MARC VAN ESSEN

An Institution-Based View of Ownership

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Een institutioneel perspectief op aandeelhouderschap

Thesis

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Chapter 1. Introduction

The separation of ownership and control has long functioned as a defining condition for the field of corporate governance (Berle & Means, 1932). The generally accepted explanation for this separation involves the specialization of economic functions over the different parties involved in the firm. In this view, informational and decision-making economies require that the bulk of everyday decision-making is centralized in the hands of professional managers (Arrow, 1974), whilst residual risk is best borne by dispersed shareholders due to their ability to diversify their equity holdings over many different firms. Precisely because risk is borne most efficiently by dispersed shareholders holding relatively small portions of any particular firm's equity, shareholders of dispersedly held publicly listed firms are typically uninvolved in the firms they own, as transaction costs and collective action problems stand in the way of them undertaking any effective decision-making or monitoring activities (Black, 1990; Downs, 1957).

However, this combination of an efficient assignment of ownership rights to external providers of equity capital (Hansmann, 1996) and the need to centralize everyday decision-making with the firm's professional managers (Arrow, 1974; Bainbridge, 2003) also creates problems in its own right, because professional managers may use their decision-making powers to serve their own interests rather than the interest of the owners of the publicly listed firms they manage (Dalton et al., 2007). The emergence of these so-called agency problems between professional managers and the shareholders that result from the separation of ownership and control of publicly listed firms (Fama, 1980; Fama & Jensen, 1983) has shifted the focus of the defining problem of corporate governance to "the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment" (Shleifer & Vishny, 1997: 737). As a result, most corporate governance research and theory building to date has predominantly focused on the different mechanisms—both internal and external to the publicly listed firms (Walsh & Seward, 1990)—that mitigate the agency costs resulting from the separation of ownership and control (Jensen & Meckling, 1976).

In line with this currently dominant agency-theoretic perspective on corporate governance (Dalton et al., 2007), the functioning of blockholding ownership (i.e. or the concentration of ownership in the hands of a single or a few large shareholders) as a

disciplinary mechanism to remedy manager-owner agency problems has been a long-standing area of research interest in the field of corporate governance (Holderness, 2003). In this context, there are three reasons why blockholding functions as a remedy for these problems. First, by concentrating ownership in the hands of a single or few owners, blockholding alleviates the transaction costs and collective action problems that dispersed shareholders face in monitoring managers (Black, 1990). Due to economies of scale, second, large blockholders are able to develop monitoring capabilities that are unavailable to smaller, more dispersed shareholders (Ryan & Schneider, 2002). Third, blockholders may function as a countervailing power against the claims of influential non-shareholding corporate constituencies, such as managers (Bebchuk & Fried, 2004) or employees (Roe, 2003), in the *ex post* distribution of a firm's earnings (Zingales, 1998).

Consistent with these theoretical conjectures, the bulk of empirical research on blockholding ownership as a disciplinary mechanism has focused on the U.S. This is not only because agency problems between managers and shareholders loom large in the U.S. due to the prevailing dispersed ownership structures of U.S. publicly listed firms, but also because levels of ownership concentration can smoothly adjust to the needs of any particular firm as a result of the high liquidity of both equity markets and firms in the U.S. context (Demsetz & Villalonga, 2001). Yet in spite of the fact that the theoretical logic behind the conventional understanding of blockholding seems to apply seamlessly to the U.S. context, empirical research on ownership concentration has found it to be of little empirical consequence there, as there hardly be seems to be any consistent relationship between blockholding, on the one hand, and firm financial performance, on the other (Dalton et al., 2003).

This disconnect between the dominant agency theoretical view of the role of owners in corporate governance, on the one hand, and the currently available empirical evidence, on the other, suggests that field of corporate governance can benefit from a substantial reevaluation of the role of owners in corporate governance. This PhD thesis aims to contribute to such a reevaluation in two rather broad directions. First, several studies of which this thesis is comprised look at the influence that different institutional contexts may have on the role and effectiveness of owners in the management and governance of publicly listed firms. To date, most research in corporate governance continue to focus on the U.S., which differs in a number of important respects from the institutional contexts that countries in the rest of the world offer for corporate governance (Denis & McConnell, 2003). Second, this thesis

will explore the broad question of whether different kinds of owners of publicly listed firms are differentially involved and effective in the firms they own. In exploring these two broad empirical research questions, this thesis aims to contribute to the development of an institution-based view of ownership of publicly listed firms in comparative corporate governance (e.g. Aguilera et al., 2008; Peng & Khoury, 2008; Peng et al., 2008, 2009).

1.1 Towards an Institution-Based View of Ownership

Although both the dominant theoretical rationale behind the function of ownership in corporate governance and the bulk of empirical evidence about the performance consequences of concentrated ownership are derived from the U.S. context, in which dispersed ownership is the norm, concentrated ownership structures are much more prevalent in the rest of the world (La Porta et al., 1999). In fact, ownership is so concentrated in both continental Europe (Barca & Becht, 2001; Faccio & Lang, 2002) and Asia (Claessens et al., 2000b; La Porta et al., 1999) that one can seriously question whether the separation of ownership and control that has played such a defining role in the development of the field of corporate governance, has actually taken place in these countries (La Porta et al., 1997, 1998). Regardless of how one answers this question, this observation raises the question why blockholding is such a dominant corporate governance strategy for shareholders of publicly listed firms in the vast majority of countries around the world.

One interesting answer to this question comes from an emerging, but fast-growing paradigm in organizational research, which emphasizes the importance of the institutional context of business in understanding firm strategies and their outcomes (Fiss, 2008; Peng & Khoury, 2008; Peng et al., 2008, 2009). Different countries are known to have rather diverse economic systems (Hall & Soskice, 2001; Whitley, 1999) that have been developed within different institutional contexts (Jackson & Deeg, 2008; North, 1990) and which are bound to influence both the prevalence and effectiveness of any particular corporate governance practice or strategy (Bebchuk & Roe, 1999; Denis & McConnell, 2003). In line with these general observations, we expect the costs and benefits of blockholding ownership, and hence its prevalence as a generic corporate governance strategy available to shareholders, to play out differently at different institutional contexts.

1.1.1 Ownership and performance of Asian firms: The effects of institutions

An increasingly influential stream of research in comparative corporate governance has focused on the question of how formal institutions, such as the various legal provisions that protect the interests of investors in a country and the overall quality of legal institutions, affect the development of financial markets (La Porta et al., 1997), the prevalence of corporate governance structures and strategies (Demirgüç-Kunt & Maksimovic, 1998; La Porta et al., 1998; Mitton, 2002), and their effects on the financial performance and value of a firm in a country (La Porta et al., 2002). This 'law and finance' research shows that a country's legislation and general degree of institutional development matter with respect to the development of financial markets, the degree to which ownership has been able to separate from control in publicly listed firms, and the value these firms generate for their owners. Overall, this strand of literature shows that the legal framework has important economic consequences (cf. La Porta et al., 2008 for an overview of this literature).

Chapter 2 of this dissertation therefore focuses on the relationship between country level institutions, on the one hand, and the effectiveness of the involvement of large blockholding owners of Asian publicly listed firms on the other. Characteristic for the Asian region is that investors have opted massively for the governance strategy of concentrated ownership (Carney & Gedajlovic, 2002b; Claessens et al., 2000a; La Porta et al., 1999). It is commonly held that concentrated ownership offers the best protection to shareholders when legal protection is relatively weak, as is the case in most Asian jurisdictions (Denis & McConnell, 2003; La Porta et al., 2008). Yet this 'law and finance' thesis seems overly crude, as it cannot account for the fact that although concentrated ownership is an endemic feature of practically all Asian economies, the levels of protection offered to shareholders differ greatly across Asian jurisdictions. Another recalcitrant finding that necessitates us to qualify the 'law and finance' explanation is that concentrated ownership has remained remarkably stable over time despite a marked improvement in corporate governance standards and legal institutions catering to shareholders needs in many Asian jurisdictions over the past two decades (Douma et al., 2006; Gedajlovic et al., 2005). This warrants a more fine-grained and contextualized account of the costs and benefits of concentrated ownership in Asia, which takes into account the subtly different institutional and corporate governance configurations found in Asia. Chapter 2 aims to provide such an account.

Using both Hedges & Olkin-type meta-analysis (HOMA; Hedges & Olkin, 1985) and meta-analytic regression analysis (MARA; Stanley & Jarrell, 2005) on a sample covering 1,149,629 firm-year observations derived from 14 Asian countries, this chapter develops and tests hypotheses about possible complementing and substituting features between jurisdiction-level institutions, on the one hand, and the corporate firm-level strategy of blockholding on the other (Aguilera et al., 2008; Gilson, 2001). We focus more specifically on the following institutions: (a) rule of law (Kaufmann et al., 2005), (b) legal anti-self-dealing provisions (Djankov et al., 2008), (c) private benefits of control (Dyck & Zingales, 2004), (d) shareholder disclosure requirements (Bushman et al., 2004), and (e) labor protection (Botero et al., 2004). These institutions can be seen as *complementary* to ownership concentration when they increase its overall effect on firm performance (Aguilera et al., 2008; Fiss, 2008; Gilson, 2001). In contrast, they can be seen as *substitutes* when they decrease the effectiveness of the ownership concentration mechanism (Aoki, 2001).

The results presented in this chapter offer at least three new insights on the relationship between concentrated ownership and firm performance in Asia. First, concentrated ownership contributes positively to performance, as firms with blockholders outperform dispersedly held firms.

Second, the strength of the focal relationship varies significantly across Asian jurisdictions. Asian nations differ markedly in the degree to which ownership concentration is an effective remedy against familiar agency problems. More specifically, this chapter shows that the general quality of a jurisdiction's legal institutions, functions as a *complement* to ownership concentration via its positive influence on owners' capacity to contribute to the performance of firms. In other words, the effectiveness of ownership concentration as a corporate governance strategy is to some degree contingent on the overall quality of the institutional matrix in a given jurisdiction (North, 1990; Shleifer & Vishny, 1997). A noticeable *substitution* effect exists between two other factors, i.e. shareholder disclosure (Bushman et al., 2004) and private benefits of control (Dyck & Zingales, 2004), and effectiveness of ownership concentration. Blockholders can positively contribute to corporate performance in countries in which the scores on these variables are low, but increasingly less so when the variable scores increase.

Finally, this chapter finds that the identity of the concentrated owner matters. More specifically, we find that foreign owners outperform domestic owners and that market investors outperform inside investors, who in turn outperform stable owners.

1.1.2 Labor institutions and blockholder effectiveness in European countries

In order to further investigate how country-level institutional factors affect the effectiveness of the firm-level corporate strategy of blockholding, chapter 3 focuses on the European context for three reasons. First, blockholding is the dominant corporate governance strategy for shareholders in most European countries except for the U.K. (Faccio & Lang, 2002), which makes Europe uniquely suitable for empirical analysis of this generic corporate governance strategy (Barca & Becht, 2001; Connelly et al., 2010). Second, as many European countries are economically and institutionally well-developed compared to the rest of the world (including most Asian countries), ownership is allowed to separate from control from the outset, which makes blockholding a discretionary rather than necessary feature of European corporate governance. Third, compared to the rest of the world, European countries feature rather specific institutions with respect to the role of employees in the economy and in corporate governance more specifically, which to date have received relatively little attention in corporate governance research (Aguilera & Jackson, 2003).

Using a variety of advanced meta-analytic methods on a sample of 748,569 firm-year observations derived from 162 studies covering 23 European countries, this chapter finds that the effectiveness of blockholding is affected by the specific labor institutions that distinguish European countries from the rest of the world. More specifically, first, this chapter finds that employment protection laws in European countries entrench the interests of employees vis-à-vis shareholders in the competitive processes through which corporate earnings are distributed over corporate constituencies, making blockholding a less effective corporate governance strategy in countries that feature strong employment protections laws.

Yet at the same time, second, this chapter finds that the part of labor institutions that facilitates the development and continuation of collective labor relations and a country's 'union density' have a positive effect on blockholder effectiveness, arguably because the associated centralization and consolidation of capital and labor interests enable strategic coordination that benefits for both. Together, these findings suggest that the effects of labor institutions on blockholder effectiveness involve both *competition* and *complementarity* of blockholding and institutionally facilitated employee interests.

Finally, this chapter also finds that relational blockholders are not only generally more effectively involved in the firms they own than arm's-length blockholders of the European context, but are also better able to cope with the specific

institutional challenges that European countries present to highly concentrated publicly listed firms. Together, these findings suggest that the scope, duration, and dedication of relational blockholder involvement in European publicly listed firms matter to the performance of European firms in ways that will need to be explored further by future research.

1.1.3 An institutional perspective on IPO underpricing

Chapter 4 focuses on the effects of country-level institutions on another aspect of firm ownership. A critical phase in the ownership of any publicly listed firm involves the initial public offering (IPO) of its shares. The purpose of an IPO is to transfer the ownership of a privately held firm from the hands of a single or a few owners to the hands of a potentially much larger number of smaller shareholders who are able to trade their newly acquired ownership stake freely in (secondary) equity markets. This shift in firm ownership from 'private' to 'public' ownership is economically important, first, because by issuing shares of stock to a large number of investors, the firm secures an infusion of new capital and broadens its long-term investor base through future capital increases during seasoned offerings. IPOs are economically significant, second, because a successful IPO, and the trading in public equity markets that it enables, will assure that a firm's shares will end up in the hands of those who value it the most, which, all other things being equal, will maximize the value of a firm. Finally, IPOs enable a high degree of economic specialization between relatively small and highly dispersed risk-bearing owners, on the one hand, and a sufficiently small number of managerial decision-makers on the other, which is especially efficient for large capital intensive economic enterprises (Hansmann, 1996).

A well-documented phenomenon in finance literature is the underpricing of IPOs, however. On average, shares seem to be sold in IPOs at a price lower than the market price that is realized once shares are freely traded. Underpricing is economically significant because it leaves money on the table that investors would have otherwise been willing to pay for the same securities at a higher price (Loughran & Ritter, 2002). When the level of underpricing is larger, firms receive less money for selling securities to the market, which raises the cost of capital of those firms.

Although many studies have looked at various causes of IPO underpricing at the firm level (Chen et al., 2004; Ritter, 1984), at the issue level (Benveniste & Spindt, 1989), and industry level (Kor et al., 2008), few have looked at the effect of institutional

features of the countries in which IPOs take place and none have looked more specifically at the effects of the legal environment in which an IPO takes place.

This chapter argues, first, that the quality of legal protection offered by a country will affect IPO underpricing in two different ways. First, a weaker legal system may increase the *ex ante* uncertainty (Beatty & Ritter, 1986) about the firm value over and above firm-level risk factors. Second, weaker legal institutions also increase the *ex ante* uncertainty of the distribution of firm value (both potential and realized) among different corporate constituents (Johnson et al., 2000b). In countries with better legal protection, managers or controlling shareholders have fewer opportunities to transfer profits or assets out of the firm at the expense of minority shareholders. The protection against these expropriation issues also reduces the *ex ante* uncertainty about the return on investment in IPOs.

Using hierarchical linear modeling on a major, firm-level dataset of 2,920 IPOs in 21 countries having different institutional and legal frameworks, this chapter finds broad support for these conjectures. It finds, first, that country specific characteristics explain about ten percent of the variation in the level of underpricing. Second and most importantly, a better developed legal framework, as measured by the country's level of investor protection, the quality of its legal system, and the degree of legal enforcement, reduces the level of IPO underpricing in these countries significantly. By unveiling the effects of legal institutions on the efficiency of the process through which shares of a company are first offered to public equity markets, this study contributes to the development of an institution-based view of ownership.

1.1.4 An institution-based view of executive compensation

Chapter 5 develops an institution-based view of executive compensation. Although this chapter does not *directly* contribute to the institution-based view of ownership that this thesis seeks to develop, it can be seen to contribute to the institution-based view of ownership *indirectly* in three ways. As was discussed at length in chapter 3, first, employees and managers can be seen as competing with the owners of the firm in the distribution of corporate earnings over corporate constituencies. Similar to employee wages and benefits, executive compensation is one concrete channel through which corporate earnings can be redistributed away from the residual claim that shareholders have on those earnings. Understanding how this channel works will therefore not only increase our understanding of the functioning of executive compensation in corporate governance, but will also increase our understanding of

how owners can secure their residual claim on corporate earnings more effectively. Second, this chapter sheds new light on the role that concentrated ownership plays in assuring the performance dependence of executive pay. By developing an institution-based view of executive compensation, third, this chapter contributes to the development of a more comprehensive institution-based view of corporate governance of which the institution-based view of ownership is also a part.

Specifically, this chapter synthesizes the relationship between firm financial performance and executive compensation across international contexts and offers three substantive contributions to the literature. Based on analyses of a synthetic dataset, comprised of more than four million primary observations in 29 countries, this chapter finds, first, a modest but positive and significant association between firm performance and executive compensation.

Second, using meta-analytic hierarchical linear modeling (HiLMMA; Raudenbush & Bryk, 2002), this study demonstrates that the association between firm performance and executive compensation is not universal, but is conditioned by formal and informal country-level institutions, as well as interactions between these factors. More specifically, the currently available evidence reveals that 25 percent of all variance in the firm performance-executive compensation relationship is attributable to country level factors.

Furthermore, the results show that both formal institutions like the rule of law and shareholder protection provisions, on the one hand, and informal institutions like ownership concentration and codes of good corporate governance on the other, can help strengthen the association between firm performance and executive remuneration. Finally, the results presented in this chapter show that these formal and informal institutions should be seen as complementary (Hall & Gingerich 2009; Hall & Soskice 2001) in that the contribution of formal institutions towards a stronger focal relationship is dependent on the level of development of informal institutions, and vice versa (Milgrom & Roberts, 1995).

1.2 The Role and Functioning of Different Owner Types

Although the first four chapters of this thesis focus predominantly on the effects of country-level institutional factors on the role and functioning of blockholders in publicly listed firms, chapters 2 and 3 also demonstrate that different types of owners significantly influence firm's objectives, strategies, and performance. In order to

further explore the role that different types of owners play in public firms, the two final chapters of this thesis focus on two specific ownership types, namely, business groups (BGs) (chapter 6) and U.S. publicly listed family-owned firms (chapter 7).

1.2.1 Understanding business groups

The past decade has witnessed a surge in research on BGs, which Khanna and Rivkin (2001) define as "firms which though legally independent, are bound together by a constellation of formal and informal ties and are accustomed to taking coordinated action" (47). BGs are mostly bound by persistent ties of ownership. Some business groups are vertically controlled, whereas others are horizontally linked through multiple and reciprocated equity. Moreover, BGs are ubiquitous in many countries with such types as Japanese *Keiretsus* and *Zaibatsu* (Gerlach, 1992), South Korean *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), becoming emblematic of their nation's enterprise systems.

Despite their prevalence, disagreement fueled by ambiguous research findings is apparent over the general question of whether the net economic and social effects of BGs are positive (Fisman & Khanna, 2004; Keister, 2000). Such disagreement is evident in characterizations of BGs by scholars as either 'heroes or villains' (Claessens et al., 2000a), 'paragons or parasites' (Khanna & Yafeh, 2007), 'red barons or robber barons' (Perotti & Gelfer, 2001), or 'anachronisms or avatars' (Granovetter, 2005). These contradictory and rather unsophisticated qualifications clearly suggest that our understanding of BGs is currently far from sufficient.

Through meta-analytical techniques employed on a database of 141 studies on BGs covering 28 different countries chapter 6 shows that such categorical classifications are unwarranted and that their character is considerably more complex. Specifically, this chapter offers four substantive contributions to the BG literature that each enhances our understanding of this highly prevalent and complex phenomenon.

First, this chapter conducts a meta-analysis on the BG literature that synthesizes all empirical evidence available to date on the effect of BG affiliation on performance (Geyskens et al., 2009). Although this effect is negative and significant, its magnitude offers no grounds to disregard BGs as 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, chapter 6 unpacks 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. This chapter reveals not only that affiliates perform relatively well in contexts characterized by 'soft' voids in labor and financial market institutions, but also that BGs add no value in contexts lacking 'hard' infrastructure and actually impair affiliate performance in settings with underdeveloped legal institutions.

Third, chapter 6 identifies differences in the revealed strategic choices of BG affiliates (relative to non-affiliates) and assesses the performance implications of these choices. This chapter finds that affiliates tend to be more leveraged, diversified, and locally oriented than their standalone counterparts, which explains much of the performance discount they incur.

Fourth, chapter 6 advances 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 BG size, this chapter disentangles these into positive scale and negative scope effects. Owing to factors like size-related cost savings and increased market and political power, a greater scale improves BG performance. However, a greater scale also tends to broaden the operational scope of BGs 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. Together, these four findings do not only increase our understanding of BGs, but also contribute to the institution-based view of ownership that this thesis aims to further develop.

1.2.2 Understanding publicly listed family firms in the U.S. context

Publicly listed family firms (FF) are often considered to be archaic and unremarkable and have long been neglected by scholars, as a result. Yet, general consensus has emerged in the literature that the publicly listed FF represents a unique and theoretically interesting organizational form for a number of related reasons. (e.g. Anderson & Reeb, 2003a, 2003b; Gomez-Mejia et al., 2003, 2007; Miller et al., 2008). First, relative to the classic public corporation, which is characterized by the separation

of ownership and control (Berle & Means, 1932; Chandler, 1977), the executives of FFs (and their families) often own a controlling stake. Second, families actively participate in the firm's management by providing the CEO or other senior executives or they may ensure themselves of some influence on corporate policy by supplying the chair of the board or other family directors (Anderson & Reeb, 2003a). Third, the placement of family members in key managerial positions (Villalonga & Amit, 2006) has the effect of centralizing decision-making authority (Gedajlovic et al., 2004; Gomez-Mejia et al., 2003), and may lead to the adoption of important decisions on the basis of particularistic criteria (Carney, 2005; Luo & Chung, 2005). Finally, the trans-generational intent of FFs (i.e. the intent to hand over control of the firm to a succeeding generation of family members) results in complex executive succession issues not apparent in other firms (Bennedsen et al., 2007; Perez-Gonzalez, 2006).

Using advanced meta-analytic techniques on a sample of 55 studies about FFs in the U.S., chapter 7 investigates how FFs perform in the context of U.S. medium- to large-sized publicly traded corporations, a setting that is both highly competitive and where a well-developed legal and institutional environment requires that organizations establish and maintain specialized exchange relationships and complex business systems (Coffee, 1999; Gilson, 2006).

This chapter finds, first, that family control has a modest, but statistically significant positive effect on firm performance. U.S. publicly listed FFs outperform the control group (i.e. non-family publicly listed firms), indicating that the family business enterprise enjoys performance-enhancing advantages in precisely the sort of highly competitive and complex business environment that many scholars see as incompatible with its capabilities, resources, and managerial capacities (cf. Chandler, 1990).

Second, this chapter finds that although the tendency for FFs to engage in fewer international ventures than non-FFs harms their performance, their inclination to diversify less and utilize less debt provide them with profit-enhancing advantages. These findings suggest that the net positive effect of family control on performance is partially attributable to specific strategic choices made by FF managers, rather than to inherent weaknesses in other forms of business enterprise.

Chapter 7 finds, third, that firms controlled by founding generations are substantially more profitable than those controlled by successor generations. In fact, successor generation FFs underperform not only founding generation FFs, but also non-family public corporations, effectively turning the founding generation premium

into a successor generation discount. These findings suggest a stark difference in the performance characteristics of first- and successor-generation FFs. These same results suggest that the general performance advantages of FFs are driven by first-generation, founder-controlled firms.

While the lower performance levels of successor-generation firms are well-documented in prior research (e.g. Bennedsen et al., 2007; Perez-Gonzales, 2006; Villalonga & Amit, 2006), fourth, the empirical literature is largely silent on the possible strategic and governance causes behind the successor discount. The findings presented in chapter 7 indicate that successor firms employ more conservative strategies by investing much less in R&D and by generally avoiding risk and that successor FFs are less likely to have their shares in the hands of external blockholders and more likely to utilize dual class shares, traits suggestive of attempts to entrench family control and avoid external constraints on the discretion of the controlling family (Villalonga & Amit, 2008). In contrast, firms controlled by founding generations appear highly innovative, risk taking, and much more profitable.

Overall, several chapters in this thesis demonstrate that a crucial factor with respect to the ownership concentration and firm strategy-performance relationship pertains to the identity of the concentrated owners involved, in that who owns a firm matters significantly for that firm's objectives, strategies, and performance.

1.3 Structure of Dissertation

The remainder of the dissertation is structured as follows: Chapters 2 and 3 present two meta-analyses of the relationship between blockholding and firm performance in that part of the world where it has historically been highly prevalent: Asia and Europe. Chapter 4 presents the third study which examines the role of institutions during a major milestone in the lifecycle of a firm, namely going public. More specifically, this chapter tests the relationship between quality of national institutions and IPO underpricing through the mechanism of *ex ante* uncertainty. Chapter 5 presents the influence of formal and informal institutions on the firm performance-executive pay relationship. Finally, chapters 6 and 7 investigate two specific organizational forms in great detail: business group affiliation and U.S. publicly-listed family firms.

Chapter 2. The ownership and performance of Asian firms: A meta-analytic test of identity and institutional effects[1]

ABSTRACT

Ownership concentration is the most prevalent corporate control strategy in Asia, but its capacity to contribute positively to corporate performance varies considerably across Asian jurisdictions. Prior theorizing fails to account for this variance because it largely treats concentrated ownership as a context-independent mechanism with universal applicability. We challenge this view through a theory building and testing meta-analytic study. We find that the identity of the concentrated owner conditions the effectiveness of ownership concentration. Foreign owners outperform domestic owners, and market owners outperform inside and stable owners. We also show that jurisdiction-level institutions, such as the effectiveness of the legal system and the degree of information disclosure towards shareholders, affect the effectiveness of concentrated ownership. Our evidence stems from the largest database on the ownership and performance of Asian firms to date, containing 1,149,629 firm-year observations from 14 countries.

2.1 Introduction

One of the most prominent research topics in the field of corporate governance concerns the relationship between concentrated ownership and the performance of modern firms (Berle & Means, 1932). Historically, there are two competing views on how this relationship is constituted. The first view suggests that concentrated ownership improves firm performance, because it allows for close monitoring of potentially self-serving managers (David, Hitt, & Liang, 2007; Shleifer & Vishny, 1986). The second view proposes that ownership concentration is detrimental to performance. Wealth concentration could lead to overly risk-averse behavior, making

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large owners choose to forego maximum profits in exchange for more stable returns (Demsetz & Lehn 1985; Shleifer & Vishny, 1997). Concentrated owners are also poor stewards towards smaller shareholders, as their actions tend to be guided by diverse interests rather than by the singular objective of maximizing firm value (Fama & Jensen, 1985; Young, Peng, Ahlstrom, Bruton & Jiang, 2008).

However, these views are increasingly replaced with a third view suggesting that there is likely no relationship between ownership concentration and performance, because owners will adjust the size of their equity holdings according to the monitoring needs of the firm (Demsetz, 1983; Demsetz & Villalonga, 2001). When monitoring needs increase (e.g., due to diversification), owners consolidate their holdings to curb managerial opportunism. Inversely, when monitoring needs decrease (e.g., through organizational restructuring), owners decrease their holdings to benefit from a better diversification of their income risk. If ownership structure is indeed endogenously determined, its equilibrium effect on performance will be null.

Prior research has shown that ownership is indeed endogenous upon performance in North America (see King & Santor (2008) for Canada, and Demsetz & Villalonga (2001) and Himmelberg, Hubbard, & Palia (1999) for the United States), as well as in various European countries (see Claessens & Djankov (1999) for the Czech Republic, Grosfeld & Hashi (2007) for Poland, Pindado & De la Torre (2006) for Spain, and Davies, Hillier, & McColgan (2005) for the United Kingdom). However, the Asian evidence points in a different direction (Douma, George, & Kabir, 2006). Ownership concentration is negatively related to performance in China (Liu & Lu, 2007) and Japan (David, Yoshikawa, Chari, & Rasheed, 2006), and positively so in Hong Kong (Carney & Gedajlovic, 2002b), Singapore (Chen & Ho, 2000), and South Korea (Yoo, 2008). Moreover, the evidence reported in this paper shows that the associational strength of the focal relationship differs markedly across the 14 Asian nations included our study. Apparently, Asia is a special case warranting additional research. We therefore address the following research question: *Which firm- and jurisdiction-level factors condition and contextualize the relationship between ownership concentration and firm performance in Asia?*

At the firm level, we find that the *identity* of the concentrated owner conditions the focal relationship, as suggested by several contemporary researchers (Cronqvist & Fahlenbrach, 2009; Douma *et al*., 2006; Gedajlovic, Yoshikawa, & Hashimoto, 2005; Thomsen, Pedersen, & Kvist, 2006). Different types of owners are differentially successful at driving firms to maximum performance, because they

themselves differ in terms of their: (a) preferences for risk, stability, and growth (Douma *et al*., 2006); (b) ability to monitor and discipline managers (Gillan & Starks, 2007); and (c) capacity to contribute resources and managerial capabilities (Djankov & Hoekman, 2000). We focus on two influential classifications of firm ownership: (a) foreign versus domestic owners (Douma *et al*., 2006); and (b) stable, versus market, versus inside owners (Gedajlovic *et al*., 2005; Gerlach, 1992). Specifically, we test two ordinal hypotheses stating which owner types will outperform their counterparts.

At the jurisdiction level, we find that the quality of national *institutions* affects the effectiveness of concentrated ownership. This speaks to what some have called the institution-based view of corporate governance (Peng, Wang, & Jiang, 2008; also see: Aguilera & Jackson, 2003; Aguilera, Filatotchev, Gospel, & Jackson, 2008; Jackson & Deeg, 2008; La Porta, Lopez-de-Silanes, & Shleifer, 2008; Roe, 2003). Specifically, we test whether jurisdiction-level institutions and firm-level control strategies jointly form a configuration of governance mechanisms with complementing and substituting features (Aguilera *et al.* 2008; Gilson, 2001). We focus on the following institutions: (a) rule of law (Kaufman, Kraay, & Mastruzzi, 2005), (b) legal anti-self-dealing provisions (Djankov, La Porta, López-de-Silanes, & Shleifer, 2008), (c) private benefits of control (Dyck & Zingales, 2004), (d) shareholder disclosure requirements (Bushman, Piotroski, & Smith, 2004), and (e) labor protection (Botero, Djankov, La Porta, López-de-Silanes, & Shleifer, 2004). Such institutions are *complementary* to ownership concentration when they increase its overall effect on performance (Aguilera *et al*., 2008; Fiss, 2008; Gilson, 2001). In contrast, they are *substitutes* when they decrease the effectiveness of the ownership concentration mechanism (Aguilera *et al*., 2008; Fiss, 2008; Gilson, 2001).

To tests our hypotheses, we employ a set of meta-analytical techniques on the largest database on Asian firms to date. We assess our owner identity hypotheses with Hedges and Olkin-type meta-analyses (HOMA; Hedges & Olkin, 1985) and subject them to a formal test using Feingold's (1992) *z*-test statistic. In line with meta-analytic conventions (Geyskens, Krishnan, Steenkamp, & Cunha, 2009), we use the Pearson product-moment correlation (*r*) as our preferred effect size. However, our reliance on *r* is potentially problematic, since *r* can only provide information on the linear association between two variables but not on the direction of causality between them. We therefore retest our hypotheses on a separate set of effect sizes, this time partial correlation coefficients ($r_{xy.z}$). In our study, $r_{xy.z}$ is the partial correlation between ownership concentration (x) and firm performance (y), given a set of n controlling

variables (Z). As Z oftentimes contains a control for endogeneity[2], in addition to a varying set of other firm-level controls, $r_{xy.z}$ provides an assessment of the direction of causality between X and Y. In all, our HOMA analyses are based on 637 correlations representing 1,149,629 firm-year observations and 223 partial correlations representing 375,292 firm-year observations. Finally, we test our jurisdiction-level hypotheses using meta-analytic regression analysis (MARA; Lipsey & Wilson, 2001). Concretely, we model a significant proportion of the heterogeneity present in a distribution of 498 effect sizes.

The contributions of our study are threefold. First, through a quantitative synthesis of the literature on ownership concentration, we sort out several contradictory research findings on the effectiveness of that mechanism in Asia, thereby complementing earlier ownership meta-analyses on North-America (Dalton, Daily, Certo, & Roengpitya, 2003) and Europe (Van Essen, Van Oosterhout, & Heugens, 2009). Second, we contribute to the literature on ownership identity (Douma *et al*., 2006; Gedajlovic *et al*., 2005; Thomsen *et al*., 2006) by showing that two conceptual ownership typologies can fruitfully be employed as empirical taxonomies in the Asian context. Third, we add to the institution-based view of corporate governance (cf. Aguilera *et al*., 2008; Fiss, 2008; Gilson, 2001; Peng *et al*., 2008) by demonstrating that national institutions can complement as well as substitute for the control mechanism of concentrated ownership.

2.2 Theory and Hypotheses

2.2.1 Concentrated owner identity

An emerging insight in corporate governance is that concentrated owner identity matters for firm performance. In Europe, for example, Pedersen and Thomsen (2003) found that ownership concentration is positively associated with performance when the concentrated owner is a financial institution or another corporation, ineffectual when the owner is a family or a single individual, and has a negative effect when the

[2] In econometrics, the problem of endogeneity occurs when the independent variable is correlated with the error term in a regression model, or when the dependent variable (i.e., the firm performance measure) simultaneously affects the independent variable (i.e., the degree of concentrated ownership) (Bhagat & Jefferis, 2002). There are several accepted methods of controlling for endogeneity. Endogeneity-conscious researchers usually use a fixed or random effects panel data model, and calculate instrumental variables using two- or three-stages least squares (2/3SLS) or the generalized method of moments (GMM) (Sánchez-Ballesta & García-Meca, 2007).

owner is a government organization (also see Pedersen & Thomsen, 1997; Thomsen & Pedersen, 2000). Although these fine-grained European findings are important, they may not translate directly to Asia due to prevailing institutional differences between the two regions. Recent research has produced two typologies of owner identity that may resonate more clearly with the Asian context. A first categorization distinguishes between foreign and domestic owners (Douma *et al*., 2006). This distinction matters in Asia, as many Asian economies are rapidly opening up and attracting ever-increasing levels of foreign direct investment (Fukao, Ishido, & Ito, 2003). A second categorization differentiates between stable, market, and inside owners (Gerlach, 1992). Empirical research has shown the contextual validity of this typology, as it covers three distinct identities which are well-represented in many Asian economies (Gedajlovic *et al*., 2005; Heugens, Van Essen, & Van Oosterhout, 2009).

***Foreign owners versus domestic owners*.** Prior research shows that there can be marked performance differentials between foreign- and domestically-owned firms, with the former generally outperforming the latter. Three reasons are commonly given for the superior performance of firms with a sizeable foreign ownership stake. First, there may be selection effects at work, in that foreign investors are better equipped than domestic parties to acquire sizeable stakes in well-performing firms (Berger, Clarke, Cull, Klapper, & Udell, 2005). Selection effects may yield better performance either because foreign parties apply better selection criteria (cherry picking) or because they have greater financial resources at their disposal (deeper pockets) than local investors. Second, there may be a knowledge transfer effect at play, in that foreign owners can positively contribute to the performance of firms by bolstering their organizational and managerial capabilities (Chibber & Majumdar, 1999; Djankov & Hoekman, 2000). Third, governance effects may materialize when foreign owners contribute to the implementation of better governance practices, especially when they expect of their local acquisitions that they comply with higher foreign standards for transparency and accountability. In sum, due to the combination of selection, knowledge transfer, and governance effects, foreign-owned firms will outperform domestically-owned rivals. See Hypothesis 1a:

> Hypothesis 1a: The association between concentrated ownership and firm performance in Asian countries will be more strongly positive when the concentrated owner is foreign, as opposed to domestic.

Stable, market, and inside owners. Parties can also be characterized in terms of their motivations to pursue concentrated ownership. Gerlach (1992) distinguishes between 'stable,' 'inside,' and 'market' owners. Each of these groups has distinct investment objectives, which are likely to result in differential firm performance. Characteristic for stable owners is that they are multiply tied to the firms in which they own shares. In addition to owning equity, stable owners are often also simultaneously creditors, debtors, buyers, or suppliers. Typical stable owners are parties like affiliated firms, banks, families, and insurance companies. The crucial point about them is that they will continuously balance the returns on their equity stakes with all other concurrent interests they have in the focal firm (Abegglen & Stalk, 1985; Gedajlovic & Shapiro, 2002). They usually refrain from implementing performance-enhancing policies that put unwarranted pressures on their other relationships with the firm (Brickley, Lease & Smith, 1988; David, Kochhar & Levitas, 1998). We therefore consider them poor candidates for improving firm performance.

Inside owners are individuals or groups who have both a substantial equity stake in the firm as well as direct managerial control over it (Fama & Jensen, 1983). In Asia, the dominant form of inside owner is the corporate founder and his/her immediate family. Such owners may not be efficient guardians of firm profitability for three reasons. First, since inside owners concentrate a large proportion of their personal wealth in the firms they own, their income streams are usually sub optimally diversified. This makes them more risk averse than other types of concentrated owners, encouraging them to forego risky but potentially lucrative investment opportunities (Fama & Jensen, 1983). Second, in many Asian nations, it is customary for inside owners to build family dynasties by appointing family members rather than external professional managers in key managerial positions (Granovetter, 2005). Such appointments are usually motivated by a combination of altruism towards kin and distrust of outsiders (Schulze *et al*., 2001). Since merit is often not a primary consideration for managerial appointments, firm profits tend to suffer under inside ownership. Third, through their executive powers, inside owners have the opportunity to engage in minority shareholder disadvantaging policies that benefit them privately while simultaneously hurting the public performance of the firm (Bae, Kang & Kim, 2002; Johnson *et al*., 2000b). In short, inside ownership in Asia is unlikely to result in strong firm performance. Finally, market owners differ from stable owners in that they are tied to the firm only with their equity stakes, and from inside owners because they

operate at arm's length from firm management. Their primary objective is to realize maximum equity returns (Fukao, 1999).

We expect firms to be sensitive to market owners' pressures for two reasons. First, due to the singularity of their tie to the firm, market owners will not hesitate to liquidate their shareholdings when they become dissatisfied with the firm's future earnings potential. As the selling off of large blocks of equity lowers the firm's share price and increases its cost of capital, this is a disciplining force to be reckoned with (La Porta *et al*., 2000b). Second, market owners factor in a risk premium when they are exposed to shareholder disadvantaging strategies, which also drive up the firm's cost of capital. Market owners can therefore ensure that managers choose policies that are consistent with their objectives. In short, we expect that market owners will outperform both inside and stable owners. See Hypothesis 1b:

> Hypothesis 1b: The association between concentrated ownership and firm performance in Asian countries will be more strongly positive when the concentrated owner is a market owner, as opposed to an inside or stable owner.

2.2.2 Jurisdiction-level institutions

Another emerging scholarly insight is that the effectiveness of corporate governance mechanisms is not universal, but instead conditioned by jurisdiction-level institutions (Aguilera & Jackson, 2003; Aguilera *et al.,* 2008; Jackson & Deeg, 2008; La Porta *et al.*, 2008). Even seemingly straightforward mechanisms, like incentive schemes tied to performance or monitoring by independent boards, have to be thoroughly adapted when applied in a new context, to make them fit in with the local configuration of interdependent governance elements (Davis & Useem, 2002; Fiss & Zajac, 2004). We expect the mechanism of ownership concentration to be likewise conditioned by local institutions, focusing specifically on the following variables: (a) rule of law (Kaufmann *et al*., 2005), (b) legal anti-self-dealing provisions (Djankov *et al*., 2008), (c) private benefits of control (Dyck & Zingales, 2004), (d) shareholder disclosure requirements (Bushman *et al*., 2004), and (e) labor protection (Botero *et al*., 2004).

Rule of law. A first variable to condition the effectiveness of concentrated ownership is the overall quality of legal institutions, commonly operationalized through the 'rule of law' index (Kaufmann *et al*., 2005). When large investors lack outright control over the firm, they may induce managers to work in their interest by

engaging with them privately (Gillan & Starks, 2007). Yet the effectiveness of private engagement hinges on a relatively amicable relationship between manager and concentrated owner. When this relationship is less amicable, large minority owners can only govern through voting. But voting is often a deficient governance mechanism (Bebchuk, 2007; Easterbrook & Fishel, 1991), as its effectiveness depends on the quality of legal institutions. As Shleifer and Vishny have put it: "large minority share holdings may be effective only in countries with relatively sophisticated legal systems" (1997: 755). Therefore, good quality legal institutions complement concentrated ownership, as they help protect the voting rights of large minority shareholders. See Hypothesis 2a:

> Hypothesis 2a: The association between concentrated ownership and firm performance is positively moderated by the quality of the background institutions of the firm's home country.

Legal protection against self-dealing. A second factor to condition the effectiveness of concentrated ownership is the degree of *specific* protection against minority shareholder expropriation, commonly operationalized through the 'anti-self-dealing' index (Djankov *et al*., 2008). In Asia, where many firms have large owners (Claessens, Djankov & Klapper, 2003; La Porta, López-de-Silanes & Shleifer, 1999), minority shareholders are at least as likely to be expropriated by larger shareholders as by opportunistic managers (cf. Young *et al*., 2008). Minority shareholders who fear expropriation by their larger counterparts have two control strategies at their disposal: further concentrating their ownership stakes to become dominant owners themselves or investing only in jurisdictions in which a sophisticated legal system offers them protection against controlling shareholders. Both strategies independently help investors to obtain a return on their investments. We therefore expect concentrated ownership and legal protection to be substituting governance strategies (Heugens *et al*., 2009; Shleifer & Vishny, 1997). See Hypothesis 2b:

> Hypothesis 2b: The association between concentrated ownership and firm performance is negatively moderated by the level of legal protection against self-dealing offered by the firm's home country.

Private benefits of control. A third conditioning variable is the extent to which concentrated owners can reap 'private benefits of control' (PBoC; Dyck & Zingales, 2004; Nenova, 2003). PBoC involve the fraction of firm value that does not accrue to all shareholders in proportion to their equity stake, but is enjoyed exclusively by parties who control the firm (Horner, 1988; Zingales, 1994). Positive PBoC exist in many Asian jurisdictions, as can be inferred from the premiums above the prevailing market price at which controlling blocks of shares tend to trade (Dyck & Zingales, 2004). At modest levels, PBoC may create value because they *incentivize* owners to engage in actions that benefit shareholders as a class (Gilson, 2006). Concretely, PBoC reward owners for increased monitoring of management (Demsetz & Lehn, 1985), for aggressively pursuing entrepreneurial strategies (Dyck & Zingales, 2004), and for inviting value-enhancing takeovers (Grossman & Hart, 1980). Things change, however, when PBoC become larger. When jurisdictions offer little protection against blatant forms of self-dealing, the *consumptive* aspects of PBoC will outweigh their incentivizing effects (Zingales, 1994). The consumption of firm value by concentrated owners may involve the sale of corporate assets at sub-market transfer prices, or the effectuation of mergers which only benefit the controlling shareholder (Bae *et al*., 2002). See Hypothesis 2c:

> Hypothesis 2c: The association between concentrated ownership and firm performance stands in an inverted U-shaped relationship to the level of private benefits the concentrated owner is allowed to reap in its home country.

Information disclosure towards shareholders. A fourth factor to influence the effectiveness of ownership concentration is the availability of firm-specific information to parties outside publicly traded firms, as commonly captured by the 'corporate transparency' index (Bushman *et al*., 2004). Each jurisdiction possesses a multi-faceted information disclosure regime, which comprises a number of actors who jointly produce, collect, validate, and disseminate information about listed firms (Bushman *et al*., 2004). These parties include the business press, auditing firms, credit rating agencies, and investor watchdog organizations. They play a pivotal role in the economy, because information asymmetries between corporate insiders and outsiders are associated with higher transaction costs, fraud, mispricing of assets, and

misallocated resources (Core, 2001; Gelb & Zarowin, 2000; Healy & Palepu, 2001). We expect (public) information disclosure and (private) direct monitoring by concentrated shareholders to act as substitutes (La Porta, López-de-Silanes, Shleifer & Vishny, 1998). When information disclosure regimes are poorly developed, investors must alleviate information asymmetries by concentrating their shareholdings. Alternatively, when sufficient information about firms is publicly available, concentrated owners have no informational advantages over dispersed shareholders. See Hypothesis 2d:

> Hypothesis 2d: The association between concentrated ownership and firm performance is negatively moderated by the level of shareholder disclosure requirements imposed by the firm's home country.

Protection of labor. A fifth variable to condition the effectiveness of ownership concentration is the level of legal protection offered to workers, as captured by Botero *et al.*'s (2004) 'labor protection' index. Laborers commonly enjoy protection though employment laws regulating labor contracts at the individual level, collective relations laws structuring the processes giving rise to collective agreements and regulating unionized labor activity, and social security laws stipulating the benefits accruing to individuals who temporarily or permanently drop out of the working population (Atanassov & Kim, 2009). Labor protection laws touch upon several corporate governance issues. First, stronger union laws empower workers, allowing them to claim a greater part of the corporate residual (Aguilera & Jackson, 2003). Second, when the law dictates that workers should be represented on corporate boards, as in China, they can exercise direct control over the firm (Cho & Rui, 2007). Third, better labor protection makes it more difficult for concentrated owners to pursue value-enhancing strategies that affect workers negatively, such as corporate restructuring after a performance crisis (Atanassov & Kim, 2009). Fourth, empowered workers can collude with managers by demanding above market wages in exchange for support to keep poorly performing managers entrenched, to the detriment of shareholders' interests (Pagano & Volpin, 2005a). In short, better protection of workers limits the strategic latitude that concentrated owners enjoy to effectuate better performance. See Hypothesis 2e:

Hypothesis 2e: The association between concentrated ownership and firm performance is negatively moderated by the level of labor protection offered by the firm's home country.

2.3 Methods

2.3.1 Sample and coding

The value of meta-analytic work depends on the availability of a substantial number of high-quality replication studies, and on the inclusion of the greatest possible fraction of these in the analysis (Eden, 2002: 841). We used a set of five complementary search strategies to minimize the chance of missing essential studies (White, 1994). First, we read two meta-analyses on the relationship between equity holdings and firm performance in Asia (Heugens *et al.*, 2009) and the United States (Dalton *et al.*, 2003). 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: 'blockholder,' 'equity,' 'inside ownership,' 'institutional ownership,' 'ownership,' 'ownership concentration,' and 'shareholders.' Third, we conducted a manual search of 25 relevant journals in the fields of accounting, economics, finance, and management. Examples of included journals are: *Academy of Management Journal*; *Journal of Corporate Finance*; *Journal of Finance*; *Journal of International Business Studies* and *Strategic Management Journal*. Fourth, after collecting an initial set of studies, we used a two-way 'snowballing' technique that involved backward-tracing all references reported in the articles and by forward-tracing all articles that cited the original articles using Google Scholar and ISI Web of Knowledge. Fifth, we corresponded with 44 researchers that had previously written one or several papers on the focal relationship in which effect size information was not reported, asking them for a correlation table listing Pearson correlation coefficients.

These strategies yielded a final sample of 637 effect sizes derived from 145 primary studies, which in turn consisted of 97 journal articles, 46 working papers, and 2 PhD theses. We finished the search for data in November 2008 (See Appendix A). We then read all articles in the final set and developed a coding protocol (Lipsey & Wilson, 2001) for extracting data on all relevant variables. To test Hypotheses 1a and 1b we collected information on the average percentage of equity held by the largest owner in

a given jurisdiction, bivariate correlation coefficients and multivariate *t*-statistics for the ownership-performance relationship, sample sizes, and the degrees of freedom of sampled regression analyses. We also differentiated (when possible) between 'foreign' and 'domestics' owners, and classified owners alternatively as 'stable-', 'market-', or 'inside' owners. To test Hypotheses 2a through 2e we furthermore collected additional covariates from several secondary sources. Table 1 provides a description of all variables included in the analysis.

Table 1: Description of Variables

Variable	Description
Ownership	The most generic category of concentrated ownership on which data can be obtained. It encompasses inside owners as well as controlling or non-controlling outside blockholders who, depending on the disclosure laws of any particular jurisdiction, own 3 percent or more of the company's shares (see for example, Seifert *et al.*, 2005).
Ownership concentration	A more specific measure of ownership concentration, which is differentially defined across research studies. First, it may be operationalized as 'largest owner,' representing a measure of the degree to which ownership in the firm is concentrated in the hands of a single investor. Second, it may be operationalized as 'ultimate owner,' which identifies any party – a substantial minority shareholder or the majority shareholder – who enjoys outright control over the firm. Common cut-off points for determining ultimate ownership are the 10 and 20 percent levels of ownership (Faccio and Lang, 2002). Third, it may be operationalized as a continuous measure of the degree to which ownership is concentrated in the hands of the largest owners, such as the largest three or five shareholders, with a Herfindahl or entropy measure (Gedajlovic and Shapiro, 1998).
Foreign owner	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the owner is a foreign party (e.g., a foreign firm, financial institution, business group, or other; see for instance Douma *et al.*, 2006).
Inside investor	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the owner is an insider in the firm (e.g., managers, founders, and their immediate family members; see for instance Veliyath and Ramaswamy, 2000).

Market investor	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the dominant owner is solely tied to the firm via an arm's length equity stake (e.g., foreign shareholders and investment trusts; see for instance Gedajlovic *et al.*, 2005).
Stable investor	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the owner is durably tied to the firm via multiple business ties over and above the equity tie (e.g., family firms or firms affiliated to business group; see for instance Gedajlovic *et al.*, 2005).
Accounting performance	Any indicator of the financial performance of the firm that is expressed in the form of an accounting-based measure of firm profits (ROA, ROE and PM).
Market performance	Any indicator of the financial performance of the firm that is expressed in the form of a market-based measure of firm value (stock returns, market-to-book ratio, Tobin's Q).
Firm risk	A variable which reflects the degree to which the financial valuation of a firm's stock varies in relation to movements of the broader market. (see for instance Gedajlovic *et al.*, 2005).
Firm size	An indicator of the size of the firm, commonly measured as a firm's total assets, sales, or employees (see for instance Veliyath and Ramaswamy, 2000).
Rule of law	A variable which measures the extent to which agents have confidence in and abide by the rules of society in 2002. These include perceptions of the incidence of violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts (source: Kaufmann *et al.*, 2005).
Anti-self-dealing index	A variable which measures the extent to which national jurisdictions offer minority shareholders protection against expropriation by controlling shareholders, expressed in the form of a zero (low protection) to one (high protection) index. The index includes ex-ante and ex-post controls around self-dealing transactions (source: Djankov *et al.*, 2008).
Private benefits of control index	A variable which measures the excess value (over and above the market value) of a controlling block of shares as measured in an exchange transaction. This excess value, which is paid in the form of a 'block premium,' captures the discounted future cash flows the acquirer expects to expropriate from minority shareholders. The block premium is computed by taking the difference between the price per share paid for the control block and the exchange price two days after the

	announcement of the control transaction, dividing by the exchange price and multiplying by the ratio of the proportion of cash flow rights represented in the controlling block (source: Dyck and Zingales, 2004).
Labor protection	Measures the protection of labor and employment laws as the average of: (1) Alternative employment contracts; (2) Cost of increasing hours worked; (3) Cost of firing workers; and (4) Dismissal procedures (source: Botero *et al*., 2004).
Stock market capitalization/GDP	Average of the ratio of stock market capitalization to gross domestic product for the period 1999-2003 (source: WDI at: http://devdata.worldbank.org/dataonline/).
Disclosure	Average ranking of the answers to the following questions: A6g (R&D), B3f (capital expenditure), Ca (subsidiaries), Cb (segment-product), Cc (segment-geographic), and D1 (accounting policy) (source: Bushman *et al*., 2004).
Publication year	For journal articles: year in which the article first appeared in print. For working papers: year in which the paper was first included in a publicly accessible working paper series.
Published	A dummy variable measuring whether a specific study was published in a scholarly peer reviewed journal (1) or not (0).
Cross-sectional design	A dummy variable measuring whether the data included in a specific study was based on a cross-sectional (1) or a longitudinal (0) observation plan.
Ln GDP/capita	Natural log of per capita gross domestic product in 2003 US dollars (source: World Development Indicators at: http://devdata.worldbank.org/dataonline/).

2.3.2 Analysis

To test Hypotheses 1a and 1b we used HOMA (Hedges & Olkin, 1985). In HOMA there are two methods for combining study estimates. The first, the fixed effects model, assumes no heterogeneity between study results, and collected effect sizes are solely corrected for sampling error to explain variability between effect sizes. The second, the random effects model, assumes that studies estimate different effect sizes, which are corrected for sampling error plus a value that represents other sources of variability that are assumed to be randomly distributed (Raudenbush & Bryk, 2002; Kisamore & Brannick, 2008). This method produces more conservative estimates when effect size distributions are heterogeneous, but it becomes computationally similar to the fixed effects model when the effect size distribution is homogeneous (Lipsey & Wilson, 2001). Because of its more realistic assumptions (Geyskens *et al.*, 2009), we opt for the random effects model.

We use MARA (Lipsey & Wilson, 2001) to test Hypotheses 2a through 2e. MARA is a special type of weighted least squares (WLS) regression analysis designed specifically to assess the relationship between effect size and moderator variables in order to model previously unexplored heterogeneity in the effect size distribution (Lipsey & Wilson, 2001). One of the unique benefits of MARA is that it allows for the modeling of such heterogeneity with the help of data that were not part of the primary studies. In our case, we included the additional jurisdiction-level variables.

2.3.3 HOMA procedure

The effect size statistics we used for the HOMA are the Pearson product-moment correlation r and the partial correlation coefficient $r_{xy.z}$. r is commonly used in meta-analysis, because it is an easily interpretable and scale-free measure of linear association. When studies reported different effect size statistics, such as Cohen's standardized means difference measure d, we converted them back into an r value using the appropriate formulas (Lipsey & Wilson, 2001). r provides appropriate effect size information when the direction of causality of the underlying relationship has been established by prior research. However, for the present study it is necessary to also establish the direction of causality for the focal relationship. Since r does not provide this information, we also require a different type of effect size.

