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Conflicting Voices and Strategic Choices: Capital Structure Heterogeneity and Strategic Actions

Chetan Chawla
Isenberg School of Management

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**CONFLICTING VOICES AND STRATEGIC CHOICES:
CAPITAL STRUCTURE HETEROGENEITY AND STRATEGIC
ACTIONS**

A Dissertation Presented
by

CHETAN CHAWLA

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 2015

Isenberg School of Management

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CHETAN CHAWLA

Approved as to style and content by:

Anurag Sharma, Chair

Ben Branch, Member

Thomas Moliterno, Member

Craig Wells, Member

Lawrence Zacharias, Member

George R. Milne,
Director of Ph.D. Program
Isenberg School of Management

DEDICATION

This dissertation is dedicated to my mother Dr. Kuldip Kaur Sidhu, M.D. Her lifelong quest to prioritize the healthcare of her patients over her own personal gain and despite the institutional impediments in the Indian healthcare system made her the ideal role model for me. As she would put it: sincere and high-quality work is its own reward.

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Last but certainly not the least, the timely econometric guidance of Prof. Robert Nakosteen helped me incorporate Generalized Methods of Moments (GMM) regressions for dynamic panels as my statistical method of choice. This enabled me to implement state of the art statistical methodology in my research and account for endogeneity – an endemic problem in most social science research.

ABSTRACT

CONFLICTING VOICES AND STRATEGIC CHOICES: CAPITAL STRUCTURE HETEROGENEITY AND STRATEGIC ACTIONS

SEPTEMBER 2015

CHE TAN CHAWLA, B.A., DELHI UNIVERSITY

M.B.A., UNIVERSITY OF SOUTHERN CALIFORNIA

Ph.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Anurag Sharma

The mix of debt and equity in a firm's capital structure has been associated with varied strategic actions, such as diversification and innovation. Different forms of debt and equity have been associated with particular types of strategic actions. Although there are clear differences between debt and equity, I argue there are also similarities across the two forms of capital. I develop a theoretical framework to categorize both debt and equity along the dimensions of time horizon and risk tolerance, so as to categorize the providers of capital as Transient Equity, Dedicated Equity, Transactional Debt, and Relational Debt. I then empirically investigate the association between the presence of these four forms in the capital structure of firms and their strategic actions.

My theory development is anchored in transaction cost economics, which conceptualizes debt and equity as not merely financing choices but also governance structures (Williamson, 1988). Debt (rules) resembles markets while equity (discretion) has features of hierarchies. My integrated categorization of

heterogeneous debt holders and equity holders along the dimensions of time horizon and risk tolerance augments this transaction cost reasoning to within debt and equity. I test my hypotheses on multiple panels of publicly held U.S. firms between 1996 and 2010 in the contexts of diversification, research & development (R & D), and mergers & acquisitions (M & A). After controlling for endogeneity – using Generalized Methods of Moments (GMM) regressions for dynamic panels with robust inference – I find strong support for the hypothesized relationships in the case of mergers and acquisitions; and partial support for association between forms of capital and diversification, and research and development. In essence, my theory development and empirical analysis suggests a more nuanced role in strategy formation of capital providers than envisioned in extant theory.

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CHAPTER 1

INTRODUCTION

“Equity is soft, debt hard. Equity is forgiving, debt insistent. Equity is a pillow, debt a sword. Equity and debt are the Yin and Yang of corporate finance...Equity lulls management to sleep, forgiving their sins more readily than a death-bed priest...Debt’s edge jabs management awake, demanding attention.”

Stewart & Glassman (1988: 81)

The colorful characterization above (Stewart & Glassman, 1988) underlines the persistent view of debt and equity as being bestowed with distinct attributes, and consequently distinctively associated with firm level strategic actions. A call to investigate these associations between capital structure and firm strategy was made thirty years ago (Bettis, 1983) along with an insistence to avoid simplifying assumptions in such investigations (Barton & Gordon, 1987). Management scholars have heeded such calls by investigating strategic implications of equity (Connelly, Tihanyi, Certo, & Hitt, 2010b; Hoskisson, Hitt, Johnson, & Grossman, 2002; Johnson & Greening, 1999; Tihanyi, Johnson, Hoskisson, & Hitt, 2003) and debt heterogeneity (David, O'Brien, & Yoshikawa, 2008). Unfortunately, this research has bifurcated into two independent streams, one investigating debt and the other equity heterogeneity, each assuming the other homogeneous. In this dissertation, I combine these distinct literatures to investigate the joint implications of debt and equity heterogeneity on strategic actions.

Williamson (1988) argued that debt and equity have governance attributes of markets (rules) and hierarchies (discretion) respectively. However, conceptualizing and examining debt and equity separately weakens the ability to understand the governance aspects of capital structure (Williamson, 1988) by suppressing attributes that the two forms of capital hold in common. This is especially relevant now as strategy scholars have moved beyond homogenous conceptions of debt and equity to recognition of heterogeneity within debt (David et al., 2008; O'Brien, David, Yoshikawa, & Delios, 2014) and equity (Hoskisson et al., 2002). That is, not all equity is the same nor is all debt the same; considerable within-group differences remain as different types of equity holders bring different motivations to their role as residual owners and, similarly, different debt holders differ from each other as well. Researchers have noted that neither all equity holders (Hoskisson et al., 2002) nor all debt holders (David et al., 2008) speak with the same voice. In fact, some equity holders may be aligned less with other equity holders and more with certain debt holders, and vice versa. The usual distinctions between debt and equity may, in other words, undermine the ability to credibly understand the relationship between capital structure and strategic choices made by firms (cf. Hoskisson *et al.*, 2002).

Given the tendency to conceptualize debt and equity as fundamentally different from each other, the many conflicting voices in the capital structure are heard in isolation—thereby fragmenting research by shackling debt and equity heterogeneity into separate silos. Extant literature has investigated the association

between different groups of equity holders or different groups of debt holders, separately, with firm strategic actions such as diversification (Kochhar & Hitt, 1998; Ngah-Kiing Lim, Das, & Das, 2009; Tihanyi et al., 2003) and innovation (David, Hitt, & Gimeno, 2001; David *et al.*, 2008). This separation is perhaps driven by a persistent view amongst management scholars of equity and debt as merely financing choices. Viewed from this constricted lens, debt and equity are simply modes of raising capital and thus their associations with firm outcomes are investigated in isolation.

Viewed from a wider lens, the combination of debt and equity heterogeneity is critical since their division has had far reaching repercussions on our understanding of capital structure's influence on strategic actions. First, this division has led to the assumption of homogeneity of either debt or equity holders (David et al., 2008). This has prevented theoretical development to understand the underlying dimensions and interactions of these diverse groups of debt and equity holders embedded in capital structure.

Second, if the choice of debt and equity has governance implications – as suggested by transaction cost reasoning – then these differing implications must extend within debt and equity also. The current literature assumes these governance implications are limited to between debt and equity. Consequently, lack of theoretical integration connecting these diverse capital structure groups has diluted the original vision of a “combined treatment of corporate finance and

corporate governance” (Williamson, 1988: 567). The impact of this assumption on the transaction cost perspective has been a predominant focus on transaction (e.g. uncertainty) and resource (e.g. asset specificity) attributes at the expense of governance structures (Williamson, 1991).

Third, the selective picking of some elements of capital structure over others weakens the link between management theory and practice (Foss & Hallberg, 2013). This may explain the lack of support for ownership-performance studies (Dalton, Daily, Certo, & Roengpitya, 2003), all of which assume debt homogeneity. The assumption of debt homogeneity in research is surprising since studies indicate that in practice a high proportion of large U.S. public firms, the most common sample used in management research (Short, Ketchen, & Palmer, 2002), combine different forms of debt (Colla, Ippolito, & Li, 2013; Rauh & Sufi, 2010). In fact, in their sample of large public firms, Rauh and Sufi found that 53% of firm-year observations employ bank debt while 55% employ bonds, in other words: “A substantial fraction utilize both” (2010: 4251). Thus, there are perhaps substitutive or complementary governance implications of debt heterogeneity that have been disregarded in management literature. The governance implications of a holistic range of capital structure may thus inform corporate governance research.

Extant research on capital structure suggests that varied equity holders differ in their support for strategic actions based on differences in their time

horizons. For example, the long-term orientation of pension fund managers predisposes them to favor internal innovation in the form of R & D investments by firms (Hoskisson et al., 2002). This is because the long-term payoffs of such internal innovation (David et al., 2001) are aligned with the investment time horizons of pension funds. Parallel research suggests that support for innovation varies amongst debt holders due to different risk tolerances. Relational debt holders (i.e. banks) have been found to support R & D investments by firms since close and repeated interactions between these relational debt holders and firms reduces information asymmetries and increases the risk tolerance and adaptability of lenders (David et al., 2008).

In this dissertation, therefore, I offer a new conceptualization whereby debt and equity are reframed along two important dimensions of time horizon and risk tolerance of capital—and thereby reassess the influence that different types of capital (combinations of equity and debt) have on the strategic choices of firms. Specifically, research suggests that long-term dedicated equity holders represent patient capital that is positively related to innovation, i.e., firm R & D spending. Conversely, short-term transient equity holders represent impatient capital that has a negative influence on innovation (Bushee, 1998; Hoskisson et al., 2002; Lee & O'Neill, 2003). Parallel to such equity heterogeneity research, results in the debt heterogeneity literature suggest that short-term transactional debt (i.e. bonds) negatively impacts innovation. On the other hand, long-term relational debt

positively impacts innovation (David et al., 2008). Thus, I argue that the dimensions underlying both debt and equity are the same.

In summary, I offer two distinct contributions in this dissertation. One, when viewed from a transaction cost lens (Williamson, 1988), both debt and equity have governance implications that are adapted to particular types of strategic actions. Generally, debt follows a more rigid, rule-based governance regime (akin to markets) while equity follows a more discretionary governance regime (akin to hierarchy). I extend this transaction cost conceptualization by arguing that these governance attributes are driven by the dimensions of time horizon and risk tolerance and extend to different forms of debt and equity.

The second contribution centers on the mediation mechanisms driving the association between capital structure and strategic actions. Innovation and diversification entail significant investments and involvement from top executives of the firm (Chen, Smith, & Grimm, 1992). Also, different forms of opportunism and exchange hazards hamper markets and hierarchies and therefore require specific mitigation devices. Executive compensation, through incentives, mitigates opportunism in the form of holdup that is prevalent in market governance (i.e., impatient capital). While, the board of directors, through monitoring, mitigates moral hazard prevalent in hierarchical governance (i.e., patient capital) by facilitating proprietary information exchange.

To develop this thesis, I begin with an integrated literature review of the association between capital structure and strategic actions (chapter 2). In the theory development section (chapter 3), I begin by establishing the governance structures embedded in capital structure. Next, I develop a theoretical model that explains the governance attributes of diverse debt and equity holders using the dimensions of time horizons and risk tolerance. I further posit that the board of directors and compensation mediates the relationship between capital structure heterogeneity and strategic actions. The methods section (chapter 4) provides data sources and an explanation of the analysis used – Generalized Methods of Moments regressions – to control for endogeneity. The results (chapter 5) and discussion (chapter 6) sections present my findings. In essence, my theorizing is strongly supported in the context of Mergers and Acquisitions; while the mixed results for Diversification and Research and Development suggest that capital structure plays a more nuanced role than extant theories have conceived.

CHAPTER 2

CAPITAL STRUCTURE AND STRATEGY – AN INTEGRATED REVIEW AND ASSESSMENT

Introduction

Capital structure – the mix of debt and equity used to finance a firm – and, its influence on firms is perhaps one of the oldest themes in corporate governance (Berle & Means, 1932). Berle and Means focused on the dispersion of ownership amongst equity holders and the resulting separation of ownership and control. In more recent decades, capital structure scholarship has encompassed research incorporating owners (i.e. equity holders) as well as creditors (i.e. debt holders). The purpose of this literature review is to take an integrated view of capital structure and its linkages to firm strategic actions such as diversification and innovation. I incorporate 66 representative papers (see Tables 1 – 3) selected from the top management journals. Considering the scope of this dissertation, I focus my discussion on papers that investigate the association between capital structure variables and the strategic actions of diversification and innovation.

In the eight decades since the foundational work by Berle and Means, capital structure research can be classified into three distinct waves of investigations: The first wave was triggered in finance by a set of papers (Modigliani & Miller, 1958, 1963) that argued for the irrelevance of capital structure for firm valuation. These analytical works were underpinned by

idealized assumptions, such as perfect markets, that subsequent research has relaxed (Myers, 2001) in order to empirically test the linkages between capital structure and firm strategic actions, performance and valuation. The bulk of this research in management (n = 17 in this review) has conceptualized capital structure as leverage, i.e., as made up of homogeneous debt holders and equity holders.

Subsequent research has evolved from considering capital structure to be simply firm leverage to recognition of heterogeneity within capital structure. These constitute the second wave of research papers (n = 40 in this review) that have gone beyond simple leverage ratios to investigate associations between heterogeneous groups of equity holders and firm strategic actions such as diversification, innovation and corporate social performance. This literature equates ownership, i.e., equity holders, with governance (Connelly, Hoskisson, Tihanyi, & Certo, 2010a; Daily, Dalton, & Rajagopalan, 2003b) in all its myriad forms and contexts. A flourishing subset of this literature investigates family ownership. Although vast, family businesses have recently been reviewed (Gedajlovic, Carney, Chrisman, & Kellermanns, 2012; Schulze & Gedajlovic, 2010) and are beyond the scope of this dissertation – they are therefore excluded from this broader review of the capital structure literature.

This second wave of capital structure research has kept pace with changes in the governance landscape (Daily et al., 2003b), which has evolved since the

Berle and Means era. Instead of dispersion of ownership and its separation from control, firm management faces diverse blockholders and institutional investors (Johnson, Schnatterly, Johnson, & Chiu, 2010) who may even act as monitoring substitutes of the board of directors (Desender, Aguilera, Crespi, & Garc' Ia-Cestona, 2013). These changes, i.e. shift from dispersed to concentrated ownership, have intensified in recent years. For example, pension funds have become the predominant form of long-term equity capital available for firms (Buttonwood, 2012).

Finally, the third wave of capital structure research investigates the association between heterogeneous groups of debt holders and firm strategic actions. This is a promising research area whose sparseness ($n = 9$) reflects a pervasive debt homogeneity assumption (David et al., 2008). Nonetheless, research suggests that different kinds of debt holders are differentially associated with firm financing (Mizruchi & Stearns, 1994a), knowledge capabilities (Uzzi & Gillespie, 2002), innovation (David et al., 2008) and diversification (O'Brien et al., 2014). Research also indicates that the majority of large public U.S. firms carry multiple forms of debt (Rauh & Sufi, 2010) and that debt specialization, i.e. debt homogeneity, is a feature of relatively smaller firms that are unrated in credit markets (Colla et al., 2013).

This continuing evolution of capital structure and its association with firm strategy calls for an updated review that incorporates all three waves of research:

homogeneous debt/equity, equity heterogeneity and debt heterogeneity. Extant reviews have focused primarily on the ownership as governance literature, i.e., equity heterogeneity (Connelly et al., 2010a; Daily et al., 2003b). These important and impactful reviews underscore the significance of the broader capital structure research – spanning both between and within debt holder and equity holder groups – which this review aims to highlight. Unfortunately, no recent review of this literature exists, with this review I seek to integrate these seemingly disparate literatures that investigate the association between capital structure heterogeneity and strategy.

Another contribution of this review is to the broader corporate governance literature. Meta-analysis of the equity holder and firm performance relationship (Dalton et al., 2003) has yielded insignificant or equivocal results suggesting the presence of indirect effects. In other words, conflicting findings maybe driven by exclusion of strategic actions, which have for long been known to mediate the association between ownership and performance variables (Hill & Snell, 1988: 585). Thus, the unsettled nature of the capital structure (across both debt and equity) and performance relationship may better explicated by incorporating strategic actions, i.e. intervening variables such as diversification and innovation, whose exclusion may be leading to equivocality in the ownership and governance literature.

This review spans 66 published papers that are representative of capital structure research in management. Of these 66 papers, 3 are theoretical and 63 are empirical studies, mainly from the top management journals: *Academy of Management Journal*, *Academy of Management Review*, *Administrative Science Quarterly*, *Journal of Management* and the *Journal of Management Science*. The earliest paper is a call for capital structure research (Bettis, 1983) in the *Academy of Management Review* published thirty years ago. Subsequent research was identified using keyword searches for *capital structure*, *institutional investors*, *debt holders*, *relational debt* and *transactional debt*. In addition, forward cites of the seminal papers were scanned to identify prospective papers for inclusion. Only papers incorporating qualitative investigations or hypotheses testing of capital structure variables and their relations to firm strategic actions were incorporated. The review that follows reflects the three waves of capital structure research discussed above – leverage (i.e. homogeneous debt and equity), equity heterogeneity and finally, debt heterogeneity. I conclude with a summary of future directions for capital structure research.

Leverage

The first wave of capital structure research – that assumed homogenous debt and equity represented capital structure, measured by leverage – in finance was triggered by a set of papers (Modigliani & Miller, 1958, 1963) that argued for the separation of firm financing and firm investment strategy. The simplifying assumptions for these claims were perfect markets and firms categorized as homogenous classes of stock with similar income streams. Subsequent research

on firm capital structure has relaxed such unrealistic assumptions (Harris & Raviv, 1991). We now know that agency costs (Jensen & Meckling, 1976) and transaction costs (Williamson, 1988) defy any attempts at separating firm financing from firm strategy.

Capital structure research came onto the radar screen of organizational scholars in the early 1980's when Bettis called for greater integration between modern financial theory and strategic management (Bettis, 1983). The rise of modern financial theory centered on two developments: efficient market hypothesis and the capital asset pricing model. These developments suggest that the risk of a security could be divided into unsystematic and systematic risk. The former, i.e. unsystematic risk was the unique risk associated with a security that could be dealt with through portfolio diversification. The latter, i.e. systematic risk was a market-level risk that could not be diversified away.

The call for synthesis between modern financial theory and strategic management (Bettis, 1983) centered on three conundrums created by the rise of modern financial theory: First, modern financial theory suggests that markets do not reward the mitigation of firm specific (i.e., unsystematic) risk, the *raison d'être* of strategy. Second, firms need to make information disclosures in order to enable investors to make forecasts with greater accuracy and thereby increase the value of the firm. However, these disclosures may decrease information asymmetries between the firm and its competitors thereby raising appropriability

hazards and imitation risks. Third, the modern financial theory paradigm is centered on efficient capital markets, the capital asset pricing model and equity holder wealth maximization. However, when facing international competition, U.S. firms may be at a disadvantage against nations that are not part of this paradigm. An example of such exceptions would be the low cost of capital enjoyed by many foreign competitors, especially state owned enterprises (1983: 411).

Bettis' call did not go unchallenged, Peavy argued that modern financial theory is more aligned with strategy than previously believed (Peavy, 1984). For example, regarding the first conundrum raised by Bettis, Peavy argued:

“In a diversified portfolio context beta is the only relevant risk measure because it gauges only the nondiversifiable systematic risk. However, an individual stock's beta is affected by the total risk of the stock's return...beta is affected by the fundamental business and financial features of the company...”

Peavy (1984: 153)

Therefore, modern financial theory does not expect managers to be negligent of unsystematic (i.e., firm specific) risks. For example, firm specific risks in the form of threat of entry can be diversified away by management, thus allaying the prescriptions of both modern financial theory and corporate strategy.

In a similar manner, Peavy argued (1984: 155) that the second conundrum overstates the information asymmetries created by competitive secrecy. Investors simply want greater predictability of a firm's future cash flows; this can be accomplished without jeopardizing these cash flows by reaching a middle ground of optimal information disclosure.