We therefore also use $r_{xy.z}$ to check whether ownership concentration indeed *causes* firm performance, when controlling for endogeneity and firm characteristics (cf. Sánchez-Ballesta & García-Meca, 2007). In addition to its ability to provide an endogeneity-corrected reassessment of the overall mean effect size, partial correlation-based HOMA is also an attractive method because of its potential for exploring non-linear effects, such as squared and cubed terms. A potential deficit of the method is that the control variables included in the analysis tend to vary from sample to sample, such that the actual content of the aggregate z-vector is unknown and difficult to interpret. Given our specific interest in endogeneity controls, the impact of this deficit on our analysis is limited. We compute partial correlation coefficients on the basis of the t-statistics and degrees of freedom reported in primary studies (Greene, 2008).[3] The number of partial correlation coefficients which can be harvested from primary studies

[3] The formula used to calculate partial correlations is: $\sqrt{(t^2/ (t^2+df))}$
where t is the t-statistic and df is degrees of freedom. Note that this will always produce a positive number, so it is necessary to convert it to a negative number if the regression coefficient is negative (see Greene 2008, chapter 3). T-values result from the scaling of primary coefficients by their respective standard errors. They thus are by definition standardized and defined on a dimensionless scale.

is usually lower than the number of Pearson correlations, because studies must use firm performance as the dependent variable for partial correlations to be retrievable (Doucouliagos & Ulubasoglu, 2008). The partial correlation coefficients were then analyzed using HOMA procedures identical to those used for Pearson correlations. HOMA is applicable when effect sizes are normally distributed. However, when the underlying (or true) population values of r or $r_{xy.z}$ differ substantially from zero, the effect size distribution tends to become skewed (Rosenthal, 1991). A common remedy to this problem is to apply Fisher's (1928) Z*r* transformation to the data, to bring them closer to the normal distribution (Hedges & Olkin, 1985; Silver & Dunlap, 1987). In our HOMA we therefore used Fisher's Z*r* transformed correlations.[4]

An important question in meta-analysis is how to deal with studies containing multiple measurements of the focal effect (Geyskens et al., 2009). In our study, multiple measurements of the focal relationship are often reported due to different operationalizations of ownership and performance. The issue at stake is the trade-off between stochastic independence of the various effect sizes in the analysis on the one hand, and the use of all available information on the other. A Monte Carlo simulation by Bijmolt and Pieters (2001) shows that procedures using the complete set of measurements outperform those representing each study by only a single value (such as a composite effect size) in areas like parameter significance testing and parameter estimation accuracy. We therefore included all available measurements in our study.

To arrive at an appropriate estimate of the meta-analytic mean effect size, we had to account for differences in precision across effect sizes plus variability in the population of effects (Lipsey & Wilson, 2001). These differences derive from differences in the sample sizes of the underlying primary studies on which the effect sizes are based, plus a constant that represents the variability across the population effects. Hedges and Olkin (1985) demonstrated that the optimal measure of precision for a given effect size is the inverse variance weight w: the inverse of the squared standard error value of the effect size.[5] With the help of these weights, we can

[4] Fisher's Zr transformed correlations are calculated as follows: $z_r = \frac{1}{2}\ln\left(\frac{1+r}{1-r}\right)$, where r is the untransformed correlation coefficient.

[5] w is calculated as follows: $w_i = \frac{1}{se_i^2 + \hat{v}_\theta}$, where SE is the standard error of the effect size and $\hat{v}_\theta$ is the random effects variance component.

subsequently calculate the meta-analytic mean effect size, its standard error, and the corresponding confidence interval.[6]

2.3.4 MARA procedure

Variables. We used MARA to test Hypotheses 2a through 2e. In addition to the institutional moderator variables discussed in the Theory and Hypotheses section, we assessed the influence of three methodological moderator variables. Specifically, we tested whether a particular effect size was derived from: (1) a recent or an older study; (2) a published or unpublished study; and (3) a study using cross-sectional or longitudinal data. We also included three substantive factors: (1) gross domestic product (GDP) per capita to account for any spurious differences in development across the countries in our sample; (2) stock market capitalization (World Development Indicators, 1999-2003) to control for the effect of market liquidity; and (3) dummy variables for the identity of the concentrated owner to corroborate Hypotheses 1a and 1b. All variables are summarily described in Table 1.

Analysis. We used WLS regression analysis to assess the relationship between effect size and moderator variables (Lipsey & Wilson, 2001). We used weighted regression to account for differences in precision across effect sizes. Research shows that the optimal weighting variable for MARA is the inverse variance weight w (Hedges, 1982; Hedges & Olkin, 1985). We use a modified type of WLS, because most statistical analysis programs will provide correct estimates of the regression coefficients, but report incorrect standard errors and significance levels for MARA.

, which is in turn calculated as: $s.e.(z_r) = \frac{1}{\sqrt{n-3}}$

, and the formula of random effect variance is: $\hat{v}_\theta = \frac{Q_T - k - 1}{\sum w - \left(\frac{\sum w^2}{\sum w} \right)}$

[6] The meta-analytic mean is calculated as follows: $\overline{ES} = \frac{\sum (w \times ES)}{\sum w}$, with its standard error: $se_{\overline{ES}} = \sqrt{\frac{1}{\sum w}}$, and with its 95% confidence interval computed as: $Lower = \overline{ES} - 1.96(se_{\overline{ES}})$, $Upper = \overline{ES} + 1.96(se_{\overline{ES}})$

This is the case when the software interprets the inverse variance weights as "representing multiple effect sizes rather than weightings of single effect sizes and attributes an exaggerated *n* to the effect size sample" (Lipsey & Wilson, 2001: 122). This problem is easy to correct. Hedges and Olkin (1985) demonstrated that a correct standard error can be computed for the unstandardized regression coefficients using the incorrect standard error and the mean-square residual. A significance test (*z*-test) can then be conducted by dividing the unstandardized regression coefficient by its corrected standard error (Lipsey & Wilson, 2001). In line with current conventions (Geyskens et al., 2009), we estimated the regression parameters with mixed effects models. In such models, variability in the effect size distribution is attributed to systematic between-study differences and subject-level sampling error (as in fixed effects models) as well as to a remaining unmeasured or even immeasurable random component (as in random effects models; Lipsey and Wilson, 2001).

2.4 Results

2.4.1 General overview

Ownership concentration and performance. We first present a generic overview of the relationship between firm ownership and performance in Asia (see Table 2). The results show that firms with a blockholding owner outperform dispersedly held firms, and the confidence interval does not include zero (implying that the effect is significant). The mean effect size (mean rho) for the focal relationship is .04 (k = 637; N = 1,149,629) and the confidence interval does not include zero (implying that the effect is significant). The effect is independent of the chosen dependent variable, as the difference between market- and accounting-based measures of performance is negligible. A different way of assessing the focal relationship is to test for the effect of ownership *concentration* on performance (see Table 2). Here we add information concerning the degree of concentrated ownership, measured as the fraction of a firm's total equity that is concentrated in the hands of a select few owners. We find few significant effects for this more fine-grained measure, implying that the size of the ownership stake might not be monotonically related to performance (cf. Demsetz & Villalonga, 2001; Morck, Shleifer, & Vishny, 1988; McConnell & Servaes, 1990).

Additional HOMA analyses, exploring the moderating effect of the size of the ownership stake on the focal relationship, confirm this intuition (see Table 2). When ownership is wholly dispersed, no significant relationship between ownership structure and performance can be detected (mean rho = -.04, but the effect is not significant). When a blockholder is present while ownership concentration remains modest, such that owners can influence managers but lack full control over the firm, we find a positive and significant effect (0–30 percent: mean rho = .04). As the ownership stake increases (30–50 percent), such that owners can exert full control over the firm (usually with the help of pyramidal equity schemes), the effect on performance becomes negligible (mean rho = .01) and insignificant. The same is true for even higher levels of ownership (50–100 percent). We therefore conjecture that beyond a certain threshold level, the benefits of concentration are offset by increased opportunities for self-dealing (Bae *et al*., 2002; Johnson *et al*., 2000b).

Endogeneity of ownership. A common critique of the literature we surveyed is that corporate ownership is an endogenous variable rather than an exogenous influence on firm profitability (Demsetz & Lehn, 1985). As Demsetz and Villalonga have put it: "the ownership structure of a corporation should be thought of as an endogenous outcome of decisions that reflect the influence of shareholders and of trading on the market for shares" (2001: 210). Central to this view are the monitoring needs of the firm: when the performance of the firm is more likely to fluctuate due to self-serving managerial behaviors, it is better managed by concentrated owners; when performance is more predictable it is also safe in the hands of dispersed shareholders (Davis, 2005). As an equilibrium outcome, the effect of ownership on performance is therefore expected to be null (Demsetz & Villalonga, 2001).

Although the endogeneity argument holds in many jurisdictions, especially in those with large, liquid, and informationally transparent capital markets, it has never been shown satisfactorily that ownership is endogenous upon performance in Asia. In fact, there may be few possibilities for endogenous adjustments of ownership structure in this region due to the prevalence of small, illiquid, and informationally opaque financial markets in many jurisdictions (Douma *et al*., 2006; Selarka 2005). Under such conditions, large shareholders cannot dispense of sizeable blocks of shares through the stock market, such that equilibrium conditions will not obtain easily and ownership will remain exogenous. Concentrated owners are then better off exercising direct control over the firm, either through representation on the board or through private

engagement with management (Gillan & Starks, 2007). The results of a meta-analytic test of the endogeneity effect are presented in Table 3.

The results reported in Table 3 replicate those of Table 2 almost completely. When controlling for potentially influential variables, the effect of blockholdings on performance remains positive and significant (mean rho = .03; k = 223; N = 375,292) and the effect of ownership concentration remains null (mean rho = .01 (n.s.); k = 77; N = 125,210). Furthermore, the differential effect of linear and quadratic measures of concentration in studies employing both confirms that the focal relationship is non-monotonic. Most importantly, the results confirm the robustness of these findings against the inclusion of endogeneity controls. Blockholders continue to contribute to firm performance (mean rho = .06; k = 52; N = 61,248) and the effect of ownership concentration continues to be null. Ownership is therefore not endogenous upon performance, or other variables, in Asia.

Table 2: Correlation-Based HOMA Results for the Focal Relationship

Predictor	K	*N*	Mean	SD_ρ	CI 95%	Q test
Ownership to performance	637	1,149,629	**0.04***	0.00	0.03 / 0.05	10,275.45 (0.00)
Accounting measures	354	781,770	**0.04***	0.01	0.03 / 0.05	5,809.25 (0.00)
Market measures	283	367,859	**0.03***	0.01	0.01 / 0.04	4,438.81 (0.00)
Ownership concentration to performance	278	576,855	0.01	0.00	-0.00 / 0.02	2,892.06 (0.00)
Accounting measures	174	427,948	**0.01***	0.01	0.00 / 0.02	1,893.43 (0.00)
Market measures	104	148,907	-0.00	0.01	-0.02 / 0.02	974.40 (0.00)
0 t/m 30%	26	40,867	**0.04***	0.02	0.00 /0.08	279.39 (0.00)
30 to 50 %	94	205,646	0.01	0.01	-0.00 / 0.03	1,014.19 (0.00)
50 to 100 %	158	330,342	-0.00	0.01	-0.02 / 0.01	1,567.47 (0.00)
Dispersed ownership to performance	6	653	-0.04	0.06	-0.17 / 0.06	12.11 (0.03)

*** Significant**

Contextual differences. Although these findings speak to the importance of concentrated ownership as a control strategy, they must be nuanced in light of contextual differences across Asian countries. Cochran's (1954) Q test, which assesses

the heterogeneity of the effect size distribution, is highly significant (Q = 10,275.45; p < .001).[7]

Table 3: Partial Correlation-Based HOMA Results for the Focal Relationship

Predictor	K	*N*	Mean	SD_ρ	CI 95%	Q test
Ownership to performance	223	375,292	**0.03***	0.00	0.02 / 0.04	1,423.93 (0.00)
Accounting measures	104	133,127	**0.04***	0.01	0.02 / 0.05	509.70 (0.00)
Market measures	119	242,165	**0.02***	0.01	0.01 / 0.04	913.32 (0.00)
Control for endogeneity	52	61,248	**0.06***	0.01	0.03 / 0.08	428.41 (0.00)
Non-linear relationship						
Linear term	24	20,701	-0.04	0.02	-0.09 / 0.00	266.71 (0.00)
Quadratic term	25	21,404	0.03	0.02	-0.00 / 0.07	191.76 (0.00)
Cubic term	2	1,406	-0.01	0.29	-0.56 / 0.55	114.20 (0.00)
Ownership concentration to performance	77	125,210	0.01	0.01	-0.01 / 0.02	463.59 (0.00)
Accounting measures	31	36,474	-0.01	0.01	-0.03 / 0.02	116.36 (0.00)
Market measures	46	88,736	0.02	0.01	-0.00 / 0.04	330.81 (0.00)
Control for endogeneity	13	13,839	0.04	0.03	-0.01 / 0.09	97.31 (0.00)
Non-linear relationship						
Linear term	6	5,021	-0.04	0.04	-0.11 / 0.03	28.55 (0.00)
Quadratic term	6	5,021	**0.07***	0.03	0.01 / 0.13	19.66 (0.00)

*** Significant**

An important question is whether this heterogeneity derives from cross-jurisdictional differences. Table 4 therefore reports country-specific results. The results confirm that the associational strength of our focal relationship varies across national contexts. The effect of blockholdership and/or ownership concentration was positive and significant in six cases: Hong Kong, India, Jordan, Singapore, South Korea, and Taiwan. Here, ownership clearly matters for performance, with mean effect sizes ranging from .02 (Hong Kong) to .09 (Taiwan). In five other nations – Bangladesh, China, Indonesia, Malaysia, and Thailand – no significant effects could be identified. Only for Armenia did we find negative effects of blockholdership (-.03) and ownership concentration (-.05) on performance. Japanese firms perform better when they have a blockholder on board (.04), but increasingly worse as the degree of ownership concentration increases (-.02). As more concentratedly owned firms tend to be those in

[7] The Q test is computed by summing the squared deviations of each study's effect estimate from the overall effect estimate (Cochran, 1954). In this exercise, each study is weighted by its w. The Q test assumes homogeneity, following a Chi-square distribution with k – 1 degrees of freedom (k = the number of studies). When Q is significant, as it is in our case, the assumption of homogeneity is rejected.

the lower tiers of Japanese supply systems, this effect likely derives from profit redistribution practices (Gedajlovic & Shapiro, 2002).

2.4.2 Owner identity

Foreign owners versus domestic owners. Tables 5 and 6 report the correlation-based and partial correlation-based HOMA results for Hypotheses 1a and 1b. Related evidence can be found in Table 4 (which reports country-specific results whenever available) and Table 7 (which reports the MARA results with owner identity controls).

Hypothesis 1a is confirmed by the results in Table 5. Whereas having a domestic concentrated owner does not lead to improved performance (mean rho = .01 (n.s.); k = 220; N = 492,332), foreign owners make a positive difference (mean rho = .12; k = 99; N = 154,728). A z-test (Feingold, 1992) confirms the significance of this ordinal ranking (z = 37.91; p < .001). The results in Table 6 similarly show a positive and significant effect for foreign ownership (mean rho = .07; k = 32; N = 59,185), which is robust against the inclusion of endogeneity controls (.06). These findings are corroborated by the results in Table 7 (Model 1), which show that foreign owners significantly outperform the reference category (p < .01) while domestic owners do not. Table 4 shows that these findings are largely driven by the excellent performance of foreign owners as compared to domestic owners in India (.11 vs. -.03), South Korea (.11 vs. .04), Japan (.19 vs. -.01) , and Taiwan (.27 vs. .05).

Stable, market, and inside owners. The results in Table 5 also confirm Hypothesis 1b, as market investors (mean rho = .07; k = 92; N = 169,055) outperform inside investors (mean rho = .03; k = 137; N = 177.881). A z-test confirms this ordinal difference (z = 11.80; p < .001). Likewise, inside investors outperform stable investors (mean rho = .00 (n.s.); k = 235; N = 513.147), and again this rank-ordering is confirmed statistically (z = 10.90; p < .001). Ordinally similar results are reported in Table 6 (.14 vs. .02 vs. -.00 (n.s.)), which are again largely robust against the inclusion of endogeneity controls (.19 vs. .01 (n.s.) vs. .00 (n.s.)). MARA analyses (Table 7; Model 1) similarly show that market investors outperform the reference category (p < .05), inside investors are on par with it (difference is not significant), and stable investors underperform the referents (p < .01).

Table 4 shows that market investors do especially well in the heavily industrialized Asian nations of Japan (.08 vs. .05 vs. -.05), Korea (.07 vs. .01 (n.s.) vs. .02), and Taiwan (.24 vs. .10 vs. .01 (n.s.)). In contrast, only in the service industry-

driven economy of Singapore are market investors (and inside investors) modestly outperformed by stable investors (.01 (n.s.) vs. -.03 (n.s.) vs. .03).

2.4.3 Jurisdiction-level institutions

Table 7 shows the MARA results for Hypotheses 2a through 2e. Two models are reported. The dependent variable for each model is the correlation between ownership (i.e., blockholder presence) and performance. Both models fit the data reasonably well (R^2 = .24, .29). Model 1 reports evidence pertaining to all jurisdiction-level hypotheses except 2c (PBoC) and includes a control for effect sizes stemming from Japan. The model is based on 497 observations. Model 2 does not include the Japan dummy (due to limited degrees of freedom at the jurisdiction level), but does report evidence pertaining to all jurisdiction-level hypotheses. Since scores on the PBoC variable are not available for all countries, the number of observations for this model drops to 389.

Rule of law. The results confirm Hypothesis 2a. The quality of legal institutions, captured by the rule of law variable (Kaufmann *et al*., 2005), positively moderates the focal relationship ($p < .01$). The effectiveness of ownership concentration as a control strategy is therefore contingent on the overall quality of the institutional matrix in a given jurisdiction (North, 1990; Shleifer & Vishny, 1997).

Protection against self-dealing. Hypothesis 2b is rejected. Protection against self-dealing transactions by organizational insiders (Djankov *et al*., 2008) does not moderate the focal relationship. In spite of the prominence comparative corporate governance scholars tend to attribute to the role of law in corporate governance (La Porta *et al*., 2008), specific legal remedies against self-dealing fail to make it easier for large owners to achieve adequate returns on their investment and do not function as a more efficient substitute to the potentially costly strategy of ownership concentration.

Private benefits of control. Hypothesis 2c is supported. When PBoC are modest, they do not affect the focal relationship, because the consumption effect is wholly offset by the incentive effect. Yet when PBoC increase (as indicated by the squared term in Model 2), the consumption effect begins to prevail and moderate the focal relationship negatively ($p < .05$). In other words, the interests of smaller shareholders are hurt by the presence of a concentrated owner in jurisdictions that are exceptionally lenient towards the extraction of PBoC.

Shareholder disclosure. Hypothesis 2d is supported. A noticeable substitution effect exists between shareholder disclosure and ownership concentration. When shareholder disclosure provisions are firmly in place, shareholders can afford themselves to monitor firms from a distance and diversify their investment portfolios. When adequate shareholder disclosure is not guaranteed, however, the monitoring needs of firms increase due to informational opacity (Demsetz & Lehn, 1985). This makes concentrated share ownership more attractive, because it allows for closer monitoring of managers.

Labor protection. The findings for Hypothesis 2e are mixed. Model 1 shows a significant negative moderation effect of labor protection on the associational strength of the focal relationship ($p < .01$). Although this finding suggests that ownership concentration is a less effective control strategy in the face of strong labor protection laws, it is not robust against the combined effects of statistical control and sample attrition that obtain when the PBoC variable is included in the analyses.

Control variables. Several control variables were incorporated in the regression work. First, we accounted for the fact that the Japanese economy is very large relative to the other economies in the region by creating a separate dummy variable, coded as '1' in case an effect size represented Japanese data and '0' otherwise. Removing the Japan dummy from Model 1 did not significantly affect our results: model fit statistics and parameter estimates remained within the same order of magnitude. Second, no significant effect was found for *publication year*, implying that the results we found for our focal relationship are stable over time. Third, we found no significant effect for the *published* variable, which means that our results are unlikely to be affected by the most common form of publication bias, notably: mean effect size inflation due to confirmatory publication bias (Pfeffer, 2007). Fourth, the *cross-sectional design* variable came out modestly significant in Model 1 but was wholly insignificant in Model 2, implying that the choice between cross-sectional and longitudinal research did not critically influence study outcomes. Fifth, the effect of *gross domestic product* on our focal relationship was significant and negative, implying that the benefits of concentrated ownership are more pronounced in emerging markets than in mature economies (Stiglitz, 1994). Sixth, in contrast to prior literature (cf. Bolton & Von Thadden, 1998; Coffee, 1991), we found no substitution effect between stock market liquidity and control through concentrated ownership.

Table 4: Country-Specific Correlation-Based HOMA Results

Country	Ownership	Ownership concentration	Foreign owners	Domestic owners	Inside owners	Market owners	Stable owners
Armenia	**-0.03* (1,800)**	**-0.05* (1,200)**	_	0.00 (600)	0.00 (600)	_	_
Bangladesh	0.06 (14,976)	0.06 (5,558)	_	0.06 (3,986)	_	0.05 (5,432)	0.06 (3,986)
China	0.01 (229,026)	-0.01	0.01	-0.01	0.01	0.04	**-0.03***
		(83,483)	(19,907)	(121,647)	(40,942)	(34,159)	**(91,337)**
Hong Kong	0.01	**0.02***	_	0.02	0.02	0.02	0.02
	(43,046)	**(22,039)**		(11,413)	(18,432)	(7,722)	(13,562)
India	**0.03***	0.01	**0.11***	-0.03	0.05	0.05	0.01
	(113,216)	(62,820)	**(19,162)**	(23,327)	(14,735)	(14,306)	(55,962)
Indonesia	0.06 (6,575)	0.11 (6,480)	_	0.06 (6,575)	_	_	_
Japan	**0.04***	**-0.02***	**0.19***	-0.01	**0.05***	**0.08***	**-0.05***
	(464,372)	**(274,421)**	**(56,621)**	(219,595)	**(52,418)**	**(60,590)**	**(213,033)**
Jordan	**0.06***	**0.06***	0.04	0.11	0.11	-0.01	_
	(2,676)	**(1,058)**	(220)	(712)	(712)	(330)	
Malaysia	0.04 (11,729)	0.03 (11,229)	_	0.02 (121)	-0.06 (6,061)	_	_
Singapore	0.01	**0.03***	-0.01	**0.03***	-0.03	-0.01	**0.03***
	(27,289)	**(13,451)**	(11,430)	**(12,753)**	(2,021)	(11,430)	**(12,753)**
South Korea	**0.04***	**0.02***	**0.11***	**0.04***	0.01	**0.07***	**0.02***
	(155,438)	**(64,828)**	**(31,838)**	**(78,724)**	(14,691)	**(27,638)**	**(85,877)**
Taiwan	**0.09***	0.01	**0.27***	0.05	**0.10***	**0.24***	0.01
	(60,317)	(16,286)	**(13,122)**	(8,172)	**(20,251)**	**(5,866)**	(18,168)
Thailand	0.00 (9,044)	0.01 (1,512)	0.01 (2,172)	0.01 (1,512)	0.04 (2,680)	0.06 (712)	-0.02 (4,916)

*** Significant**

Table 5: Correlation-Based HOMA Results for Owner Identity

Predictor	K	*N*	Mean	SD_ρ	CI 95%	Q test
Foreign owners to performance	99	154,728	**0.12***	0.01	0.09 / 0.15	2,830.03 (0.00)
Accounting measures	67	115,104	**0.12***	0.02	0.09 / 0.15	1,477.78 (0.00)
Market measures	32	39,624	**0.11***	0.03	0.04 / 0.18	1,331.48 (0.00)
Market investor	33	43,201	**0.07***	0.02	0.03 / 0.11	449.72 (0.00)
Stable investor	10	9,524	**0.05***	0.01	0.02 / 0.08	17.09 (0.05)
Mixed/unknown	56	102,003	**0.16***	0.02	0.12 / 0.20	1,881.02 (0.00)
Domestic owners to performance	220	492,332	0.01	0.01	-0.00 / 0.02	3153.63 (0.00)
Accounting measures	145	378,571	0.01	0.01	-0.00 / 0.02	1645.39 (0.00)
Market measures	75	113,761	0.01	0.01	-0.02 / 0.03	1485.29 (0.00)
Inside owners to performance	137	177,881	**0.03***	0.01	0.02 / 0.05	778.06 (0.00)
Accounting measures	79	121,165	**0.04***	0.01	0.03 /0.06	378.63 (0.00)
Market measures	58	56,716	0.02	0.01	-0.00 / 0.04	383.11 (0.00)
Market owners to performance	92	169,055	**0.07***	0.01	0.05 / 0.08	977.84 (0.00)
Accounting measures	52	119,707	**0.07***	0.01	0.05 /0.09	416.07 (0.00)
Market measures	40	49,348	**0.06***	0.02	0.02 / 0.09	498.57 (0.00)
Domestic market owners	59	107,493	**0.06***	0.00	0.05 / 0.08	457.98 (0.00)
Stable owners to performance	235	513,147	0.00	0.00	-0.00 / 0.00	2,178.59 (0.00)
Accounting measures	154	408,675	0.00	0.01	-0.01 / 0.01	1,626.14 (0.00)
Market measures	81	104,472	-0.00	0.00	-0.02 / 0.02	551.47 (0.00)

*** Significant**

This finding is robust against all common operationalizations of stock market liquidity, such as stock market capitalization as a fraction of GDP, total value of stocks traded as a fraction of the shares outstanding, and total value of stocks traded as a percentage of GDP. This finding lends further credence to the insight that corporate ownership is not endogenous upon performance in Asia: the ease with which blocks of shares can be transferred from one owner to the next does not affect the focal relationship.

Table 6: Partial Correlation-Based HO MA Results for Owner Identity

Predictor	K	*N*	Mean	SD ρ	CI 95%	Q test
Foreign owners to performance	32	59,185	**0.07***	0.01	0.04 / 0.09	176.91 (0.00)
Accounting measures	20	39433	**0.06***	0.02	0.03 / 0.09	143.78 (0.00)
Market measures	12	19,752	**0.07***	0.01	0.04 / 0.10	32.51 (0.00)
Control for endogeneity	6	10,176	**0.06***	0.01	0.01 / 0.11	30.81 (0.00)
Inside owners to performance	39	51,573	**0.02***	0.01	0.00 / 0.04	118.01 (0.00)
Accounting measures	20	23,802	0.02	0.01	-0.01 / 0.04	47.35 (0.00)
Market measures	19	27,771	0.02	0.01	-0.01 / 0.05	67.95 (0.00)
Control for endogeneity	7	9,902	0.01	0.02	-0.02 / 0.04	12.66 (0.05)
Market owners to performance	17	28,097	**0.14***	0.03	0.09 / 0.19	230.28 (0.00)
Accounting measures	12	17,335	**0.11***	0.02	0.06 / 0.15	79.15 (0.00)
Market measures	5	10,762	**0.20***	0.07	0.07 / 0.34	150.65 (0.00)
Control for endogeneity	9	3,716	**0.19***	0.02	0.16 / 0.22	126.74 (0.00)
Stable owners to performance	85	161,546	-0.00	0.01	-0.01 / 0.01	423.22 (0.00)
Accounting measures	40	52,789	0.01	0.01	-0.02 / 0.03	195.88 (0.00)
Market measures	45	108,757	-0.00	0.01	-0.02 / 0.01	224.92 (0.00)
Control for endogeneity	24	34,311	0.00	0.01	-0.01 / 0.02	55.04 (0.00)

*** Significant**

2.5 Discussion

Three stylized facts characterize the relationship between concentrated ownership and firm performance in Asia. First, concentrated ownership contributes positively to performance, as firms with blockholders outperform dispersedly held firms. Second, ownership is not endogenous upon performance, implying that the direction of causality of this relationship really runs from ownership to performance and not the

other way around. Third, and most importantly, the associational strength of the focal relationship varies significantly across jurisdictions. The main contribution of our work is that we managed to trace this variety to two systematic sources: owner identity and jurisdiction-level institutions.

2.5.1 Owner identity

The associational strength of our focal relationship varies systematically across owner types. An interesting opportunity to further investigate the sources of differential performance of the various owner types derives from the fact that during our window of observation (1965-2008) a severe financial crisis struck Asia (in 1997-1998; Mitton, 2002). The question at stake is how the various owner types dealt with it respectively. Some contributors suggest that concentrated owners are more prone to self-dealing during crises than during business-as-usual periods (Johnson *et al.*, 2000b).

According to this view, the link between concentrated ownership and performance should be weaker during the crisis than before or after it. To test this intuition, we split our sample into four sub-groups, notably: observations covering the pre-crisis period (from 1965 to 1996; N = 274,702); the crisis period (1997 and 1998; N = 13,794); the post-crisis period (1999 and after; N = 222,262); and the 'mixed' category of observations covering two or more of these periods (N = 638,871). We then conducted separate HOMA analyses on each sub-group and on each owner type (see Table 8).

Our findings go against conventional wisdom. During the pre-crisis period, firms with a concentrated owner did not perform any different from dispersedly held firms (mean rho = .01 (n.s.), with the exception of firms controlled by a market owner (.04). During the crisis, however, concentratedly owned firms significantly outperformed their dispersedly held counterparts (.07). The differences between the various owner categories are telling. Firms controlled by stable owners performed poorly during the crisis (-.03). One possible explanation for this effect is that stable owners are more likely than other owner types to engage in self-dealing when they experience financial setbacks (Bae *et al.*, 2002). Another explanation derives from the revealed investment preferences of stable owners in terms of firm risk (see Table 9; also see Table 1 for variable definitions). They are the only category of owners who are decidedly risk-averse (-.04). Due to their tie multiplicity, they might be more interested in the long-run stability of the firms in which they hold equity than in maximizing short-run performance. This could result in lower firm performance during crises, when the trade-off between stability and profitability becomes more acute.

Table 7: Mixed Effects MARA Results for Institutional Contextual Factors[a]

Variable	Model 1 Ownership	Model 2 Ownership
Publication year	0.00 (0.00)	-0.00 (0.00)
Published	-0.00 (0.01)	-0.01 (0.01)
Panel design	*-0.02 (0.01)**	-0.02 (0.01)
Rule of law	*0.10 (0.02)***	*0.18 (0.08)***
Anti-self dealing index	-0.06 (0.06)	-0.89 (-0.50)
Private benefits of control		0.16 (0.07)
Private benefits of control squared		*-0.70 (0.30)**
Shareholder Disclosure	*-0.74 (0.15)***	*-1.11 (0.5)**
Liquidity	-0.00 (0.00)	0.00 (0.00)
Labor protection	*-0.44 (0.17)***	-0.27 (0.22)
Inside owners	0.00 (0.01)	-0.01 (0.01)
Stable owners	*-0.03 (0.01)***	*-0.05 (0.01)***
Market owners	*0.03 (0.01)**	*0.03 (0.01)**
Foreign owners	*0.10 (0.01)***	*0.09 (0.01)***
Domestic owners	0.01 (0.01)	0.00 (0.01)
Japan	*-0.02 (0.01)***	
Gross domestic product	*-0.03 (0.01)***	*-1.13 (0.52)**
R^2	0.24	0.29
K	497	389
Q_{Model} (p)	181.33 (0.00)	188.37 (0.00)
$Q_{Residual}$ (p)	577.12 (0.06)	464.10 (0.01)
V	.00544	0.005

[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.

* $p < 0.05$

** $p < 0.01$

Table 8: Effect of the Asian Crisis on the Focal Relationship

Predictor	Pre-crisis period	Crisis period	Post-crisis period	Mixed
Ownership to performance	0.01 (274,702)	**0.07*** (13,794)	**0.04*** (222,262)	**0.05*** (638,871)
Foreign owners to performance	0.02 (13,282)	_	**0.13*** (43,056)	**0.14*** (98,390)
Domestic owners to performance	-0.00 (117,749)	0.06 (8,222)	-0.00 (57,061)	0.02 (309,300)
Inside owners to performance	0.01 (60,548)	**0.16*** (3,119)	**0.04*** (34,294)	**0.03*** (79,920)
Market owners to performance	**0.04*** (71,847)	**0.27*** (1,140)	**0.06*** (53,491)	**0.07*** (42,577)
Stable owners to performance	-0.01 (127,226)	**-0.03*** (8,222)	0.01 (74,656)	0.00 (303,043)

*** Significant**

In contrast, firms with market owners performed significantly better than dispersedly held firms during the crisis (.27). This effect also persisted after the crisis (.06), suggesting that firms with market owners also recovered faster in the post-crisis period. The excellent performance of these firms might well derive from the ability of market owners to force bold strategic actions upon firms – such as corporate restructurings or synergistic mergers – during a time when they badly needed them. As market owners have a revealed preference for sizeable firms, their differential performance may in part be ascribed to selection effects (Berger *et al.*, 2005).

Firms with large inside owners similarly outperformed dispersedly held firms both during (.16) and after (.04) the crisis. These firms are likely to have benefitted from the fact that their blockholding executives were properly incentivized to pursue shareholder value maximizing policies. The results in Table 9 show that inside owners are indeed risk-neutral, implying that they are probably more interested in increasing firm value than in entrenched positions with secure performance-insensitive salaries. Table 9 furthermore shows that inside owners are associated with smaller firms (-.09). It is likely that this revealed preference for smaller firms is actuality an artifact of the predominance of founding families in this class of owners, who tend to be dominant owners only during the earlier (pre-expansion) stages of a firm's life cycle. If this is the case, the incentivizing effect of inside ownership affects both professional managers and executives recruited from founding families.

Table 9: Correlation-Based HOMA Results for Owner Type Investment Preferences

Predictor	K	*N*	Mean	SD_ρ	CI 95%	Q test
Ownership to size	391	492,066	**0.07***	0.01	0.05 / 0.09	21,918.75 (0.00)
Foreign owners to size	61	87,045	**0.22***	0.02	0.18 / 0.26	2,064.11 (0.00)
Market owners to size	55	53,342	**0.15***	0.02	0.10 /0.19	1,386.36 (0.00)
Stable owners to size	140	196,999	**0.11***	0.02	0.07 / 0.15	9,407.61 (0.00)
Inside owners to size	70	76,449	**-0.09***	0.02	-0.12 / -0.06	1,122.95 (0.00)
Ownership to risk	72	130,827	-0.02	0.01	-0.04 / 0.00	1,026.95 (0.00)
Foreign owners to risk	15	14,823	0.00	0.03	-0.06 / 0.06	170.45 (0.00)
Stable owners to risk	22	59,865	**-0.04***	0.00	-0.04 / -0.03	531.97 (0.00)
Inside owners to risk	14	35,042	0.01	0.02	-0.03 / 0.04	79.18 (0.00)

*** Significant**

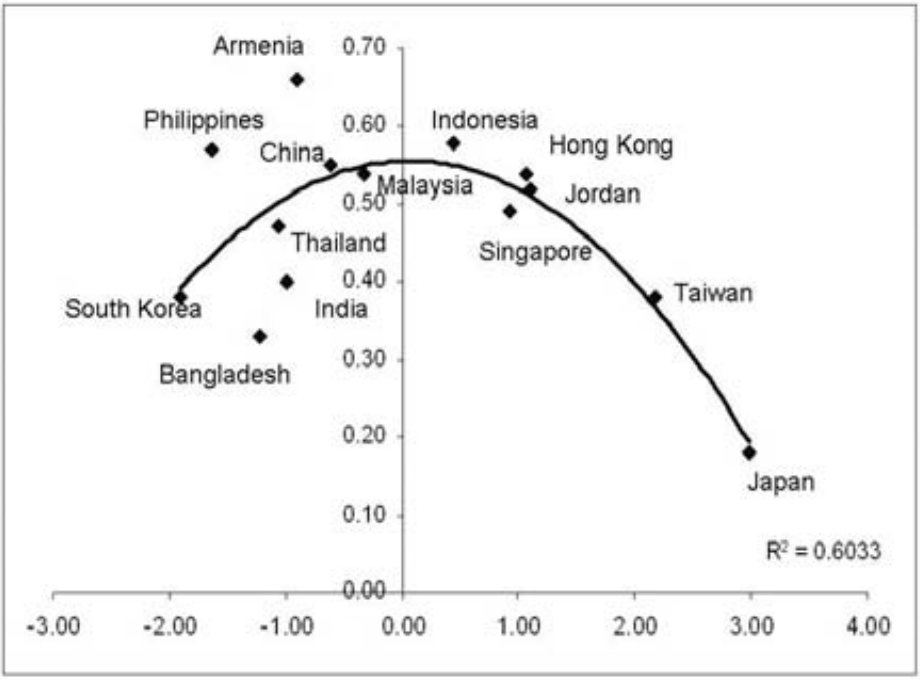
Finally, firms with foreign owners performed comparatively strong in the post-crisis period (.13). Foreign owners' revealed investment preferences indicate that their good performance is likely attributable to a selection effect, as they tend to invest primarily in very large firms (.22). Because they are also risk-neutral (.00 (n.s.)), this preference probably does not derive from a desire to avoid risks by investing only in well-known and well-governed firms. Instead, for foreign owners whose home market was not severely affected by the Asian crisis, blocks of shares in financially troubled but structurally healthy Asian firms were probably temporarily cheap and easy to turn around in terms of performance.

2.5.2 Jurisdiction-level institutions

Our results also speak to the emerging institution-based view of corporate governance (Aguilera & Jackson, 2003; Aguilera *et al*, 2008; Jackson & Deeg, 2008; La Porta *et al*., 2008; Peng *et al*., 2008; Roe, 2003) by showing that the associational strength of our focal relationship is critically affected by the level of development of several jurisdiction-level institutions. One factor in particular, notably: the overall quality of a jurisdiction's legal background institutions (Kaufmann *et al*., 2005), acts as a complement to ownership concentration through its positive influence on owners'

capacity to contribute to the performance of firms. Two other factors – shareholder disclosure (Bushman *et al*., 2004) and PBoC (Dyck & Zingales, 2004) – act as moderators affecting the costs and benefits of ownership, in that blockholders can positively contribute to corporate performance in countries in which the scores on these variables are low, but increasingly less so when the variable scores increase.

Figure 1: The Adaptation of Concentrated Ownership to Jurisdiction-Level Institutions



The question is whether these individual effects mesh into jurisdiction-level institutional configurations, which collectively affect the prevalence and attractiveness of ownership concentration (Aguilera *et al*., 2008; Gilson, 2001). To answer this question, we conducted further exploratory analyses. First, we *z*-transformed the scores of the countries represented in our dataset on the three aforementioned institutional variables, which were selected because they produced robustly significant results in the MARA analyses (see Table 7). Second, we compiled a new 'ownership embeddedness scale' by summing these individual scores, taking into account the

effect signs of the MARA output (i.e., we left the sign of countries' *z*-scores on the rule of law variable as-is, but reversed the sign of their scores on the other two variables, as these showed negative effect signs in the regression work). Third, we ran a univariate non-linear OLS regression, in which we regressed countries' scores on an average ownership concentration variable (operationalized as the average fraction of equity held by the three largest owners of the firm) on our self-compiled scale. The regression fitted the data very well (R^2 = .60), and revealed that there are indeed three broad institutional configurations in Asia which each condition ownership concentration in unique ways. The visual plot of this regression work is presented in Figure 1.

Tracing the graph from left to right, we first come across a group of Asian countries with intermediate to high levels of ownership concentration which includes a set of strong Asian economies like South Korea, China, and India, but also Thailand and the Philippines. What sets these countries apart from other Asian nations is that they allow for high levels of PBoC and that they have comparatively low scores on the rule of law variable. In line with our theoretical predictions, it appears that ownership concentration is an attractive control strategy in these nations because it can be highly lucrative. The caveat for these countries in particular is that the concentrated owner must enjoy full control over the firm, because the court system can most likely not be relied upon to enforce (minority) shareholders' rights.

Moving further right along the graph, we come along a qualitatively very different cluster of countries that includes Malaysia, Singapore, and Hong Kong. Ownership concentration is still high in these nations, although Singapore and Hong Kong are already beyond the 'tipping point' of the graph. What makes this cluster of countries institutionally distinct from other Asian jurisdictions is that they combine fairly high PBoC with high scores on the rule of law and shareholder disclosure variables. Concentrated ownership is thus attractive in these nations because it is again profitable, but what is salient here is that smaller shareholders are also comparatively well-off because they can count on reliable firm-specific information and adequate protection by the courts. That this combination of moderate PBoC and a strong position of smaller shareholders represents a fairly unique and attractive 'sweet spot' is demonstrated by the relative depth of the stock markets of the countries in this cluster: Hong Kong, Singapore, and Malaysia outperform all other countries in our sample in terms of stock market capitalization per capita.

Towards the right-hand side of the graph we find a cluster of countries comprising Taiwan and Japan. This is again a qualitatively different cluster in that

these nations do not allow for any PBoC and can further boast excellent scores on the rule of law and shareholder disclosure variables. The degree of concentrated ownership in these nations is amongst the lowest in Asia, both because it is not exceptionally profitable to be a concentrated owner in these jurisdictions and because minority shareholders are well-protected and well-informed. In short, we identify at least three different clusters of Asian nations, which each have a unique set of institutional features conditioning the prevalence and attractiveness of concentrated ownership.

2.5.3 Conclusion

Corporate governance scholars have long seen concentrated ownership as a universal control mechanism, treating it as if it had predictable, context-independent effects on the relationship between owners and managers, as well as on corporate performance. Yet our meta-analytic study of 14 Asian countries shows that the associational strength of the relationship between ownership concentration and firm performance varies considerably across Asian jurisdictions. We therefore raised and addressed the question which firm- and jurisdiction-level factors condition and contextualize this relationship in Asia. At the firm level, we found strong owner identity effects, implying that it matters considerably for performance *who* owns firms. At the jurisdiction-level, we found that the attractiveness and effectiveness of the concentrated ownership mechanism is critically conditioned by configurations of interacting institutions. This implies that it also matters significantly for performance *where* firms are owned. We therefore recommend the inclusion of identity and institutional effects as control or explanatory variables in future research studies exploring issues of firm governance and performance in Asia.

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Chapter 3. Competition and complementarity in corporate governance: The effects of labor institutions on blockholder effectiveness in 23 European countries[8]

ABSTRACT

Using a variety of advanced meta-analytic methods on a sample of 748,569 firm-year observations derived from 162 studies covering 23 European countries, this study provides an analysis of the costs and benefits of blockholding in a region of the world in which it is a dominant yet discretionary corporate governance strategy for shareholders of publicly listed firms. We find that the effectiveness of blockholding is affected by the specific labor institutions that distinguish European countries from the rest of the world, and that these institutional effects can be seen to involve both competition and complementarity between blockholding and institutionally facilitated employee interests. We also find that relational blockholders are better able to deal with these institutional effects than arm's-length blockholders.

3.1 Introduction

Although the separation of ownership and control in publicly listed firms functions as a defining condition for the field of corporate governance (Berle and Means 1932), 'blockholding', or the concentration of ownership in the hands of a single or a few large shareholders, has been a long standing focus of corporate governance research (Holderness 2003). According to the established agency theoretical view of corporate governance (Fama 1980, Jensen and Meckling 1976), blockholding functions as a remedy for the agency problems between managers and owners that result from the separation of ownership and control in dispersedly held publicly listed firms because it: alleviates the incentive problems and transaction costs that dispersed shareholders face in monitoring managers (Black 1990), facilitates the development of monitoring capabilities that are unavailable to dispersed shareholders (Ryan and Schneider 2002),

[8] Paper by Van Essen, M., Heugens, P. P. M. A. R., & Van Oosterhout, H. Earlier versions of this paper have been presented at the Academy of Management (2009) and American Law and Economic Association (2009). Paper under review by Organization Science (revise and resubmit, 2nd round).

provides a countervailing power against the claims of non-shareholding corporate constituencies on a firm's earnings (Rajan and Zingales 1998, Roe 2003), and functions as a substitute for poor legal investor protection in a country (Heugens et al. 2009, Shleifer and Vishny 1997).

This widely accepted agency theoretical understanding of blockholding can be questioned, however, for several reasons. First, the balance of empirical evidence on blockholding mounted thus far does not support the existence of any straightforward positive relationship between blockholding and firm performance (Dalton et al. 2003), suggesting that the costs and benefits to blockholding are presently insufficiently accounted for. Some studies have suggested, for example, that the relationship may be non-monotonic, and that the ability of blockholders to add value to the corporation may be contingent on the size of their ownership stake (Demsetz and Villalonga 2001, McConnell and Servaes 1990, Morck et al. 1988).

Second, much of the theoretical rationale behind blockholding as a corporate governance strategy available to shareholders is premised on the separation of ownership and control that actually exists in the US and the UK, but that is hardly true for the rest of the world where concentrated ownership remains the norm (La Porta et al. 1999). This raises the question which function blockholding serves in countries where ownership has hardly separated from control to begin with (La Porta et al. 1999). Although the prevailing answer in the literature is that blockholding serves as a substitute for legal protection in institutionally poorly developed countries (La Porta et al. 2008, Shleifer and Vishny 1997), this answer does not explain why blockholding is also the dominant corporate governance strategy in quite a number of economically and institutionally well developed countries, such as Sweden for example (Gilson 2006, Holderness 2008). The existence of such anomalies in respect to this so-called 'law and finance' thesis (La Porta et al. 1998, 2008) not only suggests that blockholding may serve different functions in different institutional contexts (Gilson 2001), but also that these functions need not exclusively involve those identified by agency theoretical understandings of the phenomenon.[9]

[9] We understand the agency theoretical view of corporate governance to include so-called principal-principal agency problems between different (often large controlling versus non-controlling small) shareholders (Young et al. 2008). As we will argue below, we believe that agency theory can fruitfully be seen to be part of a broader theoretical framework that seeks to explain corporate governance configurations, as well as their strategic and distributional outcomes, from the competition for corporate earnings between corporate constituencies (Zingales 1998). In this more comprehensive view, agency theory is just one perspective which looks at these issues mostly from the perspective of a firm's owners, with a somewhat instrumental focus on the remedies against agency problems.

More specifically, third, an emerging literature suggests that at least some of the benefits of blockholding may not derive from its function to secure shareholder's residual claims in the competition for corporate earnings with other corporate constituencies (e.g. managers, employees), but from its complementarity with certain country-specific institutional features (Hall and Soskice 2001, North 1990) that enable mutually beneficial strategic coordination between blockholders, on the one hand, and labor interests, on the other, that may ultimately benefit both (Hopner 2005, Jackson 2005). Finally, as some studies have found different types of blockholders to be differentially successful in creating value for the firms they own (Douma et al. 2006, Gedaljovic et al. 2005, Thomsen and Pedersen 2000), different types of blockholders may also be differentially effective in performing dissimilar functions in diverse institutional contexts.

In order to complement the prevailing, mostly agency theory inspired understanding of blockholding, we develop and test hypotheses about blockholder effectiveness in the European context. We look at Europe for three reasons. First, blockholding is the dominant corporate governance strategy for shareholders in most European countries except for the UK (Faccio and Lang 2002), which makes Europe uniquely suitable for an empirical analysis of this generic corporate governance strategy (Barca and Becht 2001, Connelly et al. 2010). As many European countries are economically and institutionally well developed, second, ownership is allowed to separate from control to begin with, making blockholding a discretionary rather than necessary feature of European corporate governance. Third, compared to the rest of the world, European countries feature rather specific institutions in regard to the role of employees in the economy and in corporate governance more specifically, which to date have received relatively little attention in corporate governance research (Aguilera and Jackson 2003).

We clarify, first, how the costs and benefits of blockholding may explain an inverted U-shape relationship between blockholding and firm performance, and test whether this relationship holds in the European context. In line with the leading agency theoretical perspective we argue, second, that certain economic and institutional features of European countries, such as the degree of labor regulation and union density in a country, empower employees to claim a larger part of corporate earnings, which will negatively affect blockholder effectiveness. Drawing on the emergent literature on institutional complementarities (Hall and Gingerich 2009), third, we develop an alternative hypothesis that blockholders are able to positively

influence firm performance in countries where labor institutions are relatively strongly developed, because the centralization of shareholder and employee interests enables strategic coordination that may benefit both (Gospel and Pendleton 2003, Hall and Soskice 2001). Finally, we test whether 'relational owners' that are durably and multiply tied to the firms they own, are better able to add value in the European context than owners that have only arm's-length involvement with their firms (Ayres and Cramton 1993).

Because there already exists a wealth of studies on blockholding in European countries, we use both Hedges and Olkin-type meta-analyses (HOMA; Hedges and Olkin 1985) and meta-analytic regression analyses (MARA; Stanley and Jarrell 2005) on a dataset involving 23 European countries and consisting of 748,569 firm-year observations derived from 162 primary studies that report 866 effect sizes of the ownership-performance relationship. These methods not only allow us to synthesize a sizeable body of mostly inconclusive research findings on blockholder effectiveness in the European context, but also enable us to develop and test new hypotheses that to date have not yet been researched (Combs et al. 2010, Eden 2002). More specifically, by combining the results from multiple single-country studies into a single multi-country study, we are able to test the influence of institutional variables that protect and enable the role of employees in corporate governance on the effectiveness of blockholding, on the one hand, and the interaction between—possibly opposite—institutional effects and the involvement of relational and arm's-length blockholders, on the other.

Our contribution to the literature is threefold. Overall, first, we develop a theory of blockholding that explains its costs and benefits as a corporate governance strategy available to shareholders from both country level institutional factors, on the one hand, and the interaction between these institutional factors and the types of blockholders involved, on the other. We thereby contribute to an emerging organizational theory of comparative corporate governance that seeks to explain the effectiveness of firm level corporate governance practices from both firm and country level contingencies (Aguilera et al. 2008, Denis and McConnell 2003). More specifically, second, by focusing on the effect of institutions that protect and facilitate the role of employees in corporate governance on the effectiveness of blockholding, we not only address a topic that thus far has received relatively little attention in corporate governance research (Aguilera and Jackson 2003), but also highlight the corporate governance role of institutional features of the European context that distinguish it from the rest of the world. We thereby contribute to the emerging institution-based

view of firm strategies and their outcomes (Carney et al. 2010, Engelen and Van Essen 2010, Fiss 2008, Peng and Khoury 2008, Peng et al. 2008, 2009). Theoretically, third, we show how the concept of institutional complementarity that is central to the variety of capitalisms literature can fruitfully complement the currently dominant agency theoretical understanding of the role of blockholding in corporate governance (Hall and Gingerich 2009, Hall and Soskice 2001).

3.2 Theory and Hypotheses

Blockholding is conventionally understood to function as a remedy for agency problems that result from the separation of ownership and control in dispersedly held publicly listed firms (Holderness 2003). In such firms, shareholders face significant transaction costs and collective action problems that negatively affect their willingness and ability to monitor managers (Black 1990), who, in the leading agency theoretical view of corporate governance, are assumed to serve their own interests over those of the shareholders (Dalton et al. 2007). Blockholding functions as a remedy for these problems in this view for several reasons. First, by concentrating ownership in the hands of a single or a few owners, blockholding alleviates the transaction costs and collective action problems that dispersed shareholders face in monitoring managers (Black 1990). Due to economies of scale, second, large blockholders are able to develop monitoring capabilities that are unavailable to smaller more dispersed shareholders (Ryan and Schneider 2002). Third, blockholders may function as a countervailing power against the claims of powerful non-shareholding corporate constituencies, such as employees or managers, in the *ex post* distribution of a firm's earnings (Roe 2003, Zingales 1998). Finally, blockholding functions as a substitute for poor legal protection in a country (Heugens et al. 2009, Shleifer and Vishny 1997), which may stand in the way of ownership separating from control to begin with (La Porta et al. 1997, 1998).

It has become increasingly clear, however, that there are costs as well as benefits attached to blockholding. First, concentrated ownership has been argued to lead to suboptimal risk exposure and diminished liquidity of the firm's equity (Bolton and Von Thadden 1998, Maug 1998). This not only increases the cost of capital to the firm, but may also make controlling owners pursue more risk-averse and potentially less lucrative corporate strategies, such as unrelated diversification for example (Rajan et al. 2000), in order to offset their increased risk exposure. Second, certain blockholders may pursue goals that deviate substantially from the end of maximizing

shareholder value. This is particularly true in Europe, where government ownership continues to play an important role in many firms and where it often serves as a substitute for regulation or formal policies (Thomsen and Pedersen 2000: 694). Third, controlling blockholders may enjoy benefits of their control that they do not share with other shareholders—so-called 'private benefits of control' (Zingales 1994)—by adopting self-dealing strategies that hurt not only firm performance and minority shareholders, but possibly also employees and creditors (Johnson et al. 2000b).

Several scholars have argued that the balance of costs and benefits of blockholding may vary with the size of the ownership stake in the firm (Demsetz and Villalonga 2001, McConnell and Servaes 1990, Morck et al. 1988). In this view, this balance initially increases up to an optimum degree of ownership concentration, after which it declines and eventually becomes negative. One explanation for this is that the benefits of increased owner control over the firm, such as increased monitoring, already kick in at lower levels of concentration, while the costs that result from self-dealing by a controlling owner increase with the size of the ownership stake until it becomes so large that there are few if any minority owners left to expropriate (Heugens et al. 2009). A similar but slightly different explanation can be given about other costs of blockholding, such as reduced liquidity and the performance effects of strategies adopted to offset increased risk exposure, as these can be seen to increase with block size, assuming again that the benefits of blockholding are already realized at lower levels of ownership concentration. We therefore hypothesize that:

> Hypothesis 1: In the European context, the relationship between blockholding and firm performance has an inverted U-shape.

3.2.1 Blockholding in the European institutional context

An emerging but fast growing paradigm in organizational research emphasizes the importance of the institutional context of business in understanding firm strategies as well as their outcomes (Carney et al. 2010, Fiss 2008, Peng and Khoury 2008, Peng et al. 2008, 2009). Different countries are known to have rather diverse economic systems (Hall and Soskice 2001, Whitley 1999) that have been developed within different institutional contexts (Jackson and Deeg 2008, North 1990) and that are bound to influence both the prevalence and the effectiveness of any particular corporate

governance practice or strategy (Bebchuk and Roe 1999, Denis and McConnell 2003). In line with these general observations, we expect the costs and benefits of blockholding to play out differentially within different institutional contexts.

This is, first, because the strategy of blockholding to discipline managers makes most theoretical sense in the context of dispersed ownership regimes, such as the US and the UK, where manager-shareholder agency problems loom large and levels of ownership concentration can smoothly adjust to the needs of any particular firm due to the higher liquidity of firms and equity markets there (Demsetz and Villalonga 2001). Yet it is a well-documented fact that blockholding is more prevalent in the rest of the world than in the UK and the US (La Porta et al. 1999), where it was found to be of little empirical consequence (Dalton et al. 2003).

It is, second, because blockholding is often claimed to constitute a response by shareholders to low levels of institutional development (Gilson 2006, 2007) and legal protection more specifically (La Porta et al. 2008), which makes blockholding an invariant corporate governance feature of many institutionally poorly developed countries (La Porta et al. 1999). But although blockholding is indeed the dominant corporate governance strategy in most European countries similar to the rest of the world, levels of institutional development are actually quite high in Europe, as can be observed from Table 1, which compares European countries with the rest of the world in terms of a number of economic and institutional indicators. This makes blockholding a discretionary rather than a necessary feature of European corporate governance.

Taken together, these observations suggest that the European context offers *additional* benefits to the strategy of blockholding that derive neither from its disciplinary role in dispersed ownership regimes, nor from its functioning as a substitute for poor institutional and legal development.

One important dimension in which the European institutional context differs from the rest of the world involves the role of employees in the economy and in corporate governance more specifically (Aguilera and Jackson 2003, Jackson 2005). A combination of a long standing presence of socialist or social democratic parties in European countries, on the one hand, and a high prevalence of electoral systems that promote coalition government and consensus building over partisan majoritarian decision making (Lijphart 1999), on the other, has resulted in comprehensive institutional compromises between labor and capital that are quite unique in the world (Gourevitch and Shinn 2005).

Table 1: Institutional and Economic Indicators[a]

	Europe		Rest of World	
Variables	Mean	SE	Mean	SE
GDP per capita	**26.520*** ** (23)	10.131	9.312 (160)	10.849
Rule of law index	**1.03*** ** (23)	0.94	-0.16 (160)	0.91
Anti-self-dealing index	0.38 (22)	0.18	0.47 (50)	0.25
Employment laws index	**0.60*** ** (23)	0.16	0.45 (62)	0.19
Collective relations laws index	**0.50** ** (23)	0.12	0.43 (62)	0.13
Union density	34.63 (22)	21.67	29.99 (12)	20.61

[a] Number of countries is in parentheses. SE = Standard error of mean. We used two-tailed significance levels. Descriptions of the variables are in Table 2.
* $p < 0.1$
** $p < 0.05$
*** $p < 0.01$

More specifically, and as can be observed from Table 1, European countries distinctively feature a legal environment that protects employee interests and facilitates collective labor to play an important role in corporate governance (Botero et al. 2004). These institutional features conducive to employee interests can be seen to have two different effects on the effectiveness of blockholding in the European context. On the one hand, they can empower employees in the competitive processes through which corporate earnings are distributed over corporate constituencies. On the other hand, they can enable comprehensive strategic coordination between organized labor and blockholders that may ultimately benefit both. Different theoretical perspectives underlie the articulation of these alternative expectations.

3.2.2 The empowering and constraining effects of labor institutions

According to an increasingly influential view, corporate governance is about the structures and processes, both at the firm and country levels of analysis, through which corporate constituencies, such as shareholders, managers and employees, competitively seek to appropriate corporate earnings (Zingales 1998). Although this perspective is largely consistent with the leading agency theoretical view of corporate governance, it broadens agency theory's somewhat instrumental focus on the remedies for agency problems in public firms with a more comprehensive ambition to explain extant corporate governance configurations (Rajan and Zingales 2003) and the strategic and distributional outcomes that result from them (Zingales 2000), at both the firm and country levels of analysis (Durnev and Kim 2005). Pagano and Volpin (2005a), for

example, explain the levels of investor and labor protection in a country from possible coalitions that the interested parties involved can build under majoritarian or coalition governments, showing that the former favor investor interests, while employees benefit more from the latter. Our explanatory focus here is on the firm-level strategy of blockholding and on the question how country-level labor institutions, once they are in place, affect its effectiveness more specifically.

Consistent with the core tenets of agency theory, the main function of blockholding in this broader competitive perspective is for shareholders to create a countervailing power against other corporate constituencies in order to secure the residual returns on their investments. In contrast to the US, where managers have been very effective in appropriating an increasing part of corporate earnings through their compensation packages (Bebchuk and Fried 2004), employees are believed to be a more powerful corporate constituency in many European countries (Gourevitch and Shinn 2005). As a result, some have argued that in most European countries blockholding serves predominantly to counter legally protected and empowered labor interests (Roe 2003). There exist at least two different mechanisms through which labor institutions may influence the effectiveness of blockholding in this competitive view of corporate governance.

First, labor institutions may affect the balance of power between corporate constituencies in employees' favor and thereby negatively affect the effectiveness of blockholding in so far as it depends on their relative power vis-à-vis other corporate constituencies. Thus the degree in which labor regulation facilitates collective labor relations to form and be maintained (henceforth: collective relations law), and the union density in a country, are expected to increase the relative power of labor (Blanchard and Giavazzi 2003, Botero et al. 2004), thereby correspondingly decreasing the effectiveness of blockholders in securing their residual claim on corporate earnings. When firms are confronted with negative revenue shocks, for example, strong collective labor interests may be able to pressure management to refrain from restructurings, or even to engage in value destroying asset sales, in order to relieve financial distress and avoid layoffs (Atanassov and Kim 2009). In this view, organized labor may side with either management (Pagano and Volpin 2005b) or blockholders (Pagano and Volpin 2005a), in attempts to preserve above market wage levels (Bertrand and Mullainathan 1999) or to shield against disciplining takeovers (Rauh 2006), at the expense of firm performance.

Second, a different mechanism through which labor institutions may affect blockholder effectiveness is by structurally constraining the options available to blockholders to pursue value-enhancing strategies. This is the case with the specific kind of labor regulation that protects employees against dismissals (henceforth: employment protection law), as this will limit the possibilities for blockholders to gain financially by restructuring and downsizing the firms they own (Atanassov and Kim 2009). Because this kind of labor regulation is found to increase the rigidity of labor markets (Botero et al. 2004), controlling blockholders may face difficulties in adjusting the scale of operations to optimal levels of output. Again, this problem becomes particularly acute when firms are confronted with negative revenue shocks. Atanassov and Kim (2009), for example, found that when firms are confronted with such shocks, employment protection law decreases the likelihood that these firms will lay-off employees, and increases the probability that they resort to value decreasing asset sales, as selling even a firm's crown jewels may be the only way to absorb falls in demand and meet short-term financial obligations. Similarly, firms in countries with high levels of employment protection are likely to grow slower when the market picks up again, as they anticipate this regulation-induced lack of flexibility in their growth and hiring policies (Besley and Burgess 2006). We therefore hypothesize:

> Hypothesis 2a: In European countries, the strength of labor institutions will negatively affect the effectiveness of blockholding.

3.2.3 Institutional complementarity between blockholding and labor institutions

An alternative perspective on the relationship between labor institutions and blockholder effectiveness has been suggested by a variety of scholars studying the extant variety of business systems in international business (Whitley 1999). Proceeding from the observation that different forms of capitalism co-exist durably across the world (Bebchuk and Roe 1999), these scholars seek to explain both this variety of business systems (Amable 2003, Crouch 2005) and their effects on economic performance (Hall and Soskice 2001), from possible complementary relationships between institutional features on the one hand, and firm level strategies, on the other (Aguilera et al. 2008, Amable 2000, Hall and Gingerich 2009, Hopner 2005). Institutional and organizational features are complementary in this view, when their

combined presence increases the positive welfare implications of each (Aoki 1994, 2001, Milgrom and Roberts 1995). We focus here on complementarities between country level labor institutions and the firm level strategy of blockholding, which may derive from three related yet distinctive sources.

Similar to how blockholding concentrates the pursuit of shareholder interests in the hands of a single or a few large owners, first, labor institutions that facilitate the formation and maintenance of collective labor relations in an economy can be seen to concentrate and consolidate the articulation and pursuit of employee interests in corporate governance (Gospel and Pendleton 2005). The resulting centralization of capital and labor interests will enable strategic coordination between shareholders and employees because it economizes on transaction costs that otherwise dispersed employees and shareholders would face in bargaining over mutually beneficial agreements (Black 1990, Schnabel et al. 2006, Traxler 2003).

A second source of complementarity builds on the first, and involves the scope of exchange between employees and blockholding owners of the firm. Compared to individual bargaining in a context of relatively unconstrained labor markets, more centralized bargaining facilitated by collective labor relations law will allow for the exchange of *individual* for *collective* employee benefits that are difficult to realize in decentralized individual bargaining (Moskow 1971). Thus blockholders may come to agree with unions, for example, to absorb downfalls in firm revenues by accepting a lower return on investment in return for a commitment from labor to exercise wage restraint (Visser 1998), or invest in innovation (Koeninger 2005) and flexible employment within the firm (Volberda 1998). This broadening of the scope of exchange to include collective arrangements increases the chance of reaching mutually beneficial agreements.

A third source of complementarity between blockholding and labor institutions pertains to assurance problems that may stand in the way of mutually beneficial strategic coordination between employees and shareholders in public firms. In labor markets where employees have little employment protection, workers have incentives to invest in general rather than firm-specific skills because the latter may not lead to sufficient return on investments in alternative sources of employment (Blair 1995, Rajan and Zingales 1998). This lack of assurance may lead to underinvestment in human capital, which may be detrimental to firm performance (Belot et al. 2007, Hitt et al. 2001). This problem is especially likely to burden dispersedly owned firms, because the higher liquidity of such firms will pressure managers to defect on implicit job

security contracts with employees in order to make good on short term equity market expectations (Blair and Stout 1999, Shleifer and Summers 1988). Labor institutions that provide more job security could therefore offer the assurance necessary to make specific human capital investments. More specifically, by providing assurance in regard to specific human capital investments that can increase the value of workers employed within the firm, employment protection laws will allow employees and blockholders to trade flexibility between alternative sources of employment for flexible employment within the firm (Volberda 1998). On account of these three different sources of complementarity, we hypothesize:

> Hypothesis 2b: In European countries, strength of labor institutions will positively affect the effectiveness of blockholding.

3.2.4 Relational and arms'-length blockholders

Thus far, we have understood blockholding exclusively in terms of the level of ownership concentration in a firm and have thereby implicitly assumed that blockholders make up a homogenous class. Empirical research has increasingly questioned this assumption, however, as several researchers have found that different types of blockholders are differentially successful in contributing to the performance of the firms they own (Douma et al. 2006, Gedaljovic et al. 2005, Thomsen and Pedersen 2000). These findings suggest that different types of blockholders may suffer or benefit differentially from labor institutions in European countries. Although the development of a full-fledged theory of blockholder types is beyond the scope of this paper, we do want to account for the possibility that different types of blockholders will be differentially able to cope with the effects of labor institutions by distinguishing relational from arm's-length blockholders in European firms (Ayres and Cramton 1993, Bhagat et al. 2004).

Analogous to how in an exchange situation arm's-length contractors can be distinguished from relational contractors in terms of the degree in which they value their ongoing economic relationship over any of their individual transactions (MacNeil 1978, Williamson 1985), we distinguish relational from arm's-length blockholders on the basis of the scope, duration, and dedication of their involvement in the firms they own. Thus we consider banks, other corporations, and business groups to be relational

rather than arm's-length blockholders because these types of owners are typically multiply and often durably tied to the firm, featuring creditor, supplier, or client relationships in addition to their ownership stake (Gedajlovic and Shapiro 2002, Gerlach 1992). This multiple involvement will lead them to maximize the returns from all their relationships with the firm rather than just the value of their equity stake (Brickley et al. 1988, David et al. 1998). Similarly, inside and family owners are not only multiply and durably tied to the firm through managerial positions and ongoing business relationships, but also tend to be more actively involved in, and socio-emotionally committed to, the firms they own than arm's-length blockholders (Gomez-Mejia et al. 2007, 2010).

Although government owners could also be seen as relational blockholders, we do not do so here because government ownership is driven by regulatory or policy considerations rather than economic objectives, which makes them a different kind of blockholder altogether (Thomsen and Pedersen 2000).

Finally, because their investment strategy is premised on the strategy of liquidity and exit (Parrino et al. 2003), institutional blockholders typically hold highly, often internationally diversified equity portfolio's (Ferreira and Matos 2008), in which the relatively small size of even their largest positions will keep them from being actively involved in the firms they own altogether (Dharwadkar et al. 2008, Faccio and Lasfer 2000). We hence understand institutional owners, such as investment and pension funds, to be arm's-length rather than relational blockholders.

We reason that relational blockholders operationalized in this way are not only more effective blockholders, but are also better able to deal with labor institutions in the European context, for three reasons. Due to their multiple involvement in the firms they own, first, relational owners will typically be able to generate better flows of information from the firm than arm's-length owners (Ayres and Cramton 1993). This informational advantage emerges as a by-product of their ongoing transactions with the firm (Hansmann 1996), and will not only benefit their monitoring efforts, but also facilitate their ability to strike mutually beneficial deals with organized labor. The more enduring involvement of relational blockholders in the firm, second, will allow them to develop specific knowledge and capabilities (Eisenhardt and Martin 2000) that will not only enable them to deal more effectively with organized labor at the level of the firm, but will also help them to cope with the specific challenges of the institutional environment in which the firm is located (Oliver 1991, Peng et al. 2005).

Finally, the more enduring and stronger commitment of relational investors to the firm will help to remedy assurance problems that may stand in the way of striking mutually beneficial deals between blockholders and organized labor, because the viability of these mostly implicit contracts (Baker et al. 2002, Zingales 2000) is to an important degree contingent on the identity (Van Oosterhout et al. 2006) and stability of relational ownership of the firm (Dixit 2004, Gilson 2007). We therefore hypothesize:

Hypothesis 3a: In European countries, relational blockholders will be more effective blockholders than arm's-length blockholders.

Hypothesis 3b: In European countries, relational blockholders will be better able to deal with both the positive and negative effects of labor institutions than arm's-length blockholders.

3.3 Methods

3.3.1 Sample and coding

We used five complementary search strategies to retrieve as many high-quality studies reporting on the focal relationship as possible (White 1994). First, we read several review articles (Becht et al. 2005, Connelly et al. 2010, Gadhoum et al. 2005, and Holderness 2003). Second, we explored five electronic databases: (1) ABI/INFORM Global, (2) EconLit, (3) Google Scholar, (4) JSTOR, and (5) SSRN, using the search terms like: 'blockholder', 'equity', 'inside ownership', 'institutional ownership', 'ownership', 'ownership concentration', and 'shareholders'. Third, we conducted a manual search of 25 journals in the fields of accounting, economics, finance, and management.[10] Fourth, after collecting an initial set of studies, we used a 'snowballing' technique that involved backward-tracing all references reported in the articles and forward-tracing all articles that cited the original articles using Google Scholar and ISI Web of Knowledge. Fifth, we corresponded with 106 researchers who had written articles on the focal relationship in which effect size information was not reported, asking them for a table with Pearson product-moment correlation coefficients. This

[10] The complete list of journals is available from the authors upon request.

yielded a final sample of 866 effect sizes derived from 162 primary studies, consisting of 105 journal articles, 54 working papers, and 3 PhD theses (See Appendix B).

We subsequently read all articles in the final set and developed a coding protocol (Cortina 2003, Lipsey and Wilson 2001) for extracting data on all relevant variables. To test Hypotheses 1 and 3a we collected information on the bivariate correlation coefficients and multivariate *t*-statistics for the focal relationship, sample sizes, and the degrees of freedom of sampled regression analyses. We differentiated (when possible) between 'relational', 'non-relational', and 'government' owners, and between 'foreign' and 'domestic' owners. To test Hypotheses 2a, 2b, and 3b we collected additional covariates from several secondary sources. One author coded all effect sizes. To assess agreement in extracting information from primary studies, another author coded a sub-sample of 153 randomly selected effect sizes. We then computed a chance agreement-corrected measure of inter-rater reliability (i.e. Cohen's kappa coefficient; Cohen 1960) of 0.97, signifying very high inter-rater reliability.

3.3.2 HOMA procedure

To test Hypotheses 1 and 3a we used HOMA (Hedges and Olkin 1985). In line with current conventions, we use random effects HOMA to combine study estimates (Geyskens et al. 2009). Random effects HOMA corrects individual study estimates for sampling error plus a value that represents other sources of variability, which are assumed to be randomly distributed (Kisamore and Brannick 2008, Raudenbush and Bryk 2002). Random effects models outperform the once-popular fixed effects models when the effect size distribution is heterogeneous, as it is in our case, because they produce more conservative estimates (Lipsey and Wilson 2001).

The effect size statistics we used for HOMA are the Pearson product-moment correlation r and the partial correlation coefficient $r_{xy.z}$. r is commonly used in meta-analysis, because it is an easily interpretable and scale-free measure of linear association. When studies reported different effect size statistics, such as Cohen's standardized means difference measure d, we converted them back into an r value using the appropriate formulas (Lipsey and Wilson 2001). r provides appropriate effect size information when the direction of causality of the underlying relationship has been established by prior research. However, for our focal relationship it is necessary to also establish the direction of causality, as the discussion as to whether ownership structure is endogenous upon firm performance or alternatively an exogenous

predictor of it, is presently far from resolved (Demsetz and Villalonga 2001, Holderness 2003).

We therefore also use a different type of effect size, $r_{xy.z,}$ to check whether ownership (x) indeed causes firm performance (y) exogenously when controlling for a vector of control variables (z) containing instruments correcting for endogeneity[11] and variables capturing firm characteristics (Sánchez-Ballesta and García-Meca 2007). In addition to its ability to provide an endogeneity-corrected reassessment of the overall mean effect size, $r_{xy.z}$-based HOMA is also attractive because of its potential for exploring non-linear effects, such as when squared and cubed terms of ownership variables are used as predictors of firm performance. We compute $r_{xy.z}$ on the basis of the t-statistics and degrees of freedom reported in primary studies (Greene 2008).[12] $r_{xy.z}$-based mean effect sizes were then computed using HOMA procedures identical to those used for r-based means. To minimize skewness in the effect size distribution, which violates the HOMA assumption of normally distributed effects, we applied Fisher's (1928) Zr transformation to both the r- and $r_{xy.z}$-based distributions (Hedges and Olkin 1985, Silver and Dunlap 1987).[13] To account for sample size-related differences in precision across effect sizes, we weigh each effect size by its inverse variance weight w (Hedges and Olkin 1985).[14] Using these weights, we calculate the mean effect size, its standard error, and the corresponding confidence interval.[15]

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[11] In econometrics, the problem of endogeneity occurs when the independent variable is correlated with the error term in a regression model, or when the dependent variable (i.e. the firm performance measure) simultaneously affects the independent variable (i.e. the degree of ownership concentration) (Bhagat and Jefferis 2002). There are several accepted methods of controlling for endogeneity. Endogeneity-conscious researchers usually use a fixed or random effects panel data model, and calculate instrumental variables using two- or three-stages least squares (2/3SLS) or the generalized method of moments (GMM) (Sánchez-Ballesta and García-Meca 2007).

[12] The formula used to calculate partial correlations is:
$\sqrt{(t^2/ (t^2+df))}$
where t is the t-statistic and df is degrees of freedom. Note that this will always produce a positive number, so it is necessary to convert it to a negative number if the regression coefficient is negative (see Greene 2008, chapter 3). T-values result from the scaling of primary coefficients by their respective standard errors. They thus are by definition standardized and defined on a dimensionless scale.

[13] Fisher's Zr transformed correlations are calculated as follows: $z_r = \frac{1}{2}\ln\left(\frac{1+r}{1-r}\right)$, where r is the untransformed correlation coefficient.

[14] w is calculated as follows: $w_i = \frac{1}{se_i^2 + \hat{v}_\theta}$, where SE is the standard error of the effect size and $\hat{v}_\theta$ is the random effects variance component.

An important question in meta-analysis is how to deal with studies containing multiple measurements of the focal effect (Geyskens et al. 2009). In our study, multiple measurements of the focal relationship are often reported due to different operationalizations of ownership and firm performance. The issue at stake is the trade-off between stochastic independence of the various effect sizes in the analysis on the one hand, and the use of all available information on the other. A Monte Carlo simulation by Bijmolt and Pieters (2001) shows that procedures using the complete set of measurements outperform those representing each study by only a single value in areas like parameter significance testing and parameter estimation accuracy. We therefore include all available measurements in our study.

3.3.3 MARA procedure

We use MARA (Stanley and Jarrell 2005) to test Hypotheses 2a, 2b, and 3b. MARA is a special type of weighted least squares (WLS) regression analysis, designed specifically to assess the relationship between effect size and moderator variables in order to model previously unexplored heterogeneity in the effect size distribution (Lipsey and Wilson 2001). We use weighted regression to account for differences in precision across effect sizes. Again, the preferred weighting variable is *w* (Hedges 1982, Hedges and Olkin 1985). In line with current conventions (Geyskens et al. 2009), we estimate the regression parameters with mixed effects models in which variability in the effect size distribution is attributed to systematic between-study differences and subject-level sampling error (as in fixed effects models) as well as to a remaining unmeasured or

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, which is in turn calculated as: $s.e.(z_r) = \frac{1}{\sqrt{n-3}}$

, and the formula of random effect variance is: $\hat{v}_\theta = \frac{Q_T - k - 1}{\sum w - \left(\frac{\sum w^2}{\sum w} \right)}$

[15] The meta-analytic mean is calculated as follows: $\overline{ES} = \frac{\sum (w \times ES)}{\sum w}$, with its standard error: $se_{\overline{ES}} = \sqrt{\frac{1}{\sum w}}$, and with its 95% confidence interval computed as: $Lower = \overline{ES} - 1.96(se_{\overline{ES}})$, $Upper = \overline{ES} + 1.96(se_{\overline{ES}})$.

even immeasurable random component (as in random effects models; Lipsey and Wilson 2001).

To test Hypotheses 2a, 2b, and 3b, we include three country-level variables that subtly capture different mechanisms or sources of institutional complementarity through which labor institutions affect the effectiveness of blockholding in a country. We rely, first, on measurements developed and tested by Botero and colleagues (2004) in their study on labor regulation. Following Atanassov and Kim (2009), we distinguish the *'employment laws index'* (source: Botero et al. 2004), which measures the economic protection of individual workers in a given jurisdiction by capturing the incremental cost to employers of deviating from a hypothetical contract in which job conditions are fully specified and workers cannot be fired, on the one hand, from the *'collective relations laws index'* (source: Botero et al. 2004), which captures the degree in which labor regulation protects and facilitates collective labor relations to form and be maintained, on the other, because these two measures subtly capture different mechanisms through which labor institutions may influence blockholder effectiveness, as specified in the development of hypotheses 2 a and 2b. Next to these proxies for labor 'law on the books', second, we also include the degree of *'union density'* in a country (source: OECD labor force statistics) which measures the actual degree in which workers are collectively represented by labor unions. To test Hypothesis 3b, we included dummy variables capturing whether blockholders were '*relational owners*', '*non-relational owners*', '*government owners*', or '*other*' (reference category). As Hypothesis 3b stipulates an interaction effect between relational owners and the strength of labor institutions, we also included three product terms linking relational owners and labor variables: (1) '*employment laws index*' * '*relational owners*', (2) *'collective relations laws index'* * '*relational owners*', (3) *'union density'* * '*relational owners*'. Prior to multiplication, we grand-mean centered the institutional variables to facilitate subsequent interpretation of their main effects and avoid multicollinearity (Raudenbush and Bryk 2002: 31ff).

To control for the possible moderating effect of methodological artifacts on the focal relationship, we controlled for five methodological factors. To assess whether the associational strength of the focal relationship has changed over time, we included the *'publication year'* of each study. To test whether our results were affected by the 'file drawer problem' (Rosenthal 1979), the inflationary effect on the meta-analytic mean of studies finding null-effects being barred from publication, we entered a dummy variable capturing whether our effect sizes derived from a '*published study*' or an

'*unpublished study*' (reference category). We included a dummy variable capturing whether effect sizes were harvested from a study using a '*panel design*' or a '*cross-sectional design*' (reference category) to control for the effect of research design factors. To control for a possible moderating effect of the chosen operationalization of the dependent variable on our focal relationship, we included a dummy variable capturing whether a given effect size involved a '*market measure*' or an '*accounting measure*' (reference category) of firm performance. Finally, to control for different levels of reviewers' scrutiny across journals of differential prestige, we included the five-year SSCI '*impact factor*' score of the journal from which an effect size was harvested, assigning a zero value to sources not included in the SSCI.

We also control for the possible moderating effect of several substantive factors that are likely to moderate the focal relationship. We control for the commonly hypothesized effect that '*foreign owners*' outperform '*domestic owners*' (Douma et al. 2006) with the help of a dummy variable, using '*mixed owners*' as a reference category. We use '*labor cost*' (source: Eurostat) to control for exogenous differences in wage levels between countries (Lazonick 1981). We include the national *'unemployment rate'* (source: OECD labor force statistics) for the years covered by each underlying primary study in our meta-analyses in order to control for the country level scarcity-based bargaining power of labor. We use the '*rule of law index'* (source: World Bank) to capture international differences in legislative and court effectiveness (Kaufmann et al. 2009). To control for the profitability-dampening effect of large owners diverting corporate wealth into their private coffers through self-dealing transactions, we include the '*anti-self-dealing index'* (Djankov et al. 2008, Heugens et al. 2009). To control for geographic and cultural differences between continental European countries and the UK (which is typically seen as a dispersed ownership regime), we selected the UK as reference country and include the variables '*cultural distance to UK*' (Kogut and Singh 1988) and '*geographic distance to UK*' (source: Raymond 1998) in our analyses. To control for the effect of national affluence on blockholder effectiveness we include '*GDP per capita*' (source: World Development Indicators). To hold constant the availability of equity financing through public financial markets, we include national '*stock market capitalization*' levels (source: World Development Indicators). All variables included in this study are succinctly defined in Table 2.

Table 2: Description of Variables

Variables	Description
Ownership	The most generic category of concentrated ownership on which data can be obtained. It encompasses inside owners as well as controlling or non-controlling outside blockholders who, depending on the disclosure laws of any particular jurisdiction, own 3 percent or more of the company's shares (see for instance Ruigrok et al. 2006).
Ownership concentration	A more specific measure of concentrated ownership, which is differentially defined across research studies. First, it may be operationalized as 'largest owner', representing a measure of the degree to which ownership in the firm is concentrated in the hands of a single investor. Second, it may be operationalized as 'ultimate owner', which identifies any party who enjoys outright control over the firm. Common cut-off points for determining ultimate ownership are the 10 and 20 percent levels of ownership (Faccio and Lang 2002). Third, it may be operationalized as a continuous measure of the degree to which ownership is concentrated in the hands of the largest owners, such as the largest three or five shareholders, with a Herfindahl or Entropy measure (see for instance Gedajlovic and Shapiro 1998).
Relational owners	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the owner is relational investor (e.g. business partners, family firms, or firms that are a member in the same business group (see for instance Gedajlovic et al. 2005).
Non-relational owners	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the owner is non-relational investor (e.g. public or company pension funds, mutual funds, insurance services or other (see for instance Faccio and Lasfer 2000).
Government owners	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the owner is a government party (see for instance Thomsen and Pedersen 2000).
Domestic owners	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the owner is a domestic party (e.g. domestic firm, financial institution, business group, or other (see for instance Grosfeld and Hashi 2007).

Foreign owners	A variable which assumes a positive value (either '1' in case of dummy operationalizations or a percentage in case the degree of ownership concentration is known) when the owner is a foreign party (e.g. foreign firm, foreign financial institution, or other (see for instance Grosfeld and Hashi 2007).
Publication year	For journal articles: year in which the article first appeared in print. For working papers: year in which the paper was first included in a publicly accessible working paper series.
Published	A dummy variable measuring whether a specific study was published in a scholarly journal (1) or not (0).
Panel design	A dummy variable measuring whether the data included in a specific study was based on a cross-sectional (0) or a longitudinal (1) observation plan.
Market performance	Any indicator of the financial performance of the firm that is expressed in the form of a market-based measure of firm value (stock returns, market-to-book ratio, and Tobin's Q).
Accounting performance	Any indicator of the financial performance of the firm that is expressed in the form of an accounting-based measure of firm profits.
Impact factor	A variable measuring the average number of citations of articles in a given journal, derived from articles that were published during the two preceding years.
Labor cost	A variables which measures the average labor cost in country, calculated as the total labor costs divided by the corresponding number of hours worked (source: Eurostat).
Rule of law index	A variable which measures the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts (source: Kaufmann et al. 2009).
Anti-self-dealing index	A variable which measures the extent to which national jurisdictions offer minority shareholders protection against expropriation by controlling shareholders, expressed in the form of a zero (low protection) to one (high protection) index. The index includes ex-ante and ex-post controls around self-dealing transactions (source: Djankov et al. 2008).
Cultural distance to the UK	Cultural distance to the host country from the UK was measured with Kogut and Singh's (1988) index. This index is an aggregate of the four dimensions of culture outlined in Hofstede (1980): (1) power distance index, (2) individualism, (3) masculinity and (4) uncertainty avoidance index.

Geographic distance to the UK	A variable which measures the distance to the host country from the UK. The formula calculates distances between two countries which are defined by geographical coordinates in terms of latitude and longitude (source: Raymond 1998).
GDP per capita	Natural log of per capita gross domestic product in US dollars (source: World Development Indicators).
Stock market capitalization	The ratio of stock market capitalization to gross domestic product (source: WDI at: http://devdata.worldbank.org/dataonline/).
Unemployment rate	Average unemployment rate as a percentage of the total labor force (source: OECD *Labour Force Statistics*).
Employment laws index	Measures the protection of labor and employment laws as the average of: (1) alternative employment contracts; (2) cost of increasing hours worked; (3) cost of firing workers; and (4) dismissal procedures (source: Botero et al. 2004).
Collective relations laws index	Measures the statutory protection and power of unions as the average of the following seven dummy variables which equal one: (1) if employees have the right to unionize; (2) if employees have the right to collective bargaining; (3) if employees have the legal duty to bargain with unions; (4) if collective contracts are extended to third parties by law; (5) if the law allows closed shops; (6) if workers, or unions, or both have a right to appoint members to the boards of directors; and (7) if workers' councils are mandated by law (source: Botero et al. 2004).
Union density	Measures the membership of trade unions, calculated as the number currently enrolled as members as a proportion of all those employees potentially eligible to be members (source: OECD *Labour Force Statistics*).

3.4 Results

3.4.1 Overall blockholder effectiveness in Europe

Table 3 reports the overall results concerning blockholder effectiveness in Europe as well as the more specific results for Hypothesis 1. In addition to the meta-analytic mean, we report: the number of samples (k), total sample size (N), the standard error of the mean effect size (SE), the 95% confidence interval around the meta-analytic mean, and the Hedges and Olkin (1985) chi-square test for heterogeneity (Q). The results in the left-hand panel show that firms with a more concentrated ownership structure are on par with more dispersedly owned firms in terms of their profitability. The r–based

meta-analytic mean correlation between ownership and performance is 0.00, based on 748,569 firm-year observations. Because the confidence interval includes zero, the focal effect is insignificant. The results reported in the right-hand panel of Table 3 show very similar results. The $r_{xy.z}$-based mean is 0.02, based on 158,310 firm-year observations, and the confidence interval does not include zero. Although this denotes a statistically significant relationship between blockholding and firm performance, the profitability difference between concentrated and dispersedly owned firms is hardly practically significant (cf. Combs et al. 2010).

Table 3 also shows that the retrieved mean effect is not moderated by the chosen operationalization of the dependent variable, as the difference between market- and accounting-based measures of performance for both the *r*-based and $r_{xy.z}$-based results is negligible. Likewise, the results in Table 3 are robust across the cruder but more inclusive 'ownership' and more specific but more exclusive 'ownership concentration' operationalizations of the independent variable, measured as the fraction of a firm's total equity that is concentrated in the hands of a select few owners. Furthermore, since the meta-analytic mean of the subset of $r_{xy.z}$-based results with an endogeneity instrument in the *z*-vector is comparable to the overall *r*- and $r_{xy.z}$-based mean, our findings appear not to be affected by the possible endogeneity of ownership structure on firm performance (Demsetz and Villalonga 2001). Finally, both effect size distributions are highly heterogeneous (*r*-based $Q = 7{,}094.32$; $p < 0.001$; $r_{xy.z}$-based $Q = 1{,}306.16$; $p < 0.001$), suggesting the presence of owner identity-based and institutions-based moderating effects. [16]

3.4.2 Curvilinear effects

The results in Table 3 for linear, squared, and cubed effects confirm Hypothesis 1. The linear term is positive and significant at 0.05, the squared term is negative and significant at -0.04, and the cubed term is positive and significant at 0.04. These results confirm the existence of a curvilinear, inverted U-shaped relationship between blockholding and firm performance. Blockholding has a positive effect on firm performance when blocks are sufficiently large such that blockholding owners have both the incentives and the capabilities to be actively involved in the firms they own,

[16] The *Q* test is computed by summing the squared deviations of each study's effect estimate from the overall meta-analytic mean effect size estimate. In this exercise, each study is weighted by its w. The *Q* test assumes homogeneity, following a Chi-square distribution with $k - 1$ degrees of freedom (k = the number of studies). When *Q* is significant, as it is in our case, the assumption of homogeneity is rejected.

but where they lack the control over the firm to do as they please (Heugens et al. 2009, Morck et al. 1988).

The effect becomes negative, however, when their ownership stake becomes sufficiently large to fully control the firm, such that controlling blockholders can expropriate minority shareholders through self-dealing transactions like tunneling and propping (Bae et al. 2002, Johnson et al. 2000). Yet when their ownership stake nears full ownership, there are hardly any minority shareholders left to expropriate and the effect on firm performance becomes positive again (Heugens et al. 2009). The effect is independent of the chosen operationalization of ownership, as the inverted U-shaped pattern we report is similar for ownership and ownership concentration.

3.4.3 The costs and benefits of blockholding: The effect of labor institutions

Table 4 reports the MARA results for Hypotheses 2a and 2b. Model 1 includes the methodological and substantive control variables, whereas Model 2 reports all control variables as well as the hypothesized main effects on blockholder effectiveness of the variables capturing the strength of labor institutions and the relational, non-relational, and government owner type variables. Together, the control variables explain about 5 percent of the variance in the effect size distribution (Model 1). Including the hypothesized main effects raises the explanatory power of the model to 22 percent (Model 2), suggesting that the institutional and owner type variables play an important role in explaining blockholder effectiveness in Europe.

The results for the employment laws index (Botero et al. 2004), which captures the extent to which individual employees are protected against unilateral contractual rearrangements and dismissals, support Hypothesis 2a ($p < 0.10$). Yet interestingly, the other two variables included to capture the strength of labor institutions—i.e. the collective relations laws index ($p < 0.10$) and union density in a country ($p < 0.05$)—positively rather than negatively moderate blockholder effectiveness, implying that Hypothesis 2a must be rejected. A more fine-grained interpretation of these results neutralizes these conflicting conclusions, however. As explained while developing Hypothesis 2a, labor institutions can affect the effectiveness of blockholders in securing their residual claim on corporate earnings through two different mechanisms.

Table 3: HOMA Results for the Focal Relationship[a]

	Pearson product-moment correlation						Partial correlation coefficient					
Predictor	*k*	*N*	Mean	SE	CI 95%	Q test	*k*	*N*	Mean	SE	CI 95%	Q test
Ownership to performance	866	748,569	0.00	0.01	-0.01 / 0.01	7,094.32	223	158,310	**0.02***	0.01	0.00 / 0.03	1,306.16
Accounting	430	511,404	0.01	0.01	-0.01 / 0.02	5,292.65	70	50,776	0.02	0.01	-0.00 / 0.05	453.76
Market	436	237,165	-0.01	0.00	-0.01 / 0.00	1,724.67	153	107,534	0.01	0.01	-0.00 / 0.03	852.22
Endogeneity control							56	27,928	0.01	0.02	-0.03 / 0.04	445.72
Non-linear relation												
Linear term							36	29,627	**0.05***	0.01	0.03 / 0.07	122.36
Squared term							36	29,627	**-0.04***	0.01	-0.06/ -0.02	82.55
Cubed term							8	6,572	**0.04***	0.01	0.02 / 0.07	9.04
Ownership concentration to performance	497	430,835	-0.01	0.01	-0.02 / 0.00	3,851.22	149	115,101	**0.02***	0.01	0.01 / 0.04	832.85
Accounting	257	296,154	-0.00	0.01	-0.02 / 0.01	2,976.13	49	34,477	**0.03***	0.02	0.00 / 0.06	300.11
Market	240	134,681	**-0.02***	0.01	-0.03 / -0.00	868.86	100	80,624	0.02	0.01	-0.00 / 0.04	529.68
Endogeneity control							34	18,681	0.02	0.02	-0.02 / 0.06	229.27
Non-linear												
Linear term							13	12,163	**0.04***	0.02	0.00 / 0.07	54.42
Squared term							13	12,163	-0.02	0.02	-0.05 / 0.02	39.70
Cubed term							2	1,576	0.02	0.03	-0.03 / 0.06	0.99

[a] *k* = number of samples; *N* = total sample size; Mean = meta-analytic mean effect size; SE = standard error of the mean effect size; CI 95% = 95% confidence interval around the meta-analytic mean; Q test = Hedges and Olkin (1985) chi-square test for homogeneity (*Q*).

First, they can empower *collective* labor interest to claim a bigger piece of the corporate pie. Second, they can constrain the options available to blockholders to adjust the scale of operations to optimal levels, which is what happens when employment protection laws entrench the interests of *individual* employees. Only the latter explanation is consistent with our findings. Thus Hypothesis 2a is supported only insofar as labor institutions constrain the options available to blockholders to pursue value-enhancing changes in the firms they own (Atanassov and Kim 2009).

At the same time, the positive moderating effects of the collective relations laws index ($p < 0.10$) and the union density in a country ($p < 0.05$) support Hypothesis 2b, which specified that blockholding and strong labor institutions are complementary in the European context because they enable strategic coordination between blockholders and employee interests that may ultimately benefit both (Aguilera et al. 2008, Amable 2000, Hall and Gingerich 2009, Hopner 2005). Again, the negative moderating effect of the employment protection index ($p < 0.10$) suggests that different kinds of labor institutions function differentially in this regard, and that there is a subtle story to tell about the sources of complementarity between labor institutions and blockholding.

First, the positive moderating effects of the collective relations laws index and the union density in a country suggest that the degree in which collective labor relations are developed in a country can be seen to either reduce the transactions costs that burden strategic coordination between capital and labor interests through the centralization and consolidation of these interests, or increase the scope of exchange by opening up the possibility to strike collective deals with labor interests.

Yet, second, the negative moderating effect of the employment protection index pretty much excludes that such strategic coordination is facilitated by providing assurance in regard to specific human capital investments, possibly because the assurance provided by general employment protection laws does not distinguish those employees for which specific human capital investments will be value-increasing from those for which this is not the case. We therefore find support for Hypothesis 2b only insofar as labor institutions either reduce bargaining-related transaction costs of strategic coordination, or increase the odds of attaining mutually beneficial agreements by increasing the scope of exchange, but not for protecting workers' dedicated investments in human capital (Gospel and Pendleton 2005, Moskow 1971, Rajan and Zingales 1998).

Table 4: Results of Mixed Effects WLS Regression[a]

Variables	Model (1)	Model (2)	Model (3)
Publication year	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Published study	0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Panel design	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)
Market measure	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Impact factor	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Foreign owners	**0.06 (0.02)*****	**0.07 (0.03)*****	**0.06 (0.02)*****
Domestic owners	0.00 (0.01)	-0.01 (0.02)	-0.01 (0.02)
Labor cost	0.00 (0.00)	-0.05 (0.05)	-0.04 (0.05)
Unemployment rate	**0.08 (0.03)****	**0.07 (0.03)****	**0.08 (0.03)****
Rule of law index	0.00 (0.03)	0.07 (0.07)	0.15 (0.16)
Anti-self-dealing index	0.00 (0.06)	0.09 (0.27)	-0.17 (0.26)
Cultural distance to UK	-0.00 (0.00)	0.01 (0.00)	0.00 (0.00)
Geographic distance to UK	0.00 (0.00)	**-0.0003 (0.00)****	**-0.0002 (0.00)****
GDP per capita	-0.11 (0.08)	**-0.32 (0.14)****	**-0.97 (0.55)***
Stock market capitalization	-0.00 (0.00)	**0.002 (0.00)****	**0.003 (0.00)*****
Hypothesized mean effects			
Employment laws index		**-0.50 (0.29)***	**-0.90 (0.30)*****
Collective relations laws index		**0.31 (0.18)***	**0.42 (0.18)****
Union density		**0.06 (0.02)****	**0.06 (0.02)****
Relational owners		**0.03 (0.01)*****	**0.02 (0.01)****
Government owners		-0.02 (0.03)	-0.02 (0.04)
Non-relational owners		-0.01 (0.02)	-0.02 (0.02)
Hypothesized interaction effects			
Employment laws index * Relational owners			**0.38 (0.20)****
Collective relations laws index * Relational owners			-0.16 (0.20)
Union density * Relational owners			**0.01 (0.00)*****
R^2	0.05	0.22	0.26
K	614	614	614
Q_{Model} (p)	28.36 (0.19)	140.95 (0.00)	189.62 (0.00)
$Q_{Residual}$ (p)	492.84 (0.89)	503.06 (0.94)	546.32 (0.96)
V	.00872	.00818	0.0062

[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. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

3.4.4 Relational owners

Tables 4 and 5 contain the results pertaining to Hypotheses 3a and 3b. Hypothesis 3a is confirmed by the results in Table 5. Relational blockholders, who are durably and multiply tied to the firms they own, are better able to realize firm value than arm's-length blockholders, whose involvement is more fleeting (Ayres and Cramton 1993, Bhagat et al. 2004). Firms with relational blockholders (slightly) outperform the benchmark (*r*-based mean = 0.01; $r_{xy.z}$-based mean = 0.04), while firms with non-relational, arm's-length blockholders are either are at, or underperform this benchmark (*r*-based mean = -0.03; $r_{xy.z}$-based mean = 0.00 (n.s.)). Government blockholders are unmasked as a different kind of blockholder altogether, as the regulatory and policy goals they pursue through their ownership ties hurt firms' profitability (Thomsen and Pedersen 2000; *r*-based mean = -0.03; $r_{xy.z}$-based mean = -0.06). Finally, Model 3 of Table 4 shows the results for Hypothesis 3b. Compared to Model 2, Model 3 adds three interaction variables, which were constructed by computing the product terms of the 'relational owners' dummy and the three institutional variables we introduced in model 2.

The interaction variables improves the fit of the model from 0.22 to 0.26, and the results support Hypothesis 3b that overall, relational blockholders are better able to cope with labor institutions in Europe than arm's-length blockholders. First, relational blockholders prove better able to deal with strongly developed employment protection laws ($p < 0.05$), possibly because they learn to cope more effectively with these institutional constraints as a result of their longer term commitment to the firm and its host country. Similarly, second, relational blockholders are also better able to deal with a more collectively organized work force, as the interaction between union density and the relational owner dummy is positive and significant ($p < 0.01$). Apparently, relational ownership increases the chance of realizing mutually beneficial strategic coordination with organized labor interests. However, finally, no significant effect was found for the interaction between relational ownership and the collective relations laws index.

3.4.5 Robustness checks and control variables

In order to evaluate the overall robustness of our findings, we perform several methodological and substantive robustness checks. We start with the former.

Methodological robustness checks. Because we have performed an exhaustive search, and have been cautious on the side of inclusion, we have included both published and unpublished primary studies that may be of very different academic quality. We conduct several checks to control for these possible quality differences. We run separate *r*-based HOMAs for our focal relationship for sub samples derived from: published articles (k = 421), peer reviewed publications (k = 402), journals included in the *ISI Social Science Citation Index* (*SSCI*) in 2008 (k = 252), journals continuously included in *SSCI* from 2004 – 2008 (k = 229), journals with an *SSCI* impact factor greater than > 1.0 (k = 211), and the 10 journals in our dataset with the highest five-year *SSCI* impact factors (k = 97) (Carney et al. 2010). The mean correlations for all these sub samples are insignificant and between -0.00 and 0.01, consistent with the overall mean correlation for our focal relationship that we report in Table 3.

Additionally, we include the publication outlet's five-year ISI impact factor in the multivariate MARAs (see Table 4) and find no significant moderating effect for the *SSCI* impact factor. Together, these tests suggest that publication outlet quality does not affect our focal relationship. Table 4 also reports the results for other methodological control variables and shows that our results are unaffected by these factors, as neither publication year, published study status, panel design, nor the use of market-based performance measures, meaningfully moderates the focal relationship.

Substantive robustness checks. We also carry out several substantive robustness checks and find some significant results. First, in order to account for the fact that the UK is somewhat over represented in our sample, and is also seen in the literature as an example of the dispersedly owned corporate governance system rather than the control-based European corporate governance model, we create two variables to measure and control for the cultural and geographic distance to the UK in the MARA analysis (see Table 4). We find that the geographic distance to the UK variable is significant and negative, suggesting that blockholders add more value in Nordic, Central, and Western Europe than in Eastern and Southern Europe. In order to assess whether UK data points bias our research findings, second, we run a separate HOMA and MARA analyses without UK data points,[17] and find that the exclusion of the UK data does not significantly change our main results.

Third, we test whether the link between blockholding and firm performance is different during an economic crisis by splitting up the sample of all effect sizes in a sub sample covering crisis years and one covering normal years. In spite the small number

[17] The HOMA and MARA results are available from the authors upon request.

of observations in the former, we find that concentrated firms significantly outperform their dispersedly held counterparts under adverse economic conditions (mean = .06; k = 14; N = 2,332). A z-test (Feingold 1992) confirms the significance differences of blockholder effectiveness during different economic times (z = 2.89; p < 0.01). This finding suggests that that the risk-averse strategies that highly concentrated firms adopt in order to offset the increased risk exposure of their blockholding owners have a positive rather than negative pay out when the going gets tough.[18]

The negative significant effect for GDP per capita in the MARA, fourth, suggests that blockholders make a bigger difference in less affluent societies, possibly because they can fill institutional voids in areas like technology acquisition and human capital development (Carney et al. 2010). Fifth, the positive significant effect for stock market capitalization in model 2 and 3 of Table 4 suggests that blockholders are better able to perform their monitoring task when deep equity markets allow them to smoothly adjust their ownership stake to, the monitoring needs of the firms they own (Demsetz and Villalonga 2001). Sixth, the general level of unemployment in a country positively moderates blockholder effectiveness, which suggests that blockholders have a better bargaining position vis-à-vis collective labor when employment opportunities are scarce. In line with prior research, seventh, we find that foreign owners outperform domestic owners in the European context (Douma et al. 2006, Gedajlovic et al. 2005). Finally, no significant moderating effects were detected for the labor cost, rule of law index, anti-self-dealing index, and cultural distance variables.

3.5 Discussion

Using a variety of advanced meta-analytic methods on a sample of 748,569 firm-year observations derived from 162 studies covering 23 European countries, this study provides an analysis of the costs and benefits of blockholding in a region of the world in which it is a dominant yet discretionary corporate governance strategy for shareholders of publicly listed firms. As demonstrated by the development and corroboration of Hypothesis 1, the relationship between blockholding and firm performance has an inverted U-shape form in the European context, suggesting that the balance of costs and benefits of blockholding plays out differentially at different levels of ownership concentration.

[18] We thank an anonymous reviewer for calling our attention to this issue.

Table 5: HOMA Results for Owner Identity[a]

	Pearson product-moment correlation						Partial correlation coefficient					
Predictor	K	*N*	Mean	SE	CI 95%	Q test	K	*N*	Mean	SE	CI 95%	Q test
Relational owners to performance	358	226,263	**0.01***	0.01	0.00 / 0.03	3,009.23 (0.00)	98	98,382	**0.04***	0.01	0.02 / 0.05	485.89 (0.00)
Accounting measures	157	149,813	0.02	0.01	-0.01 / 0.04	2,055.64 (0.00)	37	31,665	**0.04***	0.01	0.01 / 0.07	157.42(0.00)
Market measures	201	76,450	0.01	0.01	-0.00 / 0.03	658.55 (0.00)	61	66,717	**0.04***	0.01	0.01 / 0.06	320.46 (0.00)
Non-relational owners to performance	75	105,926	**-0.03***	0.01	-0.05 / -0.00	583.12 (0.00)	30	14,430	0.00	0.02	-0.04 / 0.04	174.33 (0.00)
Accounting measures	36	85,300	-0.01	0.02	-0.04 / 0.02	252.65 (0.00)	6	2,295	0.03	0.04	-0.04 / 0.10	11.34 (0.05)
Market measures	39	20,626	**-0.04***	0.01	-0.07 / -0.02	120.57 (0.00)	24	12,135	-0.01	0.03	-0.06 / 0.04	160.53 (0.00)
Government owner to performance	61	25,315	**-0.03***	0.01	-0.06 / -0.00	218.23 (0.00)	13	17,774	**-0.06***	0.03	-0.11 / -0.01	107.97 (0.00)
Accounting measures	38	19,953	**-0.04***	0.02	-0.08 / -0.00	175.85 (0.00)	9	13,655	**-0.10***	0.03	-0.16 / -0.04	73.08 (0.00)
Market measures	23	5,362	-0.02	0.02	-0.07 / 0.02	40.50 (0.01)	4	4,119	0.01	0.02	-0.02 / 0.05	3.66 (0.30)

[a] *k* = number of samples; *N* = total sample size; Mean = meta-analytic mean effect size; SE = standard error of the mean effect size; CI 95% = 95% confidence interval around the meta-analytic mean; Q test = Hedges and Olkin (1985) chi-square test for homogeneity (*Q*).

Because this finding reflects decades of research, it is best taken as a stylized fact about blockholding in Europe, albeit one that is in need of further clarification. In developing Hypothesis 1, we conjectured that some of the most important benefits of blockholding are likely to be realized already at relatively low levels of concentration, while certain costs are more likely to increase with block size. The latter was argued to be the case with the costs to firms that arise from strategic responses to the higher risk exposure and lower liquidity of blockholding ownership, while the costs to firms associated with possible private benefits of control for blockholders are likely to be highest at intermediate levels of ownership concentration due to the fact that there will be fewer minority shareholders to expropriate the more blockholding approaches full ownership of the firm (Heugens et al. 2009). Although our findings are consistent with this explanation, the data we use in our study do not allow us to empirically test these more fine-grained conjectures. An important part of the task of further unpacking the firm-level costs and benefits of blockholding therefore remains for future research.

Yet at the same time, our study does provide three important contributions to the literature that each enhances our understanding of how certain costs and benefits of blockholding that hitherto have hardly been empirically researched, affect its effectiveness in the European context. These contributions consecutively involve: (1) the role of the institutional factors that distinguish European countries from the rest of the world in explaining blockholder effectiveness in Europe, (2) the question whether the benefits of blockholding in European countries derive from competition or complementarity with collective labor interests, and (3) the question of how different kinds of labor institutions interact with firm-level owner type contingencies in explaining blockholder effectiveness.

3.5.1 Towards an institutions-based view of blockholding

By showing that the effectiveness of the firm level corporate governance strategy of blockholding is to a significant extent contingent on country level institutional features, our study contributes, first, to the emerging institution-based view in comparative corporate governance (Carney et al. 2010, Engelen and Van Essen 2010, Fiss 2008, Peng and Khoury 2008, Peng et al. 2008, 2009), which seeks to explain firm level corporate governance strategies and their performance effects from the institutional features of the countries in which firms are located. More specifically, our findings not only show that the strength of labor institutions that distinguish European countries from the rest of the world significantly influence the effectiveness

of blockholding, but also that there is a fine-grained story to tell about the mechanisms through which different kinds of labor institutions affect the effectiveness of this corporate governance strategy for shareholders.

First, the empirical evidence mounted in this paper provides solid indications that employment protection laws entrench the interests of employees vis-à-vis shareholders in the competitive processes through which corporate earnings are distributed over corporate constituencies. We have explained that employment protection laws have this effect because they limit the options available to blockholders to adjust the scale of operations of the firms they own to optimal levels. More specifically, employment protection laws do not only limit the possibilities for shareholders to restructure and downsize their firms when confronted with considerable falls in demand for a firm's products or services (Atanassov and Kim 2009), but also hold back firms to grow to optimal size when demand and revenues pick up again in anticipation of this downward inflexibility (Besley and Burgess 2006).

One explanation for the overall negative effect of employment protection laws on blockholder effectiveness is that the negative effects of employee entrenchment simply outweigh any positive effect that employment protection laws may have in securing optimal levels of firm-specific investments in human capital. A supplementary but perhaps alternative explanation could be that employment protection laws are unable to underwrite implicit contracts in regard to firm-specific investments in human capital at all, because they apply to all firms and employees alike and are thereby unable to differentiate between firms and employees for which investments in firm-specific human capital will be value enhancing from those for which this will not be the case (Micco and Pagés 2004). Because our data do not allow us to unpack the negative effect of employment protection laws on blockholder effectiveness we report, future research should attempt to tease out the different causal pathways through which employment protection laws affect blockholder effectiveness.