This early Bettis – Peavy debate in *The Academy of Management Review* inspired the incorporation of capital structure research in strategic management. In a few years the three conundrums had transformed into acknowledgement of the critical association between capital structure and firm strategy. Scholars began arguing for a reverse flow of ideas, from strategy to finance (Barton & Gordon, 1987). This was driven by a lack of consensus in finance over an optimal capital structure (Myers, 1984): “we know little about capital structure...our theories don't seem to explain actual financing behavior” (1984: 575). Barton and Gordon argued for the unique opportunity for strategy by contributing to the interdisciplinary capital structure debate by bringing it to the level of the firm.

Barton and Gordon claimed that conventional economic and financial theory seeking to explain capital structure was focused on industry or financial variables at the firm level. Thus, there was a relative neglect of non-financial considerations at the firm level. They argued that the potential contributions of strategy to the capital structure debate center on: firm level analysis, incorporation of top management team decisions and idiosyncrasies; and finally, going beyond

economic and financial goals to incorporate the multiple social and behavioral factors driving different stakeholders in the firm.

Subsequent capital structure research in management has built on these ideas. Studies incorporating capital structure as leverage, i.e., composed of homogeneous debt and equity ($n = 17$), are summarized in Table 1. The first three of these papers are theoretical and have been discussed above. Key papers investigating the association between firm capital structure and the strategic actions of diversification and innovation are discussed below.

Debt and Diversification

Diversification is a key managerial policy lever for adapting to a constantly changing competitive landscape in the pursuit of superior performance (Schendel & Hofer, 1979). The difference between related and unrelated diversification are closely tied to the nature of firm resources (Kochhar & Hitt, 1998), these in turn are closely linked to firm competitive advantage (Chatterjee & Wernerfelt, 1991) and its future performance (Palich, Cardinal, & Miller, 2000). Fundamentally, the association between firm leverage and diversification rests on the redeployability of firm assets in case of default. Generally, firm specific assets (concomitant with related diversification) have a positive association with equity financing (i.e. lower leverage) since they are considered riskier for debt holders. Some of the seminal works in this literature are reviewed below.

Considering that the catalyst for capital structure research in strategy was a debate over the managerial role in mitigating firm level unsystematic risk, it is not surprising that researchers turned their attention to corporate debt and default risk (Sandberg, Lewellen, & Stanley, 1987). Combining an analytical and empirical study, Sandberg et al. (1987) proposed that historical standard deviations of firm return on assets (ROA) are sufficient in determining its probability of earnings shortfalls. Invoking signaling arguments (Ross, 1977), the authors suggest that firms should carry high leverage to communicate confidence to both capital markets and competitors, as well as to fend off any potential takeover bids. Since debt increases unsystematic firm risk, diversification became a common strategic outcome of interest for early strategy scholars.

However, in another initial study (Lubatkin & O'Neill, 1987) diversification was posited to leave unsystematic risk unaffected since managerial overconfidence (in case of related diversification) may add administrative risks. Instead, related diversification mitigates systematic risk as the firm's market power increases and it is able to leverage its resources, capabilities, knowledge and economies over multiple related businesses. This allows firms to withstand exogenous shocks better than less diversified firms (1987: 670). Lubatkin and O'Neill found support for this in their sample of 297 U.S. mergers between 1954 and 1973.

In a follow-up empirical study (Barton & Gordon, 1988) to their earlier theoretical work (Barton & Gordon, 1987), Barton and Gordon found that managerial choice regarding diversification is associated with capital structure. In fact, the relationships between the financial variables and capital structure are contingent upon strategy (1988: 629). Generally, debt was negatively associated with profitability, but positively associated with sales growth. Specifically, related (diversification) and single business firms had the lowest debt levels. On the other hand, unrelated firms had the highest. These studies, while methodologically elementary compared to modern diversification investigations, were critical in establishing the association between capital structure and strategic actions and catalyzing the interest of strategy scholars. A subsequent replication of Barton and Gordon (1988) using Australian data (Lowe, Naughton, & Taylor, 1994; Taylor & Lowe, 1995) suggested that capital markets reward focused firms since they are easier to understand, findings in line with research on the conglomerate discount (Benner, 2007).

The rising influence of the resource-based view (Barney, 1991; Wernerfelt, 1984) was evident in a study by Chatterjee and Wernerfelt (1991). They found that firm diversification strategy was predicated on the nature of its unutilized (or under-utilized) resources. Firms with excess knowledge and external financial resources (equity capital) are associated with related diversification. Excess internal financial resources (including debt capacity) was associated with unrelated diversification (Chatterjee & Wernerfelt, 1991).

Interestingly, in both high and low performing firms, innovation was associated with related diversification.

Kochhar and Hitt (1998) investigated the debt and diversification linkage through a transaction cost lens. They found that the capital structure and strategy association is reciprocal as changes in asset specificity combine with capital market imperfections. For example, prior research (Chatterjee & Wernerfelt, 1991) suggests that nature of resources affect firm diversification strategy. However, the nature of diversification itself is associated with capital structure and firm's resource profile (Kochhar & Hitt, 1998). Generally, equity financing is linked with related diversification and firm specific assets.

This link between capital structure, strategy and firm resources was further developed in a paper linking the nature of resources with capital structure (Vicente-Lorente, 2001). Vicente-Lorente argued that opaque and firm specific resources reduce a firm's borrowing capacity. This creates a fundamental contradiction between the goal of following a resource based strategy (Barney, 1991) and seeking the lowest cost financing. This problem echoes the second conundrum raised by Bettis (1983) that highlighted an inconsistency between the transparency sought by capital providers and the strategic opacity required for competitive advantage. Thus, capital market imperfections may create insurmountable challenges for smaller or younger firms trying to grow by pursuing a resource driven strategy. This swing in the pendulum (Hoskisson, Hitt,

Wan, & Yiu, 1999) is ironic since it was firm level resource heterogeneity that was used to invoke the importance of strategy to the capital structure literature (Barton & Gordon, 1987). However, that very resource heterogeneity (especially if concomitant with resource opacity) may make financing expensive and the capital structure choice difficult.

The issue of strategic opacity becomes more nuanced in the presence of environmental dynamism. For example, the leverage and diversification association is moderated by environmental dynamism (Nghah-Kiing Lim et al., 2009). Their sample of 245 Singaporean listed firms from 1995 to 2000 reveals counterintuitive findings. Under stable conditions, unrelated diversification is associated with low debt while under dynamic conditions, such firms take on more debt. The authors argue that this unexpected result maybe driven by country effects (Singaporean firms being smaller on average than U.S. firms) due to which Singaporean firms maybe using the complexity and information asymmetries created by environmental dynamism to raise their debt levels. Such findings suggest that firm strategies pertaining to diversification are inexorably linked to firm financing since changes in firm resources modify its risk profile in the eyes of capital providers.

Debt and Innovation

Strategy research over the last few decades has shifted its focus from industry levels of analysis to investigations of firm-level heterogeneity

(Hoskisson et al., 1999) , exemplified by the resource based view (Barney, 1991; Penrose, 1959). One of the key drivers of this firm-level heterogeneity is innovation. Similar to a related diversification strategy, the pursuit of innovation centers on the use of under- or un-used firm productive services (including managerial resources) for the introduction of new combinations of resources, i.e. innovation (Penrose, 1959: 85). However, such an emphasis on innovation is likely to create firm specific assets that increase the riskiness of debt. This is because firm R & D not only serves as a “stock of strategic resources such as innovative capabilities” (Vincente-Lorente, 2001: 162), but also proxies for the relative importance the firm gives to innovation (O'Brien, 2003). Some seminal papers linking firm leverage with innovation are reviewed below.

Balakrishna and Fox (1993) proclaimed the primacy of firm-level heterogeneity in explaining capital structure. Using transaction cost arguments, they posited that firm specific effects contribute the most to leverage suggesting strong links between strategy and capital structure. These firm specific attributes are far more important than industry level factors in determining firm capital structure. For example, asset specificity (measured by R & D) is negatively related to debt in their sample of 295 U.S. firms. However, reputational assets (measured by advertising intensity) were positively related to debt. A contemporaneous study (Long & Ravenscraft, 1993) found a similar negative association between debt and innovation. However, in their context of 72 leveraged buyouts between 1981 and 1987, the authors argued that this decline

(LBOs led to 40% decline in R & D intensity) was attributable to the agency role of debt in disciplining managers by reducing discretionary spending in pet projects, including R & D.

A more recent paper (O'Brien, 2003) argued that slack plays a key role for firms following a strategy of innovation. This is both because innovation capabilities are cumulative (Dierickx & Cool, 1989) and require regular expenditures as well as because such innovative firms may acquire outside capabilities to complement their own stock of resources (Ahuja & Katila, 2001; Kogut & Zander, 1992). Both these factors along with prior research on intangible assets suggest that firms pursuing a strategy of innovation (R & D intensity at 90 percentile of industry) will prioritize slack and therefore have lower leverage. Furthermore, in his sample of 16,358 U.S. firms between 1980 and 1999 O'Brien found that innovative firms with low or median leverage saw positive performance effects.

The studies discussed above treated capital structure as simply leverage, i.e., the implicit assumption being that debt and equity are homogeneous. These studies have found that debt and diversification are linked primarily due to diversification's role in shuffling of firm resources. These resources in turn change the riskiness of the firm for its capital providers. In the context of innovation, there is an increase in the stock of firm specific assets, which have lower redeployability in case of default. Thus, generally, slack and equity are preferable, compared to debt, when it comes to financing innovation. Theoretically,

environmental dynamism is expected to raise riskiness of firm strategies, as has been shown in U.S. samples (Simerly & Li, 2000). However, such findings may not hold in international institutional settings (Nghah-Kiing Lim et al., 2009; Ofori-Dankwa & Julian, 2013). The evolution of this literature discussed above and its insightful findings suggest that a more realistic incorporation of capital structure – i.e., recognition of heterogeneity between and within different debt holder and equity holder groups – offers to increase our understanding of the capital structure and strategy relationship. The next set of papers reviewed take on part of this challenge by being cognizant of heterogeneity amongst equity holders.