In addition to the negative effect that employment protection laws have on the effectiveness of the corporate governance strategy of blockholding, this paper also provides robust empirical evidence that the part of labor law that facilitates collective labor relations to form and be maintained, as well as the union density in a country, have a positive effect on blockholder effectiveness. As both collective labor relations law and union density capture the degree in which the articulation and representation of employee interests are centralized and consolidated within a country, this finding suggests that this centralization and consolidation of labor interests enables mutually

beneficial strategic coordination between blockholders and employees, either by reducing the transaction costs that otherwise dispersed capital and labor interests would face in coordinating with each other, or by increasing the scope of exchange by including collective labor agreements in the set of possible mutually beneficial agreements. Future empirical research will have to further tease out which source of institutional complementarity best explains the positive effect of strong collective labor relations on blockholder effectiveness, however.

3.5.2 Competition and complementarity in European corporate governance

There also remains an important theoretical issue in respect to the interpretation of our findings, however. Thus far, we have interpreted our finding that strong collective labor relations positively affect blockholder effectiveness as evidence that the centralization and consolidation of labor interests enables mutually beneficial strategic coordination between blockholders and employees. This interpretation is consistent with the core tenets of the variety of capitalisms literature, in which the notion of institutional complementarity plays a central role (Hall and Soskice 2001).

Yet in spite of the fact that this finding can be seen to empirically fuel this emerging perspective in comparative corporate governance, it does not exclude an alternative explanation that blockholding simply matters more where collective labor is strong, because under these conditions its function as a countervailing power against strong collective labor relations becomes relatively more important. This alternative interpretation derives from the theoretical view of corporate governance according to which corporate constituencies competitively seek to appropriate corporate earnings (e.g. Roe 2003, Zingales 1998) and raises the question of how these alternative interpretations, and the different theoretical views they involve, can be reconciled.

In our view, the concept of institutional complementarity can perform a bridging role between these two the theoretical frameworks and the alternative interpretations that they suggest. Remember that institutional—or organizational—features are complementary when their combined presence increases the positive welfare implications of each feature (Aoki 2001, Milgrom and Roberts 1995). It is important to note that institutional complementarities may not just result from strategic coordination between corporate constituencies, but that this is just one source of complementarity. Another source of institutional complementarity can be seen to exist in the checks and balances that have emerged within different corporate

governance configurations in order to constrain corporate constituencies in their competitive pursuit for corporate earnings (Gilson 2001). In the latter view, blockholding complements strong collective labor relations precisely because these two features of a corporate governance configuration constitute countervailing powers in the competitive processes through which corporate earnings are appropriated by different claimants (Roe 2003).

Although our research is inconclusive with respect to these two different sources of complementarity between blockholding and collective labor relations, it does show that the currently dominant agency-theoretical understanding of blockholding will need to be complemented with more comprehensive and arguably alternative theoretical perspectives. At the very least, agency theory's somewhat narrow focus on the relationship between shareholders and managers will need to be broadened to include the competitive behaviors of all corporate constituencies in the quest for corporate earnings (Rajan and Zingales 1998, Zingales 1998, 2000). There already exists a wealth of predominantly North American research on how managers pursue their claims on corporate earnings through their compensation packages (Devers et al. 2007). Our findings show that blockholders and organized labor merit similar research attention, at least in the European context. More generally, our study highlights the importance of employees (Blair 1995) and organized labor (Roe 2003) in European corporate governance, which currently receives little attention in research (Aguilera and Jackson 2003).

More fundamentally, our findings suggest that corporate governance is not merely about the competitive quest for corporate earnings, but also about strategic coordination and cooperation between corporate constituencies that may ultimately benefit all. Our findings suggest, more specifically, that our understanding of blockholding in Europe may increase more when we shift attention from the question whether there are complementarities between blockholding and labor institutions, to the more fine–grained question from which sources these complementarities arise. It seems only common sense to include both the competition and the complementarity theoretical perspectives on corporate governance in this quest to further unveil the sources of complementarity between blockholding and labor institutions. By showing the direct relevance of these two comprehensive theoretical frameworks for our research questions, our study contributes to the comparative corporate governance literature that to date remains predominantly premised on the somewhat narrow perspective provided by agency theory.

3.5.3 Towards an organizational approach to comparative corporate governance

Finally, our paper contributes to the development of a distinctively *organizational* approach to comparative corporate governance which seeks to explain corporate governance practices and their outcomes from both firm- and country-level contingencies, as well as the interactions between them (Aguilera et al. 2008). Over and above the contributions we have already discussed above, and which focused predominantly on the effects of country-level institutional variables on blockholder effectiveness, we contribute to this emerging perspective in comparative corporate governance by highlighting the influence of the firm-level contingency of blockholder type.

First, our research shows that relational blockholders are generally more effectively involved in the firms they own than arm's-length blockholders, indicating that the scope, duration, and dedication of relational owner involvement in European publicly listed firms has performance enhancing effects. This finding raises questions in regard to the concrete channels and mechanisms through which relational blockholders are able to create value for the firms they own (Black et al. 2008). More specifically, questions remain as to how and to what extent either informational advantages, knowledge and capability building, or the assurance provided by relational owners in regard to implicit contracts with parties both inside and outside the firm (Gilson 2007), can explain the performance enhancing effect of relational ownership. As the development of a full-fledged theory of owner types is beyond the scope of this paper, future research will have to unveil the ways in which different types of blockholders add value to the firms they own.

Second, however, our paper already reveals one concrete causal pathway through which relational ownership matters, as relational owners are better able than arm's-length owners to cope with the negative influence of employment protection laws and the positive effect of union density on the effectiveness of their blockholder involvement in the firms they own. Presumably, the scope, duration, and dedication of relational owner involvement in European publicly listed allows these firms to develop capabilities that enable them to cope better than arm's-length owners with the specific institutional challenges that European countries provide for blockholding owners. Future research is necessary, however, to unveil how relational owners develop and use this capability to deal with institutional influences on blockholder involvement in European publicly listed firms.

Chapter 4. Underpricing of IPOs: Firm-, issue- and country-specific characteristics[19]

ABSTRACT

Using a large firm-level dataset of 2,920 IPOs from 21 countries we examine the impact of country-level institutional characteristics on the underpricing of IPOs. Through hierarchical linear modeling we are able to control for firm-specific and issue-specific characteristics and test whether country-specific institutional characteristics add explanatory power to explain the level of underpricing. Our results show that about ten percent of the variation in the level of underpricing is between countries. The quality of a country's legal framework, as measured by its level of investor protection, the overall quality of its legal system and its level of legal enforcement, reduces the level of underpricing significantly.

4.1 Introduction

When companies go public, a well documented phenomenon is the underpricing of the initial public offering (IPO). On average, shares seem to be offered at a price lower than the market price. Underpricing is usually estimated as the percentage difference between the price at which the shares were sold to investors during the offering period and the price at which the shares trade afterwards in the secondary market. Underpricing of IPOs has been empirically researched for more than forty countries and the results indicate that underpricing of IPOs occurs worldwide. From the US to South Korea, from Norway to New Zealand, almost all empirical studies document underpricing of IPOs.

Empirical studies, however, show large differences in the level of underpricing between countries. In France, for example, researchers have calculated an average initial return of 3 to 14 percent, while this is 11 to 30 percent in Australia, 30 to 47 percent in Taiwan, 48 to 64 percent in Greece, 74 to 78.5 percent in Brazil and 127 to 950 percent in China. In this article we examine whether there is a relationship

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between a country's legal framework and the level of underpricing of IPOs, over and above traditional firm-level and issue-specific characteristics.

Focusing on shareholder and creditor rights, the studies of La Porta et al. (1997, 1998 and 2002) show that a country's legal framework explains differences in the development of financial markets and the decisions of companies and investors. A good legal environment expands the ability of companies to raise external finance through either debt or equity (La Porta et al., 1997, 1998). In general common law countries exhibit a higher degree of investor protection and have more developed financial markets compared to, for example, French civil law countries, which have the lowest quality of investor protection rules. The civil law systems of Scandinavian and German origin occupy a middle position. Mahoney (2001) shows that common law systems produce faster economic growth than civil law systems through greater security of property and contract rights.

The law and finance literature shows furthermore that cross-country differences in the legal framework affect ownership structure (La Porta et al., 2002), ownership effectiveness (Heugens et al., 2009), capital structure (Demirgüç-Kunt and Maksimovic, 1998), asset structure (Claessens and Laeven, 2003), dividend policy (La Porta et al., 2000a), corporate governance (La Porta et al., 2000b; Mitton, 2002), and corporate valuation (La Porta et al., 2002). Overall, this strand of literature shows that the legal framework has important economic consequences. La Porta et al. (1997) show that the number of IPOs is positively related with investor rights, the legal origin, and the law and order tradition of a country. Although their empirical evidence shows that higher levels of legal protection are associated with *more* IPOs, they do not investigate whether the *level* of IPO underpricing varies with the level of legal protection across countries.

In this article we analyze the relationship between underpricing and a country's legal framework. We examine whether countries with a more developed legal framework have less underpricing than those with a less developed legal framework. More specifically we conjecture that there are two ways in which the quality of legal protection offered by a country will affect IPO underpricing. First, a weaker legal system can increase the *ex ante* uncertainty about the firm value over and above firm-level risk factors, such as, for example, the strategic issue whether the firm has high investments in research and development. Second, weaker legal institutions also increase the *ex ante* uncertainty of the distribution of (realized) firm value among different corporate constituents. In countries with better legal protection managers or

controlling shareholders have fewer opportunities to transfer profits or assets out of the firm at the expense of minority shareholders. We contend that protection against these expropriation issues also reduces the *ex ante* uncertainty about the return on investment in IPOs.

We aim to contribute to the existing literature in three ways. First, to our knowledge, this is the one of the very first comparative studies in the empirical law and finance literature that focuses on the impact of the legal and institutional context on IPO underpricing. By using hierarchical linear modeling, second, we are able to simultaneously model company-specific, issue-specific and country-specific variables in a large firm-level dataset. More specifically, third, we answer the question of how much explanatory power country-level institutional factors have in explaining IPO underpricing. To test our hypothesis, we compile and analyze a large database consisting of 2,920 IPOs from 21 countries having different institutional and legal frameworks and belonging to different legal families, covering the period of 2000-2005. We find, first, that country-specific characteristics explain about ten percent of the variation in the level of underpricing. We find, second, that firms going public in a country with a more developed legal system, as measured by: 1) the country's level of investor protection, 2) the quality of legal system, and 3) the level of legal enforcement, on average, leave less money on the table in their IPO.

This article is organized as follows. Section two briefly reviews the theoretical literature on underpricing of IPOs, and also summarizes the main firm-specific and issue-specific characteristics of an IPO which empirical research has found to be crucial factors explaining IPO underpricing. This section introduces the country-specific characteristics that may add additional explanatory power for underpricing of IPOs. Section three presents the data and the hierarchical linear modeling approach that we use. Section four presents the empirical results, while section five discusses alternative explanations for the relationship between the legal framework and IPO underpricing. Section six summarizes and concludes.

4.2 Underpricing of IPOs

Different researchers have advanced different models trying to explain the underpricing of IPOs.[20] The winner's curse model of Rock (1986) assumes

[20] It is outside the confines of this article to provide a complete overview of all theories. Comprehensive theory and literature reviews are provided by Jenkinson and Ljungqvist (1996) and Ljungqvist (2007).

underpricing to be necessary because of asymmetric information between investors. Some investors have better information available about the value of the firm than others. The uninformed investors buy new shares of every IPO, while the informed investors only subscribe to shares of attractive IPOs. As the number of shares issued by a firm is limited, attractive shares will be oversubscribed. Therefore, uninformed investors will receive the full supply of unattractive IPOs and only a part of the attractive IPOs.[21] In this way uninformed investors get an expected return below the average underpricing, or even a negative return (Ritter and Welch, 2002). With negative expected returns, uninformed investors would not bid for any IPO allocation anymore. Rock assumes that the IPO market needs the demand of the uninformed investors, as the demand of informed investors alone is insufficient for its existence. Uninformed investors only invest in IPOs when they expect a positive return (or at least break even), so underpricing is needed on average (Ljungqvist, 2007).[22]

Beatty and Ritter (1986) extend this model by showing that the level of underpricing increases with the degree of *ex ante* uncertainty about the value of the firm. This implication is tested empirically, and the results confirm this relationship (Beatty and Zajac, 1994; Welbourne and Cyr, 1999). Firms with more uncertainty about growth opportunities, for example, on average have higher levels of underpricing than other firms (Ritter, 1984). It is now widely accepted in the literature that *ex ante* uncertainty is at the heart of the IPO process and that higher uncertainty leads to higher underpricing (Ljungqvist, 2007). A similar conclusion is reached by so-called principal/agent IPO models which focus on the asymmetric information between underwriters and issuers (Baron and Holmström, 1980; Baron, 1982). Higher *ex ante* uncertainty about the value of the firm leads to more informational asymmetry between underwriters and issuers, which in turn leads to more underpricing.

Although the Rock model assumes a fixed pricing offer with pro-rata allocation rules, the model predicts lower underpricing if information is distributed more homogeneously across investors (Michaely and Shaw, 1994). One solution is to switch to a different introduction method than fixed price offers. There exist different

[21] Leite (2007) demonstrates that the strict separation between informed and uninformed investors is not required. If there are plenty of heterogeneously informed investors, the winner's curse occurs when the least informed investor willing to participate in the offering (the marginal investor) is allocated a disproportionately high fraction of overpriced issues relative to the rest of the participating investors who all are better-informed than the marginal investor.

[22] While issuing firms therefore collectively benefit from IPOs to be underpriced on average, individual firms would benefit from underpricing their offer as little as possible. This free-riding behavior is limited by underwriting banks. These repeat players need underpricing for the existence of the IPO market in the long-run (Ljungqvist, 2007).

methods to go public. The most commonly used introduction methods are fixed price offers, book building, auctions, and hybrid offers. Fixed price offers set the offer price after which investors can submit their orders at the predetermined price. Book building is an introduction method whereby investors submit non-binding orders and underwriters use these indications to set the offer price. In an auction, investors submit binding orders (a certain number of shares at a certain offer price) after which an auction pricing mechanism assign the shares. Finally, hybrid offerings are a combination of the three types.

Book building, which allows underwriters full discretion over the allocation of shares, can be a good mechanism for investors to reveal their information through their indications of interest. Under certain conditions, this method can reduce the information asymmetry and thus leads to lower underpricing (Benveniste and Spindt, 1989). Benveniste and Wilhelm (1990) formalize this within the context of the winner's curse model and show that a pure book building method leads to less informational asymmetry, reduces the winner's curse, and consequently leads to lower underpricing.

However, the quality of the book building mechanism is crucial. In many European and Asian countries, restrictions on the use of the book building mechanism reduce the effectiveness of the information revelation leading again to higher underpricing. Examining 65 countries, Ljungqvist, Jenkinson, and Wilhelm (2003) show that book building by non-U.S. underwriters for investors at their domestic market provides no pricing advantage compared to fixed price offerings.

4.2.1 Traditional firm-specific and issue-specific risk factors

This section summarizes the main firm-specific and issue-specific risk factors that are reported in the rich empirical IPO literature to be most important in explaining the level of underpricing. Since we want to measure the impact of country-specific variables on the level of underpricing, these firm-specific and issue-specific parameters are included as control variables in the empirical section of this article. First, we include several firm-specific characteristics such as the firm age, the price earnings ratio, the industry, and the fact whether the IPO is venture capital-backed or not. Second, we include issue-specific variables. We control for the introduction method of the offering in lowering the *ex ante* uncertainty. Finally, the year of introduction is included. The impact of these variables on the level of underpricing is briefly explained below.

Firm age is a firm-specific control variable that measures the difference between the foundation year of the firm and the year of introduction. Ritter (1984) argues that there is a positive relationship between the level of underpricing and the *ex ante* uncertainty about the value of the firm. Older firms have a longer history and have more information available to the public. They have a longer track record of published financial data and are more likely to be screened by financial intermediaries and financial press.[23] Overall, older firms create less *ex ante* uncertainty about firm value and the level of underpricing will therefore be lower for older firms. This is empirically confirmed by Su and Fleisher (1999), Loughran and Ritter (2004), and Chahine (2008), who all find a negative relationship between firm age and the level of underpricing.

Price earnings ratio is the second firm-specific control variable and is expressed as earnings per share. Firms with a lot of growth opportunities have a higher price earnings ratio which causes more risk and uncertainty for investors about the true value of the firm (Chen et al., 2004). It can therefore be expected that firms with higher price earnings ratios on average have higher levels of underpricing. Engelen (2003) and Hauser et al. (2006) confirm this positive relationship empirically.

The level of *ex ante* uncertainty of *high-tech firms* will generally be higher than for non-high-tech firms. The IPOs of technological firms therefore tend to be more underpriced than of firms operating in other sectors (Ritter, 1984). Roosenboom and Schramade (2006) control for this impact by using a technology dummy and Benveniste et al. (2003) use industry dummies.

The involvement of a *venture capitalist* can reduce the *ex ante* uncertainty of investors about the value of the firm. Venture capitalists provide both knowledge and resources to the firm, and typically also perform a thorough and extensive due diligence before they invest in a firm. Afterwards, they monitor the firm on a day to day basis, assist management, and often occupy a seat in the board of directors (Suchard, 2009). Overall, empirical researchers expect that firms with a venture capitalist as an early investor are less underpriced (Megginson and Weiss, 1991). Recent studies which include this parameter are Guo et al. (2006), Dolvin and Jordan (2008) and Arthurs et al. (2008), all of which show mixed results.

[23] The organizational literature as well observes that business risk seems to decline with firm age. This is referred to as the "liability of newness" which implies that newer firms face a greater risk of failure (Freeman et al., 1983).

As an issue-specific control variable, dummies are typically used to capture differences among *book building*, *fixed price offer*, *auction,* and *hybrid offer*. Although the functioning of the different introduction methods in the reduction of information asymmetry through information revelation is hotly debated in the literature (Bennouri and Falconieri, 2008; Biais and Faugeron-Crouzet, 2002), the empirical results provide no unambiguous answer. The majority view, however, seems to indicate that book building is more efficient than fixed price offers (Benveniste and Spindt, 1989; Ritter, 1998), while auctions seem to be more efficient than book building (Derrien and Womack, 2002; Kaneko and Pettway, 2003).

Finally, empirical studies show that the level of underpricing fluctuates across different years (Ibbotson and Jaffe, 1975). To control for this we include a dummy variable *year of introduction*. One explanation for the yearly fluctuations may be the fact that there are "hot" and "cold" IPO markets (Ibbotson et al., 2001). In a hot IPO market, the average level of underpricing is large and the amount of firms going public increases. Afterwards there is a high rate of firms going public, but the level of underpricing decreases. The following cold period starts with fewer firms going public and very low underpricing or even overpricing. There is strong empirical evidence for this recurrent pattern, but theoretically, the existence of this pattern has not yet seen sufficiently explained (Ibbotson and Ritter, 1995).

Table 1 gives an overview of the firm- and issue-specific variables included in 21 empirical studies on underpricing. As this article focuses on the role of country-level institutional variables, the table covers a wide range of countries.[24]

[24] Legend of table 1: y means parameters included in the empirical study. Nature refers to the nature of the offer (primary versus secondary offering), age refers to the company age and measure the number of year between its establishment and the IPO, VC indicates whether a dummy was included for venture capital backed IPOs, Techno indicates whether a dummy for technology firms is included, Method indicates whether dummies for the introduction methods are included, Year indicates whether dummies for the years of introduction are included, P/E refers to the price earnings ratio, Offer size refers to the total market capitalization of the offered shares, Rep indicates whether measures for underwriter reputation are included in the empirical study.

Table 1: Literature Overview of Firm-Specific and Issue-Specific Variables in Empirical Studies on Underpricing

Study	Country	Average underpricing	Nature	Age	VC	Techno	Method	Year	P/E	Offer size	Rep
Megginson and Weiss (1991)	US	7,10%		y	y					y	y
Kunz and Aggarwal (1994)	Switzerland	35,80%									
Wasserfallen and Wittleder (1994)	Germany	17,58%		y						y	
Ljungqvist (1997)	Germany	9,20%						y		y	
Hameed and Lim (1998)	Singapore	19,52%					y				
Su and Fleisher (1999)	China	948,60%	y	y		y		y		y	
van Hoeijen and van der Sar (1999)	Netherlands	7,80%		y		y	y		y		y
Kutsuna and Smith (2000)	Japan	31,48%	y	y	y		y			y	y
Kooli and Suret (2002)	Canada	20,57%				y					y
Hunger (2003)	Germany	42,34%				y					y
Jog and McConomy (2003)	Canada	7,40%		y		y					y
Engelen (2003)	Belgium	14,32%	y	y	y	y		y	y		
Loughran and Ritter (2004)	US	18,90%	y	y		y		y			y
Boabang (2005)	Canada	2,90%		y						y	y
Guo, Lev and Shi (2006)	US	15,00%			y					y	y
Hill and Wilson (2006)	UK	11,41%		y			y				
Hauser et al. (2006)	Israel	10,40%					y		y	y	y
Dolvin and Jordan (2008)	US	10,99%	y	y	y	y		y		y	y
Arthurs et al. (2008)	US	10,00%		y	y	y		y			y
Dimovski and Brooks (2008)	Australia	13,30%				y				y	y
Chahine (2008)	France	22,70%	y	y	y	y	y	y			y

The most frequently used variables in the empirical literature include: the nature of the offer, the company's age, whether the IPO is venture capital backed or not, technological firms, introduction method, the year of introduction, the price earnings ratio, the offer size, and the underwriter reputation. As can be seen from the table, no empirical study includes all variables mentioned. The number of included variables in each study ranges from two to seven. In our empirical study we include seven firm-specific and issue-specific variables. We include the nature of the offer, the company's age, venture capital backing, technological firms, introduction method, the year of introduction, and the price earnings ratio. The offer size and the underwriter reputation are not included due to lacking data for the majority of countries.

4.2.2 Country-specific risk factors

At the heart of every IPO process are informational issues between the different actors, which potentially lead to IPO underpricing (Ljungqvist, 2007).[25] The uncertainties surrounding the IPO will display themselves at different levels. The current literature on IPO underpricing focuses mostly on firm-specific and issue-specific characteristics that influence the *ex ante* uncertainty about the value of the firm. Yet this focus has resulted in a relative neglect of country-specific characteristics, such as the institutional framework for business that a country provides (North, 1991; Peng, 2009). This section will focus on the influence of country-level institutional variables on the *ex ante* uncertainty about the value of the firm over and above the traditional drivers.

Douglas North defines institutions as "the rule of the game in a society or, more formally, the humanly devised constraints that shape human interaction" (1990: 6). A jurisdiction-level institutional framework consists of both formal (laws and regulation) and informal (norms and culture) institutions. The institutional context critically affects the formation, compliance, and enforcement of laws, that are necessary to sustain efficient business practices (Van Essen et al., 2009). By constraining the range of acceptable behaviors both formal and informal institutions facilitate the process of economic specialization and wealth creation (Peng, 2009). In general, the key role of institutions is to reduce uncertainty by creating a stable foundation in which subsequent human interactions can be grounded (North, 1994).

[25] CFOs consider the compensation of investors for taking risk to be the most important function of underpricing (Brau and Fawcett, 2006).

The law and finance literature has already demonstrated the importance of formal institutions for corporate finance (La Porta et al, 1997). Therefore we specifically focus on the formal institutional factors that reduce *ex ante* uncertainty at the time a firm goes public for the first time. In line with asymmetric information models, which demonstrate a positive relation between *ex ante* uncertainty and underpricing, a similar relation can be expected between the development of the institutional framework and the level of underpricing. The legal framework can influence the *ex ante* uncertainty about the value of the firm in two separate but related ways.

First, the legal framework can increase the *ex ante* uncertainty about firm value in more or less the same way as *ex ante* firm-specific risk at the time of the IPO. One example of a firm-specific risk factor involves the high-tech intensity of the firm that was discussed above. Claessens and Laeven (2003), for instance, show that firms operating in a legal environment with poor protection of intellectual property rights underinvest in intangible assets, leading to lower firm growth and lower firm value. In general, lower levels of legal protection for investors will create more uncertainty with respect to post IPO strategies and managerial decisions that may negatively affect firm value. This higher *ex ante* uncertainty concerning firm valuation hence leads to more underpriced IPOs. It is important to note that this uncertainty affects the firm over and above other firm-level risk factors already discussed. It is well-documented, for example, that high-tech firms are more underpriced due to higher *ex ante* uncertainty about future income streams. Just looking at firm-level risk factors, therefore, two identical high-tech firms will be underpriced at same level. Yet, a high-tech firm operating in a less developed legal framework (e.g. poor protection of intellectual property rights) will be more underpriced than an otherwise identical high-tech firm operating in a well-developed legal framework because of the increased *ex ante* uncertainty due to country-level risk factors.

A second way in which legal institutions may increase the *ex ante* uncertainty pertains to the future *distribution* of realized firm value among different corporate constituents. In a country with a weaker legal framework, managers or controlling shareholders have more opportunities to transfer profits or assets out of the firm at the expense of the minority shareholders. This increased probability of *ex post* expropriation by management or controlling shareholders increases the *ex ante* uncertainty at the time of IPO.[26] Johnson et al. (2000) show how "tunneling" or the

[26] Of course we acknowledge that the prospect of being expropriated will also effect ex ante estimations of the value of investments, but we wish to emphasize that value destroying managerial choices and

transfer of assets and profits out of the firm for the private benefit of managers or controlling shareholders takes place at the expense of minority shareholders. This can happen, among others, in the form of transfer pricing, asset stripping, and investor dilution (Berkman et al., 2009; Cheung et al., 2009). Especially in French civil law countries, such as France and Italy, much of the tunneling is even legal, contrary to common law countries. This is mainly because in French civil law countries such transactions are assessed by courts in light of their conformity with statutes, and not on the basis of their general fairness to minority shareholders such as in common law countries (Johnson et al., 2000b). Therefore, in countries with weaker legal protection, investors will be more uncertain about realizing a return on their investment (Shleifer and Vishny, 1997).[27] This increases the *ex ante* uncertainty about the value of their investment. To induce investors to subscribe to the offer and not being expropriated *ex post*, IPOs need to be more underpriced on average. The higher the expropriation risk, the more the offer needs to be underpriced to compensate for this *ex ante* uncertainty. Underpricing can thus be seen as a premium paid to investors for insuring them against the adverse outcome of expropriation. In that case underpricing will increase in the *ex ante* uncertainty about realizing minority shareholders' return on investment. Therefore we expect IPOs of firms operating in a country with better legal protection and enforcement to have, on average, a lower level of underpricing.

We find both theoretical and empirical support for the relationship between a country's legal framework and IPO underpricing through the mechanism of *ex ante* uncertainty. Although no paper explicitly models the above relationship, Giannetti and Simonov (2006) empirically demonstrate that minority and other investors who generally enjoy only security benefits are reluctant to invest in companies with weak investor protection. Himmelberg et al. (2004) show that weaker legal protection leads to higher risk premiums and thus higher cost of capital. This is in line with the general equilibrium model developed in Albuquerque and Wang (2008), who focus on the effects of conflicts of interest between controlling shareholders and outside shareholders. Under weak legal protection rules the variance of output increases and the equilibrium equity premium increases proportionally. The model predicts the

value expropriation by managers or controlling shareholders constitute different 'channels' through which lower legal protection will create uncertainty at the time a firm is offered to the market for the first time.

[27] In the absence of any legal protection, there would be no uncertainty, making the returns to minority shareholders predictable low (in fact zero). Although one could argue that it would lead to less underpricing because less risky, in reality it would more likely imply the collapse or even the non-existence of any IPO market. This is also in line with the findings of Giannetti and Simonov (2006).

equity risk premium to be higher in countries with weaker legal protection because of increased expropriation by controlling shareholders. Effective legal institutions may reduce the risk premium demanded by outside investors.

Recent empirical research also supports the mechanism of *ex ante* uncertainty. Chiou et al. (2010) examine 4,916 stocks from 37 countries and find that stronger investor protection leads to a decrease in investment risk. A higher overall quality of the legal system and a better legal protection of investor's rights are associated with lower asset volatility and lower systematic risk, as well as with a higher risk-adjusted return as measured by the Sharpe and Treynor index. Weaker legal investor protection rules are thus associated with a higher stock risk. Chung et al. (2007) find that closed-end country funds in countries with lower investor protection have higher systematic risk. A shortcoming of both studies is the use of realized stock returns; therefore Hail and Leuz (2006) use four proxies for *ex ante* uncertainty. Controlling for traditional risk factors, they find that more effective securities regulation as well as a higher overall quality of the legal system leads to lower *ex ante* uncertainty. The above theoretical models and empirical results show that weaker legal protection leads to higher *ex ante* uncertainty, which in its turn leads to higher underpricing according to the model of Beatty and Ritter (1986).

4.3 Data and Methods

4.3.1 Sample and data collection

We manually collect a dataset covering IPOs from 21 different countries during the period running from January 2000 until December 2005. Our sample consists of 2,920 firms who conducted an IPO on the stock markets of the following countries: Argentina, Australia, Austria, Belgium, Brazil, Finland, France, Germany, Greece, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Firm- and issue-specific data are gathered directly from the prospectuses and firm websites. In addition such digital information sources as *Global Financing Database of the Securities Data Company (SDC)* and *DataStream* are used. Country-specific data on investor protection, the quality of the general legal framework, the quality of legal enforcement and origin of the legal system are obtained from La Porta et al. (1998), Kaufmann (2004), Kaufmann et al. (2005), and Djankov et al. (2008).

4.3.2 Measure of underpricing

Consistent with the standard methodology, we calculate the underpricing as the percentage change from the offer price to the closing price in the secondary market ((closing price – offer price)/ offer price)*100%. In case of a one-day return, corrections for market movements have no significant impact since the first day IPO return is very large compared to the average market return. For instance, Beatty and Ritter (1986) report an average initial return of 14.1 percent, while the average daily market return was less than 0.1 percent.[28] Table 2 shows the number of IPOs and average underpricing in each country. The results indicate that underpricing of IPOs is a worldwide phenomenon (except in Israel). Nevertheless, the data show enormous differences in the level of underpricing. For example, the overpricing in Israel is 3.67 percent, while the underpricing in Spain is more than 40 percent. The overall average underpricing across all 2920 firms over the 21 countries for the time period 2000-2005 amounts to 24.97%.

Table 2: Number of IPOs and Average Underpricing in Each Country

Countries	Number of IPOs	Average Underpricing	Std Dev
Argentina	4	2.11	1.75
Australia	437	18.04	63.04
Austria	10	16.15	35.29
Belgium	18	6.25	11.26
Brazil	10	14.68	15.12
Finland	15	25.98	64.05
France	171	13.12	37.64
Germany	132	37.20	71.95
Greece	124	34.97	76.87
Israel	74	-3.76	18.30
Italy	54	12.12	32.78
Japan	609	43.95	49.23
Mexico	4	2.20	2.17
Netherlands	5	32.46	71.93
New Zealand	28	14.43	48.14
Portugal	3	17.98	6.52
Spain	7	43.75	82.12
Sweden	25	8.58	27.52
Switzerland	48	15.67	45.80
United Kingdom	471	20.16	53.06
United States	671	21.14	49.42

[28] Adjustments for market movements in the initial one-day return calculations do not result in any significant changes. Results are available from the authors upon request.

4.3.3 Country-, issue- and firm-specific characteristics

Country-Specific Characteristics. Since the seminal articles of La Porta et al. (1997, 1998) there has been an increased interest in the finance literature for differences in the legal system and its influence on corporate financial decisions. To investigate cross-country differences, typical law and finance studies use several proxies to measure the quality of a countries legal framework: (1) a proxy measuring (minority) investor protection, (2) a proxy measuring the general quality of the legal system (law in the books), (3) a proxy measuring judicial efficiency (law in practice), and (4) a proxy measuring the origin of the legal system.

We use the variable *Anti self dealing* to measure the protection of minority shareholders and focus on how outside investors are protected against expropriation by insiders. This set of specific legal provisions against self-dealing is quite diverse, and ranges from private enforcement features, such as disclosure and approval of related party transactions by disinterested shareholders, on the one hand, to public interventions such as criminal fines and prison terms on the other (Djankov et al., 2008). To measure the overall quality of legal background institutions in the various jurisdictions in our sample, we use the 'Rule of law' and 'Corruption' measures of Kaufmann et al. (2005). The *Rule of law* variable measures the extent to which agents have confidence in and abide by the rules of society, while *Corruption* measures the exercise of public power for private gain (Kaufmann et al., 2005). In general, a weak legal system (law in the books) can be substituted by a strong and effective legal enforcement (La Porta et al., 1998). Effective courts and legal enforcement can therefore also protect investors against managers and controlling shareholders.

The *Public enforcement index* is included in the analyses to measure the quality and effectiveness of legal enforcement. This index focuses on different dimensions of public enforcement. We include the legal origin of a country. The binary variables *Common legal origin*, *French legal origin*, *German legal origin,* and *Scandinavian legal origin* identify the legal origins of the company law or commercial code of each country. These are important variables to find some residual difference between countries (Gugler et al., 2004). Alternatively, we also use the classification of origin and transplant countries of Pistor et al. (2003). Origin countries are countries that developed their legal system largely internally, while transplant countries inherit their legal system largely from other countries. Table 3 presents definitions, sources, and basic statistics of all country-specific variables.

Firm- and Issue-Specific Characteristics. To assess the impact of the legal framework on the level of underpricing of IPOs, we include different firm- and issue-specific control variables to specify the model correctly. The descriptive statistics and definitions of the firm-specific and issue-specific variables are reported in Table 4.

To control for *ex ante* uncertainty at the firm level, we include the firm age, measured as the number of years since the founding of the company, the price earnings ratio and a dummy variable to indicate whether it is a high-tech firm. We include a dummy variable which equals one if a firm has a venture capitalist as shareholder at the moment of IPO, because previous research suggested that the monitoring and advice of venture capitalist reduce the level of underpricing (Megginson and Weiss, 1991).

Issue-specific data include the introduction method and the nature of offer (See section 2.1 for more information). Finally, we include dummies for the years of introduction to correct for time-varying levels of underpricing since the level of underpricing fluctuates over time. In the year 2000 the average level of underpricing came to 36 percent, while in the following years the level of underpricing fluctuates between 17 to 22 percent. This is in line with other empirical research indicating a hot IPO market in 2000. Loughran and Ritter (2004) show that during the internet bubbles in the years of 1999-2000 the underpricing increased to more than 65 percent in the United States and reverting thereafter to 12 percent in the period 2001-2003.

4.3.4 Hierarchical linear modeling

The data are analyzed using Hierarchical Linear Modeling (HLM; Raudenbush and Bryck, 2002). We use HLM because we have hierarchically structured data, where IPOs are nested within countries. This means that IPOs within a country will be more alike, on average, than IPOs from different countries, because they share the same legal rules for example. One of the standard assumptions of most statistical techniques is the assumption of independence of observations. If this assumption is violated, and in hierarchical structured data this is almost always the case, OLS obtains standard errors that are too small for the parameters estimates (Hox, 2002). The advantage of HLM is that HLM explicitly recognizes and corrects for this once it is present in the data. Our dataset contains a hierarchical structure with two levels; each of which level is represented by its own regression equation.

Table 3: Description and Summary of Country-Specific Variables

Variable	Description	Obs.	Mean	SD
Anti Self Dealing Index	Average of ex-ante and ex-post private control of self-dealing. Index of ex-ante control of self-dealing transactions. Average of approval by disinterested shareholders and ex-ante disclosure. Index of ex-post control over self-dealing transactions. Average of disclosure in periodic filings and ease of proving wrongdoing. *Source: Djankov et al. (2008)*	21	0.46	0.22
Rule of Law	Rule of Law measures the extent to which agents have confidence in and abide by the rules of society in 2002. These include perceptions of the incidence of violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. *Source: Kaufmann et al. (2005).*	21	1.25	0.83
Corruption	The corruption index measures "the exercise of public power for private gain" in 2002. It captures aspects ranging from the frequency of additional payments to get things done to the effects of corruption on the business environment. *Source: Kaufmann et al. (2005).*	21	1.35	0.86
Public Enforcement Index	The index of public enforcement equals the arithmetic mean of: (1) Supervisor characteristics index; (2) Rule-making power index; (3) Investigative powers index; (4) Orders index; and (5) Criminal index. *Source: Djankov et al. (2008).*	21	0.56	0.27
Legal Origin	This variable identifies the legal origin of the company law or commercial code of each country. It is a binary variable that represents the legal origin of the different countries (English, French, German and Scandinavian legal regimes). *Source: La Porta et al. (1998).*			
	English Legal Origin	21	0.24	0.44
	French Legal Origin	21	0.48	0.51
	German Legal Origin	21	0.19	0.40
	Scandinavian Legal Origin	21	0.10	0.30
Origin/Transplant Countries	Indicator variable equal to 1 if countries developed their formal legal order internally and 0 if countries received their formal legal order externally. *Source: Pistor et al. (2003).*	21	0.33	0.48

Table 4: Description and Summary of Firm- and Issue Specific Variables

Variable	Description	Obs.	Mean	SD
Initial return	The difference between the issue price of a new share and the first trading price on the secondary market	2920	24.97	54.39
Year	Year of introduction on the stock exchange in the period 2000 to 2005. *Source: Prospectuses and firm websites.*			
	Year 2000	758	0.36	0.60
	Year 2001	352	0.21	0.22
	Year 2002	284	0.17	0.19
	Year 2003	284	0.20	0.23
	Year 2004	635	0.22	0.30
	Year 2005	607	0.21	0.48
High-Tech Firms	A dummy variable that equals 1 if it is high-tech firm and 0 otherwise. *Source: firm websites.*	2920	0.32	0.47
Firm Age	Firm age is a control variable that measures the difference between the foundation year of the firm and year of introduction on the stock market. *Source: Prospectuses and firm websites.*	2667	17.62	23.31
Price Earnings Ratio	The price/earnings ratio reflects the offer price as a function of the earnings per share. *Source: Prospectuses and firm websites.*	1674	24.52	26.00
Nature of the Offer	Nature of the offer is calculated as the ratio between the number of new shares and the total shares in the offering. *Source: Prospectuses and firm websites.*	2892	0.66	0.34
Dummy Venture Capitalist	A dummy variable that equals 1 if a firm has a venture capitalist as shareholder at the moment of IPO and 0 for firms that had not. *Source: Prospectuses and firm websites.*	2768	0.32	0.47
IPO Method	The most common IPO methods: book building, fixed price offer, auction and hybrid offer. *Source: Prospectuses and firm websites.*			
	Book building method	2920	0.71	0.46
	Fixed price offer method	2920	0.18	0.39
	Auction method	2920	0.03	0.18
	Hybrid method	2920	0.08	0.27

The level 1 model predictors are firm-specific and issue-specific variables, while the level 2 model predictors are the country-specific variables. The slopes and intercept at the level 1 model are allowed to differ between countries, something which is not the case for ordinary linear regression.

In more analytical terms level 1 model is expressed as:

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{1ij} + e_{ij} \quad [1]$$

and the level 2 model as:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} Z_{1j} \quad [2]$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11} Z_{1j} \quad [3]$$

where Y_{ij} is level of underpricing, X are firm-specific and issue-specific variables and Z are the country-specific variables. With HLM we can run a one-way analysis of variance (ANOVA) to measure how much of the variance of the level of underpricing is explained by country-specific characteristics versus firm-specific and issue-specific characteristics. We executed the different analyses using the HLM 6 software package (Raudenbush et al., 2004).

4.4 Empirical Results

We start our empirical results with a simple random ANOVA model (HLM null model) to calculate the corrected overall average, to determine intra-class correlation and the importance of multi-level modeling. Next, we turn to the HLM full model to test our hypothesis. All models use the robust standard errors generated by HLM software package, as these relax the assumptions of the variance-covariance matrix (Hox, 2002).

4.4.1 HLM null model

Table 5 shows the results of the one-way ANOVA with random effects. The corrected overall average underpricing is 20.28 percent.[29] We first test formally whether there is significant variation between countries in the level of underpricing. If not, the assumption of independence of observations is not violated. The results support our

[29] See Raudenbush and Bryck (2002: 41) for more details on the calculation.

choice to use HLM, as there exists a significant variation among countries (*variance component* = 280.33, *df* = 20, *p value* = 0.000). About 10% of the variance in underpricing is between countries.

Table 5: Results from the One-Way ANOVA Model

Fixed Effect	*Coefficient*	*se*	
Average Underpricing, γ_{00}	20.28	3.18	
Random Effect	*Variance component*	*df*	*p value*
Level 2 effect, u_{0j}	280.33	20	0.000
Level 1 effect, e_{ij}	2830.22		
Interclass correlation	10%		

4.4.2 HLM full model

Before we test our hypothesis, as a robustness check we analyze the sign and the power of our control variables in relationship to the level of underpricing (see Level 1 predictors in Tables 6 and 7). This allows us to assess the quality of the data and to test whether the outcomes support the theoretical expectations and empirical observations from prior studies.

We start the analysis with only firm-specific and issue-specific variables before adding country-specific variables, as shown in Model 1 of Table 6. The *Year of introduction* is a dummy variable for the years 2000 to 2005. The year 2000 is highly significant at the one percent level. This is in line with prior studies such as Loughran and Ritter (2004) that showed a hot IPO market in 2000 for the U.S. Although the years 2001 to 2003 have a large negative coefficient, they are insignificant at the five percent level.

As expected, the sign of the dummy variable *High-tech firm* is positive and significant ($p<0.01$). Firms operating in the high-tech market are approximately 22 percent more underpriced than other firms. The variable *Firm age* has a negative significant influence ($p<0.05$) on the level of underpricing. Both observations are also reported in the existing literature (see Section 2.1). The variable *Price earnings ratio* is

insignificant at the conventional levels of significance.[30] A similar conclusion holds for the dummy variable *Venture capitalist*.

The IPO method *Book building* and *Tender/auction* have a negative influence on the level of underpricing (although not significant). We will see that these results become significant when we include variables that measure investor protection across countries. Overall, most of the control variables are significant and have the signs we expect from the theoretical and empirical literature. In the next paragraph we test our hypotheses, as can be seen in the Level 2 predictors in Tables 6 and 7.

Minority protection. We use the *Anti self dealing index* of the Djankov et al. (2008) to measure the protection of minority shareholders (see Model 2 of Table 6). We expect a negative relationship between the level of investor protection and underpricing of IPOs. The anti self dealing index is significant at five percent level and shows that IPOs of firms in a country offering better minority protection are less underpriced than IPOs of comparable firms in a country with less protection of minority shareholders. As predicted in the theoretical part, higher investor protection decreases the *ex ante* uncertainty for investors and decreases the underpricing of IPOs. Higher levels of investor protection do not only lead to more companies going public (La Porta et al., 1997), but apparently also lead to lower underpricing. It allows issuers to leave less money on the table during the IPO process and decreases the cost of capital within a given jurisdiction. This finding is in line with the law and finance literature. The firm- and issue-specific variables *Year 2000*, *High-tech firm*, *Firm age*, *Venture capitalist*, *Tender/auction method,* and *Book building method* are significant at the conventional levels. The latter results are in line with prior IPO underpricing research.[31] Our study confirms the results of Hopp and Dreher (2007) who find "that the protection of shareholders affects the perceived risk of investing" (2007: 30). More effective investor protection therefore results in lower IPO underpricing. Their study differs from ours in using aggregate country-level data, whereas our study allows for a more precise measurement using a firm-level data set.

[30] Since this variable is insignificant, we leave it out of the remainder of the regressions since including it implies a strong reduction of more than 600 observations (see Table 4). Including it yields similar results, which are available from the authors upon request.

[31] We use two control variables to check if any differences in economic development across the nations in our sample influence our results: (1) gross domestic product (GDP) per capita, and (2) stock-market capitalization as a fraction of GDP. Including it yields similar results, which are available from the authors upon request.

Table 6: Results of HLM Analyses

Dependent Variable :	Level of underpricing of IPOs in period 2000-2005					
	Model (1)		Model (2)		Model (3)	
Fixed Effect	*Coefficient*	*se*	*Coefficient*	*se*	*Coefficient*	*se*
Level 1 predictors						
Year 2000	10.77**	4.07	9.32**	4.12	11.26**	4.02
Year 2001	-5.83	4.69	-3.82	4.81	-3.87	-4.72
Year 2002	-10.36+	5.28	-8.21	5.46	-8.36	-5.33
Year 2003	-5.63	5.12	-2.71	5.32	-3.01	-5.09
Year 2004	1.53	4.00	3.58	4.13	2.63	3.99
Dummy High-Tech	21.79**	2.98	22.46**	3.07	22.22**	3.01
Age	-0.13*	0.05	-.18*	0.05	-.18**	-0.05
Price Earnings Ratio	0.00	0.82				
Nature of the Offer	9.85*	4.50	4.87	4.45	3.70	4.25
Dummy Venture Capitalist	1.69	4.16	-7.71+	4.06	-8.61*	3.89
Book Building Method	-14.23	9.18	-8.316**	2.26	-13.78**	-3.59
Tender/Auction Method	-11.60	14.08	-27.93**	9.34	-28.48**	-8.79
Hybrid Method	6.28	10.50	-9.32	7.57	-3.32	-6.13
Intercept	22.28	4.98	16.10	6.58	13.59	5.09
R^2 *within countries*	0.18		0.19		0.19	
Level 2 predictors						
Anti Self dealing index			-22.11*	10.99		
Rule of Law					-8.027+	4.80
R^2 *between countries*	0.08		0.36		0.30	
Random Effect	*Variance component*	*p-value*	*Variance component*	*p-value*	*Variance component*	*p-value*
Level 2 effect, u_{0j}	257.60	0.00	179.41	.04	196.23	.03
Level 1 effect, e_{ij}	2360.60		2292.48		2292.48	

Standard errors are adjusted for heteroskedasticity. + p< 0.10; * p<0.05; ** p<0.01
Var.comp. = variance component

Table 7: Results of HLM Analyses Effect of Legal Framework on the Level of Underpricing in Period 2000-2005

Dependent Variable :	Level of underpricing of IPOs in period 2000-2005							
	Model (4)		Model (5)		Model (6)		Model (7)	
Fixed Effect	*Coefficient*	*se*	*Coefficient*	*se*	*Coefficient*	*se*	*Coefficient*	*se*
Level 1 predictors								
Year 2000	11.21**	4.00	11.87**	4.00	9.29*	4.00	10.38**	4.00
Year 2001	-4.40	-4.68	-4.41	-4.70	-5.79	4.67	-5.20	4.68
Year 2002	-8.36	5.32	-8.31	-5.29	-9.05+	5.26	-9.57+	-5.29
Year 2003	-3.39	5.12	-3.45	-5.12	-3.82	5.02	-5.30	-5.09
Year 2004	2.50	3.97	2.46	3.97	2.15	3.97	1.66	3.94
Dummy High-Tech	22.40**	2.99	22.09**	2.98	21.12**	3.10	23.14**	2.98
Age	-.17**	-.05	-.17**	-.05	-.17**	-.05	-.16**	-.05
Nature of the Offer	5.27	4.22	7.03+	4.24	9.94*	4.00	7.58+	4.23
Dummy Venture Capitalist	-6.25	-3.93	-4.89	3.94	-.01	5.01	-2.15	3.98
Book Building Method	-13.78**	3.65	-7.81+	4.01	-7.81*	3.70	-11.78**	3.60
Tender/Auction Method	-28.48**	-8.47	-34.09**	8.57	-15.88*	7.94	-30.36**	8.21
Hybrid Method	-3.32	6.03	-7.87	6.10	11.58	9.41	-.43	6.00
Intercept	13.59	4.60	16.05	3.04	3.28	2.38	2.00	
R^2 within countries	0.19		0.18		0.20		0.18	
Level 2 predictors								
Corruption	-14.09**	3.58						
Public Enforcement			-26.25**	-4.65				
French Legal Origin					-9.51	7.43		
German Legal Origin					23.58**	3.37		
Scandinavian Legal Origin					-9.23	13.00		
Transplant countries							17.86*	2.98
R^2 between countries	0.38		.37		0.28		0.30	
Random Effect	*Var.comp.*	*p-value*	*Var.comp.*	*p-value*	*Var.comp.*	*p-value*	*Var.comp.*	*p-value*
Level 2 effect, u_{0j}	173.80	0.04	176.61	0.04	201.84	0.01	196.23	.03
Level 1 effect, e_{ij}	2292.48		2360.60				2360.60	

Standard errors are adjusted for heteroskedasticity. + p< 0.10; * p<0.05; ** p<0.01

Our data set thus offers the possibility to control for firm-specific and issue-specific characteristics. Interestingly, both their country-level data set and our firm-level data set provide evidence in the same direction. Our results are also in line with Daouk et al. (2006), who use the average percentage of underpricing at the country-level as a proxy for pricing efficiency and find that improvements in capital market regulations are associated with less underpricing.

Legal system. The quality of the legal system is another proxy to measure legal protection. We use the *Rule of law* and *Corruption* variables to measure the quality of the general legal system. Both variables come from the dataset of Kaufmann et al. (2005). The rule of law measures the extent to which investors have confidence in a country's legal system. Model 3 in Table 6 shows that rule of law is significant at the 10% level, while Model 4 in Table 7 shows that the corruption variable is highly significant at the 1% level. The variables *Year 2000*, *High-tech firm*, *Firm age*, *Venture capitalist* (only in Model 3), *Book building method,* and *Tender/auction method* are significant in both regressions. The HLM model shows that countries with a better legal system, as proxied by the rule of law and the level of corruption, have less underpriced IPOs. The results are again similar to Hopp and Dreher (2007) who conclude that an effective legal system reduces the perceived risk of investing and hence decreases the level of underpricing. This means that issuers in countries with a better legal system have lower costs to go public compared to issuers operating in a country with a weak legal system.

Legal enforcement. The third proxy to measure legal protection is the quality and effectiveness of a country's legal enforcement. We use the variable *Public enforcement index* to measure the quality of enforcement in a country. Model 5 in Table 7 clearly shows a negative relationship between the level of underpricing and legal enforcement ($p<0.01$). IPOs in a country with better legal enforcement are less underpriced than in a country with poor legal enforcement. Again, the same firm-specific and issue-specific variables are still significant. The level of underpricing decreases with stronger legal enforcement, which is inline with our theoretical expectations. With strong law enforcement minority shareholders have more options to successfully appeal to a court lowering the *ex ante* risk of being expropriated by management or controlling shareholders. This leads to lower underpricing at the time of offer.

Legal origin. The legal origin is the last proxy to measure legal protection. First, we use the variables *Legal family* to measure a country's legal protection. La Porta

et al. (1998) show that common law countries offer, on average, a better legal protection than countries belonging to the German legal family and the Scandinavian legal family, which in turn offer better legal protection than French civil law countries. The common law and the French civil law countries are at the extremes both for the law in the books (legal rules) and the law in practice (enforcement), while the two other legal families are in between. One can therefore expect IPOs to be the least underpriced in common law countries and the most in French civil law countries. Only the variable *German legal family* is positively related to the level of underpricing (see Model 6 in Table 7). Compared to common law countries, IPOs in countries belonging to the German legal family are more underpriced ($p<0.01$). IPOs of firm located in a country belonging to the French civil law legal family and the Scandinavian legal family are statistically not different from common law countries. Contrary to our expectations, there seems to be no unambiguous negative relationship between belonging to a certain legal family and the level of underpricing. It appears as the variation in the level of legal protection and enforcement is more subtle than can be captured by just the difference of belonging to a certain legal family. Berkowitz et al. (2003) argue that "the way in which a country received its formal law is a much more important determinant of the current effectiveness of its legal institutions than the particular legal family that is adopted" (2003: 167).

As an alternative we therefore use the classification of origin versus transplant countries of Pistor et al. (2003). Origin countries are countries that developed their legal system largely internally, while transplant countries inherit their legal system largely from other countries. We examine whether IPOs in a country that developed its legal system internally (*origin country*) is less underpriced than IPOs in a country that received its legal system from foreign sources (*transplant country*). Model 7 in Table 7 shows that IPOs in a transplant country are more underpriced than IPOs in an origin country ($p<0.05$). Since origin countries are supposed to have a higher legal innovative capacity (Pistor et al., 2003), our results show that countries with a more adequate legal framework have less underpriced IPOs. Model 6 and 7 again confirm the significance of the usual suspects. The firm-specific and issue-specific variables *Year 2000*, *High-tech firm*, *Firm age*, *Nature of the offer*, *Book building method,* and *Tender/auction method* are significant at the conventional levels.

4.5 Discussion

In the previous section we demonstrated the existence of a negative relation between the quality of a country's legal framework and IPO underpricing, controlling for traditional firm-specific and issue-specific characteristics. Earlier we explained this relationship through the mechanism of *ex ante* uncertainty. Our more fine-grained firm-level dataset corroborates the coarser results from a prior country-level study by Hopp and Dreher (2007). Although it appears plausible that the legal system and *ex ante* uncertainty are related in this way, and that institutional country-level risk factors drive underpricing, one can argue that alternative mechanisms could explain the relationship between the country's legal framework and IPO underpricing as well. In this section we discuss these alternative mechanisms and the possible limitation of our interpretation and results.