Equity Heterogeneity

Scholars investigating the changing corporate governance landscape of the 1980's also realized the theoretical gains to be made by integrating capital structure and strategy research. Unlike the Berle and Means (1932) era, corporate America was witnessing a surge in institutional ownership of firms that belies the myth of dispersion of ownership (Holderness, 2009). From a mere 16% in the 1960's, institutional investors came to own 57% of U.S. corporate equity by 2000 (Ryan & Schneider, 2002). This upward trend grows unabated, by 2010 institutional investors owned 67% of U.S. equities by market capitalization (Aguilar, 2013; Blume & Keim, 2012). Instead of dispersion of stockholdings and separation of ownership and control, the corporate landscape witnessed the rise of institutions whose influence was felt by firms either through direct actions or through stock sell-offs (Porter, 1992).

These changes swept the governance landscape as the reversal of dispersed ownership combined with equity holders need to curb managerial tendency to entrench themselves (Davis & Thompson, 1994). In order to understand these developments and their associations with firm strategy, scholars began incorporating differences between equity holder groups as a key explanatory variable. Extant literature categorizes this research under the rubric of ownership as governance (Connelly et al., 2010a; Daily et al., 2003b). This literature forms the lion's share of capital structure research in strategy, and is reviewed below. See Table 2 for an overview of these articles. Seminal articles investigating the links between firm equity holders and innovation, diversification and firm performance are discussed below.

Equity holders and Innovation

The 1980's were a decade of soul searching for American business. Globalization, especially the rise of Japan, was making both academic and corporate strategists realize the impact of corporate governance and ownership on competitiveness. A belief took hold that "the U.S. system of allocating investment capital both within and across companies appears to be failing" (Porter, 1992: 4). This *institutional myopia* logic was the key impetus for studies into the impact of equity holder concentration, and later equity holder types, on firm innovation. Investigations into the cause of this broader phenomena led scholars to identify different groups and types of equity holders as a key antecedent to firm

innovation, these investigations continue to this day and form the biggest subset of the equity holder heterogeneity literature.

An early study (Graves, 1988) was motivated by the anecdotal nature of the investor myopia accusation – i.e., institutional investors being negatively associated with firm investments in R & D and other long-term projects. In his sample of computer manufacturers between 1976 and 1985, Graves found that, *ceteris paribus*, institutional ownership was negatively associated with R & D. He concluded that this innovation suppression effect might be hampering U.S. international competitiveness. Contradicting these findings, another study (Hill & Snell, 1988) of research intensive industries established that stock concentration was positively associated with innovation. However, contrary to agency expectations, proportion of outside directors on board was negatively associated with innovation.

Baysinger and colleagues found results confirming the positive effects of insiders on boards on innovation in their sample of 176 Fortune 500 firms from 1980 (Baysinger, Kosnik, & Turk, 1991). These results were contrary to the long-held belief that innovation creates an employment risk for managers that cannot be diversified away, like financial risk (Alchian & Demsetz, 1972). However, the association between stock concentration and innovation was mixed. Stock concentration amongst institutions was positively associated with innovation and concentration amongst individuals was negatively associated with innovation.

Thus, they argued, the positive impact of stock concentration on R & D is largely attributable to institutional investors.

More evidence against investor myopia kept accumulating (Hansen & Hill, 1991). In a 10-year longitudinal study of 129 firms, Hansen and Hill found that institutional investors are positively (but weakly) associated with innovation. Cash and debt were also positively associated with innovation, while insider holdings gave mixed results. Contrasting myopic investors with efficient market hypothesis, Hansen and Hill argued that the sole empirical result in favor of myopic investors (Graves, 1988) was an artifact of sample and methodological choices. They further posited two potential explanations for the positive association between institutional investors and innovation. First, using a weak form of efficient market hypothesis, the short-termism of equity holders may be attributed to individual equity holders who lack the capabilities required for thorough firm analysis. This is in stark contrast to the highly capable research capabilities of institutions, i.e., institutions are superior investors. This is a persistent belief since percentage of outstanding shares held by a firm's largest institutional investors has been associated with a perception of information advantage (Schnatterly, Shaw, & Jennings, 2008). The second possibility is that the large holdings of institutions make exits expensive, thereby leading to a "lock-in".

The mounting evidence against the myopic investor hypothesis raised another question: is there any heterogeneity in the effect of different institutions and their impact on innovation? To answer this question, Kochhar and David (1996) utilized a categorization developed in financial economics (Brickley, Lease, & Smith, 1988) that classified institutional investors based on their susceptibility to management pressure. Institutions that may in some way be dependent on firms for business, such as banks and insurance companies, are classified as pressure-sensitive. Those that have no business with firms, such as public pension funds and mutual funds, are classified as pressure-resistant. Those institutions that fall into neither category, such as corporate pension funds, are classified as pressure-indeterminate.

In a sample of 135 U.S. manufacturing firms, Kochhar and David (1996) find that pressure-resistant institutional investors are positively associated with innovation (measured as new product announcements). Kochhar and David interpret this as support for their “active investor” hypothesis and rejection of both the myopic investor and superior investor hypotheses, since only pressure-resistant investors were associated with innovation. The lack of support for the superior investor hypothesis was a significant finding and foreshadowed subsequent works in accounting that measured actual investor behavior and confirmed the prevalence of stock indexing amongst institutions (Bushee, 1998; Bushee, 2001).

Once the association between active investors and innovation was established, the question of the nature of this activism arose. David et al. (2001) found that institutional investor activism has positive and both short and long-term association with R & D inputs (i.e. expenditures). Specifically, one instance of activism (proxy-based) raises R & D inputs by 0.05% in the subsequent year and 0.025% over the long-term. These are not insignificant as they represent 9% and 44% respectively of within-firm standard deviation of R & D expenditures (2001: 149). Interestingly, activism has an indirect effect on R & D outputs (new product announcements) via R & D inputs (David et al., 2001). These findings corroborated the cumulative research till date, namely that equity holder heterogeneity was a critical factor in explaining firm-level variance in innovation.

Institutional ownership and board governance factors were combined in another investigation of the antecedents of innovation (Hoskisson et al., 2002). In their sample of 234 U.S. firms between 1985 and 1991, these scholars found that pension funds were positively associated with internal innovation (R & D expenditures) while investment funds were associated with external innovation (acquisitions). The authors argue that this is driven by the long-time horizons of pension funds that match the longer payoff periods of internal R & D projects. Similarly, investment manager short-term incentives match the faster market entry that acquisitions enable. Upholding previous findings (Baysinger et al., 1991; Hill & Snell, 1988), insider board members were associated with greater internal innovation. Interestingly, outsider board members were associated with external

innovation. These findings on innovation mirror those on corporate venturing, which is negatively associated with outsiders on the board and positively associated with executive stock options and long-term institutional investors (Zahra, 1996).

The equity holder and innovation association received nuanced support from a multi-country study (Lee & O'Neill, 2003) that contrasted the U.S. with Japan. Lee and O'Neill found similar positive associations between concentrated ownership in the U.S. but no effect in Japan. Furthermore, Japanese firms on average spend more on R & D suggesting that unlike the agency issues dominating the U.S. environment, Japanese managers are driven by stewardship concerns that align their incentives with equity holders – even if these equity holders are dispersed.

The Lee and O'Neill (2003) study brought out sharp distinctions between the markets for corporate control and the prevalent corporate governance paradigms (agency vs. stewardship) operating in the U.S. as opposed to countries like Japan. These differences imply that managerial incentives are likely to be important in the context of U.S. where agency problems seem to be more severe. A study of 250 U.S. firms (Sanders & Carpenter, 2003) revealed that one way in which managers balance the interests of short-term equity holders with the long-term interests of firms is through stock buybacks. The presence of information asymmetries (measured by R & D) between the firm and its equity holders

increases the prevalence of stock repurchases as a mollifying mechanism. Furthermore, such “strategic satisficing” (2003: 166, 171) is more likely under conditions of unmet performance expectations and high CEO stock options.

Kim and colleagues (2008) explored the principal-principal conflict and its impact on the association between slack and innovation. A key tenet of the behavioral theory of the firm (Cyert & March, 1963) is that organizational slack encourages risk-taking and experimentation exemplified by innovation. However this relationship is inverted-U shaped as it reverses at high levels of slack (Nohria & Gulati, 1996). In a sample of 253 Korean firms between 1998-2003, Kim and colleagues found that equity holders are differentially associated with this relationship (Kim, Kim, & Lee, 2008). Increasing ownership by foreigners and domestic institutions weakens the positive relationship between slack and innovation. Such owners further increase the negative relationship between slack and innovation (at higher levels of slack).

A recent paper (O'Brien & David, 2014) argues that the differences between the U.S. and Japan are driven primarily by the differing regimes both corporate cultures operate under. American firms follow a contractarian regime, while Japanese firms follow a communitarian regime in which reciprocity and embeddedness reign. In their sample of 2,123 Japanese firms (18,283 firm-year observations) between 1992 and 2004, the authors find that the pattern of problemistic search (Cyert & March, 1963) is similar to those found in other

contexts, but R & D intensity will increase more for communitarian firms (those with domestic equity holders). Furthermore, communitarian Japanese firms raise their R & D search more than other contractarian firms (i.e. transactional or foreign owners) when performance exceeds expectations, since such communitarian firms tend to invest in growth opportunities. In contrast, firms with high transactional ownership cut R & D as performance rises above aspirations.

In summary, the last thirty years (1983-2013) have seen the capital structure and innovation debate come full circle. From early concerns of U.S. firms being at a disadvantage due to differing financial paradigms operating in countries with low cost of capital (Bettis, 1983), to concerns over investor myopia (Graves, 1988; Porter, 1992), research has found that equity holder heterogeneity has material impact on firm innovation strategies and that these vary with country contexts. Strategy research has also elaborated the nature of the mechanisms linking equity holder heterogeneity with innovation, ranging from transaction and agency costs to behavioral considerations. I next turn my attention to the literature linking equity holders with firm restructuring and diversification.

Equity holders, Restructuring and Diversification

Along with concerns about U.S. competitiveness and lack of investment in innovation, a parallel and prominent conversation in the 1980's was diversification. The core arguments in the early investigations centered on the

disciplining influence of concentrated equity holders. Such concentrated equity holders have both the incentive and the clout to ensure that the link between firm diversification and performance remains positive.