Spinning is the first alternative interpretation of the observed negative relationship within the Rock-framework. It could be that underwriters may be more inclined to give favorable allocations of shares to preferred investors (friends, family, executives, etc.) and unfavorable allocations to non-favored non-connected investors. The latter would require higher underpricing to participate in the IPO market. The outcome of this process is not due to *ex-ante* uncertainty, but due to discretionary allocation of shares by underwriters. For the alternative interpretation to be in line with our empirical results, we would have to assume that countries with an institutional framework offering little control over the allocation of shares during the IPO process are the same as countries that exhibit a weak legal protection of minority shareholders. Although we cannot exclude this alternative hypothesis, we do not immediately see why both groups of countries are the same. For instance, during the late nineties and early two thousands spinning was a widespread practice in the U.S., despite having one of the strongest investor protection rules at the same time (Liu and Ritter, 2009). Spinning occurs as the favorable allocation of shares to friends and family (Ljungqvist and Wilhelm, 2003) or to top executives of the issuing firm or the general partners of the participating venture capital firm (Loughran and Ritter, 2002, 2004). Key decision-makers in the IPO process pick underwriters with a reputation for underpricing since they receive side-payments on personal brokerage accounts.[32] We

[32] For real-life examples we refer the interested reader to the press references in Loughran and Ritter (2004). In 2003 the New York Public Prosecutor's Office reached a settlement with ten investment banks to follow a 'no spinning rule' (Loughran and Ritter, 2004).

have no data on the occurrence of spinning practices and supervisory control on this misconduct in other countries to test the role of spinning around the world.[33]

A second mechanism which potentially could explain a relationship between the legal system and IPO underpricing is the managerial control theory of Brennan and Franks (1997). They see underpricing as mechanism through which management retains control of the company after going public. The excess demand for shares caused by underpricing the offer enables managers to allocate small stakes of shares to many small investors. In this way, they claim that the probability of external monitoring by outside investors is reduced. Boulton et al. (2007) use this mechanism to predict a positive relationship between the legal system and IPO underpricing. It is argued that managers in countries with better investor protection have fewer possibilities to capture the private benefits of control compared to countries with weak investor protection. In a strong legal environment managers therefore use underpricing to maintain control.

Although our data do not allow us to formally test this mechanism, it is difficult to see why this mechanism would provide a good explanation for the relationship between legal framework and underpricing. First, other substitute mechanisms for retaining control such as takeover defenses, non-voting stocks and alike are more effective since underpricing cannot prevent outside investors from accumulating larger stakes of shares once trading begins in the aftermarket (Ljungqvist, 2007). Second, it seems as if this mechanism might offer a reasonable explanation for underpricing in the UK and US, but not in many Continental European and Asian countries as existing shareholders in those countries often retain the majority of the shares after going public, hence they do not need to underprice the offer to retain control over the company. In that case this mechanism does not provide any explanation for the relationship between legal framework and underpricing. Finally, our firm-level data set does not support this mechanism since we observe a negative relationship between the country's legal system and IPO underpricing, which contradicts the positive relationship predicted through this mechanism. Moreover, the methodology in Boulton et al. (2007) cannot capture hierarchically structured data, in which IPOs are nested within countries. In section 3.4 we argued the case that testing this relationship requires the use of HLM instead of OLS regressions.

[33] We thank the reviewer for pointing out this alternative interpretation.

4.6 Conclusion

Although empirical studies on underpricing of IPOs show enormous differences between countries, the literature largely neglects the role of country-specific characteristics such as the country's legal and institutional framework. This study analyzes the relationship between the level of underpricing and legal protection. Based on theory we expect countries with stronger legal protection to have on average a lower level of underpricing. This expectation is in line with Beatty and Ritter's (1986) conclusion of a positive relationship between the level of underpricing and the *ex ante* uncertainty about the value of the firm. In countries with weaker legal protection investors are more uncertain about realizing the required rate of return on their investment.

Using a large firm-level dataset of 2,920 IPOs covering a wide range of 21 countries having different institutional and legal frameworks, we confirm our hypothesis. We find, first, that country-specific characteristics explain about ten percent of the variation in the level of underpricing. By using the hierarchical linear modeling approach we are able to control for firm-specific and issue-specific characteristics that influence the level of underpricing and find that country-specific characteristics add explanatory power to the level of underpricing. Second, firms going public in a country with a more developed legal framework, as measured by the country's level of investor protection, the quality of its legal system, and the level of legal enforcement, reduce the level of underpricing significantly.

The economic significance for firms operating in a poor legal environment is important. In case of underpricing, money is obviously "left on the table", since investors would have been willing to buy the same securities at a higher price (Loughran and Ritter, 2002). When the level of underpricing is larger, firms receive less money for selling securities to the market, raising the cost of capital of those firms. One of the economic consequences of issuing shares at a discount (through the underpricing of the IPO) is that fewer firms will consider an IPO as the cost to go public increases. Since country-specific characteristics explain an additional ten percent of the variation in the level of underpricing of an IPO, this has real economic consequences. Issuers in countries with a weaker legal system have on average a higher level of underpricing, and consequently face a higher cost of capital, which is a disadvantage for domestic firms compared to their international competitors.

Our study complements research by Ljunqvist et al. (2003), who find that bookbuilding in countries outside the US only reduces the level of underpricing when

used in combination with US banks and targeted at US investors. Our study shows the importance of legal framework on the level of underpricing. Combining these two results shows that countries with a poor legal environment more frequently use US banks and US investors.[34] These findings are related to the literature on cross-listings, showing that issuers can independently improve their level of investor protection by a listing on a foreign stock exchange with higher standards of investor protection (Reese and Weisbach, 2002; Roosenboom and van Dijk, 2009). Although it appears that companies operating in a poor legal environment can bond themselves to higher standards through a cross-listing (Black, 2001), it is doubtful that they can fully compensate for the lack of an adequate legal framework at the country-level. Examining corporate governance rankings for 495 firms across 25 emerging markets Klapper and Love (2004) find that "although we do find that firms can independently improve their investor protection and minority shareholder rights to a certain degree, this adjustment mechanism is a second best solution and does not fully substitute for the absence of a good legal infrastructure." Moreover, smaller firms often do not have the alternative to go for a cross-listing or a foreign listing. Put differently, the first best solution for lowering the cost of capital is still the improvement of the country-level legal and institutional framework. Countries that want to offer their domestic firms cheaper access to external equity should therefore focus on reforming their legal system.

Since our empirical results show that issuers in countries with a better legal system have lower costs to go public compared to issuers operating in a country with a weak legal system, further insights into the specific role of the legal and institutional framework are crucial in offering companies cheaper access to equity finance. The future research agenda should focus on at least three areas. First, a further decomposition of each legal and institutional parameter can provide more detailed insights into which specific aspects of the formal institutional framework matter the most to lower the cost of capital to firms. Second, while the law and finance literature analyzes cross-sectional variation in underpricing due to differences in the legal framework, future research should look into the evolution of the institutional framework through time and its impact on IPO underpricing. Chambers and Dimson (2009) examine IPO underpricing over the period from 1917 until 2007. Expanding this study to a larger sample of jurisdictions could provide further insights in the evolving

[34] The bivariate correlation between anti self dealing index and US investors is -0.45 and between anti self dealing index and US banks -0.41. Similar results for rule of law index.

role of institutions on underpricing. Third, the law and finance literature mainly focuses on formal institutions and their impact on corporate finance. Chambers and Dimson (2009) suggest that the level of trust among investors, issuers, and sponsors plays a crucial role on the level of IPO underpricing over time in the United Kingdom. In period where they expect greater levels of trust, they find lower underpricing. Future research should therefore also look into informal institutions and their impact on underpricing, next to formal institutions.

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Chapter 5. An institutions-based view of executive compensation: A multilevel meta-analytic test[35]

ABSTRACT

Our study confirms the widely held theoretical expectation that executive compensation is positively associated with firm performance. Yet it also reveals considerable cross-country variability in this relationship, which we trace to formal institutions like the rule of law and investor protection provisions and to informal institutions like concentrated ownership patterns and codes of good corporate governance. A core finding of this study is that formal and informal institutions are complementary, as the focal relationship becomes stronger when concentrated owners have access to well-functioning courts, and when informal norms of good governance are buttressed by formal shareholder protection laws.

5.1 Introduction

Over the past two decades, public and academic interest in executive compensation has burgeoned in the wake of rapidly increasing compensation levels (Bebchuk & Grinstein, 2005; Murphy & Zábojník, 2004), new or new-in-context types of compensation (Buck, Liu, & Skovoroda, 2008; Fiss & Zajac, 2004), incidents involving gross executive overcompensation (Bebchuk & Fried, 2006; Wade, O'Reilly, & Pollock, 2006; Yermack, 2006), and the catalytic role executive incentive contracts have allegedly played in the 2008-2009 global financial crisis (Bebchuk & Spamann, 2010; Bhagat & Romano, 2009). Much of the discussion focuses on the question of whether executives' compensation packages can be justified in terms of their contribution to corporate financial performance (Devers, Cannella, Reilly, & Yoder, 2007; Gomez-Mejia & Wiseman, 1997). Although some scholars have made highly invasive suggestions to limit executive compensation through caps, taxation, and proportionality measures (cf. Bhagat & Romano, 2009; Core & Guay, 2010), the

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dominant view in the literature remains that executives are "worth every nickel they get" as long as they are able to increase shareholders' wealth (Murphy, 1986).

According to the influential agency-theoretical view (Jensen & Murphy, 2010), an important function of executive compensation is to align the interests of executives with those of shareholders through the use of incentive plans that tie a considerable portion of executives' remuneration to firm financial performance. This bonding of interests incentivizes executives to make value-enhancing decisions, which benefit shareholders and executives alike. Although the performance implications of executive compensation are central to the current debate, the bulk of empirical research has focused on the reverse relationship, as executive compensation can only perform its bonding role well when it is sufficiently sensitive to changes in firm performance. A stylized fact that has emerged from the numerous empirical studies that have been conducted on this topic in the U.S. context is that there is a modest but significant positive association between corporate financial performance and executive compensation (Tosi, Werner, Katz, & Gomez-Mejia, 2000). Through the present meta-analytic study, which synthesizes observations from 29 countries around the world, we generalize this stylized fact across international contexts. More specifically, we find that the bivariate meta analytic mean correlation (ρ) for this relationship is 0.12 and significant. On the whole, this finding suggests that executives around the world are (modestly) incentivized to act in the interest of shareholders (Jensen & Murphy, 2010).

Yet what is obfuscated by this estimate of the mean ρ is that its strength differs substantially from case to case. Compensation scholars have mostly focused on the influence of firm-level moderators on the performance sensitivity of executive compensation, especially those suggested by agency theory and the corporate governance literature more generally (Devers et al., 2007; Gomez-Mejia & Wiseman, 1997). Studies exploring agency moderators scrutinize whether the focal relationship becomes stronger when the level of compensation executives receive is tied more closely to their attainment of financial and organizational goals (Jensen & Murphy, 1990; Leone, Wu, & Zimmerman, 2006; Zajac & Westphal, 1995). Furthermore, studies focusing on broader corporate governance factors explore whether the focal relationship weakens in the presence of deficiencies in a firm's governance setup, such as CEO duality and staggered or insider-dominated boards (Conyon & Peck, 1998; Core, Holthausen, & Larcker, 1999; Murphy & Zábojník, 2004).

In light of the currently available evidence, however, many observers have concluded that the field is rapidly reaching the limits of what can be explained in

terms of firm performance – executive compensation variability with the help of firm-level corporate governance moderators (Barkema & Gomez-Mejia, 1998; Bebchuk & Fried, 2003). As the present study shows, the overall influence of such governance factors on the focal relationship is rather modest. After controlling for firm-level moderators through a partial correlation-based test (Doucouliagos & Ulubasoglu, 2008), the mean ρ remains positive and significant at 0.08 (k = 2,415; N = 4,107,639), implying that the overall effect of the most commonly studied corporate governance variables on the strength of the firm performance – executive compensation association is unlikely to exceed 0.04 (i.e., the difference between the partial and bivariate mean correlations). A continued search for the effect of firm-level moderators distracts researchers' attention from other but no less important influences on the focal relationship, especially those deriving from country-level institutions (Bruce, Buck, & Main, 2005; Fiss, 2008; Peng & Khoury, 2008; Sun, Zhao, & Yang, 2010).

A meta-analytic hierarchical linear modeling (HiLMMA; Raudenbush & Bryk, 2002) test employed on all currently available evidence reveals that 25 percent of all variance in the firm performance – executive compensation relationship is attributable to country-level factors. For example, the focal relationship is comparatively weak in countries like the Netherlands (-0.06), Pakistan (-0.01), and the Philippines (0.02), about average in China (0.07), Japan (0.07), and the UK (0.07), and relatively strong in Finland (0.16), Germany (0.16), and New Zealand (0.16). Our aim in the present paper is to trace this cross-national variability to underlying institutional differences. Recent theorizing in the international business field (Bruce et al., 2005; Fiss, 2008; Peng & Khoury, 2008) has suggested the partitioning of country-level institutional influences into those deriving from formal institutions (e.g., the court system and corporate law) and from informal institutions (e.g., national culture and informal corporate governance norms). We theorize and test the influence of such formal and informal institutions on the focal relationship, and also take the interaction between both types of institutions into account.

The contributions of this study are threefold. First, it offers the most comprehensive synthesis of the executive compensation literature to date, updating the only previously published meta-analysis of the same relationship (Tosi et al., 2000) by adding another decade of research to the observation window and increasing the number of included studies from 42 to 332. Second, our study adds to the emerging tradition of assessing cumulative evidence in macro research (Combs, Ketchen, Crook, & Roth, 2010) through a pair of methodological extensions. It controls for the influence

of firm-level moderators on the focal relationship through the use of partial correlation-based effect sizes (Doucouliagos & Ulubaşoğlu, 2008; Stanley, 2005), and it accounts for the fact that observations from multiple national contexts cannot be regarded as a sample from a singular population through the application of hierarchical linear modeling techniques (Raudenbush & Bryk, 2002; Snijders & Bosker, 1999). Third, our study is the first to apply the emerging institutions-based view of international business strategy (Carney, Gedajlovic, Heugens, Van Essen, & van Oosterhout, 2010; Fiss, 2008; Heugens, Van Essen, & van Oosterhout, 2009; Peng, Sun, Pinkham, & Chen, 2009) to the phenomenon of executive compensation. It thereby extends this view's empirical domain, while buttressing the executive compensation literature by providing it with novel theoretical underpinnings. More specifically, this study demonstrates that the association between firm performance and executive compensation is not universal, but that it is conditioned by formal and informal country-level institutions, as well as by interactions between these factors.

5.2 Theory and Hypotheses

5.2.1 Optimal contracting theory

The classical framework for analyzing the firm performance – executive compensation relationship is provided by optimal contracting theory (Conyon & Murphy, 2000; Jensen & Murphy, 1990). In this economic view of executive compensation, the compensation-setting process is assumed to be a (quasi) arm's length bargaining process between the executives of the firm on the one hand, and the Board of Directors (BoD) on the other (Bebchuk & Fried, 2003, 2004). The core prediction of this theory is that, due to disciplining potential of market forces (Gillan, 2006) operating in the market for corporate control (Hubbard & Palia, 1995), product markets (Aggarwal & Samwick, 1999), and the executive labor market (Ezzamel & Watson, 1998), this negotiation process will ultimately yield a performance-based contract. In such contracts, executive remuneration is made (partially) contingent on their achievement of financial and organizational goals set by the BoD (Aggarwal & Samwick, 1999).

Because of the contingency structure of performance-based executive compensation contracts, executives are incentivized to forego self-serving goals like empire building (Williamson, 1964), unrelated diversification (Amihud & Lev, 1981), and hoarding excess free cash flow (Jensen, 1986), in order to focus on the realization

of value-enhancing strategic and operational objectives (Jensen, 2001). An optimal executive compensation contract is therefore geared towards a positive relationship between performance and compensation, such that changes in (relative) corporate performance will lead to adaptations to executive compensation in the same direction (Hall & Liebman, 1998; Jensen & Murphy, 1990).

In spite of its popularity and theoretical elegance, there are problems associated with the optimal contracting lens, especially when it is used for studying the focal relationship in an international context. Since the vast majority of executive compensation studies rely on data derived from the U.S. context (in fact, 57 percent of all firm-year observations in our meta-analysis are drawn from U.S. samples), certain stylized facts about the U.S. economy and financial system have hidden from purview the fact that optimal contracting models incorporate a set of assumptions which do not necessarily hold in the international setting.

First, the optimal contracting lens assumes that the contracting process is conditioned by market forces (Gillan, 2006) operative in the market for corporate control (Hubbard & Palia, 1995), product and service markets (Aggarwal & Samwick, 1999), and the executive labor market (Ezzamel & Watson, 1998). Yet if these forces are not well-developed in a given national context, such that markets insufficiently discipline self-serving behaviors in executives, the predicted performance sensitivity of executive compensation may not obtain.

Second, optimal contracting theory assumes the presence of well-functioning formal institutions for the effectuation of contracts (cf. Djankov, La Porta, López-de-Silanes, & Shleifer, 2008; La Porta, López-de-Silanes, Shleifer, & Vishny, 2002), Thus, when strong formal institutions are underdeveloped in a given context, the focal relationship may weaken because even well-designed contracts are vulnerable to ex-post haggling and defection in the absence of well-functioning enforcement mechanisms.

Third, optimal contracting theory downplays the role of informal institutions in effectuating a tighter performance – compensation link (Peng & Khoury, 2008; Peng et al., 2009). Due to its traditional focus on the formal legal underpinnings of executive contracts, it might underestimate the associational strength of the focal relationship in contexts where informal institutions dominate formal ones.

Finally, the optimal contracting lens only considers two parties who participate in the compensation setting process: executives and the BoD. However, several other parties are documented to influence the sensitivity of executive

compensation to firm performance, including employees (Cowherd & Levine, 1992), blockholders (Hambrick & Finkelstein, 1995) and creditors (Mintz, 2005). In contexts other than the U.S., which are often typified by more organized labor, controlling owners, and more pronounced creditor-financing, a stronger focal relationship may obtain in spite of weak BoD.

In light of these reservations, we expect that the optimal contracting lens, alone or in combination with agency or corporate governance theory, will not suffice to model cross-national variability in the relationship between firm performance and executive compensation. As a complementary view we therefore offer a conceptualization that is more sensitive to influence of institutional forces, and that is firmly grounded in the emerging institutions-based view of international business strategy (Carney et al., 2010; Fiss, 2008; Heugens et al., 2009; Meyer & Peng, 2005; Peng, 2002, 2003; Peng & Khoury, 2008; Teegen, Doh, & Vachani, 2004). Following North, we broadly define institutions as "humanly devised constraints that structure human interaction" (North, 1990: 3). More specifically, these overarching 'rules of the game' can be broken down into formal and informal institutions (Greif, 2006; North, 1990). We conjecture that formal and informal institutions matter for the link between firm financial performance and executive compensation, as prior research has already demonstrated their importance for important organizational issues like foreign entry strategy (Delios & Henisz, 2003), business group effectiveness (Carney et al., 2010), diversification decisions (Peng, Lee, & Wang, 2005), initial public offering underpricing (Engelen & Van Essen, 2010), and foreign direct investment strategies (Globerman & Shapiro, 2003).

5.2.2 Formal institutions

Formal institutions are deliberately devised constraints to human action, usually created and actively maintained by the state, which function by sanctioning individual or corporate action through attaching rewards or punishments to alternative courses of behavior (Goodin, 1996). As such, formal institutions provide an incentive structure within which "managers and firms rationally pursue their interests and make choices" (Peng & Khoury, 2008: 260). Formal institutions intervene in most aspects of life in modern societies, and influence behavior literally from cradle to grave. The formal institutions that matter most to the firm performance – executive compensation relationship both involve (a) those that intervene in it directly by protecting the interests of corporate financiers, and (b) those that influence it indirectly by exposing

executives to alternate sources of performance and compliance pressure. We discuss both kinds of formal institutions here.

A first set of formal institutions intervenes in the compensation setting process directly by protecting the interests of investors at the expense of the power of and the behavioral options open to executives (Klapper & Love, 2004; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000b, 2002; Leuz, Nanda, & Wysocki, 2003). The specific problem they address is that executives, whom are powerful insiders who enjoy both informational and decision-making advantages over relative outsiders like independent board members and minority shareholders (Bebchuk & Fried, 2003; Leuz et al., 2003), are often able to divert substantial amounts of corporate wealth to themselves (Hart, 1995; Zingales, 1994) through self-benefiting and outsider-disadvantaging actions like tunneling, empire building, and the consumption of perquisites (Jensen & Meckling, 1976; Johnson, La Porta, Lopez-de-Silanes, & Shleifer, 2000; Yermack, 2006).

Although jurisdictions differ in terms of the specific formal institutions they offer to curb such forms of managerial opportunism, these generally consist of three sets of rules. A first set involves the extent to which insiders are obliged to inform the public about self-benefiting transactions in which they are involved, for example through disclosure to the BoD or through external review by an independent auditor (Klapper & Love, 2004; Leuz et al., 2003). A second set concerns the degree to which insiders can be held accountable when their self-benefiting transactions hurt the interests of outsiders. It entails rights through which outsiders, like minority shareholders, can force executives to disgorge the profits deriving from self-serving transactions (La Porta, Lopez-de-Silanes, & Shleifer, 2006). The third set of rules captures the ease with which outsiders can engage in lawsuits against self-dealing insiders, regulating issues such as their access to relevant documents and the standard of proof for civil suits (Djankov et al., 2008). We expect the relationship between corporate performance and executive compensation to be stronger when these three rule sets are better developed, because they make it harder for executives to engage in outsider-disadvantaging behaviors. See Hypothesis 1.

A second set of formal institutions is comparatively broad and generic, and concerns the overall development of a given jurisdiction's legal system (Kaufmann, Kraay, & Mastruzzi, 2009) and the effectiveness of its court system (Djankov, La Porta, López-de-Silanes & Shleifer, 2003) more specifically. Judicial development and court effectiveness intervene in the compensation determination process only indirectly, as

they constrain executives' room to maneuver through the threat of legal action that parties like investor watchdog organizations (Rao & Sivakumar, 1999), institutional investors (David, Kochhar, & Levitas, 1998), blockholders (Hambrick & Finkelstein, 1995), creditors (Mintz, 2005), and employees (Cowherd & Levine, 1992) can instigate against overly greedy executives (Cowherd & Levine, 1992; Lel & Miller, 2008; Mintz, 2005). More generally, the risk of legal action that a well-functioning legal system may provide gives investor watchdog organizations, institutional investors, and blockholders leverage to initiate changes like installing independent compensation committees, increasing the proportion of long-term incentives, lowering overall compensation levels, and effectuating executive turnover (David et al., 1998; Defond & Hung, 2004). We therefore expect the focal relationship to be positively moderated by differences in judicial development and court effectiveness across jurisdictions. See Hypothesis 1:

> Hypothesis 1: The better developed the formal institutions in a given jurisdiction, the stronger the relationship between corporate performance and executive compensation.

5.2.3 Informal institutions

Informal institutions tend to emerge spontaneously in response to repeatedly encountered social or economic problems (such as executive overcompensation), are maintained through continuous reenactment in behavior rather than through formal rules or decrees, and are largely self-enforcing because the long-term value of complying with their prescriptions is ultimately larger than the short-run gain from breach for all parties participating in them (Klein 1985; Stiglitz, 2000; Sugden, 1989). Like formal institutions, informal institutions affect the payoffs executives face for alternative courses of action, but there are also important differences between the two institutional types.

First, even though informal institutions are instrumental to the efficient allocation of material resources like financial, organizational, and human capital (Granovetter, 1985), they derive their regulatory potential largely from the manipulation of immaterial resources like reputation, legitimacy, and status (Deephouse & Suchman, 2008; Klein, 1985). Second, whereas formal institutions tend

to rely on third-party enforcement mechanisms like courts or arbitrage bodies (Dyer & Singh, 1998), informal institutions make agreements self-enforcing by making explicit 'bright-line rules' defining proper behavior (Black & Kraakman, 1996), which cannot be breached by executives without surrendering substantial "brand name capital" (Klein, 1985: 595), such as their personal reputation in the executive labor market. Several informal institutions have the potential to affect the firm performance – executive compensation relationship. These include: (a) 'soft legislation' provided by codes of good corporate governance (Aguilera & Cuervo-Cazurra, 2004; Cuervo-Cazurra, 2002; Denis & McConnell, 2003), and (b) ownership concentration, which has been found to function as a substitute governance mechanism when formal institutions protecting investors' interests are underdeveloped (Heugens et al., 2009; Peng & Yiang, 2010).

Although corporate governance codes may contain explicit and detailed norms and standards next to so-called 'best practice' recommendations (Aguilera & Cuervo-Cazurra, 2004; Heugens & Otten, 2007), they constitute an informal institution nevertheless. Similar to 'soft law' in general (Abbott & Snidal, 2000), they are often drafted by committees or working groups that have no formal legislative powers. Instead, these codes make explicit pre-existing normative expectations, even if these are not universally complied with. Furthermore, codes are almost never actively enforced, which is left to the media (Dyck & Zingales, 2002), investor watchdog organizations (Rao, Morrill, & Zald, 2000), reputation mechanisms (Dixit, 2004), and the market forces triggered by them (Cuervo-Cazurra, 2002). Even though these forces are informal and spontaneous, they still can secure a high level of compliance (Pellens, Hillebrandt, & Ulmer, 2001).

Common to most codes is a call for structural reforms of the BoD, such as greater representation by outside directors, separation of the CEO and Chair roles, and the prevention of 'staggered' boards (Aguilera & Cuervo-Cazurra, 2004; Denis & McConnell, 2003). Yet codes vary in terms of the mechanisms they propose to prevent executive overcompensation and to link compensation more tightly to corporate performance. Some codes provide elaborate and specific guidelines, whereas others provide very few of these or suggest only open-ended principles. In spite of this variation, most codes invoke a 'comply or explain' principle, which stipulates that even though compliance with code provisions on executive compensation is voluntary, non-compliance must be publicly explained and justified. Thus, when executives negotiate a contract that violates the remuneration principles of the local code of good

corporate governance, or when board members act as less vigilant monitors than what is expected of them by the code, they have to justify these actions publicly (Wade, Porac, & Pollock, 1997). In sum, we expect that the focal relationship will be positively moderated by the level of development of informal institutions like codes of good governance. See Hypothesis 2.

Ownership concentration is commonly seen as an informal reaction to problems concerning managerial opportunism and executive overcompensation in jurisdictions which offer limited legal protection to minority investors (Denis & McConnell, 2003; Heugens et al., 2009; Peng & Yiang, 2010). In jurisdictions in which the formal institutions defending investors' interests are well-developed, corporate owners might lack the incentive to effectively monitor executive behavior. Under these conditions, owners can afford to limit themselves to small ownership stakes in multiple individual companies in pursuit of optimally diversified investment portfolios, and leave the task of monitoring managers to courts, markets, and civil society (Gillan, 2006; Walsh & Seward, 1990).

Yet in jurisdictions where such formal institutions are underdeveloped, owners must step in to monitor and discipline managers when they seek to appropriate corporate wealth and make their compensation less contingent upon their marginal contribution to shareholder value (Gomez-Mejia, Larazza-Kintana, & Makri, 2003; Shleifer & Vishny, 1986). This requires more concentrated ownership, however, because only large owners have both the motive and the means to effectively participate in corporate governance through direct access to management and the use of concentrated voting rights (David, Hitt, & Liang, 2007). Concentrated ownership is also a clear example of an informal institution: it emerges through spontaneous self-organization (Demsetz & Villalonga, 2001), manifests itself in unique and otherwise unobservable behaviors like the monitoring of managers by shareholders (Shleifer & Vishny, 1986), and is wholly self-enforcing because of the economic value of concentrated corporate control (Dyck & Zingales, 2004). Because it represents a powerful disciplinary force with the potential to curb managerial opportunism, we expect the focal relationship to be moderated positively by the level of ownership concentration in a given jurisdiction. See Hypothesis 2:

> Hypothesis 2: The better developed the informal institutions in a given jurisdiction, the stronger the relationship between corporate performance and executive compensation.

5.2.4 Interactions between formal and informal institutions

All countries host both formal and informal institutions, but their development does not always go hand-in-hand. Some societies have strongly developed formal institutions, but face deteriorating informal institutions (Paxton, 1999; Putnam, 1995). Other nations have a thriving system of informal institutions, but are confronted with ailing formal ones (Fukuyama, 2001; Woolcock, 1998). These casual observations raise the question of how formal and informal institutions are related, and how they jointly affect the firm performance – executive compensation relationship. Two competing views exist on this topic.

The first view is that formal and informal institutions are *substitutes*,[36] in the sense that they can independently bolster the focal relationship, but are rarely simultaneously effective in promoting desirable forms of behavior. This is because formal and informal institutions may create conflicting expectations with those whose actions they seek to guide and constrain. This may result in a lack of normative guidance (Martin, Cullen, Johnson, & Parboteeah, 2007), in which strategic and opportunistic behaviors may flourish. Conflicting normative expectations are especially likely to occur between formal and informal institutions, because the latter are predicated on relational exchange models in which the identity of exchange partners matters, whereas the former aim to support more anonymous forms of exchange that avoid precisely the relational ties and social mechanisms that make relational exchange models work (Dixit, 2004; Gilson, 2007). Second, there are irrecoverable costs and inefficiencies associated with having parallel institutional structures (Peng et al., 2009; Stiglitz, 2000).

Several researchers have observed that in the early stages of their development, many societies thrive on the development of informal institutions like social capital, networks, aggregations of reputations, and organizational capital (Greif, 2005; Stiglitz, 2000). In the words of Peng and Khoury: "when formal constraints are absent or incomplete, informal constraints intervene to mitigate uncertainty and provide a guide to managers" (2008: 261). As societies develop, however, these informal institutions tend to become replaced with more formal institutions that facilitate anonymous forms of market exchange, such as specialized courts, corporate law, and representative forms of governance (Glaeser, La Porta, López-de-Silanes, &

[36] Peng and Khoury call them "compensatory structures" (2008: 261).

Shleifer, 2004; Stiglitz, 2000). Commonly, this process leads to a decline in the overall level of development and usage of informal institutions (Paxton, 1999; Putnam, 1995).

In countries in which formal and informal institutions jointly flourish, both institutional types can begin to work at cross-purposes through the creation of institutional contradictions, regulative redundancies, and rising costs of compliance (Black & Kraakman, 1996). It is commonly accepted that factors that can potentially weaken the performance – compensation association (such as moral hazard, executive entrenchment, and incentive problems), can be addressed successfully either by formal or informal institutions (Glaeser et al., 2004; Greif, 2006; Stiglitz, 2000). However, the continued simultaneous development of both institutional types may over time negatively affect the ability of a given society's institutions to address these factors, and thus weaken the focal relationship. This will especially be the case when competing and redundant institutional structures offer executives conflicting forms of 'institutional guidance' (Peng & Khoury, 2008; Peng et al., 2009), which creates room for strategic and opportunistic executive behaviors. See Hypothesis 3a:

> Hypothesis 3a: The effectiveness of formal institutions in terms of establishing a stronger relationship between corporate performance and executive compensation will decrease in the presence of well-developed informal institutions, and vice versa.

The second view holds that formal and informal institutions are *complementary*, in that the development of one type improves the effectiveness of the other (and vice versa), and that this joint development is conducive to economic development in general and to curbing the problems of executive opportunism and overcompensation more specifically (Aoki, 2001; Knack & Keefer, 1997). More concisely put: "One set of institutions is said to be complementary to another when its presence raises the returns available from the other" (Hall & Gingerich, 2009: 450). Several scholars have pointed out that especially the effectiveness of formal institutions critically depends on the development of informal institutions (Aoki, 2001; Hall & Soskice, 2001). In the words of North: "While the formal rules can be changed overnight, the informal rules change only gradually. Since it is the [informal] norms that provide the essential 'legitimacy' to any set of formal rules, revolutionary change is never as revolutionary as its supporters desire" (1995: 25). However, comparative studies have also shown that

informal institutions require formal institutions to flourish, and that trust, civic norms, and social capital are stronger in countries with better developed economic institutions, legal structures, and representative forms of governance (Hall & Gingerich, 2009; Knack & Keefer, 1997).

The institutional complementarities thesis can similarly be applied to our focal relationship. A legal system can more effectively provide formal judicial remedies against undesirable forms of executive self-dealing when the informal norms provided by corporate governance codes make explicit clear standards of behavior that aggrieved parties and judges can refer to in litigation and jurisprudence. Similarly, informal institutions such as ownership concentration become more effective when blockholders can enforce their interests through a well-functioning legal system. In sum, the combined and balanced development of both formal and informal institutions will strengthen the focal relationship in ways that are unattainable by means of a more specialized development of either institutional type. See Hypothesis 3b:

> Hypothesis 3b: The effectiveness of formal institutions in terms of establishing a stronger relationship between corporate performance and executive compensation will increase in the presence of well-developed informal institutions, and vice versa.

5.3 Methods

5.3.1 Sample and coding

To identify the maximum number of international studies on the relationship between firm performance and executive compensation, we used five complementary search strategies. First, we read several review articles (e.g. Barkema & Gomez-Mejia, 1998; Core, Guay & Larcker, 2003; Devers et al., 2007; Murphy, 1999; Werner & Ward, 2004) and one prior meta-analysis (Tosi et al., 2000). Second, we examined five electronic databases: (1) ABI/INFORM Global, (2) EconLit, (3) Google Scholar, (4) JSTOR, and (5) SSRN, using the following search terms: 'compensation', 'incentives', 'pay', 'remuneration', 'salary', and 'stock option'. Third, we manually searched 25 journals in the fields of accounting, economics, finance, and management. Illustrative examples include: *Academy of Management Journal; Administrative Science Quarterly; Journal of*

Accounting Research; Journal of Finance; Journal of Financial Economics; Journal of International Business Studies; and *Strategic Management Journal*. Fourth, we used a two-way 'snowballing' technique that involved backward-tracing all references reported in previously identified articles and forward-tracing all articles that cited these articles using Google Scholar and ISI Web of Knowledge. Fifth, we corresponded with 82 authors that had written papers on executive compensation with missing effect size information, asking them for a correlation table, regression output, and any studies we could not retrieve by other means. These efforts yielded a final sample of 332 primary studies, consisting of 246 published and 86 unpublished studies. See Appendix C for bibliographical details.

We proceeded to read all retrieved articles and we developed a coding protocol (Lipsey & Wilson, 2001) for extracting data on relevant variables. We collected information on effect sizes and sample sizes. We differentiated between two types of firm financial performance: 'accounting performance' and 'market performance'; between two frequently used measures of overall executive remuneration: 'total cash' and 'total pay'; and between three identities of compensation recipients: 'CEO', 'other executives', and 'mixed executives and other senior corporate officials'. To test our hypotheses, we collected additional covariates capturing formal and informal institutional development from secondary sources. One author coded all effect sizes. To assess agreement in extracting information from primary studies, another author independently coded a sub-sample of 153 randomly selected effect sizes. We then computed a chance agreement-corrected measure of inter-rater reliability (Cohen's kappa coefficient; Cohen, 1960). The kappa value we obtained was 0.94, signifying a high degree of inter-rater reliability.

5.3.2 HOMA procedure

We used Hedges and Olkin-type meta-analysis (HOMA; Hedges & Olkin, 1985) to capture the associational strength of the focal relationship around the world. HOMA refers to a set of statistical procedures for calculating the meta-analytic mean correlation between two variables as well as the corresponding confidence interval (Hedges & Olkin, 1985; Lipsey & Wilson, 2001). The data used in HOMA are effect sizes capturing the associational strength of the focal relationship in a given sample, such as the partial correlation coefficient $r_{xy.z}$ or Pearson product-moment correlation r. In this study we rely on both $r_{xy.z}$ and r. When studies reported different effect size statistics, such as Cohen's standardized means difference measure d, we converted

them back to r and $r_{xy.z}$ values using the appropriate formulas (Lipsey & Wilson, 2001). We predominantly rely on $r_{xy.z}$, because in many of the fields contributing to the literature on executive compensation (such as finance and accounting), reporting r is not customary. When r was missing we could usually still compute $r_{xy.z}$ ourselves, based on the t-statistics and degrees of freedom reported in primary studies (Greene, 2008).[37] An additional benefit of using $r_{xy.z}$ is that it allows for a test of causality by controlling for endogeneity and firm characteristics.[38] In our case, $r_{xy.z}$ captures the association between firm performance ($_X$) and executive compensation ($_Y$), given a set of n control variables ($_Z$). The z-vector in executive remuneration studies typically contains variables like firm size, firm risk, and some CEO characteristics (Devers et al., 2007).

An important question in HOMA is how to deal with studies that contain multiple measurements of the focal effect (Bijmolt & Pieters, 2001). Focal effect multiplicity may occur when results are reported for different simultaneous operationalizations of firm performance (e.g., accounting profits and market valuation), executive compensation (e.g., total cash and total compensation), or recipient identity (e.g., CEO and other executives). The issue at stake here is the trade-off between stochastic independence of effect sizes and the use of all available information. A Monte Carlo simulation by Bijmolt and Pieters (2001) shows that procedures using the complete set of measurements outperform those representing each study by only a single value (such as a single best indicator or a composite measure) in areas like parameter significance testing and parameter estimation accuracy. We therefore included all available effect sizes in our study.

Since HOMA procedures assume that effect sizes are normally distributed, we used Fisher's (1928) Zr-transformation to correct for skewness in the effect size

[37] Partial correlations are computed as follows: $\sqrt{(t^2/ (t^2+df))}$, where t is the t-statistic and df is degrees of freedom. Note that this will always produce a positive number, so it is necessary to convert it to a negative number if the regression coefficient is negative (see: Greene, 2008: Chapter 3). t-values result from the scaling of primary coefficients by their respective standard errors. They are by definition standardized and defined on a dimensionless scale.

[38] In econometrics, the problem of endogeneity occurs when the independent variable is correlated with the error term in a regression model, or when the dependent variable (i.e., the executive compensation measure) simultaneously affects the independent variable (i.e., firm performance) (Bhagat & Jefferis, 2002). There are several accepted methods of controlling for endogeneity. Endogeneity-conscious researchers usually use a fixed or random effects panel data model, and calculate instrumental variables using two- or three-stages least squares (2/3SLS) or the generalized method of moments (GMM) (Sánchez-Ballesta & García-Meca, 2007).

distribution (Hedges & Olkin, 1985).[39] In line with current conventions, we used random-effects HOMA for combining study estimates (Geyskens, Krishnan, Steenkamp, & Cunha, 2009; Raudenbush & Bryk, 2002). To estimate the mean effect size appropriately, differences in precision across effect sizes have to be accounted for, so we weighted effect sizes by their inverse variance weight *w* (Hedges & Olkin, 1985): the inverse of their squared standard error.[40] We also used these weights to calculate the standard error of the mean effect size and its confidence interval.[41]

5.3.3 HiLMMA procedure

The structure of the dataset we have compiled to test our hypotheses is essentially hierarchical: individual estimates of the focal effect are nested in national jurisdictions (conventionally labeled 'level 1' and 'level 2' respectively; cf. Raudenbush & Bryk, 2002). To assess whether primary study results are consistent across jurisdictions, and if not, whether study result variability can be ascribed to institutional effects, it is most appropriate to use estimation methods based on the hierarchical linear model, referred

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[39] Fisher's *Zr* transformed correlations are calculated as follows: $z_r = \frac{1}{2}\ln\left(\frac{1+r}{1-r}\right)$, where *r and* $r_{xy.z}$ are the untransformed correlation coefficients.

[40] *w* is calculated as follows: $w_i = \frac{1}{se_i^2 + \hat{v}_\theta}$, where SE is the standard error of the effect size and $\hat{v}_\theta$ is the random effects variance component.

, which is in turn calculated as: $s.e.(z_r) = \frac{1}{\sqrt{n-3}}$

, and the formula of random effect variance is: $\hat{v}_\theta = \frac{Q_T - k - 1}{\sum w - \left(\frac{\sum w^2}{\sum w}\right)}$

[41] The meta-analytic mean is calculated as follows: $\overline{ES} = \frac{\sum(w \times ES)}{\sum w}$, with its standard error: $se_{\overline{ES}} = \sqrt{\frac{1}{\sum w}}$, and with its 95% confidence interval computed as: $Lower = \overline{ES} - 1.96(se_{\overline{ES}})$, $Upper = \overline{ES} + 1.96(se_{\overline{ES}})$

to here as meta-analytic hierarchical linear modeling (HiLMMA; Hox, 2002; Raudenbush & Bryk, 2002; Snijders & Bosker, 1999).

We use HiLMMA to distinguish between two components of variation in the retrieved effect size distribution. The first component arises from sampling error at the level of the individual effect estimates. If these estimates are based on relatively large samples ($n > 30$; cf. Raudenbush & Bryk, 2002: 207), the sampling distribution will approximate normality and have a known sample size-related variance. In HiLMMA, the meta-analyst is thus presented with a series of independent effect size estimates with a known variance at level 1, equaling the inverse variance weight w (Hedges, 1982; Hedges & Olkin, 1985).[42] A second variance component represents systematic inconsistencies in the effect size distribution, which can be attributed in subsequent HiLMMA model specifications to variables measured at both levels 1 and 2.

We use restricted maximum likelihood (RML) estimation to assess the relationship between effect size and predictor variables, as suggested by Bijmolt and Pieters (2001) on the basis of a Monte Carlo simulation study. RML is to be favored over full maximum likelihood (FML) estimation, as FML tends to yield biased parameter estimates because it treats regression coefficients as fixed but unknown quantities when the variance components are estimated, but it does not account for the degrees of freedom lost by estimating these fixed effects (Hox, 2002). RML, in contrast, estimates the variance components after removing the fixed effects from the model, which produces parameter estimates with less bias (Hox, 2002).

While our hypotheses do not play out at level 1, we still incorporate several control variables at this level, predominantly methodological moderators of the focal effect. As our hypotheses concern the harmonizing effect on compensation structures of the formal and informal institutions in each national context (as well as the interactions between them), we will model institutional variables as our primary level 2 predictors, complemented by predominantly substantive control variables. The primary advantage of using HiLMMA instead of more conventional meta-analytic regression analysis (or MARA; Lipsey & Wilson, 2001) is that it explicitly recognizes and corrects for the hierarchical structure of meta-analytic data, and can precisely compute the explanatory power of level 2 institutional factors with respect to individual estimates of the focal effect (Hox, 2002). In more formal terms our level 1 model is expressed as:

[42] Raudenbush and Bryk therefore label HiLMMA as a "level-1 variance-known (or V-known) application" (2002: 207).

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{1ij} + e_{ij}$$

the level 2 model as:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} Z_{1j} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

and the integrated model as:

$$Y_{ij} = \gamma_{00} + \gamma_{10} X_{1ij} + \gamma_{01} Z_{1j} + e_{ij} + u_{0j}$$

where:

Y_{ij} = effect size $_i$ nested in jurisdiction $_j$;

β = level 1 parameter estimate;

X = level 1 predictor variable;

e = level 1 error term;

γ = level 2 parameter estimate;

Z = level 2 predictor variable;

u = level 2 error term.

Variables. To test Hypothesis 1, we used two level 2 formal institutional variables. The investor protection index measures the extent to which the formal institutions in a jurisdiction protect minority shareholders against misuse of corporate assets by executives and large owners (Djankov et al., 2008; Klapper & Love, 2004; source: www.doingbusiness.org). The rule of law index captures the extent to which people have confidence in and abide by the formal rules of society (source: Kaufmann et al., 2009). To test Hypothesis 2, we used two level 2 informal institutional variables. We created a soft law index ourselves on the basis of a content analysis of the codes of good governance (codes retrieved from: www.ecgi.org/codes/all_codes.php) of all 29 countries in our dataset. The index ranges from 0 to 15 and is formed by adding 1 for each of 15 preselected measures[43] the code proposes to attenuate executive

[43] A point is added to a given country's score on our *soft law index* when its code of good governance calls for: (1) separation of the CEO and Chair functions; (2) majority of independent directors on the BoD; (3) majority of non-executive directors on the BoD; (4) performance evaluations of executives by an independent committee and/or externals; (5) disclosure of the firm's executive remuneration policy; (6) an independent nominating committee; (7) an independent remuneration committee; (8) disclosure of the rules of operation of the remuneration committee; (9) disclosure of the total compensation received by each executive; (10) a direct link between firm performance criteria and executive compensation; (11) proportionality between the fixed and variable components of executive compensation; (12) disclosure of the principles of the retirement plan for executives; (13) disclosure of the principles for setting the exit bonus in case of premature contract termination; (14) disclosure of

compensation levels or increase the elasticity of the firm performance – executive compensation association. Ownership concentration entails the degree to which firm ownership is concentrated in the hands of large owners, measured as the fraction of all firms in a given jurisdiction with large blockholders in their ownership structure (source: authors, 2010).

To test Hypotheses 3a and 3b, we included two product terms linking formal to informal institutions: (1) investor protection index × soft law index, and (2) rule of law index × ownership concentration. Prior to multiplication, we grand-mean centered the institutional variables to facilitate subsequent interpretation of their product terms and avoid multicollinearity (Raudenbush & Bryk, 2002: 31ff).

To ensure the robustness of our results against other jurisdiction-level influences, we included several level 2 control variables. As executive compensation is known to be influenced by national culture (Pennings, 1993; Tosi & Greckhamer, 2004), we control for power distance, individualism, masculinity, and uncertainty avoidance (source: www.geert-hofstede.com). Furthermore, because executive compensation levels and structures are known to change when firms use compensation consultants (Baker, Jensen, & Murphy, 1988; Conyon, Peck, & Sadler, 2009), we controlled for pay consultants by dividing the total number of offices operated by the four major compensation consultancy firms (Hay Group, Hewitt, Mercer, and Towers Perrin in a given jurisdiction by the natural log of its per capita gross domestic product. To correct for the effect of affluence on compensation, we also control for the natural log of per capita gross domestic product itself.

To control for the influence of methodological and measurement artifacts on effect sizes, we included several level 1 control variables. To test for the "file drawer problem" (Rosenthal, 1979), we included a dummy variable denoting whether a study was published (1) or not (0). To control for the possibility that the focal relationship is weakening over time (Gregg, Machin, & Szymanski, 1993), we added the median year of the sample window. We included each publication outlet's five-year ISI impact factor to control for publication outlet status effects. To assess whether publication traditions vary across academic fields, we included separate dummy variables to identify effect sizes as stemming from an accounting journal, economics journal, finance journal, management journal, or otherwise. To correct for data collection design, we included a dummy variable indicating whether a given effect size was

stock options granted to executives; (15) a minimum exercise window of 3 years for stock options. Country score data is available from the authors.

based on panel (1) or cross-sectional (0) data. We also included a dummy variable coded as (1) when an effect size was derived from a study controlling for the possible endogeneity of firm performance on executive compensation, and as (0) otherwise. To test for the moderating effect of focal variable operationalizations, we added dummy variables indicating whether firm performance was measured as accounting (1) or as market (0) performance, whether executive compensation was measured as total cash (1) or total compensation (0), and whether the compensation was received by the CEO, other executives, or mixed executives and other senior corporate officials. We also included dummy variables measuring whether the effect size derived from a sensitivity analysis measuring the responsiveness of compensation to performance changes (1) or otherwise (0) and whether performance variable measurement lagged compensation variable measurement (1) or was performed concurrently (0). Finally, to control for industry effects, we controlled for the two industries for which sector-specific results were available: banking and real estate.

5.4 Results

5.4.1 HOMA results

Table 1 shows the $r_{xy.z}$ -based and r-based HOMA results for the focal relationship. They reveal a modest but positive and significant association between firm performance and executive compensation ($r_{xy.z}$ -based mean ρ = 0.08; r-based mean ρ = 0.12). The difference between both estimates results from the fact that the $r_{xy.z}$ -based mean ρ accounts for the influence of the control variables contained in the z-vector, which yields a more precise estimate of the mean effect (Stanley, 2005). Saliently, however, the level of heterogeneity in the effect size distribution is considerable ($r_{xy.z}$ distribution: Q = 24,515, I^2 = 0.90; r distribution: Q = 9,823, I^2 = 0.94). Under these conditions, the mean ρ is best interpreted as an average rather than a common true correlation value (Hedges & Olkin, 1985: 235), implying that further moderator analyses are needed. Further inspection of especially the $r_{xy.z}$–based results shows that differential operationalizations of the focal variables are not capable of explaining the detected heterogeneity, as neither the chosen performance measure (accounting-based = 0.08 vs. market-based = 0.08), recipient identity (CEO =0.08 vs. other executive = 0.07), nor compensation measure (total cash = 0.09 vs. total pay = 0.07) meaningfully moderates the focal relationship.

Table 2 shows the country-specific HOMA results for the focal relationship. These and all subsequent analyses are $r_{xy.z}$-based, as a synthesis of these effect sizes offers a more precise estimate of the true mean effect size and greater statistical power than one based on r (Stanley, 2005). Even casual inspection reveals the presence of jurisdiction-level moderating effects, as the cross-national differences in the associational strength of the focal relationship are substantial. If we take a bandwidth of 0.03 around the mean ρ as the margin, we find that 15 out of the 29 countries represented in our sample are fairly close to the mean ρ (Australia = 0.06, Canada = 0.05, China = 0.07, Czech Republic = 0.06, Denmark = 0.05 (n.s.), Greece = 0.05, India = 0.07, Italy = 0.06, Japan = 0.07, Norway = 0.05, South Korea = 0.06, Spain = 0.09, Switzerland = 0.11, UK = 0.07, U.S. = 0.10). These countries represent a middle group in which executive compensation is moderately contingent upon firm performance. Yet the focal relationship is weaker and occasionally even negative in a group of 9 other countries (Bulgaria = 0.04, Hong Kong = 0.03, Malaysia = 0.00 (n.s.), The Netherlands = -0.06, Pakistan = -0.01 (n.s.), The Philippines = 0.02 (n.s.), Russia = 0.04 (n.s.), Sweden = 0.02 (n.s.), Taiwan = 0.04 (n.s.)). Here, executives are less incentivized to maximize firm performance, and enjoy more discretion to engage in self-serving behavior. In a final group of 5 countries (Finland = 0.16, Germany = 0.16, Israel = 0.14, New Zealand = 0.16, Portugal = 0.15), the focal relationship is stronger. In these contexts, executive compensation is more closely tied to firm performance.

5.4.2 HiLMMA results

Table 3 shows the $r_{xy.z}$ -based HiLMMA results. Model 1 contains only level 1 predictors. Model 2 displays the results for Hypotheses 1 and 2. It contains level 1 predictors, as well as the direct effects of all level 2 predictors. Model 3 reports the results for Hypotheses 3a and 3b. It is composed of all level 1 and 2 predictors, as well as the two interaction terms. The models fit the data well. A one-way random effects ANOVA analysis reveals that the intraclass correlation coefficient is 0.25, implying that a quarter of the variability in the effect size contribution is between countries and three quarters is within countries. Table 3 shows that the chosen level 2 predictors in Model 2 explain 45 percent of the between-country variance, and that the explanatory power at this level increases to 49 percent when the interaction terms are added to the equation in Model 3. The level 1 predictors explain between 35 percent and 37 percent of the within-country variance across the three models.

Table 1: HOMA Results[a,b]

Predictor	Partial correlation coefficient						Pearson product-moment correlation					
	k	*N*	Mean ρ	SE	Q test	I^2	*k*	*N*	Mean ρ	SE	Q test	I^2
Firm Performance to Pay	2,415	4,107,639	**0.08***	0.00	**24,515***	0.90	592	659,810	**0.12***	0.01	**9,823***	0.94
Performance measurement												
Accounting measures	1,136	1,566,117	**0.08***	0.00	**8,999***	0.87	347	319,089	**0.14***	0.01	**4,569***	0.92
Market measures	1,277	2,541,223	**0.08***	0.00	**15,342***	0.92	245	340,721	**0.10***	0.01	**5,179***	0.95
Mixed	2	299	0.11	0.15	**6***	0.83						
Recipient identity												
CEO pay	1,682	2,713,901	**0.08***	0.00	**19,067***	0.91	440	407,801	**0.13***	0.01	**7,180***	0.94
Executives pay	401	879,280	**0.07***	0.00	**3,019***	0.87	82	152,387	**0.11***	0.01	**1,778***	0.95
Mixed	332	514,458	**0.06***	0.00	**1,820***	0.82	70	99,622	**0.07***	0.01	**630***	0.89
Compensation measurement												
Total cash	1,060	2,013,453	**0.09***	0.00	**13,238***	0.92	278	358,610	**0.11***	0.01	**5,215***	0.95
Total pay	1,355	2,094,186	**0.07***	0.00	**10,910***	0.87	314	301,200	**0.13***	0.01	**4,603***	0.93

[a] *k* = number of effect sizes; *N* = total sample size; mean ρ = estimate of population correlation; SE_ρ = standard error of mean ρ; *Q* = Cochran's homogeneity test statistic; *Q*; I^2 = scale-free index of heterogeneity.

[b] Mean effect sizes marked with an asterisk (*) are statistically significant (p <0.05).

Table 2: Country-Specific HOMA Results[a,b]

Criteria	*k*	*N*	Mean ρ	SE	Q test	I^2
Australia	247	158,381	**0.06***	0.01	**832***	0.70
Bulgaria	10	5,243	**0.04***	0.01	3	0.00
Canada	32	47,122	**0.05***	0.01	**179***	0.83
China	180	433,402	**0.07***	0.00	**922***	0.81
Czech Republic	6	5,988	**0.06***	0.02	8	0.38
Denmark	8	8,948	0.05	0.03	**51***	0.86
Finland	24	8,228	**0.16***	0.01	14	0.00
Germany	24	22,492	**0.16***	0.01	**40***	0.43
Greece	44	5,544	**0.05***	0.02	**80***	0.46
Hong Kong	52	72,672	**0.03***	0.01	**171***	0.70
India	24	24,274	**0.07***	0.02	**151***	0.85
Israel	9	6,264	**0.14***	0.01	4	0.00
Italy	27	40,819	**0.06***	0.01	**60***	0.57
Japan	104	165,206	**0.07***	0.01	**638***	0.84
Malaysia	16	10,119	0.00	0.02	**43***	0.65
Netherlands	29	10,654	**-0.06***	0.02	**115***	0.76
New Zealand	37	6,096	**0.16***	0.04	**291***	0.87
Norway	19	3,179	**0.05***	0.02	12	0.00
Pakistan	2	1,140	-0.01	0.03	1	0.00
Philippines	4	1,092	0.02	0.04	5	0.40
Portugal	8	1,040	**0.15***	0.03	8	0.13
Russia	16	6,782	0.04	0.02	25	0.40
South Korea	14	7,574	**0.06***	0.01	7	0.00
Spain	43	10,578	**0.09***	0.02	**154***	0.73
Sweden	64	18,608	0.02	0.01	**108***	0.42
Switzerland	34	4,191	**0.11***	0.04	**186***	0.82
Taiwan	29	18,985	0.04	0.02	**100***	0.72
UK	277	593,633	**0.07***	0.00	**1,259***	0.78
U.S.	987	2,351,582	**0.10***	0.00	**16,738***	0.94
Mixed	45	57,803	**0.02***	0.01	**162***	0.73

[a] k = number of effect sizes; N = total sample size; mean ρ = estimate of population correlation; SE_ρ = standard error of mean ρ; Q = Cochran's homogeneity test statistic; I^2 = scale-free index of heterogeneity.