These concerns are evident in the study by Hill and Snell (1988) that investigated links between firm equity holder concentration and the strategic actions of innovation and diversification. Their findings on innovation have been discussed in the previous section. In their sample of 94 research-intensive U.S. firms, contrary to expectations, proportion of outsiders on the board was positively associated with diversification. Such unrelated diversification was negatively associated with profitability, a finding confirmed by recent meta-analysis (Palich et al., 2000). However, stockholder concentration was associated with more focused firms (Hill & Snell, 1988), a finding that corroborates prior work in economics (Amihud & Lev, 1981).

A pair of papers (Bethel & Liebeskind, 1993; Gibbs, 1993) featured in a special issue of the *Strategic Management Journal* (Vol. 14, 1993) on corporate restructuring further investigated the governance and capital structure antecedents of restructuring (changes in firm's business portfolios and/or financial structure). In their sample of 93 firms, Bethel and Liebeskind found that a combination of agency and environmental factors were behind the restructuring wave. Firms "restructured in the 1980's when opportunities arose, but only when pressured by blockholders" (1993: 16). Specifically, they find that firms with blockholders at

the outset of the restructuring wave (1981) were more likely to restructure. On the other hand, emergence of blockholders in firms with previously diffused ownership was negatively associated with firm growth and diversification. They interpret this finding in terms of the efficiency enhancing and disciplining influence of blockholders, leaving less room for later restructuring. The effect of institutional equity holders was opposite; they were positively associated with firm growth.

Financial restructuring (firms taking on debt and carrying out stock repurchases) is a key prescription of the free cash flow hypothesis (Jensen, 1986). Free cash flow is a necessary but not sufficient condition under the free cash model of agency costs, the other two conditions are existence of governance problems and the threat of takeover as a catalyst for restructuring. Gibbs (1993) found that restructuring was motivated by such agency costs. In his sample of 70 U.S. firms, Gibbs found that initial level of diversification was related to subsequent restructuring. High board power (product of proportion of outside directors and their tenure divided by tenure of insiders on the board) is associated with less restructuring. The management equity hypothesis was not supported.

The two key explanations for restructuring emerging in the literature at this time were inadequate governance and prior unrelated diversification. Scholars (Hoskisson, Johnson, & Moesel, 1994) suggested that there was a causal order linking inadequate governance, strategy, firm performance and finally, divestment

activity. In their sample of 203 U.S. firms between 1985 and 1990, Hoskisson and colleagues find that non-board member blockholders are associated with lower diversification. In turn, high levels of diversification are associated with higher debt intensity as well as an increase in divestment intensity.

At this point in the evolution of the capital structure literature, a key debate arose on the association between equity holder concentration and diversification. The crucial explanatory mechanism in strategy research linking capital structure and diversification rests on agency arguments (Eisenhardt, 1989; Jensen & Meckling, 1976). Specifically, managerial propensities are directed towards reducing their employment risks. Therefore, lack of equity holder oversight (either direct or indirect through the board of directors) is associated with higher levels of unrelated diversification (Amihud & Lev, 1981; Hill & Snell, 1988) which in turn are detrimental to firm performance (Palich et al., 2000). This core narrative has not gone unchallenged (Lane, Cannella Jr, & Lubatkin, 1998).

In a substantial replication and extension of the original Amihud and Lev (1981) study, Lane et al. (1998) invoked Bettis' (1983) arguments on the paradigmatic differences between financial economics and strategy. Lane and colleagues argued that these differences and the growth of the management literature suggest that reiterating the agency theoretic links between inadequate governance and unrelated diversification based primarily on Amihud and Lev was

erroneous. In two separate datasets, one from the 1960's replicating Amihud and Lev's original data and another from the 1980's, Lane et al. (1998) found no association between capital structure (stockholder concentration to signify owner control), board vigilance and corporate strategy (diversification). The authors claim that this lack of support for agency arguments for the equity holder and diversification link (Amihud & Lev, 1981; Hill & Snell, 1988) suggest that the negative assumptions of managerial behavior in public corporations has been overblown, instead stewardship theory may be a better explanatory mechanism for this association.

Lane et al.'s refutation of the agency links between equity holders and diversification received its own strong rebuttals. Lack of statistical power in the subgroup samples and the cumulative evidence developing in financial economics in favor of agency arguments linking equity holder concentration and diversification were one set of critiques (Amihud & Lev, 1999). These suggest, "corporate risk strategy and corporate acquisitions are affected by agency problems, proxied by ownership structure" (1999: 1068). This conclusion was confirmed by others on the basis of mounting empirical evidence in favor of a link between equity holder heterogeneity, corporate risk-taking (Wright, Ferris, Sarin, & Awasthi, 1996) as well as diversification (Denis, Denis, & Sarin, 1999). However, the debate remains open due to paradigmatic differences between financial economics and strategy (Bettis, 1983; Lane, Cannella Jr, & Lubatkin,

1999), although it has been suggested that these differences rest primarily on measurement problems (Boyd, Gove, & Hitt, 2005).

Nonetheless, further support for the equity holder heterogeneity and diversification link came from a study (Tihanyi et al., 2003) of 197 U.S. firms. Tihanyi and colleagues found that due to alignment between interests and time horizons, international diversification was favored by both professional investment funds and pension funds. In addition, insider director incentives positively moderate the relationship between pension fund ownership and international diversification. While outsider directors moderate the relationship between professional investment funds and international diversification. The authors argue this is because insider director incentives (especially long-term) better align their interests with long-term pension funds. In case of investment funds, outsider directors amplify the monitoring capabilities of the board that catalyzes support for strategic actions like international diversification.

The debate outlined above had two characteristics germane to this review: First, it centered on the purported link or lack thereof between equity holder concentration (measures of concentrated stockholdings) and diversification, at a time when scholars had already begun to address the issue of equity holder heterogeneity, i.e. actual types (Brickley et al., 1988) and behaviors (Bushee, 1998) of different equity holders. Second, all the studies that were core to the debate were U.S. centric and were thus open to the critique of being contextual

and not internationally generalizable. This has changed in recent years as scholars have investigated the equity holder heterogeneity and diversification link in international samples (Colpan, Yoshikawa, Hikino, & Del Brio, 2011; David, O'Brien, Yoshikawa, & Delios, 2010; Ramaswamy, Li, & Veliyath, 2002).

In one of the early strategy studies in an international context, Ramaswamy et al. (2002) posited that country contexts matter since these influence both ownership types and the monitoring disposition of the principals. In their sample of 88 Indian manufacturing companies, they found that pressure-sensitive investors (Brickley et al., 1988) such as banks are associated with unrelated diversification while pressure-resistant investors like mutual funds are negatively associated with unrelated diversification. Raising concerns that simplistic stockholder concentration ratios (e.g. Lane et al. 1998) may mask agency effects, the authors (Ramaswamy et al., 2002) however concede that lack of significant findings linking pressure-indeterminate investors (government agencies) and foreign investors with diversification may represent a boundary condition for agency theorizing as alluded to by Lane et al. (1998).

In contrast to the small sample of Indian firms used by Ramaswamy and colleagues, significant relationship between equity holder heterogeneity and the drivers of diversification were found in a sample of 1,180 Japanese firms (David et al., 2010). Using the relational vs. transactional lens, David et al. (2010) argue that Japanese domestic ownership is relational in nature and reflects priorities

other than pure profit maximization. On the other hand, foreign owners are primarily focused on rent appropriation through profit, reflecting their transactional orientation. Relational owners seek sales and employment growth via international diversification as opposed to transactional owners who seek profit growth. Thus, equity holder heterogeneity is associated with the performance goals of firms.

Another study investigated the evolving landscape of Japanese corporate governance (Colpan et al., 2011) as it shifted from relational to more transactional or market oriented ownership in the 1990's. The authors argue that global institutional investors are the primary drivers of change – from a relational to a transactional governance culture. Domestic corporate investors are their polar opposites, still adhering to a strongly relational culture that values long term capital commitments. Finally, between these two are domestic financial institutions that are trying to balance their relationships with firms with their responsibilities towards investors, i.e., these institutions are influenced by firm performance. Using a sample of 96 electronic firms, Colpan and colleagues find that product diversification is negatively associated with foreign institutional ownership and positively with domestic corporate ownership. Further, firm performance moderates the relationship between domestic financial institutions and capital investments. This suggests that for institutions straddling the relational-transactional divide, firm performance determines their support for strategic investments.

Equity holders and Firm Performance

Being residual claimants, equity holders are particularly concerned about firm performance as they bear risks of any monitoring failure. These risks are exacerbated for outside equity holders who suffer from information asymmetries with respect to firm management. Outside equity holders have been incorporated in the literature as blockholders, institutional investors and finally, different types of institutional investors. Blockholders in a firm, investors with a 5% or higher equity stake, are motivated by concentrated ownership and private benefits (Connelly et al., 2010a). Non-board member blockholders have been found to be positively associated with both accounting and market-based performance measures. However, when the number of such blockholders is controlled for, the total equity held by non-board blockholders has a negative association with accounting performance (Hoskisson et al., 1994). In case of corporations becoming blockholders in other corporations, improved performance is seen if the target firm is a supplier or customer. This suggest that partial vertical integration (Bogert, 1996) enhances performance by reducing transaction costs.

Institutional investors have been found to be positively associated with return on equity (Chaganti & Damanpour, 1991). Furthermore, executive equity holdings and institutional holdings have a supplemental effect on firm performance in terms of return on assets, return on equity and price-earnings ratios. Chaganti and Damanpour argue that this alignment between executive and

institutional equity holdings is in line with agency predictions. However, the insider ownership and performance relationship is stronger under conditions of environmental dynamism (Li & Simerly, 1998). This suggests that environmental dynamism is a major factor in the ability of owners to comprehend firm strategies, an area that has not received adequate attention in the literature. This is in contrast to the rich literature on debt and environmental dynamism (see earlier section on homogeneous debt and equity).