[b] Mean effect sizes marked with an asterisk (*) are statistically significant (p <0.05).

The results in Model 2 confirm Hypothesis 1. The investor protection index positively moderates the focal relationship ($p < 0.10$), implying that executive compensation is more closely tied to firm performance in countries where the interests of minority shareholders are protected by formal institutions. Likewise, the rule of law index strengthens the relationship between performance and compensation ($p < 0.05$), suggesting that executives are more likely to maximize firm value in countries with a better developed formal legal system.

Model 2 results also provide support for Hypothesis 2. Our self-compiled soft law index positively moderates the focal relationship ($p < 0.10$), suggesting that executive compensation becomes more contingent on corporate performance in contexts with stronger informal norms regulating executive compensation. Also, ownership concentration bolsters the association between performance and compensation ($p < 0.05$), meaning that large owners are effective monitors of executive conduct.

Finally, the results in Model 3 confirm Hypothesis 3b, thereby rejecting Hypothesis 3a. The product term of the investor protection index and the soft law index is positive and significant ($p < 0.10$), suggesting that formal (minority) shareholder protection rules become a more effective deterrent of managerial opportunism when they are buttressed by strong informal norms condemning such behaviors, and vice versa. Furthermore, the non-significant direct effect of the soft law index in Model 3 implies that codes of good governance have no direct effect on the performance – compensation association when a country's score on the investor protection index equals the grand mean (cf. Aiken & West, 1991). Similarly, the product term of rule of law index and ownership concentration is positive and significant ($p < 0.01$), implying that large owners will be better able to effectuate a stronger focal relationship when courts acknowledge and effectuate their voting rights. The non-significant direct effects of the rule of law and ownership concentration variables in Model 3 indicate that neither variable significantly moderates the focal relationship when the value of the other equals the grand mean in a given context (cf. Aiken & West, 1991). In short, both formal and informal institutions matter for the relationship between firm performance and executive compensation, and the two institutional types are to be understood as complements, not as substitutes.

5.4.3 Control variable results

Table 3 also shows the results for our level 1 and level 2 control variables. At level 2, the national culture variables confirm that national culture influences the focal relationship (Pennings, 1993; Tosi & Greckhamer, 2004), although only the negative significant result for individualism is robust. The masculinity and uncertainty avoidance variables, which are reported to be less salient for executive compensation (Tosi & Greckhamer, 2004), had to be dropped from the analysis in Model 3 due to limited degrees of freedom at level 2. The positive significant result for pay consultants implies that the use of these intermediaries indeed helps BoDs effectuate performance-based compensation contracts (Baker et al., 1988; Conyon et al., 2009). The negative significant result for natural log of per capita gross domestic product suggests that compensation is less performance-dependent in more affluent societies. At level 1, the significant positive effect for the published variable indicates that the "file drawer problem" (Rosenthal, 1979) is present in the executive compensation field, implying that studies identifying greater effects have a better chance at being published. The significant negative result for median year of the sample window suggests that the link between performance and compensation has weakened over time (Gregg et al., 1993).

The significant positive result for five-year ISI impact factor indicates that confirmatory publication biases are more pronounced in higher status journals. In terms of disciplinary biases, focal relationship infirming studies appear to be favored amongst economists, whereas focal relationship conforming studies are favored amongst management scholars. The methodological panel and endogeneity variables did not moderate the focal relationship.

The HiLMMA results for the accounting, total cash, CEO, and executives variables are wholly consistent with those reported in the first panel of Table 1. The positive significant result for compensation to performance changes indicates that studies using change variables tend to identify stronger focal effects, which may well be a statistical artifact (cf. Bergh & Fairbank, 2002). The negative significant result for the lagged performance measurement variable suggests that executive compensation is more appropriately conceptualized as an ex-post reward than as an ex-ante incentive (Jensen & Murphy, 2010). The sector variables show that executive compensation is more contingent upon performance in the banking sector than elsewhere.

Table 3: HiLMMA Results

Variable	Model (1)	Model (2)	Model (3)
Constant	**0.05 (0.01)*** **	**0.06 (0.01)*** **	**0.06 (0.01)*** **
Level 1 predictors			
Published	**0.04 (0.02)** **	**0.04 (0.02)** **	**0.04 (0.02)** **
Median year sample window	**-0.001 (0.00)*** **	**-0.001 (0.00)*** **	**-0.001 (0.00)*** **
Five-year ISI impact factor	**0.004 (0.00)*** **	**0.004 (0.00)*** **	**0.004 (0.00)*** **
Accounting journal	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)
Economics journal	**-0.04 (0.01)*** **	**-0.04 (0.01)*** **	**-0.03 (0.01)*** **
Finance journal	-0.00 (0.00)	**-0.01 (0.00)***	**-0.01 (0.00)***
Management journal	**0.03 (0.01)*** **	**0.03 (0.01)*** **	**0.03 (0.01)*** **
Panel design	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Endogeneity check	-0.02 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Accounting performance	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.01)
Total cash compensation	**0.02 (0.01)** **	**0.01 (0.00)** **	**0.02 (0.01)** **
CEO pay identity	**0.03 (0.01)*** **	**0.03 (0.01)*** **	**0.03 (0.01)*** **
Executive pay identity	**0.03 (0.01)*** **	**0.03 (0.01)*** **	**0.04 (0.01)*** **
Change variables used	**0.02 (0.01)*** **	**0.02 (0.01)*** **	**0.02 (0.01)*** **
Lagged	**-0.05 (0.01)*** **	**-0.05 (0.01)*** **	**-0.05 (0.01)*** **
Banking	**0.05 (0.02)*** **	**0.05 (0.02)*** **	**0.05 (0.02)*** **
Real estate	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
Level 2 predictors			
Investor protection index		**0.001 (0.00)***	**0.001 (0.00)***
Rule of law index		**0.06 (0.03)** **	-0.06 (0.06)
Soft law index		**0.004 (0.002)***	-0.01 (0.01)
Ownership concentration		**0.18 (0.06)** **	-0.10 (0.12)
Power distance		**-0.002 (0.00)** **	-0.00 (0.00)
Individualism		**-0.002 (0.00)** **	**-0.002 (0.00)** **
Masculinity		0.00 (0.00)	
Uncertainty avoidance		-0.00 (0.00)	
Pay consultants		**0.56 (0.17)*** **	**0.38 (0.12)*** **
Natural log of per capita GDP		**-0.03 (0.01)** **	**-0.02 (0.01)** **
Investor protection index * soft law index			**0.02 (0.01)***
Rule of law index * ownership concentration			**0.19 (0.06)*** **
Level 1 observations	2,370	2,370	2,370
Level 2 observations	29	29	29
Intraclass correlation coefficient	.25	.25	.25
R^2 within countries	0.35	0.37	0.37
R^2 between countries	0.00	0.45	0.49

* p < 0.10, ** p < 0.05, *** p < 0.01.

5.5 Discussion

5.5.1 Generalizing the focal relationship

Our study offers the most comprehensive synthesis of the executive compensation literature to date. Based on our analyses of a synthetic dataset comprised of more than four million primary observations, we retrieved a positive significant $r_{xy.z}$ -based mean ρ of 0.08 for the relationship between firm performance and executive compensation. This finding has two implications for future compensation studies. First, we recommend compensation scholars to accept a modest positive association between firm performance and executive compensation as a stylized fact (Helfat, 2007). This implies a reduced emphasis on mustering further empirical evidence in support of the focal relationship, except perhaps for less well-researched national contexts. Second, the Q (Hedges & Olkin, 1985) and I^2 (Higgins, Thompson, Deeks, & Altman, 2003) tests for homogeneity (Table 1) both show that the effect size distribution is very heterogeneous. As a separate one-way random effects ANOVA analysis (Raudenbush & Bryk, 2002) reveals that 25 percent of that heterogeneity is between countries, researchers will benefit from refocusing their efforts towards comparative studies exploring institutional influences on executive compensation.

5.5.2 Methodological innovations

Meta-analyses have long been an accepted research methodology in micro disciplines such as organizational behavior, but recently they have also become increasingly popular in macro disciplines like strategic management and international business (Combs et al., 2010). Macro research has its own distinct challenges, however, which call for adaptations in meta-analytic research practices. Our study pioneers two such adaptations.

First, whereas micro research often tends to occur in the controlled environment of the laboratory, macro researchers tend to rely on field data. Observations made in the field are generally more difficult to compare than those harvested from laboratory studies, which obviates the need to control for extraneous influences. Our study is one of the first macro research meta-analyses to control for extraneous sources of variance through its reliance on $r_{xy.z}$ as its primary source of effect size information. Another benefit favoring the use of $r_{xy.z}$ in macro research is that this effect size can be computed directly from regression output, which fosters the inclusion of studies from macro research fields like economics and accounting in

which effect size reporting is not editorially demanded of authors (Combs & Ketchen, 2003). Furthermore, $r_{xy.z}$ is an unbiased, scale-free, linear estimate of association, making it superior to other means of retrieving information on relational strength from studies with missing effect size data, such as transformed beta coefficients (Peterson & Brown, 2005) or significance tests (Bushman & Wang, 2009). We encourage other scholars conducting macro research meta-analyses to follow suit and base their analyses on $r_{xy.z}$.

Second, strategy and international business scholars often strive to make cross-national generalizations, but have to make do with primary observations from a limited number of countries, which can lead to misleading results and mistaken interpretations (Franke & Richey, 2010). Our study is one of the first to employ HiLMMA in macro research meta-analysis. An important advantage of using HiLMMA is that it allows researchers to combine multiple single-country studies in a single multi-country study, while accounting for the non-independence of effect sizes nested in similar jurisdictions. Another important advantage of HiLMMA is that researchers can bring new level 2 variables into the analysis (like our institutional variables and interaction terms), which capture essential features of the institutional context from which effect sizes were drawn but were not part of the original analyses. This greatly expands the possibilities for strategy and international business scholars to use meta-analysis as a theory-extension research tool, as compared to a method that is geared solely towards research synthesis (Eden, 2002). We call upon other macro researchers to move beyond conventional meta-analytic syntheses of bivariate relationships towards theory-extension studies using multivariate meta-analytic techniques.

5.5.3 Extending the institutions-based view

The institutions-based view is rapidly emerging as a primary perspective in international business strategy (Carney et al., 2010; Fiss, 2008; Heugens et al., 2009; Peng et al., 2009). We extend this perspective by applying it to the phenomenon of executive compensation and by testing its core prediction that formal as well as informal institutions matter to core business processes (Peng & Khoury, 2008; Peng et al., 2009). Our results confirm this prediction by showing that both formal institutions like the rule of law and shareholder protection provisions and informal institutions like ownership concentration and codes of good corporate governance can help strengthen the association between firm performance and executive remuneration.

Moreover, our findings show that both institutional types are complementary (Hall & Gingerich 2009; Hall & Soskice 2001), in the sense that the contribution of formal institutions towards a stronger focal relationship is dependent upon the level of development of informal institutions, and vice versa (Milgrom & Roberts, 1995). Figure 1 offers a way of visualizing the interaction effect. In this three-by-three matrix, the X-axis portrays the complementarity between the soft law index and the investor protection index.

Figure 1: Complementarity of Formal and Informal Institutions[a]

		Soft law index*investor protection index		
Ownership* rule of law index		HH	HL	LL
	HH		Germany New Zealand Spain Switzerland (Mean ρ = **0.12***)	
	HL	Australia Denmark Finland Hong Kong Norway UK U.S. (Mean ρ = **0.09***)	Canada Israel Italy Japan Malaysia Netherlands Portugal Sweden (Mean ρ = **0.06***)	Bulgaria Czech Republic Greece Philippines Russia (Mean ρ = **0.05***)
	LL		India South Korea (Mean ρ = **0.06***)	China Pakistan Taiwan (Mean ρ = **0.03***)

[a] Mean ρ = estimate of population correlation; Mean effect sizes marked with an asterisk (*) are statistically significant (p <0 .05).

Countries that have an above-median ranking on both are classified in the left-hand column, countries with an above-median ranking on only one dimension are entered into the middle column, while the countries occupying the right-hand column

have a below-median score on both. Likewise, the Y-axis shows the codependence of ownership concentration and the rule of law index. Countries in the top row are typified by an above-median score of both, whereas countries with an above-median ranking on only one variable are positioned in the middle row, and the bottom row is reserved for countries with a below-median score on both.

This visual presentation confirms the HiLMMA interaction results. The association between firm performance and executive compensation is strongest in the countries in the two cells closest to the left-upper corner, which enjoy an above-median position on three out of four institutional dimensions (mean ρ = 0.12; 0.09). It is weakest in the countries occupying the bottom-right cell, which are below-median on all dimensions (mean ρ = 0.03). The mean ρ is indeed intermediate in all countries with one or two above-median institutional scores (mean ρ = 0.06; 0.06; 0.05).

These results show that the effectiveness of ownership concentration as a means of ensuring higher firm performance – executive compensation sensitivity is contingent upon a well-functioning legal system. Large owners can influence and discipline executives through their concentrated voting rights, but voting is ineffective unless courts are willing to uphold decisions made at shareholders' meetings (Shleifer & Vishny, 1997). Indeed, the strength of the focal relationship goes up as we move from lower to higher rows. Likewise, our results demonstrate that informal codes of good governance help strengthen formal investor protection measures.

Executive compensation is more closely tied to firm performance when relevant informal norms can be used in formal legal action, as compared to the situation in which both work alone. Again, the strength of the focal association increases as we move from right to left in the figure. In sum, the strength of the focal relationship is not so much dependent upon the quality of institutional factors individually, but more so on the level of development of the institutional matrix in its entirety. Researchers working on future tests of the institutions-based view of international business strategy are therefore advised to not only map direct institutional effects, but also to trace institutional complementarities though an exploration of cross-institutional interactions (Hall & Gingerich, 2009; Hall & Soskice, 2001).

Chapter 6. Business group performance, context, and strategy: A meta-analysis[44]

ABSTRACT
Research on business groups – legally independent firms tied together in a variety of 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 the affiliation discount to specific strategic actions taken at the firm and group levels. Overall, our results indicate that affiliate performance reflects complex processes and motivations.

6.1 Introduction

The past decade has witnessed a surge in research regarding the performance of business groups (BGs), which Khanna and Rivkin (2001) define as "firms which though legally independent, are bound together by a constellation of formal and informal ties and are accustomed to taking coordinated action" (p. 47). Three points of consensus are apparent in this body of work. First, BGs are ubiquitous in many countries with types such as Japanese *Keiretsus* and *Zaibatsu* (Gerlach, 1992), South Korean *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) becoming emblematic of their nation's enterprise systems.

A second area of consensus is that BGs are structurally different from conglomerate organizations, described by Williamson as H- and M-forms (Williamson, 1975). While coordination in conglomerates takes place through the unified internal control of a portfolio of firms (Davis, Diekman, & Tinsley, 1994), coordination in BGs relies on a more complex web of mechanisms, such as multiple and reciprocated

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equity, debt, and commercial ties (Gerlach, 1992) and kinship affiliation between top managers (Granovetter, 2005).

A third widely held position is that BGs owe their predominance in many countries to the existence of market failures and poor-quality legal and regulatory institutions (Granovetter, 2005). In this view, BG formation has taken place in these contexts in order to internalize transactions in the absence of reliable trading partners or legal safeguards to guarantee 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 BGs are positive (Fisman & Khanna, 2004; Keister, 2000). Such disagreement is evident in characterizations of BGs by scholars as either 'heroes or villains' (Claessens, Djankov, & Lang, 2000a), 'paragons or parasites' (Khanna & Yafeh, 2007), 'red barons or robbers barons' (Perotti & Gelfer, 2001), or 'anachronisms or avatars' (Granovetter, 2005). Specifically, a lack of consensus exists on four key issues regarding BG performance and strategies.

First, researchers are divided regarding the performance implications of BG affiliation (Claessens, Fan, & Lang, 2006; Khanna & Palepu, 2000b). While some scholars theorize that the net effect of affiliation on profits is positive, others argue 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) find that affiliation enhances performance (Almeida & Wolfenzon, 2006; Chang & Hong, 2000). Yet others have found that these potential advantages are often not realized due to 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 BG 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 which moderate the affiliation–performance relationship. The prevailing viewpoint is that BG 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) (Khanna & Palepu, 1997; Fisman & Khanna, 2004), but the evidence on this point is inconclusive. In a study of BG affiliation in fourteen emerging economies, Khanna and Rivkin (2001) find that affiliation is beneficial in six countries, detrimental in three others, and ineffectual in the remaining five. They conclude that the performance effects of BG affiliation "resist any simple normative categorization" (p. 68) and that a definitive understanding of their effects in various national contexts "must await further data collection and empirical inquiry" (p. 68).

Third, while many studies have examined the performance consequences of affiliation, there is a shortage of research examining the strategies of BG affiliates. As a result, there is little evidence on the issues of whether the strategies of affiliate firms are different from non-affiliated 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 BG affiliation.

Fourth, the evidence concerning BG performance has primarily been drawn from studies at the affiliate rather than the group level (but see: Chang & Hong, 2002; Luo & Chung, 2005; Mahmood & Mitchell, 2004). This is concerning because some of the main theoretical arguments suggesting superior BG performance emphasize their aggregate scale and scope efficiencies. For instance, it is widely argued that the performance advantages of BGs are a function of their market power and capacity to wield political influence (Morck, Wolfenzon, & Yeung, 2005; Claessens, Djankov, & Lang, 2000b). Similarly, Khanna and Palepu's core argument also pertains to the group level of analysis, as the success of BGs 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 BG literature between theories which emphasize group-level phenomena and empirical studies which examine performance at the affiliate level.

In short, in reviewing the literature we find that there is broad agreement among scholars that BGs 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 noted by Eden (2002), 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 perform such a research-synthesizing meta-analysis to examine the

mixed empirical findings in the BG literature on the performance effects of affiliation. However, both Eden (2002) and Combs, Ketchen, Crook, and Roth (2010) point out that meta-analyses are also a useful theory-extension tool. We therefore also employ 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 variables and mediating effects of affiliate- and group-level strategy variables on which the existing BG literature is largely silent.

6.2 Theory and Hypotheses

6.2.1 Performance effects of business group affiliation

To explain their prevalence in different host societies, researchers adopting various theoretical perspectives have argued that BG ties have performance-enhancing benefits for affiliates (Yiu, Lu, Bruton, & Hoskisson, 2007). Taking up the theme of BGs as a response to market failures, Khanna and Palepu (1997) have reasoned that affiliation benefits firms because BGs function as efficient internal capital and labor markets and as an intermediary organizational form capable of mobilizing valued resources. Guillén (2000) argues that the recurring transactions between BG 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 argue that scarce skilled labor and managerial talent can be developed and shared across affiliate firms more efficiently due to transaction recurrence (Chang & Choi, 1988; Chang & Hong, 2000).

Adopting a social network perspective, other scholars have emphasized benefits arising from enduring and multiplicitous relations between BG 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) reason that BGs reduce uncertainty for affiliates through the coordination of investment decisions and by providing assurances about the supply of intermediate goods. Weidenbaum and Hughes (1996) attribute the success of BGs to their informal contract enforcement capacities with regard to credit granting and joint venture participation. Luo and

Chung (2005) emphasize 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 argue that BGs do not exist to improve affiliate profitability (Kim, Hoskisson, & Wan, 2004; Morck & Yeung, 2003). Agency theorists see BGs as fraught with agency costs (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 where dominant shareholders transfer assets or profits from peripheral to core firms in which they hold relatively greater equity ownership (Friedman, Johnson, & Mitton, 2003). Others suggest that BGs promote the stability rather than the maximization of returns (Gerlach, 1992). In this view, BGs serve as an insurance policy that reduces bankruptcy risk for affiliates, but also imposes 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.

6.2.2 The moderating role of institutional context

Broad agreement exists that BGs emerged as a response to underdeveloped institutions or 'institutional voids' (Khanna & Palepu, 1997) in developing economies, and that BG ties are beneficial in societies where such voids continue to exist (Carney & Gedajlovic, 2002a). The institutional voids thesis states that BGs internalize activities that otherwise fail to materialize due to limitations in a society's financial, legal, and labor market institutions, which jeopardize the exchange of products and services between arm's length transactors (Leff, 1978). In such contexts, BG 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).

While theoretical support for the institutional voids thesis is widespread, less agreement exists about the relative importance of different types of voids. While some scholars focus primarily on deficiencies in financial systems, others emphasize the importance of deficiencies in legal or labor market institutions. Among the former, BGs 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 BGs transfer financial resources from cash rich to financially constrained affiliates (Lee *et al*., 2008; Lins & Servaes, 2002).

Others 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, BGs serve as a haven where contracts are more easily enforced and the risk of opportunism is limited. Evidence supporting this view comes from researchers describing how transaction recurrence among BG affiliates provides rich information flows, reputation effects, and informal contract enforcement mechanisms which curb opportunism (Berglöf & Perotti, 1994; Guillén, 2000; Khanna & Palepu, 1997).

Lastly, another group of scholars highlight the roles played by BGs in societies where there are weaknesses in institutions supporting the development of human capital such as deficient general, technical, and professional schools, which can lead to acute labor shortages (Fisman & Khanna, 2004). In these contexts, BGs 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 will not influence all firms equally. Rather, such voids impose a stronger negative performance effect on standalone firms due to the various benefits affiliates receive, such as the mutual assistance that group members can 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 associational strength of the relationship between business group affiliation and financial performance is positively moderated by the existence of weak financial infrastructure.
>
> Hypothesis 2b: The associational strength of the relationship between business group affiliation and financial performance is positively moderated by the existence of weak legal institutions.
>
> Hypothesis 2c: The associational strength of the relationship between business group affiliation and financial performance is positively moderated by the existence of weak labor market institutions.

6.2.3 The mediating role of organizational strategy

Whereas many scholars have examined the affiliation-performance relationship, only 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 BG affiliates make distinctive strategic choices, and if so, whether these choices explain performance differences between affiliated and non-affiliated firms. Yet affiliates' strategies are likely to differ from those of standalone 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, such that affiliates may face a performance discount relative to unaffiliated firms.

Leverage. Four streams of literature suggest that BG affiliates make greater use of debt financing than non-affiliates. First, agency theorists argue that affiliates' majority shareholders prefer to finance operations through debt rather than 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 non-affiliates (Keister, 2001). Third, norms of mutual assistance that other researchers have described as emblematic of BG affiliation may function as an "insurance policy" (Lincoln, Gerlach, & Ahmadjian,

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 intra-group provision of debt less risky for lenders (Gedajlovic & Shapiro, 2002).

While there are no studies investigating the performance consequences of debt-reliant financial strategies in the context of BGs, there may be a bias among BG affiliates 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 described by sociologists (e.g. Gerlach, 1992) pertaining to the expectation of supporting fellow affiliates and the majority shareholder entrenchment effect described by agency theorists (Faccio, Young, & Lang, 2001) suggest that debt financing may be used to fund projects for reasons other than profit maximization. Higher leverage by BG affiliates is therefore expected to lead to lower performance relative to standalone firms.

Diversification. We expect BG affiliates to engage in more unrelated diversification than other firms for three reasons. First, agency theorists suggest that many investments by BGs 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 (Friedman *et al.*, 2003). Second, the availability of financing from a group's internal capital market insulates the firm 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 that these tendencies toward unrelated diversification will negatively influence affiliate-level financial performance.

Internationalization. The literature suggests three reasons for a less pronounced international orientation amongst BG affiliates relative to non-affiliated firms (Colpan, 2006; Lamin, 2006; Hundley & Jacobson, 1998). First, the specialized services that BGs 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 the 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 BG affiliates. Third, social norms in many BGs dictate that firms should first look amongst other affiliates for possible buy-and-supply relationships before approaching non-group members, which may engender "complacency and a reduced incentive to export" (Hundley & Jacobson, 1998: 935).

Even though BG affiliates enjoy advantages in accessible financial resources (Khanna & Palepu, 1997; Guillén, 2000), their preferences for domestic projects may lead them to pass on international opportunities which are viewed as profitable by unaffiliated firms. 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 BG affiliates may lead to performance lagging that of standalone firms. In sum, multiple theoretical perspectives suggest that the strategies of BG affiliates will differ from non-affiliates, explaining some of the performance differentials between them. These views are expressed in the following hypothesis:

> 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.

6.2.4 Group-level performance effects

Our focus thus far has been on the strategic and performance consequences of group membership for BG affiliates rather than on the performance of the group as a whole. This affiliate-level focus is dominant in empirical BG work. We reason that the relative inattention paid to group-level effects is related to difficulties associated with developing a sufficiently large sample of BGs in any single primary study. Such pragmatic considerations have led to a disconnect between theoretical work on BGs, which focuses on group-level processes such as the ability to amass market power and

perform intermediating functions, and empirical work, which examines 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. BG 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 BG size, we strive for greater precision by explicitly distinguishing between the related effects of scale and scope on BG performance. By making this distinction, we are able to consider how and why BGs grow and also differentiate between various processes linking BG size to performance outcomes. In doing so, we account for the possibility that BG scale and BG scope have differing effects on group-level performance.

It is widely believed that BGs of a larger scale enjoy performance enhancing advantages relative to smaller groups (Guillén, 2000; Khanna & Yafeh, 2007). There is a strong impetus for sales and asset growth in BGs for a number of reasons. First, larger BGs 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 BGs reputation-enhancing effects. For instance, Morck, Wolfenzon, and Yeung (2005) argue that larger BGs may benefit from a reputation for fair dealing with business partners, and Khanna and Palepu (2000b) reason that reputation effects provide larger BGs with superior access to foreign capital and technological resources. Third, increased scale can provide BGs 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; Dielemans & Sachs, 2008). For these reasons, we hypothesize that BG scale is positively related to group-level performance.

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

While the arguments summarized in relation to Hypothesis 4a suggest there is a strong impetus for sales and asset growth in BGs, they do not distinguish between the various types of activities that may be pursued to achieve that greater scale. At a fundamental level, like executives elsewhere, BG 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 towards increasing size through growth in the scope of activities will be especially strong in BGs 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) reason that the types of assets available to BGs allow them to assemble the resources necessary to take advantage of diverse business opportunities and Luo and Chung (2005) similarly contend that network embeddedness within BGs provides a conduit for timely information exchange, leading to the pursuit of diverse business opportunities.

Thus, researchers generally agree that growth in BGs tends to be manifested in activities that increase the scope of a group's operations and several streams of research have theorized about the performance effects of such increased scope. Hoskisson, Johnson, Tihanyi, and White (2005) contend that broader scope in BGs leads to performance-impairing challenges related to bureaucratic and coordination costs associated with the management of increasingly complex groups. Others, however, see the effects of increased BG scope in a more favorable light and argue that it can actually be profit enhancing. In particular, proponents of the institutional voids thesis suggest that broader scope allows BGs to perform interstitial functions and provide resources and support for their various businesses. Khanna and Palepu (1997), for example, argue that greater scope enables BGs to function effectively where reliable trading partners are unavailable, as it addresses their need for complimentary products and services. The preceding discussion suggests that the impetus for sales and asset growth in BGs (cf. Hypothesis 4a) tends to manifest itself in the form of performance impacting activities that increase group scope. Consequently, we hypothesize that BG scope mediates the relationship between BG scale and BG performance.

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

6.3 Methods

6.3.1 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 *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 BG papers with missing effect size information, asking them for a correlation table. These efforts yielded a sample of 141 primary studies, consisting of 102 published and 39 unpublished studies (see Appendix D).

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 BG 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 interrelationships between all dependent, independent, and control variables in our analyses.

6.3.2 HOMA procedure

We used HOMA to test Hypotheses 1a and 1b. HOMA refers to a set of statistical procedures for calculating meta-analytic mean correlations and corresponding confidence intervals (Hedges & Olkin, 1985; Lipsey & Wilson, 2001). 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 rely on both r and $r_{xy.z}$. We use r because it is a widely published effect size statistic in management. Yet r is a bivariate measure of association, which ignores the effect of other variables that are often used as controls in multivariate

investigations of the focal relationship. 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 BG affiliation (X) and affiliate performance (Y), given a set of n controlling variables (Z).[45] The z-vector typically contains control variables like 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 show that procedures using the complete set of measurements outperform those representing each study by a single value in areas like parameter significance testing and parameter estimation accuracy (Bijmolt & Pieters, 2001). Since HOMA procedures assume 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 precision across effect sizes have to be accounted for, so we weighted them by their inverse variance weight w (Hedges & Olkin, 1985): the inverse of their squared standard error.[46]

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

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

We also used these weights to calculate the standard error of the mean effect and its confidence interval.[47]

6.3.3 MARA procedure

To test Hypotheses 2a through 2c we used MARA (Lipsey & Wilson, 2001), a special type of weighted least squares (WLS) regression analysis, designed to assess the relationship between effect size and moderator 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). MARA is a modified type of WLS regression, which prevents statistical analysis programs 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 use 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 use capture 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 with Djankov, La Porta, López-de-Silanes, and Shleifer's (2008)

[47] The meta-analytic mean is calculated as follows: $\overline{ES} = \frac{\sum(w \times ES)}{\sum w}$, with its standard error: $se_{\overline{ES}} = \sqrt{\frac{1}{\sum w}}$, and with its 95% confidence interval computed as: $Lower = \overline{ES} - 1.96(se_{\overline{ES}})$, $Upper = \overline{ES} + 1.96(se_{\overline{ES}})$

'anti-self-dealing index.' To measure the efficiency of the legal system in resolving commercial disputes, we used the *Doing Business* (World Bank) 'enforcing contracts' indicator. We utilized four variables to measure the effect of labor market institutions (Hypothesis 2c). We used *World Development Indicator* (World Bank) data to assess the general education level. To measure the availability of professionally trained managers, we created a new variable by counting the number of the Association to Advance Collegiate Schools of Business (AACSB) accredited business schools in each country (AACSB membership data). To assess the quality of these schools, we consulted the *Global Competitiveness Report* (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 ('1') or unpublished ('0') studies. Second, a dummy variable indicating whether a study utilized cross-sectional ('1') or longitudinal ('0') data was used. Third, to account for differences in journal quality, we controlled for impact factor (*ISI Web of Knowledge*^{sm}) of the publication outlet, assigning a value of '0' to unpublished or non-*ISI* sources and 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 indicators related to 'railroads,' 'ports,' 'air transport,' 'electricity supply,' and 'phone lines' from the *Global Competitiveness Report*. 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 sampling time frames across studies, we included dummy variables for each set of studies relying on similar data.

6.3.4 MASEM procedure

To test Hypotheses 3, 4a, and 4b, we used 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 Hypotheses 3, 4a, and 4b, which stipulate mediating relationships connecting two previously unlinked literatures (Eden, 2002).

Testing Hypothesis 3 requires us to assess: (a) the direct effect of BG affiliation on firm performance; (b) the effect of affiliation on firms' revealed strategy choices; and (c) 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 control for the influence of firm size (total assets, sales, or employees) and firm age (years since founding) on strategy choices, and of firm risk (volatility of returns) and R&D intensity (ratio of R&D expenditures to total sales) on affiliate performance. Due to 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:

(1) $Diversification = \beta_1\ affiliation + \beta_2\ size + \beta_3\ age + \varepsilon$
(2) $Internationalization = \beta_4\ affiliation + \beta_5\ size + \beta_6\ age + \varepsilon$
(3) $Leverage = \beta_7\ affiliation + \beta_8\ size + \beta_9\ age + \varepsilon$
(4) $Performance = \beta_{10}\ affiliation + \beta_{11}\ risk + \beta_{12}\ research\ \&\ development + \beta_{13}\ diversification + \beta_{14}\ internationalization + \beta_{15}\ leverage + \varepsilon$

Hypotheses 4a and 4b call for a test of: (a) the direct effect of BG scale on BG performance; (b) the effect of BG scale on BG scope; and (c) the influence of BG scope on BG performance. BG scale is measured as the sum of assets, sales, or employees across all affiliates; BG scope as a Herfindahl index or entropy measure capturing BG presence in multiple business segments. We also control for the influence of group leverage, R&D intensity, and risk on BG performance. Due to the potential endogeneity of BG scale and BG scope on BG performance, biased estimates could result from independent tests of these effects (Khanna & Palepu, 2000b; Kock & Guillén, 2001). We therefore evaluated the following simultaneous equations:

(1) $Scope = \beta_1\ scale + \varepsilon$

(2) $Performance = \beta_2\ scale + \beta_3\ scope + \beta_4\ leverage + \beta_5\ research\ \&\ development + \beta_6\ risk + \varepsilon$

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 across 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).

6.4 Results

6.4.1 Firm-level bivariate and partial correlations

Tables 1 and 2 show 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 is not identical to the treatment group in terms of either prevalence or size. Across all included studies, affiliated firms represent 34 percent of the sample (see Table 3). Furthermore, a HOMA on the relationship between BG affiliation and firm size yields a strong correlation (.26; k = 164), so we control for size in all firm-level analyses. Second, the results in Table 1 suggest that the strength of the focal relationship is driven by the chosen performance measure. 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 US- or Western Europe-based scholars (k = 173),[48] 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 – 2008 (k = 118), journals with an *SSCI* impact factor greater than > 1.0 (k = 109), and the 10 journals in our dataset 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 non-overlapping samples per country (k = 51). At -.04, this result is materially similar to the overall mean correlation. We also ran two separate MARAs (see Table 4): one with dummy variables for each set of overlapping samples (Model 1), and another in which other control variables were also included (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 4). In short, the 'drinking from the same well' issue does not appear to affect our results.

Third, because BGs are prominent in Asia, we assessed whether the financial crisis that struck that continent in 1997-1998 (Mitton, 2002) affected our findings. We split our sample into four sub-groups: observations from the pre-crisis period (prior to 1996); the crisis period (1997 and 1998); the post-crisis 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 (pre-crisis: -.04, k = 105; crisis: -.02 (n.s.), k = 20; post-crisis: -.02, k = 75; mixed: -.02; k = 84).

[48] This distinction was suggested by one of our reviewers.

Table 1: Firm-Level Correlation-Based HOMA Results[a,b]

Predictor	K	*N*	Mean	SD_ρ	CI 95%	Q test	I^2
Business group affiliation to firm performance	284	831,807	**-0.02***	0.01	-0.04 / -0.01	5,805.29	0.95
Accounting measures	201	672,765	**-0.03***	0.01	-0.04 / -0.02	4,687.64	0.96
Market measures	83	159,042	-0.01	0.01	-0.03 / 0.01	954.16	0.48

[a] k = number of effect sizes; N = total sample size; mean ρ = estimate of population correlation; SD_ρ = standard deviation of mean ρ; $CI_{mean\ \rho}$ 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.
[b] Mean effect sizes marked with an asterisk (*) are statistically significant ($p < .05$).

Table 2: Firm-Level Partial Correlation-Based HOMA Results[a,b]

Predictor	K	*N*	Mean	SD_ρ	CI 95%	Q test	I^2
Business group affiliation to firm performance	50	52,146	**-0.02***	0.01	-0.04 / -0.00	252.36	0.80
Accounting measures	27	24,143	-0.02	0.02	-0.05 / 0.01	126.24	0.79
Market measures	23	28,003	-0.01	0.01	-0.04 / 0.02	106.38	0.78

[a] k = number of effect sizes; N = total sample size; mean ρ = estimate of population correlation; SD_ρ = standard deviation of mean ρ; $CI_{mean\ \rho}$ 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.
[b] Mean effect sizes marked with an asterisk (*) are statistically significant ($p < .05$).

6.4.2 Jurisdiction-level moderating effects

Table 3 reports country-specific *r*-based HOMA results.[49] 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, due to a lack of observations. Table 4 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,

[49] One of the countries comprising our sample (Italy) is not included in Table 3, as we retrieved correlations between our independent (MASEM) variables for it, but not for the focal relationship.

negatively moderates the affiliation effect. When external financing is not easily available, affiliation becomes relatively more advantageous because a BG'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 BG affiliates suffers. This suggests that inefficient resource allocation decisions caused by agency problems like tunneling or propping may more negatively impact firm performance in contexts with weak overall legal protection (Bae, Kang, & Kim, 2002; Johnson, Boone, Breach, & Friedman, 2000b).

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. BG 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 4 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 BG affiliation becomes less beneficial over time (cf. Khanna & Palepu, 2000a). Journal impact factor moderated the focal relationship negatively, implying a modest publication bias amongst more highly cited journals. Finally, the physical infrastructure variables were not significant, implying that BGs are not effective at filling 'harder' infrastructural voids. Finally, the Japan dummy has a significant negative moderating effect.

6.4.3 Firm-level mediating effects

Table 5 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 average rather than a common true correlation value (Hedges & Olkin, 1985: 235).

Table 6 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 5. The model fits the data well (χ^2 = 760.09; RMSR = .10; GFI = .98). Furthermore, all conditions for mediation are met (Baron & Kenny, 1986). First, BG affiliation significantly affects all three hypothesized mediators: diversification (β = .06), internationalization (β = -.09), and leverage (β = .05). Second, BG affiliation significantly affects firm performance in the absence of these mediators (-.02; see Table 5). Third, two out of three mediators have a significant effect on firm performance: diversification (β = -.05), internationalization (β = .01; n.s.), and leverage (β = -.12). Fourth, the effect of affiliation on performance shrinks when the mediators are added to the model (to β = -.01; n.s). Formal tests (MacKinnon & Dwyer, 1993) confirm that mediating variables carry the influence of BG 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, Hypothesis 3 is supported by the data.

6.4.4 Group-level mediating effects

Table 7 presents a group-level meta-analytic correlation matrix, consisting of 15 separate HOMAs. These results confirm Hypothesis 4a: BG scale has a significant positive effect on BG performance (.07). Table 8 shows the group-level MASEM results. This model fits the data well (χ^2 = 172.10; RMSR = .02; GFI = .99), and all remaining conditions for mediation are met (Baron & Kenny, 1986). First, BG scale has a substantial and significant positive effect on BG scope (β = .47). Second, BG scope has a significant unique effect on BG performance (β = -.13). Third, the positive effect of BG scale on BG performance increases when BG scope is added to the model (to β = .09). Formal tests (MacKinnon & Dwyer, 1993) confirm the mediating role of the BG 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.

Table 3: Country-Specific Correlation-Based HOMA Results[a]

Country	% of BGs aff.	K	*N*	Mean	SD_ρ	CI 95%	Q test
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)
Peru	0.26	1	99	-0.17			
Philippines	0.37	4	624	0.10	0.06	-0.01 / 0.23	6.38 (0.09)
Russia	0.29	9	1,409	-0.00	0.04	-0.09 / 0.08	11.08 (0.20)
Singapore	0.69	1	71	0.23			
South Africa	0.49	1	1,071	-0.02			
South Korea	0.19	56	240,115	**-0.02***	0.01	-0.05 / -0.00	1,392.11 (0.00)
Sweden		4	296	**0.17***	0.06	0.05 / 0.28	1.53 (0.67)
Taiwan	0.48	15	13,599	-0.00	0.03	-0.06 / 0.06	152.67 (0.00)
Thailand	0.60	3	1,755	-0.02	0.03	-0.08 / 0.03	2.26 (0.32)
Turkey	0.55	11	2,259	**0.06***	0.02	0.02 / 0.10	8.68 (0.56)

[a] Mean effect sizes marked with an asterisk (*) are statistically significant ($p < .05$).

Table 4: 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 control[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 (0.21)
V	0.005	0.005	0.00434
z-test	-1.28 (p > 0.1)	-1.44 (p > 0.1)	

[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 < .1

** p < .05

*** p < .01

Table 5: Firm-Level Meta-Analytic Correlation Matrix[a]

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

Table 6: Firm-Level MASEM Results[a]

Predictors	Diversification	Internationalization	Leverage	Performance
BG 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			
X^2	760.09			
GFI	0.98			
RMSR	0.098			

[a] Significant relationships ($p < .05$) are printed in bold; *t*-values are given in parentheses.

Table 7: Group-Level Meta-Analytic Correlation Matrix[a]

Variable	1	2	3	4	5	6
1. BG scale		23,436 (22)	27,124 (3)	42,817 (18)	23,064 (23)	73,326 (71)
2. BG 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 χ^2 test, suggesting the presence of moderator variables.

Table 8: 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	
X^2	172.10 (0.00)	
GFI	0.99	
RMSR	0.02	

[a] Significant relationships ($p < .05$) are printed in bold; t-values are given in parentheses.

6.5 Discussion and Directions for Future Research

Scholars alternatively portray BGs as 'heroes,' 'paragons,' and 'avatars,' or as 'villains,' parasites,' and 'anachronisms' (Claessens *et al.*, 2000a; Khanna & Yafeh, 2007; Granovetter, 2005). Our results show that such categorical classifications are unwarranted, and that their character is considerably more complex. Specifically, our study offers four substantive contributions to the BG literature, each of which nuances

the dichotomous categorical schema through which scholars and policy makers have tended to approach BGs.

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 to discard BGs as 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 BGs 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 in terms like "developed," "emerging," and "developing," and instead place greater emphasis on the varied effects played by different types of institutions.

Third, we identified differences in the revealed strategic choices of BG affiliates (relative to non-affiliates) and assessed the performance implications of these choices. We found that affiliates tend to be more leveraged, diversified, and locally oriented than their standalone 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 BG size, we disentangle these into positive scale and negative scope effects. Owing to factors like size-related cost savings and increased market and political power, greater scale improves BG performance. However, greater scale also tends to broaden the operational scope of BGs 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.

6.5.1 Complexity and nuance in the affiliation-performance relationship

Our analyses reveal a small but significant negative relationship between affiliation and performance (cf. Hypotheses 1a and 1b). This suggests that on average the costs of BG affiliation, such as the agency problems described by Morck and Yeung (2003) and the insurance premiums discussed by Lincoln, Gerlach, and Ahmadjian (1996), slightly outweigh benefits like 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 illustrated by the considerable differences found in the direction and strength of the performance effect of affiliation across national contexts (Table 3).

Thus, our findings indicate that BGs 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 are more generic than descriptive case studies of individual groups and their affiliates, but also more specific than universalistic approaches that treat all cases as essentially similar. For instance, future research may be usefully directed towards in-depth comparative studies explaining cross-national performance differentials (see Table 3). 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 BG performance.

The theoretical frameworks used to understand BG behavior will likewise have to evolve and become more nuanced. To date, most BG studies have employed mono-theoretical lenses such as agency theory (Morck & Yeung, 2003), transaction cost theory (Luo & Chung, 2005), exchange theory (Keister, 2001), and the RBV (Guillén, 2000). Whereas each of these theories offers a useful perspective on BG 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.

6.5.2 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 10 institutional variables pertaining to financial infrastructure as well as legal and labor market institutions. We thus considered a broader range of institutional-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 a umbrella term for a nation's stage of development (cf. Khanna & Palepu, 1997, Khanna & Palepu, 2000b), and our findings indicate that while some institutional-level factors moderate the focal relationship in the conventionally theorized direction, others do not.

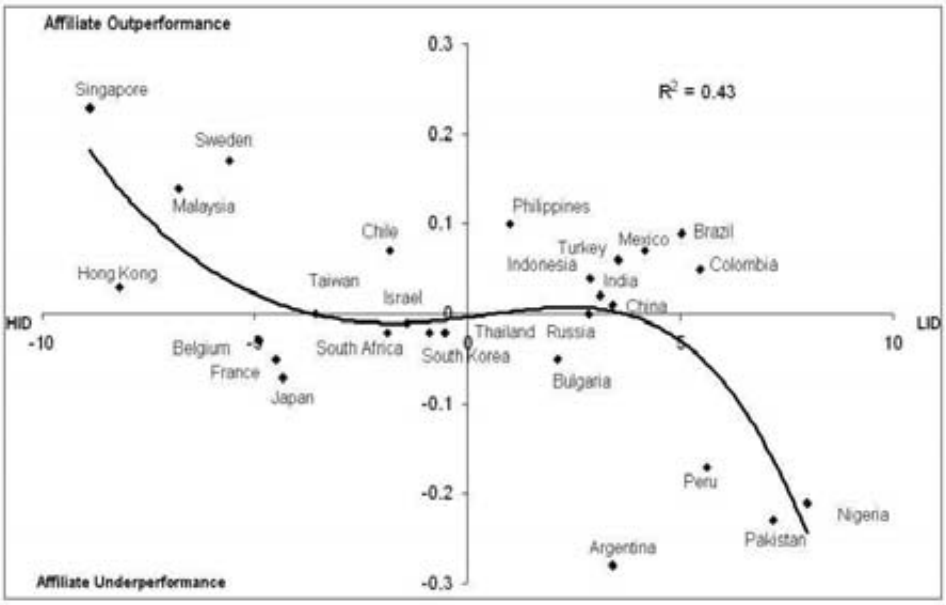
As suggested by the institutional voids thesis, we found that firms benefited from affiliation in contexts characterized by weak financial and labor market infrastructure (Hypotheses 2a, 2b, and 2c). Yet, even though the view that affiliation benefits firms in contexts with weak legal safeguards is widely held (cf. Almeida & Wolfenzon, 2006), we find little evidence for this position. While 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 we 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 3 and 4), testifies to the need for further middle-range theorizing. Its horizontal axis was computed by transforming the scores of a given country on all statistically significant variables capturing institutional voids (Table 4) to *z*-scores, and then adding and averaging them, such that we obtain a scaled measure of institutional development ranging from near-perfect development (left) to grave voids (right). The vertical axis shows the country-specific mean effect sizes we retrieved (Table 3), 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 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 BG members do so well relative to unaffiliated firms in contexts with generally well-functioning institutions, like Malaysia, Singapore, and Sweden? And why do they do so unexpectedly poorly in contexts with severe voids, like Nigeria, Pakistan, and Peru? Additional studies are needed to explore why these outliers are so poorly explained by extant institutional voids theory, and to reveal which institutional variables are responsible for their counter-theorized positioning.

Figure 1: Relationship between Institutional Voids and Affiliate Performance[a]



[a] HID = high institutional development; LID = low institutional development.

6.5.3 Strategic choices and affiliate performance

Given the mixed and contingent findings of empirical research on the affiliation-performance link (cf. Khanna & Rivkin, 2001; Hypotheses1a 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 BG affiliates. As both high levels of leverage and diversification are suggestive of pyramiding and tunneling behavior (cf. Morck & Yeung, 2003; Mitton, 2002), which results in the inefficient allocation of resources (Scharfstein & Stein, 2000), our findings are supportive of agency-theoretic perspectives on BGs, 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 RBV (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 are suggestive of an important role played by affiliate-level strategic choice in the affiliation-performance link. However, due to the scarcity of strategy variables in the body of primary empirical BG 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 BG scholars. Our leverage and diversification findings provide evidence that certain strategic choices represent pathways through which BG affiliation can harm firm performance. On the other hand, given the evidence that many firms benefit from BG affiliation, there should also be other strategic choice pathways which lead to improved performance levels. Accordingly, we call for future research directed towards identifying those specific types of strategies and competence-building activities associated with superior performance among BG affiliates and reason that frameworks and hypotheses drawn from multiple theoretical perspectives represent a logical point of departure for such inquiries.

6.5.4 Group-level size effects: Scale and scope both matter (differently)

Our results on the effects of BG size on group-level performance highlight a salient distinction between the related effects of group scale (Hypothesis 4a) and scope (Hypothesis 4b). In this regard, we find that scope mediates the relationship between group-level scale and performance. More specifically, we find that while the direct

effect of scale is strongly positive, scale also tends to increase the operational scope of BGs 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 views 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.*, 2000b; Khanna & Yafeh, 2007). On the other hand, we find no benefits associated with scope, such as those suggested by Khanna and Palepu (1997), Chang and Hong (2000), and others. On the contrary, our results support the findings of Hoskisson, Johnson, Tihanyi and White (2005), who highlight the bureaucratic and other costs of managing widely diversified BGs. Thus, while some researchers (e.g. Khanna & Palepu, 1997) have argued that greater scope benefits BGs 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 BGs 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 which allow them to make sufficiently fine-grained distinctions to capture the complex associations that underlie BG performance characteristics. In this respect, our findings highlight the need for BG researchers to distinguish between the effects of scale and scope both conceptually and empirically. Future research exploring how BG 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.

6.5.5 Limitations

While the various meta-analytical techniques we employed have allowed us to address several previously untested research questions, our study also has two limitations that can only be remedied by means of future primary BG studies. A first limitation is that while we have been able to identify mediating roles for variables like 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, for example, to test whether group-level diversification leads to more focus amongst affiliates due to the intent of avoiding competition between affiliates (Gerlach, 1992), or to more affiliate-level diversification due to 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 have done in our MARA analyses. Additional primary longitudinal studies are therefore needed to capture more nuanced time-dependent performance effects of BG 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 BGs creates positive externalities which erode the originating benefits of affiliation (Carney, Shapiro, & Tang, 2009)

6.5.6 Conclusion

BGs 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 paper, we conclude that highly polarized characterizations of BGs as either heroic paragons or as 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 a country or region's economic development (Carney & Gedajlovic, 2002a; Gerlach, 1992; Keister, 1998). These descriptions indicate that BGs are complex social and economic phenomena serving diverse purposes (Cuervo-Cazurra, 2006; Yiu *et al.*, 2007). As a result, BGs are likely to have multiple, conflicting, and complementary effects on their host societies and the firms that affiliate with them.

We should then eschew mono-theoretical accounts which characterize BGs in singular terms, such as an internal capital market, an extraction device for wealthy

families, or a generalized response to chronic institutional failure, since they will likely divert attention away from their evident structural and strategic complexity 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 BGs. 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.

Chapter 7. Do U.S. publicly listed family firms differ? Does it matter? A meta-analysis[50]

ABSTRACT

A research question that has recently risen to prominence in the strategy literature is whether publicly listed family firms (FFs) underperform or outperform other types of public corporations. An unambiguous answer to this question is absent from the literature because both theoretical arguments and empirical evidence are inconclusive across studies. Through a combination of research synthesis and theory-extension efforts, we shed new light on this relationship in three ways. First, we answer this open question by providing a meta-analysis of the relationship between family control and performance among U.S.-based firms, finding that the balance of evidence indicates that FFs outperform other types of public corporations. Second, we extend current theory by showing that FFs exhibit strategic patterns of behavior that differ from other public corporations, and that these patterns are a key driver of their superior performance. Third, we show that FF outperformance is not stable across first- and successor-generation-led firms. We also trace the source of this instability to intergenerational shifts in strategy and governance. Empirically, our study draws on a pooled database comprising 55 studies, 123 effect sizes, and 187,999 firm-year observations.

7.1 Introduction

Few would have predicted a decade ago the lavish attention placed on the humble family firm (FF) in leading management (e.g. Gomez-Mejia *et al.,* 2007; Gomez-Mejia, Larraza-Kintana and Makri, 2003; Luo and Chung, 2005; Miller, Le Breton-Miller and Lester, 2010; Schulze *et al.,* 2001) and finance (e.g. Anderson and Reeb, 2003a, 2003b; Bennedsen *et al.*, 2007; Burkart, Panunzi and Shleifer, 2003; Villalonga and Amit, 2006, 2008) journals in the intervening period. Long neglected by scholars and considered as

[50] Paper by Carney, M., Gedajlovic, E., Heugens, P. P. M. A. R., & Van Essen, M. Earlier versions of this paper have been presented at the Academy of Management (2010) and IFERA 10th Annual World Family Business Research Conference. Paper under review by Strategic Management Journal (revise and resubmit, 2nd round).

archaic and unremarkable, a consensus has emerged in recent literature that the FF represents a unique and theoretically interesting organizational form for a number of related reasons.

First, relative to the classic public corporation, which is characterized by the separation of ownership and control (Berle and Means, 1932; Chandler, 1977), the executives of FFs (and their families) often own a controlling stake. This unification of ownership and control has important implications in terms of the incentives (Anderson and Reeb, 2003a), objectives (Gomez-Mejia *et al*., 2007; Palmer and Barber, 2001) and quality of top management (Miller and Le Breton-Miller, 2005). Second, the maintenance of effective control in the hands of the family has important implications regarding the ability of the FF to acquire and make use of external sources of financial capital (Claessens *et al*., 2002; Peng *et al*., 2008) and skilled and professional human resources (Schulze *et al*., 2001). Third, the placement of family members in key managerial positions (Villalonga and Amit, 2006) has the effect of centralizing decision-making authority (Gedajlovic, Lubatkin and Schulze, 2004; Gomez-Mejia *et al*., 2003) and may lead to the adoption of important decisions on the basis of particularistic criteria (Carney, 2005; Luo and Chung, 2005). Fourth, their identification of a focal organization as a FF may influence the degree of attachment various stakeholders experience (Gomez-Mejia *et al*., 2007; Lester and Canella, 2006) and, in particular, has significant implications regarding the treatment (and motivation levels) of family versus non-family employees (Schulze *et al*., 2001). Fifth, the transgenerational intent of FFs (i.e. the intent to hand over control of the firm to a succeeding generation of family members) results in complex executive succession issues not apparent in other firms (Bennedsen *et al*., 2007; Perez-Gonzalez, 2006). Transgenerational intent also has important implications regarding the effective time horizon for decision-making (Luo and Chung, 2005; Miller and Le Breton-Miller, 2005, Miller, Le Breton Miller and Scholnick, 2008; Sraer and Thesmar, 2007) and the ability to develop complex capabilities based on tacit knowledge, social networks and experience (Arregle *et al*., 2007; Sirmon and Hitt, 2003) as well as reputation (Dyer and Whetten, 2006; Lester and Canella, 2006).