Consistent with agency predictions, concentrated ownership has been found to be positively associated with firm performance in Japan (Gedajlovic & Shapiro, 2002) as well as European samples (Thomsen & Pedersen, 2000). Such a positive association between ownership concentration and firm performance is also observed in the context of IPO firms (Bruton, Filatotchev, Chahine, & Wright, 2010). However, it has been argued that the relationship is inverse of agency predictions in case of business groups as controlling shareholders exploit insider information to increase their stakes in the most profitable and promising firms (Chang, 2003). Dalton et al.'s meta-analysis reports a similar equivocality and fails to find any substantive relationship between blockholder or institutional equity holders and firm performance (2003: 19).

Researchers have also considered the link between different categorizations of institutional investors and firm performance. In one such study, equity holders in the form of affiliated firms are negatively associated with firm

performance; but, market investors and pension funds have a positive association with firm performance in a Japanese sample (Gedajlovic, Yoshikawa, & Hashimoto, 2005). However, this reveals one key weakness of equity holder heterogeneity research in management, namely institutional investor categorizations based on type. This may be one of the key factors leading to confused findings (Daily et al., 2003) since with few exceptions (Connelly et al., 2010b), management research has assumed stability in principal intentions and incentives; thereby ignoring “the changing nature of principal interests over time” (2010b: 726).

In summary, the key insights developed by this flourishing subset of the capital structure literature can be bifurcated into two themes. On the one hand we have differences that are driven by variations in the intentions and incentives of the equity holders. On the other hand, scholars argue that these equity holder differences are a function of the institutional differences across countries (Ofori-Dankwa & Julian, 2013) which belies the notion of convergence in corporate governance practices across the world (Yoshikawa & Rasheed, 2009). Such an international institutional differences hypothesis is an especially common driver of research contrasting U.S. and Japanese contexts (David, Yoshikawa, Chari, & Rasheed, 2006; O'Brien & David, 2014; Yoshikawa, Phan, & David, 2005).

The first, and more germane to this dissertation, of these differences centers on the categorization of institutional equity holders. In finance, the most common categorization centers on susceptibility of institutions to managerial

pressures (Brickley et al., 1988). Although the Brickley et al. categorization has on occasion been adopted in management research (Kochhar & David, 1996; Ramaswamy et al., 2002), an even more common categorization is simply institutions by type. In such cases, intentions and incentives are attributed to institutional fund managers based on the type of institution; for example, long-term orientation to pension fund managers (Hoskisson et al., 2002; Neubaum & Zahra, 2006). These categorizations are in contrast to the ones developed in accounting that incorporate actual investor behavior (Bushee, 1998; Bushee, 2001) and have been fruitfully applied in management research (Connelly et al., 2010b). In spite of these shortcomings, the equity holder heterogeneity literature has underscored the varied associations of equity holder groups with firm strategic actions. These linkages also suggest that the ambiguous findings plaguing equity holder and firm performance research maybe a result of ignoring the intervening strategic actions. Thus, this review suggests new directions for capital structure research by further integrating strategic actions into corporate governance research along equity holders with a more realistic categorization of equity holders.

Debt Heterogeneity

The most common conceptions of capital structure in the management literature are leverage (i.e. ratios incorporating debt and equity, assumed homogeneous) and equity holder heterogeneity. Debt is assumed to be homogeneous in these literatures. This assumption is contradicted by both the financial intermediation literature (Boot, 2000) as well as studies in management which indicate lender influence via the board of directors (Stearns & Mizruchi, 1993). Furthermore, different types of debt holders influence firm financing (Mizruchi & Stearns, 1994b), knowledge capabilities (Uzzi & Gillespie, 2002) and innovation (David et al., 2008).

Corporate governance research has over the decades produced a voluminous body of work investigating the impact of board composition on various firm level outcomes (Daily, Dalton, & Cannella, 2003a; Deutsch, 2005). In spite of this substantial research, confusion and inconsistencies remain in the literature regarding the empirical linkages between board composition and firm level outcomes (Dalton & Dalton, 2011). It has been suggested that owing to the multilevel context of board composition studies, these null results “may be a function of the inadequacy of the analyses relied on...” (2011: 405). However, a more parsimonious explanation may be that governance research in management has largely ignored a key constituent of influence, namely lenders. Specifically, there is a neglect of debt heterogeneity in much of management research (David et al., 2008).

Lender influence on the management of corporations has principally been considered episodic and infrequent, triggered by events such as firm distress and bankruptcy (Elloumi & Gueyie, 2001). However, an increasing tide of empirical evidence refutes this assumption and demonstrates that lender influence on governance of the firm is regular and frequent (Tung, 2009). In fact, these findings show the wide span of “private lenders’ influence on corporations’ financing and investment decisions and operational matters” (2009: 117). In light of these findings, it is likely that incorporating lender influence will help mitigate the theoretical confusion and empirical insignificance that plagues the research linking corporate governance with firm level outcomes. This lender influence is evident both through relational debt (i.e. bank loans, which may involve board representation) and transactional debt (i.e. bonds). Below, I briefly review the literature exploring lender influence on firm management. An overview of key debt heterogeneity papers in management can be seen in Table 3.

Bankers on Board

Banker representation on boards is usually found on large firms with collateralizable assets and low dependence on short-term financing (Kroszner & Strahan, 2001). This phenomenon of bankers on board is inherently a side effect, as well as aggravating factor, of equity- and debt holder conflicts of interest. Since the shareholders usually elect board members, bankers representing debt holder interests create inescapable conflicts in the highest echelons of the corporation as equity and debt have different risk bearing preferences and payoff

structures (Jensen & Meckling, 1976). However, the fact that one-third of U.S. public firms have a banker on board suggests that the benefits of monitoring outweigh the costs associated with these conflicts (Kroszner & Strahan, 2001).

Research has indicated that use of debt financing by corporations is influenced by having lender representatives on the board (Stearns & Mizruchi, 1993). However, there are indications that this influence is on the decline over time, due to professionalization and internalization of the finance function as well as greater environmental uncertainty (Mizruchi, Stearns, & Marquis, 2006). This phenomena is evident from data which shows that while the average proportion of outside directors in U.S. firms has steadily increased (53.2% in 1973 to 72.2% in 1994), there has been a proportional decline (27.6% of outside directors in 1973 vs. 12.7% in 1994) in banker representation on boards (data from Mizruchi *et al* 2006: 316).

Nevertheless, when considering overall representation on the board of large firms (e.g. the S & P 500 in 2002) bankers were present on 27% of the boards (Sisli-Ciamarra, 2012). Research has shown that creditor representation on the board: “1) increases the amount of debt in a company’s capital structure via an increase in private debt, 2) decreases the sensitivity of debt financing to the amount of tangible assets that a company holds, 3) decreases the cost of borrowing, and 4) reduces the pledge of collateral and financial covenants in debt contracts” (2012: 665). In light of this, the proportional decline of bankers

amongst outside directors found in the Mizruchi *et al* (2006) data may reflect substitution of agency mitigating mechanisms between direct (relational) monitoring through board positions and indirect (transactional) monitoring through covenants and contracts.

Further complexity is added to banker representation on boards by the finding that banker board member behavior depends on whether their bank is a lender or non-lending board member (Byrd & Mizruchi, 2005), i.e., whether there is a conflict between the bankers fiduciary responsibilities and self-interest. The authors found that presence of a lending banker on the board is reflected negatively on the firm's debt ratio; while, the presence of a non-lending banker on the board has influence depending on the firm's level of distress risks. In case of firms with high distress risk, non-lending bankers provide legitimacy/certification along with expertise. For low distress risk firms, non-lending bankers carry out the role of monitors.

Consequently, we can see that debt holder representation on the board is variegated and contextual. Contrary to the popular assumption in much of management research, corporate governance is not merely the domain of shareholders and their representatives on the board, but is significantly and frequently influenced by lenders (Tung, 2009). Banker presence on the board gives them informational and relational advantages (Boot, 2000; David et al., 2008) that are hard to contract *ex ante*.

Such findings highlight the mechanism linking ownership heterogeneity and how it's mirrored by heterogeneity in the board of directors. This heterogeneity invariably gives rise to equity holder and debt holder conflicts that potentially influence strategic actions. For example there is empirical evidence (Hilscher & Sislci-Ciamarra, 2011) that firms with creditor-directors indulge in acquisitions (more diversifying) that destroy shareholder wealth. Thus, the phenomena of bankers on board highlights a fundamental heterogeneity in debt that has been overlooked by most of management research (David et al., 2008) – namely, the difference between transactional and relational debt (Boot, 2000).

Transactional vs. Relational Debt

In the case of strategic actions like innovation, transaction cost perspective (David et al., 2008; Wang & Thornhill, 2010) suggests that the strategic fit between the governance structure and the firm's strategic action affects firm performance. In a rare study incorporating debt heterogeneity, David et al. (2008) posited that the choice of governance structure is molded by the need to mitigate three types of transaction hazards: one, asset specificity, which limits asset redeployment; two, uncertainty about both the transaction and the counterparty; and third, appropriability risk. Thus, transactions exposing firms and their capital providers to such hazards will seek governance structures that enable dispute resolution, adaptation (i.e. forbearance) and monitoring.

David et al. (2008) found that relational debt, with hierarchical governance features, is positively associated with innovation. Furthermore, the alignment

between a strategy of innovation and relational debt led to higher performance. Wang and Thornhill (2010) extended these arguments and found that the association between relational debt and innovation is an inverted U-shape. This is because although relational debt facilitates monitoring and adaptation, it requires collateral that firms with very high R & D expenses may not have. Another intriguing finding was that convertible debt has a U-shaped relationship with innovation. Two opposing forces drive this relationship. Holders of convertible debt cannot intervene in firm management but have the option of swapping their securities for common stock. Firms focused on innovation are likely to have higher valued convertible securities that have lower cost than conventional debt (Wang & Thornhill, 2010).

Such a distinction is also evident in the context of diversification. In a sample of Japanese firms (O'Brien et al., 2014), transactional debt (bonds) was found to negatively affect performance more than relational debt. The authors argue that the negative and inflexible connotations of debt largely pertain to transactional debt. This is in contrast to relational debt (bank loans) that are characterized by social embeddedness (Uzzi & Gillespie, 2002; Uzzi & Lancaster, 2003) between lenders and firms that confer advantages of reciprocity, knowledge exchange and network transitivity. Thus, the original transaction cost bifurcation of debt and equity as separate governance mechanisms (Williamson, 1988) can be extended to different forms of debt as well as equity. These ideas are further developed below.

Capital Structure and Transaction Costs

Most of transaction cost theory's application to the capital structure and strategic action association implicitly invokes the differing governance attributes of equity and debt (Williamson, 1988) and explicitly focuses on transaction attributes such as uncertainty and asset specificity. However, the bifurcation of the literature into separate streams of equity and debt heterogeneity reveals an implicit assumption – namely, that equity and debt are simply financing choices. Their governance attributes are only incidentally invoked in theoretical explanations without any integrated analysis of commonalities and interactions between different forms of debt holders and equity holders and the governance structures they generate.

The governance attributes of patient (akin to hierarchy) and impatient capital (akin to market) are critical since in the absence of optimum contracting they determine the strategic fit between capital structure heterogeneity and firm strategic actions (see Table 4). Assuming bounded rationality and agent opportunism, these governance attributes determine if the strategic actions followed by the risk takers (i.e. managers) are those preferred by the risk bearers (i.e. capital providers).

Within strategy, transaction costs are one of the dominant explanatory mechanism linking capital structure and strategic actions. Research has often juxtaposed transaction cost and agency elements to develop (Kochhar, 1996) and

test (Balakrishnan & Fox, 1993; O'Brien et al., 2014; Simerly & Li, 2000) competing hypothesis. Kochhar (1996) pointed out that agency and transaction cost theories differ fundamentally in their approach to capital structure. Transaction cost theory (unlike agency) posits that markets can fail, debt and equity both possess governance attributes with equity being the more powerful and that the key asset under governance is not free cash flow but firm resources. He argued that LBOs (leveraged buyouts), which increase firm debt load, are more likely to occur in firms with low asset specificity.

Balakrishnan and Fox (1993) found that asset attributes of specificity and intangibility are negatively associated with leverage because although such investments may improve a firm's competitive position, they are harder to evaluate and monitor by lenders; this is especially true under conditions of environmental dynamism (Simerly & Li, 2000). For the same reasons, related diversification has also been found to be negatively associated with leverage (Kochhar & Hitt, 1998). More recently, O'Brien et al. (2013) found that management protected from the harsh market governance of transactional debt (i.e. bonds) performs better by leveraging existing firm resources. Thus, following transaction cost logic – the hierarchical governance of equity is preferable when firms invest in strategic actions that develop highly specific and intangible resources.

In summary, the composition of capital structure itself has governance features that are often ignored in strategy research (Barton & Gordon, 1987). When considering strategic actions such as diversification and innovation that entail managerial risk taking, capital structure heterogeneity across debt holders and equity holders has been assumed away. Research till now has focused either on equity holder or debt holder heterogeneity. We still do not know how the full range of capital structure heterogeneity –between different equity and debt-holders – influences strategic actions. Moreover, this bifurcation of the capital structure literature – into separate equity and debt heterogeneity silos – leaves important questions unanswered: What are the common underlying factors driving the association between capital structure heterogeneity and strategic actions? What are the interactions between these varied governance structures?

Unlike extant research, this dissertation incorporates capital structure heterogeneity –across both debt holders and equity holders – as governance structures (Ebers & Oerlemans, 2014; Weingast, 1993; Williamson, 1988) with varied attributes and associations with strategic actions. In the next section (chapter 3) I develop an integrated theoretical model of capital structure heterogeneity and strategic actions that addresses these unanswered questions in the literature. In addition to the de facto governance role of the capital structure, I incorporate the de jure role of the board of directors and the association of compensation as mediators of the association between capital structure heterogeneity and strategic actions.

CHAPTER 3

THEORY DEVELOPMENT AND HYPOTHESES

Strategy research has investigated the associations between capital structure heterogeneity and strategic actions such as diversification and innovation. However, these investigations bifurcate capital structure research into two separate streams: one investigating equity holder heterogeneity, i.e. ownership as governance (Daily et al., 2003b); and, another investigating debt holder heterogeneity (David et al., 2008). Therefore, we still do not know the associations between the full range of capital structure heterogeneity – across both debt and equity – and strategic actions. Even when extant research explicitly invoke transaction cost arguments, their separation of equity and debt heterogeneity reveals an implicit assumption, entrenched in the conventional view, of equity and debt as merely financing choices.

Although capital structure has been investigated within strategic management for three decades, it suffers from a simplifying assumption in which researchers of equity holder heterogeneity assume away debt holder heterogeneity and vice versa. In this dissertation I argue that this implicit assumption limits our understanding of the association between capital structure heterogeneity and strategic actions. Such hidden assumptions limit theoretical advancement (Davis, 1971) and the explanatory power of management research by undermining its closeness to reality (Foss & Hallberg, 2013). Strategic actions like diversification and innovation are likely associated with the whole range of capital structure

heterogeneity – across both debt and equity holders, which existing research overlooks.

The division of extant research into isolated streams investigating equity holder and debt holder heterogeneity and its associations with firm level outcomes reflects the conventional view of equity and debt as simply financing choices. Such a perspective allows for research that focuses on either equity or debt holder heterogeneity while assuming the other homogenous. However, viewed from a transaction cost lens, these heterogeneous groups of equity and debt holders represent governance structures that are not bound by such simplifying assumptions. Williamson (1988) argued that debt and equity have governance attributes of markets (rules) and hierarchies (discretion) respectively. I extend this transaction cost approach to different types of equity and debt holders. This necessitates a simultaneous investigation of equity and debt holder heterogeneity.

Although distinct, equity holder and debt holder heterogeneity research suggests that differences among providers of capital center on their varied tolerance for risk and their investment time horizons. Therefore, I argue that the dimensions underlying both debt holder and equity holder heterogeneity, i.e., dimensions driving their governance attributes, are the same. Such a framing makes explicit what has till now been implicit in these disjointed literatures. Both equity and debt holders can be categorized along these two dimensions that drive their associations with strategic actions such as diversification and innovation.

Therefore, I extend transaction cost economics conceptualization of capital structure as governance structures (Williamson, 1988) to groups within debt and equity. When viewed in this manner as governance structures, a question arises: what drives the association between debt and equity holder heterogeneity with strategic actions? I posit that the mechanisms linking capital structure heterogeneity and strategic actions are executive compensation and the board of directors.

In the following sections, I first draw on extant literature to integrate and develop a categorization of heterogeneous debt holders and equity holders. Next, I establish time horizons and risk tolerance as the two fundamental dimensions driving the governance attributes of these diverse equity and debt holders. Following that, I develop hypotheses that link these debt and equity holders to the strategic actions of diversification and innovation. Finally, I argue that the board of directors and executive compensation mediate these associations.

Capital Structure As Governance Structures: A Transaction Cost Perspective

Capital structure refers to the mix of debt and equity used to finance a firm. Different types of debt holders and equity holder groups constitute capital structure heterogeneity. Unlike the extensive equity heterogeneity literature, debt heterogeneity has seen limited theoretical and empirical research. In this section I

first discuss different categorizations of these groups commonly used in the literature. I go on to develop a new theoretical model that argues for commonalities between debt and equity holders along the dimensions of risk tolerance and time horizons. Development of these underlying dimensions gives me the opportunity to treat a wide range of capital structure heterogeneity – across debt and equity – as governance structures associated with firm strategic actions like diversification and innovation.

Viewed from a transaction cost lens, debt and equity are de facto governance structures (Williamson, 1988), akin to the de jure organizational governance structures (Williamson, 1985; Williamson, 1991) that have been the subject of significant research¹. Misalignment between these governance structures and strategic actions creates maladaptation costs that can be avoided by “judicious use of governance structure...rather than merely realigning incentives” (Williamson, 1988: 572). Such a transaction cost framework differs from the *ex ante* incentive alignment emphasis of agency theory.

In addition to maladaptation costs, the transaction cost perspective emphasizes other *ex post* costs such as haggling costs (to correct misalignment), setup costs and bonding costs (securing commitments). I argue, in line with Williamson (1988), that the governance structures embedded in capital structure have been neglected in research as opposed to their organizational counterparts.

¹ For a recent review of governance structures and theoretical extension of hybrid forms of governance, see Ebers, M. & Oerlemans, L. 2014. The Variety of Governance Structures Beyond

Furthermore, by bifurcating capital structure research into separate streams, extant research ignores the additive and interactive associations between these governance structures and strategic actions. Below, I briefly clarify how some of the fundamental premises of transaction cost economics have been overlooked in the research of capital structure.

Transaction cost economics rests on two fundamental behavioral assumptions: bounded rationality and opportunism (Williamson, 1985). Bounded rationality (Simon, 1997) builds on the impact of uncertainty (Knight, 1964) to study “human nature as we know it” (1964: 270). A combination of uncertainty and cognitive limitations lead to human behavior that “is *intendedly* rational, but only *boundedly* so” (Simon, 1997: 88). This boundedly rational behavior is exacerbated by the need to protect actors in transactions against “each other’s predatory propensities” (Knight, 1964: 254). These predatory propensities manifest themselves as opportunism, a serious exchange hazard (Arrow, 1971; Williamson, 1985). The nature of transactions (i.e., asset specificity, frequency etc.) must “match” the attributes of the governance structures if costs arising from such exchange hazards are to be economized.

Perhaps the first to indicate alternative governance structures as “choices” for economic coordination was Coase. Within the governance structure of *markets*, this coordination is carried out using the price mechanism (Coase, 1937). Hierarchies coordinate economic activity using fiat (Williamson, 1991), with the

business judgment rule creating a governance regime in which “hierarchy is its own court of ultimate appeal” (1991: 274). In fact, “the distinguishing feature of the firm is the supersession of the price mechanism” (Coase, 1937: 389).

Beyond markets and hierarchies, there exist a range of hybrid governance structures such as subcontracting, quasi-integration and joint ventures (Ebers & Oerlemans, 2014). These governance structures differentially deal with the transaction costs arising from economic coordination. Some have argued that the existence of hybrid governance structures suggests that a mix of attributes is needed for economizing of transactions and mitigation of hazards (Hennart, 1993).