Accordingly, as is evident in the range and quality of topics addressed by recent FF research in leading academic outlets, there is broad consensus in the literature that the FF represents a unique and theoretically interesting organizational form. Despite this agreement, FF research is still in a pre-paradigmatic state, and the field is cluttered by conflicting theories and findings, as well as significant open

questions regarding the essential characteristics and performance attributes of this ubiquitous organizational form (Schulze and Gedajlovic, 2010). On no point is the field more conflicted than it is over the basic question of whether FFs outperform or underperform other types of organizations in terms of their financial performance.

The longer established view holds that FFs underperform due to inefficiencies associated with the personalization of authority in complex organizations (Weber, 1947) and the relative superiority of non-family professional management (Chandler, 1977). More recently, the underperforming view has been expressed through economic theorizing highlighting specific inefficiencies of FFs that stem from conflict between controlling and minority shareholders (e.g. Claessens *et al*., 2002) as well as value-destroying tensions within the controlling family and between family and non-family employees (e.g. Schulze *et al*., 2001). These perspectives suggest that FFs are relatively inefficient organizations that survive in niche and non-competitive markets where they face little competition from more efficient forms of business enterprise. Set against these arguments are theoretical perspectives suggesting that FFs will outperform public corporations operated by salaried executives, due to various inefficiencies in the latter that are attributable to the separation of ownership and control (Berle and Means, 1932; Jensen and Meckling, 1976). More recent expressions of this perspective suggest that FFs benefit from the relative advantages of superior management (e.g. Miller *et al*., 2008) or capacities for developing certain rent generating capabilities (e.g. Sirmon and Hitt, 2003).

Which of these views is supported by the body of empirical evidence? Despite scores of empirical studies examining this single issue, the answer to this fundamental question is still subject to a great deal of ambiguity and controversy, with theories and evidence available to support either view. In such situations, where there are a large number of studies with mixed and conflicting findings, meta-analytic techniques can play an important role in providing a comprehensive and rigorous assessment of the balance of evidence with data that are closer to definitive than those reported in any single primary study (Miller and Cardinal, 1994). With this paper, we provide such a synthetic meta-analysis in order bring the data from multiple studies and sources to bear on the open question of whether FFs underperform or outperform other types of business enterprise. We focus on how FFs perform in the context of U.S. medium- to large-sized publicly traded corporations, a setting explored by 55 prior empirical studies and one that is both highly competitive and where a well-developed legal and institutional environment requires organizations to establish and maintain specialized

exchange relationships and complex business systems (Coffee, 1999; Gilson, 2006). We achieve our aim of synthesizing all prior studies through the utilization of Hedges and Olkin-type meta-analytical techniques (HOMA: Hedges and Olkin, 1985).

However, this paper seeks to go beyond assessing the balance of evidence on the underperformance versus outperformance issue and treat this initial objective as a point of departure from which we explore the processes and causal mechanisms that underlie FF performance differences. In particular, we theorize about and evaluate the extent to which FF performance differences are attributable to their tendencies with respect to particular strategic choices. To do so, we develop, model, and test novel hypotheses which posit that the FF-performance relationship is mediated by a firm's strategic choices with respect to diversification, internationalization, and financing. To evaluate these theory-extending hypotheses, we make use of recent advances in meta-analytic techniques which allow for path analysis through structural equations modeling (MASEM: Cheung and Chan, 2005).

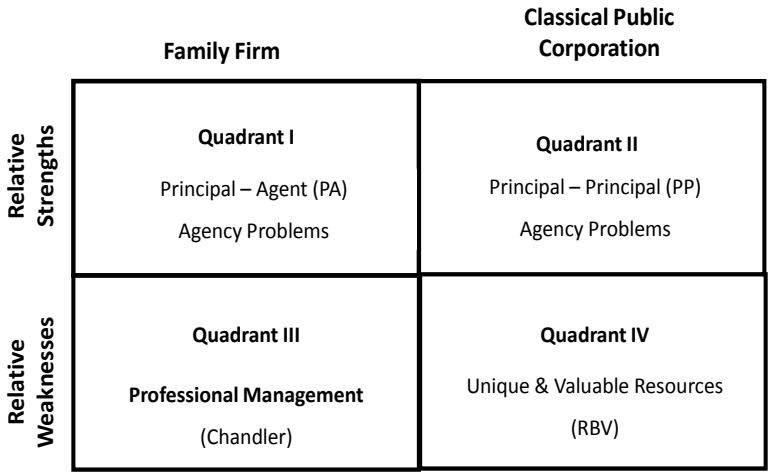
To further explicate the causal factors underlying FF performance characteristics, we hypothesize and evaluate the extent to which firms controlled by founding generations of family members outperform those controlled by successor generations. We also consider whether any observed performance differences across generations are attributable to variations in their strategic choices and governance practices. Using meta-analytic regression analysis (MARA: Lipsey and Wilson, 2001), we also further establish the robustness of our core findings against methodological moderating influences. In the closing sections of the paper, we review our findings in relation to the competing theories of FFs present in the literature and provide specific suggestions regarding open questions and fertile avenues for future research.

7.2 Theory and Hypotheses

The central question in strategic management is "why do some firms perform better than others?" (Barnett, Greve and Park, 1994: 11; Sirmon and Hitt, 2003: 340). Viewed in this light, the field of family business is still very much in a pre-paradigmatic state with many alternative theoretical perspectives offering a mixture of divergent and convergent views on the relative efficacy of the FF. To capture and parse the range of views on the performance characteristics of FFs, we provide Figure 1, which distinguishes between theoretical arguments based on the relative strengths and

weaknesses of FFs alongside the relative strengths and weaknesses of the classic public corporation, which is characterized by the separation of ownership and control.

Figure 1: Theoretical Arguments Regarding the Relative Advantages and Disadvantages of Family Control



Whereas both quadrants 1 and 4 capture perspectives suggesting that FFs will outperform classical public corporations, those from quadrant 1 suggest that this is due to inherent weaknesses in the latter, while quadrant 4 captures perspectives highlighting the relative strengths of FFs.

The primary theoretical explanation associated with quadrant 1 is the principal-agent (PA) variant of agency theory (Eisenhardt, 1989; Jensen and Meckling, 1976). According to this view, family control over the company obviates a variety of incentive problems endemic to arrangements where salaried professional managers with little or no ownership stake of the own exercise decision control over the firm on the behalf of widely dispersed shareholders (Berle and Means, 1932; Fama and Jensen,

1983; Jensen and Meckling, 1976). In this view, family control provides owners with an enhanced ability to monitor and discipline managers (McConaugby *et al*., 1998). Consequently, PA theory is predicated on the ideas that salaried professional managers have the incentive to pursue non-profit-maximizing strategies, which benefit themselves at the expense of shareholders (Amihud and Lev, 1981; Marris, 1964) and widely dispersed shareholders have little incentive or ability to monitor their managerial agents (Burkart, Gromb and Panunzi, 1997). Conversely, the PA perspective also suggests that family control over a company provides strong incentives for owner-managers to manage costs efficiently (Brickley and Dark, 1987; McConaughy *et al*., 1998), to pursue profit-maximizing strategies (Alchian and Demsetz, 1972; Gedajlovic and Shapiro, 1998), and that members of the controlling family are ideally able and motivated to monitor and discipline salaried managers (Anderson and Reeb, 2003a, 2003b). The PA variant of agency theory therefore suggests that family control will be positively associated with financial performance.

Though less well developed in the literature, there are additional perspectives suggesting that FFs will outperform classical corporations because of certain inherent strengths rather than due to the shortcomings of corporations. These perspectives are captured in quadrant 4 of Figure 1. Notable among such perspectives is Sirmon and Hitt (2003), which broke new ground by providing an analysis based on the Resource Based View of the firm (RBV), highlighting the advantages FFs have in managing and leveraging certain types of rent producing assets (i.e. human, social, patient and survivability capital). Consistent with Sirmon and Hitt's RBV-inspired framework and their notion of survivability capital, Miller and his colleagues have argued that FFs often benefit from the profound commitment family managers provide to their firms, as well as a concomitant longer time horizon for decision-making (Miller *et al*., 2008). Others have similarly argued that FFs have unique strengths in developing, sustaining and appropriating value from various forms of social capital (Arregle *et al*., 2007; Gedajlovic and Carney, 2010). More generally, Le Breton-Miller and Miller (2006) assert that the governance properties of FFs engender competitive advantages tied to organizational resources that are hard to replicate or create in other firms.

In short, whether due to the inherent weaknesses of the classical public corporation or their own inherent strengths, there is a large body of research suggesting that FFs have relative advantages. Consequently, it is hypothesized that:

> Hypothesis 1a: Family firms are more profitable than other forms of public corporations.

Although the view expressed in Hypothesis 1a is prominent in the family business literature, there are similarly well-grounded theoretical arguments predicting that FFs will underperform relative to other forms of corporations. These perspectives can divided into explanations emphasizing the relative strengths of the classical public corporation (quadrant 3), as well as those that point to inherent deficiencies of the FF form of organization (quadrant 2).

The theoretical arguments corresponding to quadrant 3 are closely associated with Chandler's body of work (Chandler, 1962, 1977, 1990) on corporations based in the U.S. and U.K. This perspective emphasizes the important role that professional salaried executives have played in developing and managing the sorts of complex organizational systems capable of reaping benefits from economies of scale and scope (Chandler, 1990). In this perspective, highly educated and trained professional managers (Chandler, 1977) vetted through competitive managerial labor markets (Fama, 1980) are uniquely suited to manage large and complex organizations. Chandler's thesis that professional managers are inherently superior to those selected on the basis of family ties has been illustrated through detailed case studies and historical accounts by Chandler himself (Chandler, Amatori and Hikino, 1997; Chandler and Daems, 1980), as well as other business historians (e.g. Church, 1986).

The second set of theoretical perspectives suggesting that FFs will underperform other sorts of public corporations is based upon their own inherent weaknesses (quadrant 2). Prominent among these perspectives is the so-called Principal-Principal (PP) variant of agency theory (cf. Dharwadkar, George and Brandes, 2000). In this view, the control of a corporation by a group of family members creates various investment hazards for minority shareholders (Heugens, Van Essen, and Van Oosterhout, 2009; Peng and Jiang, 2010). In this respect, family control is seen as a device to entrench managers who are difficult to remove through proxy contests or the market for corporate control (Morck, Wolfenzon and Yeung, 2005; Young *et al*., 2008). Such entrenchment allows for controlling families to utilize a variety of techniques, such as pyramid building (Morck and Yeung, 2003), tunneling (Bertrand and Schoar, 2006) or propping (Cheung, Rau and Stouraitis, 2006) to expropriate the wealth of minority shareholders for their own benefit. Such agency problems have been linked to inefficient resource allocation practices (Burkart *et al*., 2003) and higher effective costs of capital (Claessens *et al*., 2002; McConaughy, 1999) for family-controlled firms, both of which put them at a relative disadvantage to other sorts of corporations.

A second type of PP agency problem has been described by Jensen (1994) as "agency problems with one-self". Closely associated with the work of Schulze and his colleagues (e.g. Schulze *et al.*, 2001; Schulze, Lubatkin and Dino, 2003), this perspective is based on the core idea that the non-economically motivated preferences of FF management leads them to make decisions and adopt practices that threaten their own welfare, as well as that of those around them (Schulze *et al.*, 2001: 102). In particular, these authors emphasize the negative effects of asymmetric altruism between parents and children, which may lead to practices favoring family members over more qualified employees (Schulze *et al.*, 2003). Similarly, research by Gomez-Mejia and his colleagues finds that family managers may harm their firm's profitability or even endanger its survival through their efforts to entrench familial control (Gomez-Mejia, Larraza-Kintana and Makri, 2003) or secure privately appropriable "socio-emotional wealth" (Gomez-Mejia *et al.*, 2007).

Thus, along with the theory-based arguments supporting Hypothesis 1a, there are similarly compelling arguments supporting the position that FFs will underperform relative to other types of corporations. Given the compelling theoretical arguments on either side of this debate, we offer the following competing hypothesis to Hypothesis 1a, rather than opting to select one set of arguments over the other. In doing so, we treat the question of whether FFs outperform- or underperform other corporations as an open empirical question to be directly addressed through our subsequent meta-analyses.

Hypothesis 1b: Family firms are less profitable than other forms of public corporations.

7.2.1 Family firm strategy and financial performance

While many empirical studies have examined the relationship between family control and financial performance, only relatively few have looked at its effects on firm strategy (e.g. Anderson and Reeb, 2003b; Fernández and Nieto, 2005; Gomez-Mejia *et al.*, 2010; Zahra, 2003) and *none* have explicitly examined the mediating role that revealed strategic choices play in the family control-performance relationship. In terms of Figure 1, the lack of prior evidence regarding the performance effects of strategic choices leaves open the important question of whether these strategies result in relative advantages (quadrant 4) or disadvantages (quadrant 2) for family-controlled corporations. Consequently, the body of empirical research on FFs is largely silent on the important questions of whether corporations under family control make distinctive

strategic choices, and, if so, whether their revealed strategies explain performance differences between them and other types of corporations. We reason that this gap is highly relevant for two main reasons.

First, given the conflicting theory and evidence regarding the relative performance of family- and non-family-controlled corporations (cf. Hypotheses 1a and 1b), we reason that research geared towards explicating the mediating strategic processes linking family control and performance outcomes can shed important light on the organization-level contingencies which underlie these conflicting research findings. Second, we reason that the use of strategy variables as controls in many of the empirical models tested in prior work indicates that these variables are empirically relevant. The presence of such variables in others' empirical estimates also represents an opportunity to harvest their effects. We do so, and through the use of the advanced meta-analytic technique of MASEM (Cheung and Chan, 2005) utilize these strategy variables to evaluate previously unexplored hypotheses related to the mediating effects of firm strategy on the family control-financial performance relationship. In particular, we focus on three measures of firm strategy (i.e. diversification, internationalization and financial leverage), which appear frequently in empirical research on FFs.

Diversification. Given the widely held view that FF managers are risk averse (e.g. Chandler, 1990; Gomez-Mejia *et al.*, 2001) as well as the extensive literature on risk reduction as an important motive for diversification (e.g. Amihud and Lev, 1981; Gedajlovic and Shapiro, 1998), it is surprising that scant empirical research has examined the effect of family control on corporate diversification.

The PP agency perspective described in relation to quadrant 2 of Figure 1 suggests that since family members have a large percentage of their wealth concentrated in the firms they control, they may have an incentive to favor corporate diversification in order to reduce the risk to their personal wealth. However, contrary to this view, two major empirical studies have found that family control is actually associated with *less* diversification. In the first study, Anderson and Reeb (2003b: 659) attribute their finding to the sound management of highly committed managers who "forgo corporate diversification because of its substantial negative effects" and because they perceive that "the firm-specific knowledge of an acquisition or new business lies beyond the firm's competitive advantage". These explanations are consistent with the view associated with quadrant 4 (Figure 1) that the commitment and quality of FF top

management represents a relative strength (Sirmon and Hitt, 2003). In the second study, Gomez-Mejia and colleagues (2010) also find a negative relationship between family control and diversification, which they attribute to a desire on the part of family members to retain control over the firm's operations from which they receive socio-emotional wealth. In this view, diversification threatens familial socio-emotional wealth, because it requires additional financing and human capital above that which can be provided by the family and, consequently, represents a risk to family control (Gomez-Mejia *et al*., 2010). As a consequence of their loss aversion with respect to the socio-emotional wealth they derive from corporate control, this view suggests that family managers will be more willing to "accept below-target performance relative to the performance of referent firms in order to retain family control" (Gomez-Mejia *et al*., 2007: 112).

Although these explanations of a possible negative relationship between family control and diversification imply that such strategic behavior has important performance implications, neither study directly evaluates the impact on corporate profitability of their observed lower diversification levels. Whereas Gomez-Mejia and associates (2010: 244) see lower diversification levels as the consequence of non-economic motivations that are "difficult to defend on financial grounds", Anderson and Reeb (2003b: 659) actually see the same restrained level of diversification as the outcome of a desire on the part of family managers to maximize shareholder wealth.

In the strategy literature, firm-level diversification is widely seen as detrimental to firm performance, as it results in additional organizational complexity, which calls for a separate coordination function that can set targets, perform audits, and provide incentives (Chandler, 1962; Williamson, 1975). More greatly diversified firms are therefore generally less profitable, as their more focused competitors either do not incur such coordination costs or can shift a greater part of these costs to investors and other market parties (Wernerfelt and Montgomery, 1988). We therefore expect that the greater product-market focus of FFs will have a positive effect on their performance vis-à-vis the generally more diversified non-family controlled corporation.

> Hypothesis 2a: Diversification mediates the relationship between family control and the financial performance of public corporations.

Internationalization. As is the case with diversification, only a few empirical studies have examined the relationship between family control and a corporation's degree of internationalization. Gomez-Mejia and his associates (2010) find that FFs internationalize less than non-FFs. Analogous to their explanation of FF diversification activity, they theorize that this stems from a desire among family management to retain tight familial control and to safeguard the socio-emotional wealth it provides them. This view is supported by other research suggesting that FFs seek to avoid international operations, due to the costs and complexity associated with managing geographically dispersed operations (e.g. Fernández and Nieto, 2005). As a results, FFs may be less well equipped to manage complex international activities, because they may limit participation in the top management team to a small cadre of trusted insiders (Gedajlovic *et al*., 2004), and are accordingly less likely to recruit professional managers with detailed knowledge of international markets. Moreover, a family's most valuable external ties and social capital may be embodied in the human capital of specific family members and their local networks (Areggle *et al*., 2007; Lester and Canella, 2006; Sirmon and Hitt, 2003) and these may have little value when transferred across international boundaries (Dixit, 2004; Gilson, 2007). In terms of Figure 1, these arguments and findings suggest that the resource-based competitive strengths of FFs (quadrant 4) do not transfer well to international markets. Accordingly, we expect FFs to engage in fewer international activities than non-family corporations.

While no prior study has directly examined the performance implications of such a diminished tendency among FFs to engage in international activities, there is some indirect evidence suggesting the effect will be negative. In this regard, there appears to be broad agreement that the impact of internationalization on firm financial performance is generally positive (Hitt, Hoskisson, and Kim, 1997), because internationalization allows firms to tap into foreign factor markets more readily, avoid quota and tariffs through domestication of production, and leverage valuable firm-specific skills across a wider range of product markets (Sanders and Carpenter, 1998). We therefore expect their greater focus on domestic markets will cause family-controlled corporations to incur a performance discount relative to more internationally oriented non-family corporations.

> Hypothesis 2b: International orientation mediates the relationship between family control and the financial performance of public corporations.

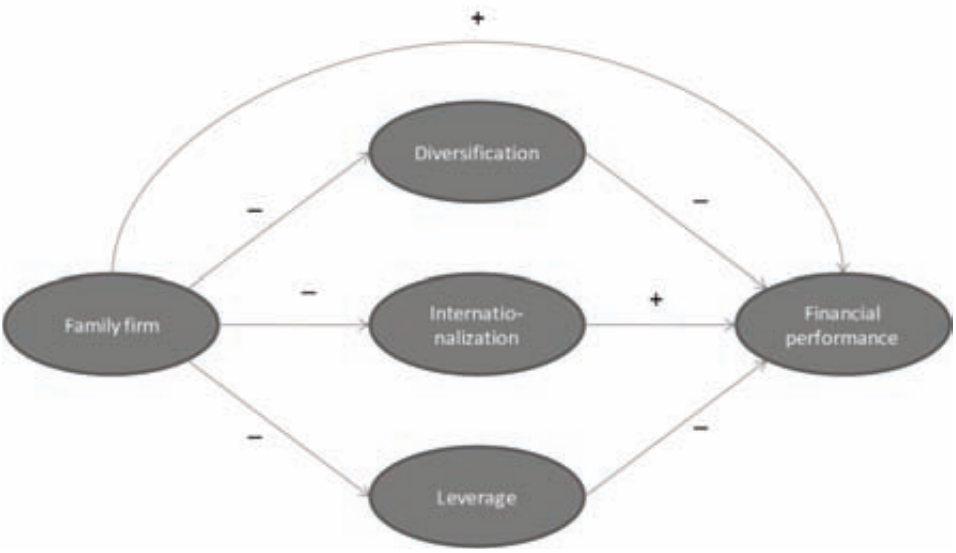
Financial leverage. Among the few studies that have directly examined whether family-controlled corporations employ different financing strategies than other firms, there is some agreement that FFs are less inclined to make use of debt financing and consequently have less levered capital structures. The utilization of greater debt financing is often seen as a factor that could increase the risk to both the financial and socio-emotional wealth that family members have concentrated in the firms they control (Anderson and Reeb, 2003b; Gomez-Mejia *et al*., 2001, 2007, 2010; Mishra and McConaugby, 1999). In other words, because of the primacy of their claims on the firm's cash flow (Jensen, 1986), payments to debt holders must be made before income flows to owners. As a consequence, debt financing not only increases the riskiness of cash flows to family owners, but also increases the risk of business failure or bankruptcy (Jensen, 1986). Similarly, debt covenants and the primacy of creditor rights represent binding constraints on family prerogatives, thereby increasing the risk that the family will lose control of the firm (Mishra and McConaughy, 1999), which puts the socio-emotional wealth that family members derive from FFs at risk (Gomez-Mejia *et al*., 2010).

Though there are both some theoretical arguments and results indicating that FFs avoid the use of debt financing, there is no direct evidence regarding the performance implications of such a strategic choice. Viewed from the perspective of PP agency theory (Figure 1, quadrant 2), the risk aversion and control needs of family members may lead to a firm's underinvestment in risky, but potentially profitable activities (Chandler, 1990). On the other hand, others such as Anderson and Reeb (2003b), suggest that FFs may eschew debt financing due to sound business practice and the promotion of a longer time horizon for decision-making. There is some consensus in the literature that high levels of debt financing are detrimental to long-term performance, because under conditions of high leverage excessive emphasis is placed on meeting short-term goals and preventing default risk rather than maximizing long-term firm value (Smith and Warner, 1979). Viewed in this light, the characteristic debt-avoiding financial strategies of FFs are likely to be a source of relative strength related to their long-term focus (cf. Anderson and Reeb, 2003b; Arregle *et al*., 2007; Miller, Le Breton and Scholnick, 2004; Figure 1, quadrant 4) rather than a weakness (cf. Figure 1, quadrant 2). We consequently hypothesize that:

> Hypothesis 2c: Financial leverage mediates the relationship between family control and the financial performance of public corporations.

In summary, we have reasoned that family corporate control tends to go hand-in-hand with a unique set of strategic choices in the areas of diversification, internationalization, and leverage. We have further reasoned that these strategic choices are likely to have previously unexplored implications regarding the performance differences between FFs and other types of corporations. We therefore hypothesized that the aforementioned strategic variables mediate the relationship between family control and financial performance in the manner illustrated in Figure 2.

Figure 2: Strategy Mediators of the Family Control – Financial Performance Relationship



7.2.2 Family firm generation effects

It is now widely accepted that corporations controlled by the founding generations of family members are more profitable than those controlled by successor generations (e.g. Bennedsen *et al*., 2007; Burkart *et al*., 2003; Perez-Gonzalez, 2006; Villalonga and Amit, 2006). In terms of Figure 1, this conventional wisdom suggests that while the relative strengths of FFs (quadrant 4) are dominant when the founding generation is in control, relative weaknesses caused by PP agency problems (quadrant 2) assert

themselves more aggressively in FFs controlled by successor generations. Thus, as a point of departure in our consideration of FF generational effects, we formally propose the following hypothesis:

> Hypothesis 3a: Family firms controlled by founding generations are more profitable than those controlled by successor generations.

Extending the theoretical logic behind Hypothesis 3a, we reason that a clear answer to the question of whether family-controlled corporations outperform or underperform other types of firms requires an analysis of how firms controlled by founding and successor generations differ. To provide such an analysis, we consider the extent to which founding and successor generation-controlled firms exhibit different tendencies with respect to their strategies and governance practices. These are questions that have not yet been closely examined in the body of empirical research on family-controlled corporations. With regard to the strategic behavior of successor-controlled FFs, we reason that the intra-family conflicts and agency problems described by Schulze and his colleagues (2001, 2003; cf. Figure 1, quadrant 2) are likely to lead to diminished managerial capacity and/or PP agency conflicts resulting in risk averse strategic behavior for several reasons. First, heir CEOs may be less capable than either founder or salaried professional CEOs (Burkart *et al*., 2003) because the latter represent a self- and circumstantially-selected group of driven individuals who are exposed 'to the permanent pressure to perform from labor markets' (Perez-Gonzalez, 2006: 1560), while heir CEOs are recruited from a shallower talent pool. Moreover, since an executive's skill set is not fully inheritable, descendants will tend to regress towards the average talent level with each new generation.

Additionally, in terms of their strategic behavior, successor-managed firms are more likely to be conservative in their orientation. For instance, they have been portrayed as less likely to engage in innovation (Morck, Stangeland and Yeung, 2000) and more concerned with wealth preservation over generations (e.g. Chandler, 1990). The number of heirs dependent on income from the FF is likely to increase with each successive generation and if such heirs have little direct involvement in the firm's activities, they will tend to prefer that management disgorge cash rather than reinvest it in new corporate activities (Wong, 1985). Such generational dynamics suggest that FFs controlled by successor generations will be less innovative and growth-oriented

and more risk averse in their strategies than those controlled by founding generations. Formally stated, we hypothesize that:

> Hypothesis 3b: Family firms controlled by successor generations adopt less innovative and more conservative (wealth preservation) strategies.

Notwithstanding the strategic intent of successor-controlled FFs described above, family-controlled corporations are normally subjected to many of the same the capital market and institutional constraints that other publicly traded corporations face (cf. Walsh and Seward, 1990). Such pressures can impose discipline and narrow the discretion and ability of executives to pursue their favored strategies (Jensen, 1989). To manage and attenuate the impact of these constraints, research has shown that the executives of FFs (Faccio, Lang and Young, 2001) including those top managers at U.S.-based publicly traded corporations (Villalonga and Amit, 2008), use a variety of governance practices such as the issuance of dual class shares which allow them to exert greater effective corporate control than their ownership stake would otherwise provide. Given the sub-optimal performance and strategies associated with control by successor generations (cf. Hypothesis 3a and 3b), we expect that the utilization of governance practices designed to augment family control will be more needed and widely employed by successor generations as compared to founding generations.

> Hypothesis 3c: Successor-generation-controlled FFs are more likely to adopt governance practices permitting family to exert greater corporate control than their ownership stake provides.

7.3 Methods

7.3.1 Sample and coding

To identify the population of studies on the performance effects of family control in the context of U.S. publicly traded firms, we employed five complementary search strategies. First, we consulted several prior review articles (e.g. Astrachan and Zellweger, 2008; Sharma, 2004). 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: 'blockholder', 'families', 'family business', 'family control',

'family firm', 'family ownership', 'founder', 'founding family', and 'ownership concentration'. Third, we conducted a manual search of 25 leading economics, finance, and management journals. Fourth, we backward-traced all references reported in the studies identified in the first three steps of the search process, and forward-traced all articles citing these studies using Google Scholar and ISI Web of Knowledge. Fifth, we corresponded with 10 researchers whose papers did not contain effect size information, asking them for a correlation table. These five strategies yielded a final sample of 55 primary studies. We finished the search for data in December 2009. Table 1 provides a description of the variables harvested from these primary studies that are included in our meta-analyses.

7.3.2 HOMA procedure

We use HOMA (Hedges and Olkin, 1985) to test Hypotheses 1a, 1b, 3a, 3b, and 3c. HOMA refers to a set of statistical procedures for calculating the meta-analytic mean correlation between two variables, as well as the corresponding confidence interval (Hedges and Olkin, 1985; Lipsey and Wilson, 2001). The data used in HOMA are effects capturing the associational 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 employ both r and $r_{xy.z}$. We use r because it is easily interpretable and a scale-free measure of linear association. Yet r is a bivariate measure, which ignores the effect of other variables researchers may use as controls in tests of the focal relationship. We therefore also use $r_{xy.z.}$, which can be computed directly from regression results (Doucouliagos and Ulubaşoğlu, 2008). In our case, $r_{xy.z}$ captures the association between family control ($_X$) and performance ($_Y$), given a set of n control variables ($_Z$).[51] When multiple measurements of a focal effect such as family control, diversification and firm performance are reported, we include all of them in our analyses, as Monte Carlo simulations show that procedures using the complete set of measurements outperform those representing each study by a single value in areas like parameter significance testing and parameter estimation accuracy (Bijmolt and Pieters, 2001).

[51] The partial correlation coefficient is calculated as follows: $\sqrt{\frac{t^2}{(t^2+df)}}$, where t is the t-statistic and df represents the degrees of freedom. Note that this formula will always produce positive numbers, so it is necessary to convert it to negative numbers if the regression coefficients are negative (see Greene 2008 chapter 3).

Table 1: Description of Variables

Variables	Description
Public family firm	A variable to indicate whether the firm is public family firm or a non-family firm.
Accounting performance	Any indicator of the financial performance of the firm that is expressed in the form of an accounting-based measure of firm profits (ROA, ROE, ROS, ROI, EPS, and PM).
Market performance	Any indicator of the financial performance of the firm that is expressed in the form of a market-based measure of firm value (stock returns, market-to-book ratio, Tobin's Q).
Diversification	A variable which reflects the degree to which firms are simultaneously active in many different businesses (entropy index, Herfindahl index, or number of segments).
Internationalization	A variable which reflects the degree of international orientation of an enterprise in terms of the presence of international trade (number of foreign countries) and the intensity of international trade (ratio of export to total sales).
Leverage	A variable which reflects the degree of leverage of the firm, commonly measured as ratio of total debts to total assets.
Risk	A variable which reflects the degree to which the financial valuation of a firm's stock varies in relation to movements of the broader market. A commonly used measure of such risk is the Beta of a firm's stock, computed by regressing a firm's monthly stock return on the corresponding country's market index return.
Firm size	An indicator of the size of the firm commonly measured as a firm's total assets, sales, or employees.
Outside blockholder	The extent to which ownership is in the hands of blockholders other than the founding family.
Dual class shares	A variable measuring the difference between control rights and cash flow rights held by the controlling shareholder.
Published article	A dummy variable measuring whether a specific study was published in a scholarly journal (1) or not (0).
Peer reviewed article	A dummy variable measuring whether a specific study was published in a scholarly peer reviewed journal (1) or not (0).
ISI rated (5 year period)	A dummy variable indicating whether a journal has continuously been included in the ISI Social Science Citation Index over the past 5 years (1) or not (0).
Top 10 journals	A dummy variable indicating whether a journal belongs to the sample subset of 10 journals with the highest 5-year average rating in the ISI Social Science Citation Index (1) or not (0).

Since HOMA procedures assume that effect sizes are normally distributed, we use Fisher's (1928) *Zr*-transformation to correct for possible skewness in the effect size distribution (Hedges and Olkin, 1985).[52] In line with current conventions, we used random-effects HOMA for combining study estimates (Geyskens *et al.*, 2009; Raudenbush and Bryk, 2002). To estimate mean effect size appropriately, differences in precision across effect sizes have to be accounted for, so we weight effect sizes by their inverse variance weight *w* (Hedges and Olkin, 1985): the inverse of their squared standard error.[53] We also use these weights to calculate the standard error of the mean effect size and its confidence interval.[54]

7.3.3 MASEM procedure

We use MASEM, which combines the techniques of structural equation modeling with those of meta-analysis (Cheung and Chan, 2005; Viswesvaran and Ones, 1995), to test Hypotheses 2a, 2b, and 2c. MASEM allows us to assess all necessary conditions for a mediation effect (Baron and Kenny, 1986), notably whether: (1) FFs score differently on all three hypothesized mediating variables (i.e., diversification, internationalization,

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[52] Fisher's *Zr* transformed correlations are calculated as follows: $z_r = \frac{1}{2}\ln\left(\frac{1+r}{1-r}\right)$, where *r* is the untransformed correlation coefficient.

[53] *w* is calculated as follows: $w_i = \frac{1}{se_i^2 + \hat{v}_\theta}$, where SE is the standard error of the effect size and $\hat{v}_\theta$ is the random effects variance component.

, which is in turn calculated as: $s.e.(z_r) = \frac{1}{\sqrt{n-3}}$

, and the formula of random effect variance is: $\hat{v}_\theta = \frac{Q_T - k - 1}{\sum w - \left(\frac{\sum w^2}{\sum w}\right)}$

[54] The meta-analytic mean is calculated as follows: $\overline{ES} = \frac{\sum(w \times ES)}{\sum w}$, with its standard error: $se_{\overline{ES}} = \sqrt{\frac{1}{\sum w}}$, and with its 95% confidence interval computed as: $Lower = \overline{ES} - 1.96(se_{\overline{ES}})$, $Upper = \overline{ES} + 1.96(se_{\overline{ES}})$

and leverage); (2) FFs underperform or outperform other firms in absence of these mediators; (3) the predicted mediators have a significant unique effect on performance; and (4) the FF effect on performance is affected when the mediators are added to the model. We also control for the effect of firm size and risk on a firm's revealed strategy choices, because both have long been recognized as important contingency variables that firms consider in strategic decision making (Beatty and Zajac, 1994). Jointly, this yields the following system of structural equations:

(3) $Diversification = \beta_1\, family\ firm + \beta_2\, risk + \beta_3\, size + \varepsilon$

(4) $Internationalization = \beta_4\, family\ firm + \beta_5\, risk + \beta_6\, size + \varepsilon$

(5) $Leverage = \beta_7\, family\ firm + \beta_8\, risk + \beta_9\, size + \varepsilon$

(6) $Performance = \beta_{10} family\ firm + \beta_{11}\, diversification + \beta_{12}\, internationalization + \beta_{13}\, leverage + \varepsilon$

As testing these equations independently could produce biased estimates, due to the potential endogeneity of firms' strategy choices on performance, we test them concurrently to avoid simultaneity biases (Geyskens *et al*., 2009). MASEM tests foresee in a two-stage procedure. First, effect size information for all possible correlations between independent and dependent variables are combined into pooled estimates to produce a meta-analytic correlation matrix (Viswesvaran and Ones, 1995). Second, this matrix is subjected to regular maximum likelihood structural equation modeling (Cheung and Chan 2005). We use the harmonic mean number of observations of all included effect sizes as our sample size (N = 7,257), to compute correct, but conservative *t*-values for the parameter estimates (Geyskens, Steenkamp and Kumar, 2006).

7.3.4 MARA procedure

Following Lipsey and Wilson (2001), we employ MARA to evaluate the robustness of our results. MARA is a special type of weighted least squares (WLS) regression analysis, designed to assess the relationship between effect size and moderator variables and model previously unexplored heterogeneity in the effect size distribution (Lipsey and Wilson, 2001). As we include all available studies in our analysis, we have to ensure the robustness of our findings against two data quality concerns. A first concern is that comprehensive sampling, to some extent, results in overlapping firm-year observations. To test whether sampling overlap materially

affects a focal relationship, we incorporate 'same data' control variables in our regression models. These controls consist of a set of dummy variables, one for each subset of (partially) overlapping samples. A second concern relates to the inclusion of studies with varying publication status and/or quality. To assess whether publication status or quality affect a focal relationship, we include a 'published paper' dummy in our regression models and control for journal impact factors in separate *r*-based HOMA analyses.

To obtain correct parameter estimates, effect sizes must be weighted by their precision, so we employ WLS regression. Again, the preferred weighting variable is w (Hedges, 1982; Hedges and Olkin, 1985). We use a modified type of WLS because most statistical packages provide correct estimates of regression coefficients, but incorrect standard errors and significance levels for MARA (Lipsey and Wilson, 2001). We estimate regression parameters using mixed-effects models (Geyskens *et al*., 2009; Lipsey and Wilson, 2001). These attribute effect size variability to systematic between-study differences and firm-level sampling error (as in fixed-effects models) to a remaining unmeasured random component (as in random effects models).

7.4 Results

Table 2 reports the *r*- and r_{xyz}-based HOMA results related to Hypotheses 1a and 1b. These results show that US publicly-listed FFs outperform the control group (i.e. non-family publicly-listed firms). In particular, we find that the overall mean *r* for the focal relationship is .07 (K=123). Following Hedges and Olkin (1985), we find that the associated 95 percent confidence interval around the mean effect size does not include zero, indicating a statistically significant positive relationship. Further, our analyses using r_{xyz}-based HOMA which controls for the effects of firm age, size, and industry yield similar results (mean r_{xyz} = .05; k = 49).

Our finding of a performance advantage for FFs is robust across alternative measures of performance (see: Table 2). To assess the possibility that our results are an artifact of family control being endogenous upon firm performance (cf. Demsetz and Villalonga, 2001), we conducted an r_{xyz}-based HOMA on the subset of studies (k = 6) that include endogeneity controls. In these tests, we find a mean r_{xyz} that is nearly identical to that obtained on the larger sample (.06 versus .05), suggesting that endogeneity is not a concern. On the basis of these tests, we conclude that family

control is positively associated with performance among US publicly listed firms. Consequently, Hypothesis 1a is supported and Hypothesis 1b is rejected.

Table 2: HOMA Results for the Focal Relationship[a, b]

Predictor	K	*N*	Mean	SE	CI 95%	Q test
			***r*-based HOMA results**			
Family firm to firm performance	123	187,999	**0.07***	0.01	0.06 / 0.09	1,338.79 (0.00)
Accounting measures	67	88,309	**0.06***	0.01	0.04 / 0.08	634.01 (0.00)
Market measures	56	99,690	**0.08***	0.01	0.06 / 0.10	678.67 (0.00)
			r_{xyz}-based HOMA results			
Family firm to firm performance	49	103,451	**0.05***	0.00	0.04 / 0.06	92.54 (0.00)
Accounting measures	13	31,795	**0.05***	0.01	0.04 / 0.06	8.94 (0.71)
Market measures	36	71,656	**0.05***	0.01	0.04 / 0.06	81.81 (0.00)
Endogeneity control	6	13,258	**0.06***	0.01	0.04 / 0.08	5.07 (0.41)

[a] Mean effect sizes marked with an asterisk (*) are statistically significant ($p < .05$).
[b] k = number of samples; N = total sample size; SE = the standard error of the mean effect size; CI 95% = 95 percent confidence interval around the meta-analytic mean; Q test = Hedges and Olkin (1985) chi-square test for heterogeneity.

7.4.1 FF strategy and financial performance

Tables 3 and 4 report the results pertaining to Hypotheses 2a, 2b, and 2c. Table 3 depicts the meta-analytic correlation matrix. The cells below the diagonal represent 21 separate meta-analyses and report the meta-analytic mean correlation and the standard error (SE) for each relationship. Above diagonal cells report the number of observations (N) and the number of samples (k) on which the meta-analytic mean is based. Mean effects and standard errors (printed in bold) indicate the presence of moderating variables as indicated by a significant Q-test.

Table 4 contains MASEM results which support Hypotheses 2a, 2b, and 2c. Overall, the model fits the data well ($\chi^2 = 361.06$; RMSR = .099; GFI = .99), and demonstrates that all three hypothesized strategy variables mediate the focal relationship. First, FFs are less diversified than non-FFs ($\beta = -.03$, $p < .05$). This benefits FFs, because diversification tends to worsen FF performance ($\beta = -.04$, $p < .05$). Second, in comparison with non-FFs, FFs are less internationally oriented ($\beta = -.05$, $p < .05$). This hurts their relative performance, because the more internationalized FFs become, the better their financial results ($\beta = .21$, $p < .05$). Third, FFs have lower leverage ratios than non-FFs ($\beta = -.09$, $p < .05$). This is beneficial to their performance, as increased

leverage is detrimental to their results (β = -.14, p < .05). As the direct relationship between FFs and performance is stronger in the path model (β =.09, p < .05) (after controlling for risk, firm size, and the strategic variables), we conclude that the focal relationship is partially mediated by FF strategic choices. Formal tests confirm that a significant portion of the FF outperformance effect is carried through the strategy mediators (Sobel: z = 7.65, p < .001; Aroian: z = 7.64, p < .001; Goodman: z = 7.68, p < .001; cf. MacKinnon *et al.*, 1995).

7.4.2 Generation effects on financial performance and strategy

Table 5 reports results related to Hypotheses 3a, 3b, and 3c. The results support Hypothesis 3a. Founder-led FFs outperform the control group of non-family controlled firms by a considerable margin (.15). However, the performance of FFs drops rather dramatically when successor generations take over, to below that of the control group (-.05), indicating relative underperformance of post-succession FFs.

The results also largely confirm Hypotheses 3b and 3c. Hypothesis 3b is concerned with intergenerational changes in substantive strategizing. Whereas founder-led FFs invest considerably more in R&D activities than the control group (.16), successor-led FFs invest substantially less (-.18). Likewise, founder-led FFs are more risk-prone than professionally managed firms (.15), whereas successor-led FFs are less so (-.06). Jointly, these results suggest that after founder succession, FFs lose much of their entrepreneurial character and become more geared more towards wealth preservation than maximization (cf. Chandler, 1990).

Hypothesis 3c is concerned with intergenerational differences in control preservation strategies. Since, external shareholders who own large blocks of shares (i.e. 'blockholders') are in a stronger position to monitor and discipline top-managers than widely dispersed shareholder (cf. Berle and Means, 1932), we expect that managers seeking to maintain control over their firm will avoid such forms of equity ties. In this respect, we find that in general FFs are less likely than non-family controlled firms to have large block shareholders, but this tendency is much more pronounced in firms controlled by successor (-.16) than founding generations (-.07).

Table 3: Meta-Analytic Correlation Matrix[a]

Variable	1	2	3	4	5	6	7
1. Family firm	*	130,307 (78)	11,639 (13)	6,745 (3)	80,549 (45)	92,542 (50)	187,999 (123)
2. Firm size	**-0.12 (0.01)**	*	4,811 (5)	5,305 (2)	32,977 (12)	25,265 (13)	69,984 (30)
3.Diversification	**-0.06 (0.02)**	**0.22 (0.04)**	*	1,440 (1)	3,548 (2)	5,794 (5)	4,811 (5)
4. Internationalization	**-0.06 (0.03)**	**0.11 (0.13)**	0.12	*	5,305 (2)	2,880 (2)	9,170 (3)
5. Leverage	**-0.09 (0.01)**	**0.09 (0.03)**	0.08 (0.02)	-0.08 (0.02)	*	18,016 (8)	47,902 (21)
6. Risk	**0.06 (0.02)**	**-0.08 (0.17)**	**0.00 (0.08)**	-0.04 (0.02)	**-0.03 (0.04)**	*	38,512 (16)
7. Firm Performance	**0.07 (0.01)**	**-0.03 (0.04)**	**-0.03 (0.08)**	**0.21 (0.06)**	**-0.16 (0.03)**	**-0.04 (0.03)**	*

[a] Mean effect sizes marked with an asterisk (*) are statistically significant ($p < .05$).
[b] k = number of samples; N = total sample size; SE = the standard error of the mean effect size; CI 95% = 95 percent confidence interval around the meta-analytic mean; Q test = Hedges and Olkin (1985) chi-square test for heterogeneity.

Table 4: MASEM Results[a]

Predictors	Diversification	Internationalization	Leverage	Performance
Family firm	**-0.03 (-2.85)**	**-0.05 (-3.83)**	**-0.09 (-7.60)**	**0.09 (7.56)**
Risk	0.02 (1.68)	**-0.03 (-2.49)**	-0.01 (-0.72)	
Firm size	**0.22 (18.77)**	**0.10 (8.64)**	**0.08 (6.60)**	
Diversification				**-0.04 (-3.41)**
Internationalization				**0.21 (18.44)**
Leverage				**-0.14 (-12.49)**
Harmonic mean *N*	7,257			
X^2	361.06			
GFI	0.99			
RMSR	0.099			

[a] Significant relationships ($p < .05$) are printed in bold; *t*-values are given in parentheses.

Table 5: Correlation-Based HOMA Results for Generation Effects[a]

Predictor	K	*N*	Mean	SE	CI 95%	Q test
Performance variables						
First generation to firm performance	21	27,444	**0.15***	0.03	0.10 / 0.21	437.53 (0.00)
Successor generations to firm performance	13	22,280	**-0.05***	0.02	-0.10 / -0.01	126.11 (0.00)
Substantive strategy variables						
First generation to R&D	6	6,853	**0.16***	0.06	0.04 / 0.28	209.82 (0.00)
Successor generation to R&D	3	5,330	**-0.18***	0.07	-0.31 / -0.05	20.93 (0.00)
First generation to risk	13	19,465	**0.15***	0.03	0.09 / 0.21	140.50 (0.00)
Successor generation to risk	8	16,642	**-0.06***	0.02	-0.10 / -0.02	45.45 (0.00)
First generation to leverage	10	11,835	-0.03	0.02	-0.08 / 0.02	52.00 (0.00)
Successor generation to leverage	5	9,906	**-0.12***	0.06	-0.23 / -0.01	104.34 (0.00)
Governance variables						
First generation to outside blockholder	4	2,367	**-0.07***	0.03	-0.13 / -0.01	6.52 (0.09)
Successor generation to outside blockholder	1	674	-0.16	-	-	-
First generation to dual class shares	4	2,367	**0.20***	0.08	0.04 / 0.36	44.52 (0.00)
Successor generation to dual class shares	2	2,784	**0.36***	0.02	0.32 / 0.40	1.10 (0.29)

[a] Mean effect sizes marked with an asterisk (*) are statistically significant ($p < .05$).

Similarly, the use of dual class shares with unequal voting rights is widely recognized as a device used to augment insider control relative to outsiders (Villalonga and Amit, 2008), and again, while we find that this practice is more common in FFs than non-FFs, it is much more widely used in successor (.36) than founding generation led FFs (.20). Together, these results indicate that successor generation controlled FFs are more likely to adopt governance practices permitting family members to exert greater corporate control than their ownership stake provides. Thus, Hypothesis 3c is supported.

7.4.3 Robustness checks

Table 6 and a non-tabularized MARA analysis contain additional information concerning the robustness of our results. As described above, we have made extensive efforts to include all available empirical studies in our meta analyses. While such a comprehensive inclusion strategy is highly desirable (cf. Eden, 2002; White, 1994), it also raises issues pertaining the possible effects of overlapping samples and the publication status and outlet quality of the primary studies included in the meta analyses. Sampling overlap may lead to the inclusion of samples with similar correlation structures. To assess the materiality of this problem in the context of our study, we estimated a MARA model in which a dummy variable was included for each set of primary samples based on (partially) overlapping firm-year data. The model constant (i.e., the control variable-adjusted mean correlation) produced by this analysis is .07. Feingold's *z*-test for meta-analytic mean differences (Feingold, 1992) shows more formally that the differences between the corrected and uncorrected mean correlations are not statistically significant (z = .64; p = .52), indicating that sampling overlap does not materially affect our results.

Table 6 reports a separate set of *r*-based HOMA results, which explores the publication outlet quality differences issue. The table reports the meta-analytic means of four nested sets of effect sizes, notably all effects published in: (1) academic journals (k = 85), (2) peer-reviewed academic journals (k = 79), (3) peer-reviewed academic journals with a five-year ISI rating (k = 63), (4) the top-10 peer-reviewed academic journals in our dataset, as measured by their five-year ISI impact factor (k = 43). All mean correlations are within the .05 to .08 range. As a consequence of these tests, we conclude that publication outlet characteristics do not meaningfully moderate the focal relationships evaluated.

Table 6: Correlation-Based HOMA Results for Source Quality Effects[a]

Criteria	K	*N*	Mean	SE	CI 95%	Q test
Published article	85	102,437	**0.08***	0.01	0.06 / 0.10	738.11 (0.00)
Peer reviewed article	79	98,753	**0.07***	0.01	0.05 / 0.09	685.18 (0.00)
ISI rated (5 year period)	63	74,360	**0.08***	0.01	0.05 / 0.10	549.29 (0.00)
Top 10 journals	43	65,782	**0.05***	0.01	0.03 / 0.07	430.42 (0.00)

[a] Mean effect sizes marked with an asterisk (*) are statistically significant (p < .05).

7.5 Discussion and Directions for Future Research

As noted in our introduction, the past decade has been marked by a substantial and growing interest in the family business enterprise in leading management, economics, and finance journals. Also, as evidenced by the quality and range of research being conducted on them, we noted that a consensus has emerged in the literature that FFs represent a unique and theoretically interesting organizational form. Despite (or possibly because of) this lavish attention placed on FFs by established scholars adopting a broad range of theoretical and disciplinary perspectives, this body of knowledge has been characterized as a "cluttered and conflicted landscape" (Schulze and Gedajlovic, 2010: 121). As a point of departure in our analysis, we employ meta-analytic techniques to take stock of the available empirical evidence on these areas of dissensus and contention. Subsequently, we develop and test novel theory-extending hypotheses which address gaps in the literature regarding the mediating strategic processes linking family control with performance outcomes as well as to explicate strategy and governance differences between founder and successor controlled FFs. In this section, we describe three general areas of contributions provided by this study and discuss their implications regarding open questions in the body of FF research and the types of future research efforts needed to address them.

7.5.1 Family firms outperform in competitive and complex business environments

We use research synthesizing meta-analytic techniques to assess of the balance of evidence on the question of whether FFs outperform or underperform other types of firms in competitive business environments. As detailed above and summarized in Figure 1, alternative theoretical perspectives on this fundamental question are in clear contrast and some empirical evidence exists that can be used to support starkly different points of view. In situations such as these, research synthesizing meta-analytic techniques like HOMA can be used productively to harvest and combine the findings reported by multiple studies in order to address open and contentious issues. We find that family control has a modest, but statistically significant positive effect on firm performance. Moreover, we find that the performance-enhancing effect of family control is not endogenous to the explanatory variables commonly employed in studies on FF performance (Table 2) and is robust across both alternative model specifications and measures of performance.

Given that the primary studies included in our dataset are empirical inquiries of U.S.-based publicly listed firms, our findings indicate that the family business

enterprise enjoys performance-enhancing advantages in precisely the sort of highly competitive and complex business environment that many scholars see as incompatible with its capabilities, resources, and managerial capacities (cf. Chandler, 1990). As such, our analysis represents a strong test of the performance characteristics of FFs insofar as the data is drawn from firms operating in an environment thought to be inhospitable to them. Thus, our results offer strong support for Hypothesis 1a as well as for theoretical perspectives suggesting that family control provides net performance advantages (e.g. Sirmon and Hitt, 2003).

To date, a large body of research has emerged describing the sources of relative competitive advantages FFs possess in developing and emerging economies (e.g. Luo and Chung, 2005; Peng and Jiang, 2010; Whitley, 1999), but research regarding their possible advantages in developed economies is still in its formative stage (Schulze and Gedajlovic, 2010). The presumption in much of the emerging / developing market literature is that the relative strengths of FFs pertain to advantages they possess in developing and utilizing types of social capital (e.g. Granovetter, 2005), reputational assets (e.g. Carney and Gedajlovic, 2002) and their capacity to excel at informal contracting (e.g. Gilson, 2007), which allow them to fill institutional voids better than other types of firms. By theorizing about the advantages that FFs have in relation to their ability to address problems associated with organizing business activities in the presence of weak institutional support, this literature suggests that the advantages of FFs are context-specific and not likely to be applicable to highly developed business environments such as the U.S.

Our findings indicating a net positive performance effect of family control among U.S. publicly-traded firms brings into question this line of argumentation. More generally, it raises questions concerning the extent to which FF advantages are contextually bound and suggests that researchers need to re-examine existing theoretical accounts regarding the sorts of institutional arrangements which most advantage and disadvantage them. We therefore conclude that there is a compelling need for additional cross-national comparative research examining the relative advantages and disadvantages of FFs in relation to specific types of formal and informal institutional features (e.g. legal, financial, economic, and labor market infrastructure) as well as research which examines how their strategic and capability development processes adapt, or fail to adapt, to differing types of local requirements.

7.5.2 Strategy differences as a source of advantage

Through the use of meta-analytic structural equations modeling techniques (i.e. MASEM), we have been able to evaluate theory-extending hypotheses which specify strategic pathways linking family control with performance outcomes. Utilizing this approach, we were able to harvest effects pertaining to the diversification, internationalization, and financing strategies from a sufficient number of primary studies to assess whether they act as mediators in the family control – performance relationship. While the tendencies of FFs with respect to these strategies have been examined in a few earlier studies (e.g. Anderson and Reeb, 2003b; Gomez-Mejia *et al.*, 2010), these studies did not examine the performance implications of such choices.

Through our MASEM analyses we corroborated Hypotheses 2a, 2b, and 2c, providing some new evidence and insights regarding the complex causal chain linking family control to specific strategic choices and ultimately to firm performance. In particular, and in accord with the hypothesized effects portrayed in Figure 2, we find that whereas the tendency of FFs to engage in fewer international ventures than non-FFs harms their performance, their inclinations to diversify less and utilize less debt provide them with profit-enhancing advantages. These findings suggest that the net positive effect of family control on performance (cf. Hypothesis1a and Table 2) is partially attributable to specific strategic choices made by FF managers, rather than to inherent weaknesses in other forms of business enterprise.

These results offer support for the RBV and other perspectives emphasizing the inherent advantages of FFs (e.g. Arregle *et al.*, 2007; Le Breton-Miller and Miller; 2006; Sirmon and Hitt, 2003, and quadrant 4 of Figure 1). In considering these findings, we reason that an open question facing family business scholars is why non-FFs are unable to close the performance gap by readily mimicking the performance-enhancing patterns of strategic decision-making that benefit FFs? We suspect that some answers to this largely unaddressed question lie in the path-dependent resource accumulation trajectories characterizing the life cycle of FFs, which are paved with unique learning obstacles and opportunities.

For FFs, their pattern of investment in social assets of predominantly local value, like social capital, reputation, and business relationships (Arregle *et al.*,2007; Sanders and Nee, 1996) appear to hamper their ability to exploit new international business opportunities (Figure 2 and Table 4). At the same time, their need for autarky during their formative stages in order to surmount their unique resource constraints (Carney, 2005) can harbor important learning opportunities (Baker and Nelson, 2005)

and provide the basis for the development of valuable tacit knowledge and routines in FFs. These long-learnt practices born from early resource privation are likely to be difficult to imitate for less resource-constrained firms.

Similarly, with respect to our diversification findings, we note that FFs often grow around a distinct set of personal interests and competencies that focuses them on a delineated set of core activities and reduces their inclination to invest in new businesses which lie beyond the family's knowledge set (Villalonga and Amit, 2006). We suspect that such restraint is more difficult to enact in non-FFs because they are more susceptible to capital market pressures compelling their managers to achieve profit and growth targets (Anderson and Reeb, 2003a). Looking forward, a challenge for scholars is to more precisely identify and explain the barriers to imitation which underlie such strategy mediated performance advantages of FFs identified here.

7.5.3 The successor generation discount and its implications for future research

The findings related to our final set of hypotheses confirm (Hypothesis 3a) and add additional nuance (Hypothesis 3b and 3c) to prior research regarding performance differences between founding and successor generation FFs (e.g. Bennedsen *et al.*, 2007; Villalonga and Amit, 2006). That is, consistent with prior research, we find that firms controlled by founding generations are substantially more profitable than those controlled by successor generations (Table 5). In fact, successor generation FFs underperform not only founding generation FFs, but also non-family public corporations, effectively turning the founding generation premium into a successor generation discount (Table 5). These findings suggest a stark difference in the performance characteristics of first and successive generation FFs. These same results suggest that the general performance advantages of FFs (Hypothesis 1a) are driven by first generation, founder-controlled firms.

While the lower performance levels of successor generation firms are well-documented in prior research (e.g. Bennedsen *et al.*, 2007; Perez-Gonzales, 2006; Villalonga and Amit, 2006), the empirical literature is largely silent on the possible strategic and governance causes behind the successor discount. Our findings, which highlight the different strategic and governance choices made by founding and successor generation FFs, are suggestive of some of the factors that explain the drop in successor generation FF performance. Of note, our findings indicate that successor firms employ more conservative strategies by investing much less in R&D and by generally avoiding risk (Table 5). Moreover, we find that successor FFs are less likely

to have their shares in the hands external blockholders (Table 5) and more likely to utilize dual class shares (Table 5), traits suggestive of attempts to entrench family control and avoid external constraints on the discretion of the controlling family (Villalonga and Amit, 2008).

The picture of successor firms that emerges from a consideration of these findings is one of less innovative and more risk averse firms using governance devices to entrench family control and resist external demands for greater accountability. In contrast, firms controlled by founding generations appear highly innovative, risk taking, and much more profitable. In terms of Figure 1, these findings suggest that while theories from quadrant 4 (e.g. RBV) may best explain the behavior and performance of founding generation FFs, other theories such as PP agency theory (Dhawadkar *et al*., 2000; Peng and Jiang, 2010) and the work of Schulze and his associates (2001) on asymmetric familial altruism from quadrant 2 may be more applicable to those controlled by successor controlled FFs.

More generally, these findings not only provide some insights regarding possible causes of the successor generation discount, they also suggest that founder and successor-controlled FFs are quite distinct in terms of their strategic behaviors. As a consequence, we reason that the successor discount may actually be an artifact of more profound differences regarding their respective organizational-level process. To date, the primary distinction emphasized in most FF research has been between family- and non-family-controlled firms (Hypothesis 1a, 1b). Our findings indicate that founding and successor controlled FFs may be similarly distinct, but we note that this distinction has only recently begun to be considered in empirical research (e.g. Bennedsen *et al*., 2007; Miller *et al*., 2007; Villalonga and Amit, 2006) and these few studies have focused on differences in performance outcomes rather than differences in strategic or governance choices. As such, scarcely little beyond the results reported here (Hypothesis 3b and 3c; Table 5) is known about the strategic and governance processes that underlie the successor discount effect.

Thus, we see a compelling need for additional primary studies, which explore strategic and governance differences between founding and successor generation FFs with theories, samples, and analytical techniques attuned to address this important gap in the body of research. Primarily through papers examining the unique characteristics of FFs relative to other types of organizations, research published in leading management, economics and finance journals over the past decade has successfully established the legitimacy of family business research as a unique and

valuable field of study (Schulze and Gedajlovic, 2010). Having surmounted this important hurdle, and on the basis of the findings reported here, we believe that the primary challenge for FF researchers in the coming years will be to go beyond this distinction and to pose and probe more subtle, but no less important ones, such as those between founding and successor generation FFs.

Appendix

Appendix A. Studies included in the meta-analysis (Chapter 2)

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* Zhou, N. 2008. Institutional environment and diversification strategy of Chinese listed firms: an investigation of H- share firms. ***Working Paper***.

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Appendix B. Studies included in the meta-analysis[a] (Chapter 3)

Author	Year	Publication
Ampenberger, Schmid, Achleitner & Kaserer	2009	WP
Andersson, Nordwall & Salomonsson	2004	WP
Andres	2008	JCF
Andreyeva & Dean	2000	WP
Arcay & Vasquez	2005	AA
Arens & Brouthers	2001	MIR
Argiles, Moreno & Caralt	2005	ARS
Axelsson & Johansson	2005	WP
Aydin, Sayim & Yalama	2007	IRJFE
Ballesta & Garcia-Meca	2007	CG
Barbosa & Louri	2005	RIO
Beiner, Drobetz, Schmid & Zimmermann	2004	KYK
Beiner, Drobetz, Schmid & Zimmermann	2006	EFM
Beiner, Schmid & Wanzenried	2004	WP
Beuselinck & Deloof	2006	WP
Bhattacharya & Graham	2007	WP
Bishop, Filatotchev & Mickiewicz	2002	AO
Bjuggren, Dzansi & Palmberg	2007	WP
Bjuggren, Eklund & Wiberg	2007	WP
Bohren & Strom	2005	WP
Boubaker	2007	MFS
Boubaker & Labegorre	2008	JBF
Bozcuk & Lasfer	2000	WP
Brammer & Millington	2005	JBE
Brammer & Pavelin	2006	JBFA
Buck, Filatotchev, Demina & Wright	2003	JIBS
Buck, Filatotchev, Wright & Zhukov	1999	JCE
Buysschaert, Deloof & Jegers	2005	WP
Cai, Keasey & Short	2006	EFM
Cella	2008	WP
Cerbioni & Parbonetti	2007	WP
Chahine	2007	MF
Chen	2004	WP
Chizema	2008	CG
Cladera & Gispert	2003	LAB
Collin	2002	WP
Collin, Smith, Broberg, Umans & Tagesson	2008	WP
Constantinou, Trigeorgis & Vafeas	2005	COC

Author	Year	Publication
Conyon & Peck	1998	AMJ
Cosh & Hughes	2001	WP
Cuijpers, Moers & Peek	2005	WP
Cvelbar, Domadenik & Prasnikar	2007	WP
Damijan, Gregoric & Prasnikar	2004	WP
Dittmann, Maug & Schneider	2010	RF
Dong	2007	WP
Donnelly & Kelly	2005	EMJ
Donnelly & Mulcahy	2008	CG
Drobetz, Pensa & Schmid	2007	CG
Edwards & Weichenrieder	2004	GER
Ehrhardt, Nowak & Weber	2006	WP
Eklund	2007	WP
Elston & Goldberg	2003	JBF
Faccio & Lang	2002	JFE
Faccio & Lasfer	2000	JCF
Faccio & Lasfer	2000	WP
Favero, Giglio, Honorati & Panunzi	2006	WP
Fernandez & Arrondo	2005	CG
Fernandez & Gomez	2002	COC
Filatotchev, Buck & Zhukov	2000	AMJ
Filatotchev, Dyomina, Wright & Buck	2001	JIBS
Filatotchev, Isachenkova & Mickiewicz	2007	EMFT
Fiss	2006	SMJ
Florackis, Kostakis & Ozkan	2007	WP
Florackis & Ozkan	2004	WP
Florou	2007	WP
Foronda, Iturriaga & Mariscal	2007	CG
Gedajlovic & Shapiro	1998	SMJ
Giannetti & Simonov	2006	JF
Ginglinger & Hamon	2007	WP
Gispert	1998	IE
Goltsman	2000	WP
Gonenc & Aybar	2006	CG
Gonenc, Kan & Karadagli	2007	EMFT
Gorriz & Fumas	1996	MDE
Grosfeld	2007	WP
Grosfeld & Hashi	2007	CG
Hengartner	2006	DIS
Hillier & McColgan	2004	WP

Author	Year	Publication
Holm & Scholer	2008	WP
Isakov & Weisskopf	2009	WP
Jacquemin & Ghellinck	1980	EER
Janowicz, Piaskowska & Trojanowski	2004	EMR
Jones, Kalmi & Makinen	2006	IR
Judge, Naoumova & Koutzevol	2003	JWB
Kasbi	2006	WP
Kaserer & Moldenhauer	2006	WP
Kowalewski, Schaefer, Stesyuk & Talavera	2007	WP
Kowalewski, Stetsyuk & Talavera	2007	FMI
Krivogorsky	2006	IJA
Krivogorsky & Grudnitski	2008	WP
Kuznetsov & Muravyev	2001	WP
Ladroo	2009	CG
Laeven & Levine	2007	WP
Lakhal	2005	RAF
Lasfer	1995	EFM
Lasfer	2006	JBFA
Lausten	2002	IJIO
Lazarides, Drimpetas & Dimitrios	2008	COC
Lei	2005	DIS
Lopez-de-Foronda, Lopez-Iturriga & Santamaria-Mariscal	2007	CG
Lopez-de-Foronda, Lopez-Iturriga & Santamaria-Mariscal	2007	WP
Lopez-Iturriaga & Rodriguez-Sanz	2001	JMG
Makinen	2007	WP
Maury	2006	JCF
McKnight & Weir	2009	QREF
Mendez & Garcia	2007	CG
Miguel, Pindado & Torre	2004	SMJ
Minguez-Vera & Martin- Ugedo	2007	IRFA
Mishra, Randoy & Jenssen	2001	JIFMA
Mueller, Dietl & Peev	2003	JIIDT
Mukherjee & Padgett	2005	WP
Muravyev	2002	WP
Navarro & Anson	2006	CH
Neumann & Voetmann	2005	MDE
Ooi	2000	JPIF
Ortega & Martin	2004	WP
O'Sullivan	2000	BAR
O'Sullivan	1997	JRI

Author	Year	Publication
O'Sullivan	2000	JMG
Oxelheim & Randoy	2005	JIBS
Ozkan	2007	JMFM
Pasternack	2002	DIS
Pedersen & Thomsen	1999	EB
Pedersen & Thomsen	2003	JMG
Perrini, Rossi & Rovetta	2007	CG
Pindado & Torre	2006	EFM
Pindado & Torre	2008	MF
Piot & Missonier-Piera	2007	WP
Prencipe, Markarian & Pozza	2008	FBR
Randoy, Dibrell & Craig	2009	SBE
Randoy, Down & Jenssen	2003	MEL
Randoy & Goel	2003	JBV
Randoy & Jenssen	2004	CG
Randoy & Nielsen	2002	JMG
Randoy & Oxelheim	2001	WP
Rose	2002	EJLE
Rose	2005	IRLE
Rose	2005	CG
Rose	2007	JMG
Ruigrok, Peck & Keller	2006	JMS
Sandell	2002	SJM
Sanders & Tuschke	2007	AMJ
Schmid	2003	WP
Schmid, Ampenberger, Kaserer & Achleitner	2008	WP
Seifert, Gonenc & Wright	2005	JMFM
Spano	2007	JBFA
Sraer & Thesmar	2006	WP
Thomsen	2000	WP
Thomsen & Pedersen	2000	SMJ
Thomsen, Pedersen & Kvist	2006	JCF
Thomsen & Rose	2004	EJLE
Thomsen & Vinten	2007	WP
Tuschke & Sanders	2003	SMJ
Vazquez	2002	WP
Vedres	2007	EMR
Viviani, Giorgino & Steri	2008	JPE
Volpin	2002	JFE
Wan & Hoskisson	2003	AMJ

Author	Year	Publication
Weir, Laing & McKnight	2002	JBFA
Westhead	1999	JMG
Zellweger, Meister & Fueglistaller	2007	FMPM
Zona & Zattoni	2007	CG

[a] **Abbreviations for the journals are as follows:** AA: *Advances in Accounting;* AMJ: *Academy of Management Journal;* AO: *Acta Oeconomica;* ARS: *Annual Regional Science;* BAR: *British Accounting Review;* CG: *Corporate Governance: An International Review;* CH: *Book Chapter;* COC: *Corporate Ownership & Control;* DIS: *Dissertation;* EB: *Economics of Business;* EER: *European Economic Review;* EFM: *European Financial Management;* EJLE: *European Journal of Law and Economics;* EMFT: *Emerging Markets, Finance and Trade;* EMJ: *European Management Journal;* EMR: *European Management Review;* FBR: *Family Business Review;* FMI: *Financial Markets and Institutions;* FMPM: *Financial Markets and Portfolio Management;* GER: *German Economic Review;* IE: *Investigaciones Economicas;* IJA: *International Journal of Accounting;* IJIO: *International Journal of Industrial Organization;* IR: *Industrial Relations ;* IRFA: *International Review of Financial Analysis;* IRJFE: *International Research Journal of Finance and Economics;* IRLE: *International Review of Law and Economics;* JBE: *Journal of Business Ethics;* JBF: *Journal of Banking & Finance;* JBFA: *Journal of Business Finance & Accounting;* JBV: *Journal of Business Venturing;* JCE: *Journal of Comparative Economics;* JCF: *Journal of Corporate Finance;* JF: *Journal of Finance;* JFE: *Journal of Financial Economics;* JIBS: *Journal of International Business Studies;* JIFMA: *Journal of International Financial Management and Accounting;* JIIDT: *Journal for Institutional Innovation Development and Transition;* JMFM: *Journal of Multinational Financial Management;* JMG: *Journal of Management and Governance;* JMS: *Journal of Management Studies;* JPE: *Journal of Private Equity;* JPIF: *Journal of Property Investment & Finance;* JRI: *Journal of Risk and Insurance;* JWB: *Journal of World Business;* KYK: *KYKLOS;* LAB: *Labour;* MDE: *Managerial and Decision Economics;* MEL: *Maritime Economics & Logistics;* MF: *Managerial Finance;* MFS: *Multinational Finance Society;* MIR: *Management International Review;*QREF: *Quarterly Review of Economics and Finance;* RAF: *Review of Accounting and Finance;* RF: *Review of Finance;* RIO: *Review of Industrial Organization;* SBE: *Small Business Economics;* SJM: *Scandinavian Journal of Management;* SMJ: *Strategic Management Journal;* WP: *Working Paper.*

Appendix C. Studies included in the meta-analysis[ab] (Chapter 5)

Author	Year	Publication	Country
Abdullah *	2006	CG	Malaysia
Adams & Giannetti *	2009	WP	Sweden
Adithipyangkul, Alon & Zhang *	2009	APJM	China
Agarwal #*	1981	IR	USA
Agrawal & Knoeber #*	1998	JFE	USA
Ahn & Han #*	2008	WP	USA
Anderson, Banker & Ravindran #*	1999	WP	USA
Anderson, Becher & Campbell *	2004	JFI	USA
Andjelkovic, Boyle & McNoe *	2002	PBFJ	New Zealand
Ang & Constand *	1997	JMFM	Japan
Ang, Lauterbach & Schreiber *	2002	JBF	USA
Angbazo & Narayanan *	1997	EFR	USA
Ashley & Yang *	2004	JBE	USA
Attaway #*	2000	ABR	USA
Baber, Kang & Kumar *	1998	JAE	USA
Baber, Kang & Kumar *	1999	AR	USA
Baecker, Grass & Hommel *	2008	CHAP	USA
Balkin, Markman & Gomez-Mejia #*	2000	AMJ	USA
Banning #	2004	COC	USA
Banning & Chiles #*	2007	JLR	USA
Barak, Cohen & Lauterbach *	2008	WP	Israel
Barnes, Harikumar & Roth *	2006	JBER	USA
Barontini & Bozzi *	2009	JMG	Italy
Barro & Barro *	1990	JLE	USA
Basu, Hwang, Mitsudome & Weintrop *	2007	PBFJ	Japan
Bebchuk & Grinstein *	2005	WP	USA
Bechmann *	2008	CHAP	Denmark
Belliveau, O'Reilly & Wade #*	1996	AMJ	USA
Benito & Conyon *	1999	JMG	UK
Benson & Davidson #	2009	WP	USA
Berrone & Gomez-Mejia #*	2009	AMJ	USA
Bhattacharyya, Mawani & Morrill #	2008	AF	USA
Bhattacharyya, Mawani & Morrill #	2008	MF	Canada
Bilimoria #	1997	HR	USA
Bliss & Rosen *	2001	JFE	USA
Bloom & Michel #	2002	AMJ	USA
Bodolica #*	2005	DIS	Canada

Author	Year	Publication	Country
Boschen, Duru, Gordon & Smith #	2003	AR	USA
Boyd #	1994	SMJ	USA
Boyer & Ortiz-Molina #	2008	CGIR	USA
Brander *	2006	JBE	USA
Brick, Palmon & Wald *	2006	JCF	USA
Brunello, Graziano & Parigi *	2001	IJIO	Italy
Buchholtz, Young & Powell #	1998	GOM	USA
Buck, Bruce, Main & Udueni #	2003	JMS	UK
Buck, Liu & Skovoroda #*	2008	JIBS	China
Bugeja, Rosa & Izan *	2009	WP	Australia
Byrd & Hickman #	1995	MF	USA
Cahan, Chua & Nyamori *	2005	FAM	New Zealand
Campbell, Johnston, Sefcik & Soderstrom *	2007	JAPP	USA
Capezio, Shields & O'Donell #*	2010	JMS	Australia
Carpenter #	2000	JM	USA
Carpenter, Sanders & Gregersen #*	2001	AMJ	USA
Carpenter & Seo #*	2008	WP	USA
Carpenter & Wade #*	2002	AMJ	USA
Carr *	1997	JSBM	USA
Carter, Lynch & Tuna *	2007	AR	USA
Cavalluzzo & Sankaraguruswamy #*	2000	WP	USA
Certo, Dalton, Dalton & Lester #	2008	JBE	USA
Chalmers, Koh & Stapledon *	2006	BAR	Australia
Chang, Leow & Watson #*	2006	WP	Australia
Chen & Lee #*	2008	IRJFE	Taiwan
Cheng #	2004	AR	USA
Cheng & Firth #*	2005	CGIR	Hong Kong
Cheng & Firth #*	2006	MDE	Hong Kong
Cheng & Indjejikian #*	2009	IRLE	USA
Cheng & Indjejikian #	2009	CAR	USA
Cheung, Stouraitis & Wong #*	2005	JEF	Hong Kong
Cho & Shen #*	2007	SMJ	USA
Chourou & Abaoub #	2009	WP	USA
Chukuemka & Ndifon #*	2009	WP	Sweden
Ciscel #	1974	SEJ	USA
Ciscel & Carroll *	1980	RES	USA
Clarkson, Nichols & Walker #*	2005	WP	Australia
Cohen & Lauterbach *	2008	JMFM	Israel
Collin, Gustafsson, Petersson & Smith #*	2009	WP	Sweden
Combs, Ketchen, Perryman & Donahue #	2007	JMS	USA

Author	Year	Publication	Country
Conyon *	1998	OBES	UK
Conyon *	2006	AMP	USA
Conyon, Core & Guay *	2009	WP	Mixed
Conyon & He *	2008	WP	China
Conyon & Leech *	1994	OBES	UK
Conyon & Peck #*	1998	AMJ	UK
Conyon, Peck & Sadler *	2001	SMJ	UK
Conyon, Peck & Sadler #*	2009	JMG	UK
Conyon & Schwalbach *	2000	LRP	Germany & UK
Coombs & Gilley #*	2005	SMJ	USA
Cordeiro #	2005	WP	USA
Cordeiro & Veliyath #*	2003	ABR	USA
Core, Holthausen & Larcker *	1999	JFE	USA
Cosh & Hughes *	1997	IJIO	UK
Crespi-Cladera & Gispert #*	2003	LAB	Spain
Crespi & Pascual-Fuster #*	2008	WP	Spain
Daily, Johnson, Ellstrand & Dalton *	1998	AMJ	USA
David, Kochhar & Levitas #*	1998	AMJ	USA
David, Yoshikawa & Oyanagi #*	2004	WP	Japan
Davila & Penalva #	2006	RAS	USA
Davila & Venkatachalam #*	2004	RAS	USA
Deckop *	1988	ILRR	USA
Desia, Fatemi & Katz *	1999	WP	USA
Dikolli, Kulp & Sedatole #	2005	WP	USA
Ding, Wu, Li & Jia *	2008	WP	China
Dogan & Smyth *	2002	AEB	Malaysia
Dong & Ozkan *	2008	JMFM	UK
Doucouliagos, Haman & Askary #*	2007	CGIR	Australia
Drobetz, Pensa & Schmid #*	2007	CGIR	Switzerland
Duffhues & Kabir #*	2008	JMFM	Netherlands
Duru & Reeb *	2002	JAAF	USA
Duru & Smith #	2001	WP	USA
Edwards, Eggert & Weichenrieder *	2008	EG	Germany
Eichholtz, Kok & Otten *	2005	WP	UK
Elhagrasey, Harrison & Buchholz #*	1998	JMG	USA
Elloumi & Gueyie #*	2001	CG	Canada
Eriksson *	2005	ET	Czech Republic
Eriksson & Lausten *	2000	SJM	Denmark
Ertugrul, Sezer & Sirmans #	2008	JREFE	USA
Evans & Evans *	2002	WP	Australia

Author	Year	Publication	Country
Evans & Stromback *	1994	ARA	Australia
Ezzamel & Watson #	1998	AMJ	UK
Ezzamel & Watson #*	2002	JMS	UK
Fagernäs #*	2006	WP	India
Fahlenbrach *	2008	RF	USA
Falaato #	2008	WP	USA
Fan, Wan & Zhou *	2008	WP	China
Fatemi, Desai & Katz #*	2003	GFJ	USA
Fernandes *	2008	JMFM	Portugal
Finkelstein & Boyd #	1998	AMJ	USA
Finkelstein & Hambrick #*	1989	SMJ	USA
Firth, Fung & Rui *	2006	JCF	China
Firth, Fung & Rui *	2007	JBR	China
Firth, Lohne, Ropstad & Sjo #*	1996	MDE	Norway
Firth, Tam & Tang #*	1999	OJMS	Hong Kong
Fiss #*	2006	SMJ	Germany
Florou *	2007	WP	Greece
Frankforter, Berman & Jones #	2000	JMS	USA
Frye, Nelling & Webb *	2006	CGIR	USA
Garvey & Milbourn #	2003	JF	USA
Garvey & Milbourn #	2006	JFE	USA
Geiger & Cashen #*	2007	JMI	USA
Geletkanycz, Boyd & Finkelstein #	2001	SMJ	USA
Gerakos, Piotroski & Srinivasan #*	2009	WP	UK
Ghosh *	2006	EMFT	India
Ghosh & Sirmans #*	2005	JREFE	USA
Gibbons & Murphy *	1990	ILRR	USA
Girma , Thompson & Wright #*	2006	EA	UK
Gomez-Mejia, Larraza-Kintana & Makri #*	2003	AMJ	USA
Gottesman & Morey #*	2006	WP	USA
Gray & Cannella #*	1997	JM	USA
Gregg, Jewell & Tonks *	2005	WP	UK
Gregg, Machin & Szymanski *	1993	BJIR	UK
Gregory-Smith *	2009	WP	UK
Grossman & Cannella #*	2006	JM	USA
Gu & Kim #	2009	SIJ	USA
Guest *	2009	WP	UK
Guest *	2009	CJE	UK
Guest #*	2009	EA	UK
Gunasekargea & Wilkinson #*	2002	IJBS	New Zealand

Author	Year	Publication	Country
Hahn #	2007	WP	UK
Hall & Liebman *	1998	QJE	USA
Hallock *	1997	JFQA	USA
Hambrick & Finkelstein #*	1995	SMJ	USA
Harjoto & Mullineaux *	2003	JFR	USA
Harm & Raible #*	2008	CHAP	Germany
Haye *	1997	JEB	USA
Haynes, Thompson & Wright #*	2007	JBFA	UK
He #	2008	JBV	USA
He *	2008	WP	USA
Hebner & Kato *	1997	IREF	Japan & USA
Hempel & Fay #	1994	HRM	USA
Henderson & Fredrickson #*	1996	AMJ	USA
Henderson & Fredrickson #	2001	AMJ	USA
Hengartner #*	2006	DIS	Switzerland
Hill & Phan *	1991	AMJ	USA
Hillman, Shropshire, Certo, Dalton & Dalton #	2008	WP	USA
Hogan & Mcpheters *	1980	SEJ	USA
Horton, Millo & Serafeim #	2009	WP	UK
Houston & James *	1995	JME	USA
Hubbard & Palia *	1995	JFE	USA
Hutchinson & Gul #	2004	JCF	Australia
Iyengar & Zampelli *	2008	AF	USA
Izan, Sidhu & Taylor *	1998	CGIR	Australia
Jaiswal & Firth #*	2007	WP	India
Jalbert, Chan, Jalbert & Landry #*	2007	JDM	USA
Jensen & Murphy *	1989	JPE	USA
Jiang, Habib & Smallman #*	2009	PAR	New Zealand
Jiraporn, Kim & Davidson *	2005	JEF	USA
Joh *	1999	RES	Japan
Johnston *	2005	AE	UK
Jones & Kato *	1996	LE	Bulgaria
Jones & Kato *	1998	WP	Bulgaria
Jones & Szychowska *	2001	WP	Russia
Joyce #*	2001	ABR	USA
Kacperczyck #*	2007	WP	USA
Kalyta #*	2009	SMJ	USA
Kaplan *	1994	JPE	Japan & USA
Kato *	1997	IJIO	Japan
Kato, Kim & Lee *	2007	PBFJ	South Korea

Author	Year	Publication	Country
Kato & Kubo #*	2006	JJIE	Japan
Kato & Long *	2004	WP	China
Kato & Long *	2006	WP	China
Kato & Rockel *	1992	JJIE	Japan
Kerr & Kren #*	1992	AMJ	USA
Khan, Dharwadkar & Brandes #*	2005	JBR	USA
Khorana & Zenner *	1998	JCF	USA
Kim & Gu #	2005	JHTR	USA
Knight, Madura & Martin *	1994	GFJ	Japan
Kren & Kerr #	1997	AB	USA
Kruse & Rennie #	2006	WP	USA
Kumar, Ghicas & Pastena #	1993	MF	USA
Laan van der, van Ees & van Witteloostuijn #*	2008	WP	Netherlands
Laing & Weir #*	1999	PR	UK
Larcker, Richardson, Seary & Tuna *	2005	WP	USA
Lau & Vos *	2004	NZJABR	New Zealand
Lawrence & Stapledon #*	1999	WP	Australia
Lazarides, Drimpetas & Dimitrios #*	2008	WP	Greece
Leone, Wu & Zimmerman #	2006	JAE	USA
Li, Moshirian, Nguyen & Tan #*	2007	RIBF	China
Lin #*	2004	ARA	Taiwan
Lin #	2005	CGIR	Taiwan
Lin, Shen & Su *	2009	WP	China
Madanoglu & Karadag #*	2008	JFBR	USA
Magnan & StOnge #	1997	SMJ	USA
Main *	1991	MDE	UK
Main, Bruce & Buck *	1996	EJ	UK
Main, O'Reilly & Wade #*	1995	ICC	USA
Mangel & Singh #*	1993	AB	USA
Mäkinen #*	2007	WP	Finland
Martin & Thomas *	2005	JCF	USA
Matolcsy #*	2000	CAR	Australia
McClelland & Barker #	2007	WP	USA
McGuire, Chiu & Elbing #	1962	AER	USA
McKnight *	1996	BJIR	UK
McKnight & Tomkins *	1999	IJEB	UK
McKnight & Tomkins #	2004	WP	UK
Meeks & Whittington *	1975	JIE	UK
Mengistae & Xu *	2004	JLE	China
Merhebi, Pattenden, Swan & Zhou *	2006	AF	Australia

Author	Year	Publication	Country
Mertens, Knop & Strootman #*	2008	WP	Netherlands
Miller #	1995	AMJ	USA
Miller, Wiseman & Gomez-Mejia *	2002	AMJ	USA
Mitsudome, Weintrop & Hwang *	2008	JJIE	Japan & USA
Murphy *	1986	RAND	USA
Ning, Hu & Garza-Gomez *	2009	WP	USA
Nourayi & Daroca #*	2008	MF	USA
Nourayi & Mintz #*	2008	MF	USA
Nwaeze, Yang & Yin *	2006	CAR	USA
Ogden & Watson #*	2007	AB	UK
O'Reilly, Main & Crystal #*	1988	ASQ	USA
Oreland *	2008	CHAP	Sweden
Ortega & Martin #*	2008	WP	Spain
Otten & Heugens *	2008	WP	Mixed
Oxelheim & Randøy #*	2005	JIBS	Mixed
Oxelheim & Randøy #*	2008	CHAP	Mixed
Oxelheim, Wihlborg & Zhang #*	2008	CHAP	Sweden
Ozkan *	2007	WP	UK
Ozkan #*	2007	JMFM	UK
Pan, Tian & Cao #*	2009	WP	China
Parthasarathy, Menon & Bhattacherjee	2006	EPW	India
Pathak, Hoskisson & Johnson #*	2008	WP	USA
Pennathur & Shelor *	2002	JREFE	USA
Porac, Wade & Pollock #	1999	ASQ	USA
Rajagopalan & Finkelstein #	1992	SMJ	USA
Rajagopalan & Prescott #*	1990	JM	USA
Ramaswamy, Veliyath & Gomes #*	2000	MIR	India
Randøy & Nielsen #*	2002	JMG	Sweden & Norway
Randøy & Oxelheim #*	2002	WP	Sweden
Rankin *	2007	WP	Australia
Riahi-Belkaoui & Pavlik #*	1993	MF	USA
Riahi-Belkaoui & Picur #*	1993	MF	USA
Roberts *	2005	WP	New Zealand
Rose #	2005	CGIR	Denmark
Rose & Wolfram *	2002	JLE	USA
Rost & Osterlich #*	2007	WP	Switzerland
Roulstone *	2003	JAR	USA
Sakawa & Watanabel *	2006	WP	Japan
Sakawa & Watanabel *	2008	WP	Japan

Author	Year	Publication	Country
Salami #*	2009	WP	Canada
Salim & Wan-Hussin #*	2009	WP	Malaysia
Sandell #	2002	SJM	Sweden
Sanders #	2001	AMJ	USA
Sanders & Carpenter #*	1998	AMJ	USA
Sapp *	2008	EFM	Canada
Schaefer *	1998	RES	USA
Schnatterly #	2003	SMJ	USA
Seo & Carpenter #*	2008	WP	USA
Shah, Javed & Abbas #*	2009	IRJFE	Pakistan
Shim & Lee #*	2003	RAF	USA
Shim, Lee & Joo #*	2009	CMR	USA
Shin #	2004	WP	USA
Shuto #*	2007	JIAAT	Japan
Sigler *	2003	MRN	USA
Sigler & Haley #	1995	MF	USA
Singh & Agarwal #*	2002	CJAS	Canada
Skalpe #*	2007	TM	Norway
Sloan *	1993	JAE	USA
Smith & Swan #*	2008	WP	USA
Smith & Swan #*	2008	WP	USA
Srinivasan, Sayrak & Nagarajan #*	2004	WP	USA
Stanwick & Stanwick #*	2001	BSE	USA
Staw & Epstein #*	2000	ASQ	USA
Suh *	2009	WP	Australia
Talmor & Wallace *	2001	WP	USA
Tian & Twite #*	2006	WP	Australia
Tinaikar #*	2006	WP	Canada & USA
Tinaikar #*	2008	WP	USA
Tosi, Misangyi, Fanelli, Waldman & Yammarino #*	2004	LQ	USA
Tripp & Kenny *	1995	ABR	USA
Unite, Sullivan, Brookman, Majadillas & Taningco *	2008	PBFJ	Philippines
Vafeas & Afxentiou #*	1998	JAPP	USA
Vafeas #	2003	FM	USA
Veliyath #	1999	JMS	USA
Veliyath & Bishop #	1995	IJOA	USA
Veliyath & Ramaswamy #*	2000	FBR	India
Wade, Porac, Pollock & Graffin #*	2006	AMJ	USA
Wan *	2003	WP	USA
Wanzenried, Piazza & Pedergnana *	2005	WP	Switzerland

Author	Year	Publication	Country
Werner, Tosi & Gomez-Mejia #	2005	SMJ	USA
Westphal & Zajac #*	1995	ASQ	USA
Winfrey & Logan #*	1998	CRR	USA
Wright & Kroll #*	2002	JMG	USA
Wright, Kroll, Lado & Elenkov #	2005	SO	USA
Wu #*	2008	WP	China
Wu & Tu #	2007	JBR	USA
Yang & Yang *	2009	PER	China
Young #*	2008	IJLIC	Taiwan
Young & Buchholtz #	2002	JMI	USA
Young & Tsai *	2008	JBR	Taiwan
Yu #*	2008	WP	China
Yurtoglu & Haid *	2006	WP	Germany
Zhou *	2000	CJE	Canada
Zhou #	2006	WP	USA
Zhu #*	2007	JAAB	China

[a] Studies marked with a # are included in the bivariate analysis; those with a * are in the partial analysis.

[b] **Abbreviations for the journals are as follows: AB:** *Accounting & Business Research;* **ABR:** *American Business Review;* **AE:** *Applied Economics;* **AEB:** *ASEAN Economic Bulletin;* **AER:** *American Economic Review;* **AF:** *Accounting and Finance;* **AMJ:** *Academy of Management Journal;* **AMP:** *Academy of Management Perspectives*; **APJM:** *Asia Pacific Journal of Management;* **AR:** *Accounting Review;* **ARA:** *Asian Review of Accounting;* **ASQ:** *Administrative Science Quarterly;* **BAR:** *British Accounting Review;* **BJIR:** *British Journal of Industrial Relations;* **BSE:** *Business Strategy and the Environment;* **CAR:** *Contemporary Accounting Research;* **CG:** *Corporate Governance;* **CGIR:** *Corporate Governance: An International Review;* **CHAP:** *Book Chapter;* **CJAS:** *Canadian Journal of Administrative Sciences;* **CJE:** *Cambridge Journal of Economics;* **CMR:** *Contemporary Management Research;* **COC:** *Corporate Ownership & Control;* **CRR:** *Corporate Reputation Review;* **DIS:** *Dissertation;* **EA:** *Economica;* **EFM:** *European Financial Management;* **EFR:** *European Finance Review;* **EG:** *Economics of Governance;* **EJ:** *Economic Journal;* **EMFT:** *Emerging Markets, Finance and Trade;* **ET:** *Economics of Transition;* **FAM:** *Financial Accountability & Management;* **FBR:** *Family Business Review;* **FM:** *Financial Management;* **GFJ:** *Global Finance Journal;* **GOM:** *Group & Organization Management;* **HR:** *Human Relations;* **HRM:** *Human Resource Management;* **ICC:** *Industrial and Corporate Change;* **IJBS:** *International Journal of Business Studies;* **IJEB:** *International Journal of the Economics of Business;* **IJIO:** *International Journal of Industrial Organization;* **IJLIC:** *International Journal Learning and Intellectual Capital;* **IJOA:** *International Journal of Organizational Analysis;* **ILRR:** *Industrial and Labor Relations Review;* **IREF:** *International Review of Economics & Finance;* **IRJFE:** *International Research Journal of Finance and Economics;* **IRLE:** *International Review of Law and Economics;* **JAAB:** *Journal of American Academy of Business;* **JAAF:** *Journal of Accounting, Auditing & Finance;* **JAAT:** *Journal of International Accounting, Auditing and Taxation;* **JAE:** *Journal of Accounting and Economics;* **JAPP:** *Journal of Accounting and Public Policy;* **JAR:** *Journal of Accounting Research;* **JBE:** *Journal of Business Ethics;* **JBER:** *Journal of Business & Economics Research;* **JBF:** *Journal of Banking & Finance;* **JBFA:** *Journal of Business Finance & Accounting;* **JBR:** *Journal of Business Research;* **JBV:** *Journal of Business Venturing;* **JCF:** *Journal of Corporate Finance;* **JDM:** *Journal of Diversity Management;* **JEB:** *Journal of Economics and Business;* **JEF:** *Journal of Empirical Finance;* **JFBR:** *Journal of Foodservice Business Research;* **JF:** *Journal of Finance;* **JFE:** *Journal of Financial Economics;* **JFI:**

Journal of Financial Intermediation; **JFR:** *Journal of Financial Research;* **JFQA:** *Journal of Financial and Quantitative Analysis;* **JHTR:** *Journal of Hospitality & Tourism Research;* **JIBS:** *Journal of International Business Studies;* **JJIE:** *Journal of the Japanese and International Economics;* **JLE:** *Journal of Labor Economics;* **JLR:** *Journal of Labor Research;* **JM:** *Journal of Management;* **JME:** *Journal of Monetary Economics;* **JMFM:** *Journal of Multinational Financial Management;* **JMG:** *Journal of Management and Governance;* **JMI:** *Journal of Managerial Issues;***JMS:** *Journal of Management Studies;***JPE:** *Journal of Political Economy;* **JREFE:** *Journal of Real Estate Financial Economics;* **JSBM:** *Journal of Small Business Management;* **IR:** *Industrial Relations;* **IRJFE:** *International Research Journal of Finance and Economics;* **LAB:** *LABOUR;* **LE:** *Labour Economics;* **LRP:** *Long Range Planning;* **LQ:** *Leadership Quarterly;* **MDE:** *Managerial and Economics;* **MF:** *Managerial Finance;* **MIR:** *Management International Review;* **MRN:** *Management Research News;* **NZJABR:** *New Zealand Journal of Applied Business Research;* **OBES:** *Oxford Bulletin of Economics and Statistics;* **OJMS:** *Omega-International Journal of Management Science;* **PAR:** *Pacific Accounting Review;* **PBFJ:** *Pacific-Basin Finance Journal;* **PER:** *Pacific Economic Review;* **PR:** *Personnel Review;* **QJE:** *Quarterly Journal of Economics;* **RAF:** *Review of Accounting & Finance;* **RAND:** *RAND Journal of Economics;* **RAS:** *Review of Accounting Studies;* **RES:** *Review of Economics and Statistics;* **RF:** *Review of Finance;* **RIBF:** *Research in International Business and Finance;* **SEJ:** *Southern Economic Journal;* **SIJ:** *Service Industries Journal;* **SJM:** *Scandinavian Journal of Management;* **SMJ:** *Strategic Management Journal;* **SO:** *Strategic Organization;* **TM:** *Tourism Management;* **WP:** *Working Paper.*

Appendix D. Studies included in the meta-analysis[ab] (Chapter 6)

Author	Year	Publication
Aburime	2008	WP
Ananchotikul	2006	WP
Ang & Constand	2002	JMFM
Bae & Jeong	2007	JBFA
Baek, Kang & Park	2001	WP
Basu, Hwang, Mitsudome &Weintrop	2007	PBFJ
Belenzon & Berkovitz	2008	WP
Bertrand, Mehta & Mullainathan	2002	QJE
Beuselinck & Deloof	2006	WP
Black, Jang & Kim	2006	JCF
Black & Khanna	2007	JELS
Boubaker	2007	MFJ
Buysschaert, Deloof, Jegers & Rommens	2008	CGIR
Carney, Shapiro & Tang	2009	MOR
Chang, Cho & Sin	2007	CGIR
Chang & Shin	2006	CGIR
Chang	2003	AMJ
Chang & Hong	2000	AMJ
Chang, Chung & Mahmood	2006	OS
Cheng & Firth	2005	CGIR
Cheng & Firth	2006	MDE
Choe & Roehl	2007	LRP
Choi, Park & Yoo	2005	WP
Choi & Yoo	2005	WP
Chu	2004	SBE
Chung	2008	WP
Chung & Luo	2008	OS
Chung & Luo	2008	OS
Chung	2006	APJM
Chung, Ho & Kim	2004	JIAAT
Claessens, Djankov, Fan, & Lang	1999	WP
Claessens, Fan, & Lang	2006	EMR
Collin	2002	WP
Colpan	2006	ABM
David, Hitt & Liang	2003	WP
Dewaelheyns & Van Hulle	2009	EFM
Douthett & Jung	2001	JIFMA
Douthett, Jung & Kwak	2004	RQFA

Author	Year	Publication
Dow & McGuire	2004	WP
Dow & McGuire	2007	WP
Elango & Chinmay	2007	JIBS
Estrin, Poukliakova & Shapiro	2009	JMS
Faccio & Sengupta	2006	WP
Ferris, Kim & Kitsabunnarat	2003	JBF
Ferris, Kumar, & Sarin	1995	PBFJ
Filatotchev, Lien & Piesse	2005	APJM
Firth, Tam & Tang	1999	OME
Fisman & Khanna	2004	WD
Flath	1994	CEP
Gadhoum	2002	WP
Gadhoum, Gueyié & Zoubeidi	2007	CG
Gaur & Kumar	2008	BJM
George & Kabir	2008	JBR
George, Kabir & Qian	2005	WP
George	2007	SAJM
Ghosh	2006	EMFT
Ginglinger & Hamon	2007	WP
Gohar	2008	WP
Gonenc & Aybar	2006	CGIR
Gonenc, Kan & Karadagli	2007	EMFT
Gormley, Johnson & Rhee	2008	WP
Gramlich, Limpaphayom & Rhee	2004	JAE
Guillén	2000	AMJ
Guillén	2002	AMJ
Guillén	2003	JIBS
Gutierrez & Pombo	2007	WP
Habib	2006	RAF
Hoskisson, Cannella, Tihanyi & Faraci	2004	SMJ
Hundley & Jacobson	1998	SMJ
Isobe, Makino & Goerzen	2006	APJM
Jung, Kim & Kim	2007	WP
Kakani	2001	WP
Kato, Kim, & Lee	2007	PBFJ
Keister	1998	AJS
Khanna & Palepu	2000	AMJ
Khanna & Rivkin	2001	SMJ
Khanna & Rivkin	2006	OS
Kim & Chizema	2008	WP

Author	Year	Publication
Kim, Jung & Kim	2005	RQFA
Kim, Heshmati & Aoun	2006	AEJ
Kim & Kim	2008	WP
Kim & Kim	2008	WP
Kim, Kim, & Lee	2008	OS
Kim & Yi	2006	CAR
Kim, Lim & Sung	2007	PBFJ
Kim, Lyn, Park & Zychowicz	2005	JBFA
Kim	2005	CG:IR
Kim, Park, Ratti & Shin	2004	HJE
Kobeissi	2004	WP
Lamin	2006	WP
Lee & Hahn	2007	SJE
Lee, Peng & Lee	2008	JWB
Lee, Park & Shin	2009	JBF
Lefort & Walker	2005	WP
Lensink, van der Molen & Gangopadhyay	2003	JDS
Lichtenberg & Pushner	1994	JWE
Lincoln, Gerlach & Ahmadjian	1996	ASR
Lu & Yao	2006	APJM
Luo & Chung	2005	ASQ
Ma, Yao & Xi	2006	APJM
Mahmood & Mitchell	2004	MS
Majumdar & Sen	2006	PC
Manos, Murinde & Green	2007	JEB
Marisetty & Subrahmanyam	2010	JFM
Mitton	2002	JFE
Morck, Nakamura & Shivdasani	2000	JB
Mueller, Dietl & Peev	2003	JIIDT
Mursitama	2006	APJM
Nguyen & Nivoix	2009	AFE
Pak & Park	2004	MIR
Pallathitta	2005	DIS
Park & Kim	2008	JWB
Park, Lee & Jang	2004	WP
Peng & Jiang	2006	WP
Peng & Jiang	2010	JMS
Perotti & Gelfer	2001	EER
Piga & Vivarelli	2004	OBES
Ramaswamy, Li & Petitt	2004	APJM

Author	Year	Publication
Rommens, Cuyvers & Deloof	2007	WP
Sambharya & Banerji	2006	MIR
Selarka	2005	EMFT
Shumilov & Volchkova	2004	WP
Silva, Majluf & Paredes	2006	JBR
Singh	2009	IBR
Singh & Gaur	2009	CG:IR
Singh, Nejadmalayeri & Mathur	2007	JBR
Sirmon, Arregle, Hitt & Webb	2008	ETP
Suetorsak	2007	JEF
Tabeta & Rahman	1999	APJM
Unite, Sullivan, Brookman, Majadillas & Taningco	2008	PBFJ
van der Molen & Lensink	2004	WP
Volchkova	2001	WP
Weinstein & Yafeh	1995	JIE
White, Hoskisson, Yiu & Bruton	2008	MOR
Xu	2008	WP
Yamak & Üsdiken	2006	BJM
Yiu, Bruton & Lu	2005	JMS
Yoo	2008	WP
Yoshikawa & Colpan	2008	WP
Yoshikawa & Gedajlovic	2002	APJM
Yu, Lensink & Van Ees	2007	WP

[a] **Abbreviations for the journals are as follows:** ABM: *Asian Business & Management;* AEJ: *Asian Economic Journal;* AFE: *Applied Financial Economics;* AJS: *American Journal of Sociology;* AMJ: *Academy of Management Journal;* APJM: *Asia Pacific Journal of Management;* ASQ: *Administrative Science Quarterly;* ASR: *American Sociological Review;* BJM: *British Journal of Management;* CAR: *Contemporary Accounting Research;* CEP: *Contemporary Economic Policy;* CG: *Corporate Governance;* CGIR: *Corporate Governance: An International Review;* DIS: *Dissertation;* EER: *European Economic Review;* EFM: *European Financial Management;* EMFT: *Emerging Markets, Finance and Trade;* EMR: *European Management Review;* ETP: *Entrepreneurship Theory & Practice Journal;* HJE: *Hitotsubashi Journal of Economics;* IBR: *International Business Review;* JAE: *Journal of Accounting and Economics;* JB: *Journal of Business;* JBF: *Journal of Banking & Finance;*JBFA: *Journal of Business Finance & Accounting;* JBR: *Journal of Business Research;* JCF: *Journal of Corporate Finance;* JEB: *Journal of Economics and Business;* JEF: *Journal of Economics and Finance;* JELS: *Journal of Empirical Legal Studies;* JFM: *Journal of Financial Markets;* JFE: *Journal of Financial Economics;*JIAAT: *Journal of International Accounting, Auditing and Taxation;*JIBS: *Journal of International Business Studies;* JIE: *Journal of Industrial Economics;* JIFMA: *Journal of International Financial Management and Accounting;* JIIDT: *Journal for Institutional Innovation Development and Transition;* JMFM: *Journal of Multinational Financial Management;* JMS: *Journal of Management Studies;* JWB: *Journal of World Business;* JWE: *Japan and the World Economy;* LRP: *Long Range Planning;* MDE: *Managerial and Decision Economics;* MFJ: *Multinational Finance Journal;* MIR: *Management International Review;* MOR: *Management and Organization Review;* MS: *Management Science;* OBES: *Oxford Bulletin of Economics and Statistics;* OME: *Omega;* OS: *Organization Science;* QJE: *Quarterly Journal of Economics;* PBFJ: *Pacific-Basin Finance Journal;* PC: *Public Choice;* RAF: *Review of Accounting and Finance;* RQFA: *Review of Quantitative Finance and Accounting;* SAJM: *South Asian Journal of Management;* SBE: *Small Business Economics;* SJE: *Seoul Journal of Economics;* SMJ: *Strategic Management Journal;* WD: *World Development;* WP: *Working Paper.*

Appendix E. Studies included in the meta-analysis (Chapter 7)

* Adams R, Almeida H, Ferreira D. 2009. Understanding the relationship between founder–CEOs and firm performance. *Journal of Empirical Finance* **16**(1): 136-150.

* Ali A, Chen TY, Radhakrishnan S. 2007. Corporate disclosures by family firms. *Journal of Accounting and Economics* **44**: 238-286.

* Anderson RC, Brouthers KD, Reeb DM. 2009. The competitor tracking paradox. *Working Paper*.

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Summary (Dutch)

In dit proefschrift staat de rol van aandeelhouders in corporate governance centraal. Het klassieke onderzoeksprobleem in de corporate governance literatuur betreft zogenoemde agency problemen, die ontstaan door de scheiding van eigendom en zeggenschap in beursvennootschappen, en de belangenconflicten tussen aandeelhouders en bestuurders die daaruit voortkomen. Veruit het meeste empirische corporate governance onderzoek gaat dan ook over de vraag in welke mate verschillende corporate governance praktijken, zowel binnen als buiten beursvennootschappen, deze agency problemen kunnen verminderen en zodoende de waarde en financiële prestaties van een beursvennootschap kunnen maximaliseren. Naast eigendomsconcentratie en de identiteit van aandeelhouders, zijn de meest onderzochte corporate governance mechanismen: het toezicht door raden van commissarissen, het binden van bestuurders aan organisatiedoelen door prestatie-afhankelijke beloningsstructuren, en disciplinering door de markt door al dan niet vijandige overnames.

Het beschikbare empirisch bewijs ten aanzien van de relatie tussen eigendomsconcentratie en de waarde en financiële prestaties van ondernemingen laat echter zien dat grootaandeelhouders binnen Noord-Amerikaanse beursvennootschappen niet of nauwelijks een positieve bijdrage leveren aan de waarde of winstgevendheid van ondernemingen, waardoor er sprake is van een tegenstrijdigheid tussen gevestigde theoretische inzichten enerzijds en het beschikbare empirische bewijs anderzijds. Dit spanningsveld vraagt om een grondige herevaluatie van de rol en functie van (groot) aandeelhouders in corporate governance. Dit proefschrift beoogt hieraan een bijdrage te leveren, en wel aan een tweetal vraagstukken in het bijzonder.

Ten eerste onderzoeken verschillende studies die in dit proefschrift worden gerapporteerd de invloed van zowel formele en informele instituties op de effectiviteit van eigendomsconcentratie of grootaandeelhouderschap. Niet alleen wordt het belang van instituties in het verklaren van de effectiviteit van deze corporate governance strategie voor aandeelhouders binnen Aziatische en Europese landen empirisch bevestigd, maar er wordt ook aangetoond dat institutionele factoren een belangrijke rol spelen bij de totstandkoming van introductieprijzen bij beursintroducties enerzijds, en het verklaren van de prestatie afhankelijkheid van bestuurdersbeloningen anderzijds.

Een tweede onderzoekslijn waarover in dit proefschrift bevindingen worden gerapporteerd betreft de identiteit van grootaandeelhouders, en de effecten daarvan op de strategie en winstgevendheid van beursondernemingen in diverse institutionele contexten. In het onderzoek naar de corporate governance strategie van eigendomsconcentratie wordt veelal impliciet of expliciet verondersteld dat de aandeelhouders van een onderneming een homogene groep vormen, hetgeen in verschillende empirische studies een onjuiste veronderstelling is gebleken. De studies die hierover in dit proefschrift worden gerapporteerd bevestigen empirisch dat zowel beursgenoteerde familiebedrijven, als bedrijven die al dan niet via eigendomsconstructies onderdeel zijn van een zogenoemde business group, significant andere strategische keuzes maken en andere financiële prestaties leveren dan beursvennootschappen waarin dit soort eigendomsrelaties afwezig zijn.

Tezamen dragen de twee onderzoekslijnen die in dit proefschrift in verschillende empirische studies worden verkend bij aan wat ik een 'institutioneel perspectief' op aandeelhouderschap in beursvennootschappen heb genoemd.

Summary (English)

The past two decades have witnessed an exponential growth of research on corporate governance around the world and on the role of the ownership concentration more specifically. In line with a longer tradition of ownership studies in the U.S. context, most corporate governance researchers have commonly taken a classical agency-theoretical view of ownership concentration. The research presented in this dissertation shows that this classical view of ownership seems overly crude.

I provide a more fine-grained understanding of the role of ownership in different contexts; one that takes into account the subtly different *formal* and *informal* institutional constellations that can be found around the world on the one hand, and that distinguishes between the various *identities* of different concentrated owner types on the other. I show, first, that a crucial factor with respect to the ownership concentration – firm strategy and performance relationships is *owner identity*: who owns a firm matters significantly for that firm's objectives, strategies, and performance. Second, I contribute to the emerging institution-based view of corporate governance by expanding its empirical domain and by testing novel hypotheses concerning the interaction between formal and informal institutions.

About the author

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AN INSTITUTION-BASED VIEW OF OWNERSHIP

The past two decades have witnessed an exponential growth of research on corporate governance around the world and on the role of the ownership concentration more specifically. In line with a longer tradition of ownership studies in the U.S. context, most corporate governance researchers have commonly taken a classical agency-theoretical view of ownership concentration. The research presented in this dissertation shows that this classical view of ownership seems overly crude.

I provide a more fine-grained understanding of the role of ownership in different contexts; one that takes into account the subtly different *formal* and *informal* institutional constellations that can be found around the world on the one hand, and that distinguishes between the various *identities* of different concentrated owner types on the other. I show, first, that a crucial factor with respect to the ownership concentration – firm strategy and performance relationships is *owner identity*: who owns a firm matters significantly for that firm's objectives, strategies, and performance. Second, I contribute to the emerging institution-based view of corporate governance by expanding its empirical domain and by testing novel hypotheses concerning the interaction between formal and informal institutions.

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