One key distinction separates governance structures that are organizational and those that are embedded in the capital structure. Organizational governance structures can take many forms. This plurality is itself a function of the complexity facing economic organization. Hennart (1993) has argued that the price system and hierarchy are the *organizing methods* that manifest as ideal types in markets and firms respectively. The core reason for the plethora of hybrid forms is that in reality, economic coordination requires a mix of attributes – i.e., a combination of price system and hierarchy. These organizational governance structures have been the focus of much research and debate (Ebers & Oerlemans, 2014).

However, in this work, the focal governance structures are those embedded in the capital structure (Williamson, 1987; Williamson, 1988). Unlike organizational governance structures that arise from managerial choice about economic coordination, the governance structures of equity and debt are vestiges of firm financing choices. These financing choices lead to differential firm capital structure and consequent associations with strategic actions (Bettis, 1983). In this dissertation I focus on the strategic actions of innovation and diversification, two of the most critical strategic actions carried out by firms (Hill & Snell, 1988) and of continued interest to scholars of capital structure (O'Brien & David, 2014; O'Brien et al., 2014).

I argue that since capital structure is a de facto governance structure, it is necessary to have a simultaneous treatment of both equity and debt holder heterogeneity to truly understand how the mix of these yin & yang of governance structures are associated with strategic actions. This is in line with transaction cost economics, in which a “fundamental tenet ... is that the supply of a good or service and its governance need be examined simultaneously” (Williamson, 1988: 567). Thus, selective focus on some providers of capital while assuming others homogenous gives us only partial insight into the associations between capital structure heterogeneity and strategic actions.

Unfortunately, extant capital structure research – even that which invokes transaction cost arguments – circumvents the concurrent treatment of debt and

equity heterogeneity. By keeping these two research streams separate, extant research has left key questions unanswered: What is the association between different kinds of governance structures embedded in equity and debt with different forms of strategic actions? How do these varied governance structures interact and relate to innovation and diversification? This dissertation research is centered on answering these two questions. Below I briefly review some of the popular categorizations of capital structure heterogeneity and demonstrate how extant literature has left the above two critical questions unanswered.

Types of Debt holders

Most of the capital structure literature focuses on equity heterogeneity, i.e. the ownership as governance literature (Daily et al., 2003b). However, debt constitutes over 90 percent of all new external financing (Mayer, 1988). In addition, a substantial proportion of large U.S. public firms utilize both relational and transactional debt (Rauh & Sufi, 2010). Considering the governance attributes of debt suggested by both agency theory and transaction cost economics – governance of free cash flow in the former (Jensen & Meckling, 1976) and governance of resources in the latter (Williamson, 1987; Williamson, 1988) – the debt homogeneity assumption (David et al., 2008) underlying almost all of governance research is puzzling.

Extant literature categorizes different debt holders as either relational or transactional (Boot, 2000). Relational debt refers to bank or commercial lending

in which the lenders develop relationships with borrowers over repeated interactions. Such relational lending is known to “facilitate monitoring and screening and can overcome problems of asymmetric information” (2000: 7). In other words, relational debt is fundamental to the mitigation of exchange hazards such as uncertainty, opportunism and appropriation.

The mechanisms underlying such mitigation through relational debt may be close coordination between the lender and borrower through board representation (Stearns & Mizruchi, 1993). Another factor is network transitivity (Uzzi & Gillespie, 2002) in which a focal firm gains resources and capabilities from a particular network tie, this in turn increasing the value added it brings to a relationship with a third independent network actor. In fact Uzzi and Gillespie argue “bank – firm tie is the dominant explanatory factor for network transitivity effects” (2002: 597).

An example of such transitivity is relational lenders introducing firms to new suppliers. As such, relational debt characterized by embedded social relations becomes an inimitable resource for firms and enhances their adaptability and learning (Uzzi & Lancaster, 2003) in the face of incomplete contracting through increased intertemporal information reusability (Greenbaum & Thakor, 2007). Socially embedded relational debt is ideally suited for transfer of proprietary knowledge since norms and expectations of trust and reciprocity, built over the duration of a long-term relationship, provide assurances that such knowledge will

be used for the mutual benefit of both parties in the transaction. A situation ideally suited for strategic actions involving risks of uncertainty, opportunism and appropriability.

In contrast to the hierarchical governance features of relational debt outlined above, transactional debt (bonds) mirrors the rigid and unforgiving governance structure of markets (Williamson, 1988). Doctrines enshrined in these restrictive covenants both enforce and limit the scope of these governance structures. This arms-length financing is focused on a single transaction with a customer or multiple identical transactions with various customers. The rigidity of such transactional debt is severe and even a single covenant violation can trigger creditor intervention in management (Chava & Roberts, 2008). Thus, transactional debt takes the form of an exceptionally constrictive governance structure that limits managerial latitude with respect to strategic actions that may require future adaptation.

Types of Equity holders

Unlike the scarce debt heterogeneity literature discussed above, there is a rich literature on equity holder heterogeneity. One of the most common categorizations is along the dimension of susceptibility to management pressure (Brickley et al., 1988). Blockholders have a stronger incentive to vote than most shareholders. Amongst these blockholders, Brickley et al. (1988) found, those less beholden to management (pressure-resistant investors) such as pension and

mutual funds are more likely to oppose management proposals. In contrast, blockholders that derive benefits from managerial discretion (pressure-susceptible investors) such as banks and insurance companies tend to vote in line with management over critical corporate issues. Such institutions “have a virtually unblemished history of passivity” (Davis & Thompson, 1994: 162).

Susceptibility to management pressure has also been used to explain firm innovation (Kochhar & David, 1996). Since these blockholders hold large investments in firms, exiting their positions can be problematic. Kochhar and David argue that such market illiquidity makes institutional investors more active in making their voice heard by management, especially with regards to investments in innovation that may confer long-term competitive advantage. Such pressure-resistant investors are found to be positively associated with innovation as measured by new product introductions.

However, Kocchar and David found no association between institutional ownership in general and innovation. This may be a relic of their innovation measure or the fact that the Brickley classification fails to take into account actual institutional investment time horizons and instead depends on classification by type of institution (Bushee, 1998). As pointed out by Bushee, classifying equity holders on actual investment portfolio behavior (time horizons etc.) creates a richer and more parsimonious categorization. This also ensures that investment behavior is not assumed simply because of type of institution since equity holders

“exhibit significant heterogeneity across these other possible classification schemes” (1998: 310).

In spite of these shortcomings, the Brickley *et al.* (1988) categorization remains popular and has also been used to investigate the association between heterogeneity amongst equity holder groups and diversification (Ramaswamy *et al.*, 2002). In a modified² application to the Indian context, Ramaswamy *et al.* (2002) classified all for-profit institutional investors as pressure-resistant, while banks and insurance companies were pressure-susceptible. They found that pressure-resistant owners were negatively associated with unrelated diversification

Using the same classification, a recent meta-analysis investigated the ownership and firm performance linkage (Dalton *et al.*, 2003). The authors categorized outside equity-holders as: pressure-resistant (public pension funds, mutual funds, foundations and endowments), pressure-sensitive (insurance companies, banks and nonbank trusts) and pressure indeterminate (corporate pension funds). Dalton *et al.* (2003) hypothesized that pressure-resistant investors will be positively associated with firm financial performance. However, in their meta-analysis, the results are non-supportive.

² The Indian context precludes use of private pension funds as a separate category as most pensions are managed by a federally operated scheme. See footnote 2 (Ramaswamy *et al.*, 2002: 350).

I classify equity holders based on their past investment behavior (Bushee, 1998), into transient, quasi-indexer and dedicated. I extend transaction cost theory and argue that transient equity holders provide governance structures akin to markets while dedicated equity holders are more akin to hierarchies. This mirrors the earlier classification of debt holders into transactional and dedicated (see Table 5). My classification is in contrast to most of the capital structure research focused on equity holder heterogeneity has used classification schemes based on institutions by type; this is problematic (Bushee, 1998; Bushee, 2001; Connelly et al., 2010b). Classification by type assumes stability in equity holder behavior and preferences that is belied by empirical research (Bushee, 1999, 2001).

Transient equity holders are focused on short-term trading profits and are characterized by high portfolio turnover and diversification (Bushee, 2001). If disappointed by the financial performance of their holdings, these transient investors do not hesitate to sell off the firm's stock (Porter, 1992). The short-term nature of these investors also suggests that they will forgo the rewards of longer-term and riskier strategic actions that may entail poor short term performance³.

Dedicated and quasi-indexer equity holders provide more stable and long-term ownership to firms. However, due to their complete passivity, I exclude quasi-indexer from inclusion in my theoretical development. Dedicated investors are akin to relational debt in that they have both long term and less diversified

³ Time horizon and risk have often been conflated in the literature. Both dimensions are developed in the next section.

portfolios (Bushee, 2001). Such owners have greater incentives to monitor executives as well as gather proprietary firm-specific knowledge about long-term and riskier strategic actions. Quasi-indexer equity holders on the other hand are passive long-term investors with more diversified portfolios and as such have low inclinations towards monitoring management. Porter (1992) has posited that the prevalence of these quasi-indexers threatens long-term investments due to their abdication of monitoring “duties”. In the next section, I extend the notion of capital structure as governance structures and develop the dimensions of time horizons and risk tolerance that underlie different groups of debt and equity holders.

Dimensions Of Time Horizon And Risk Tolerance

Capital structure manifests the financing choices of a firm but represents latent governance structures (Williamson, 1988). Extant research has taken for granted the governance structures embedded in capital structure by separating them into two research streams – debt and equity heterogeneity. This reveals an implicit bias towards treating capital structure as merely financing choices, even amongst researchers invoking transaction cost arguments. In this section I argue that we may gain significant theoretical insights by combining these two distinct research streams. Incorporation of both debt and equity heterogeneity as governance structures allows this dissertation to be a first step in developing commonalities between them and studying their interactions.

The separation of the debt and equity heterogeneity literatures underplays the transaction cost conception of capital structure as governance structures. Transaction cost economics was a significant departure from neoclassical economics because it treated the firm as a governance structure (Williamson, 1985), not a production function. The governance of transactions becomes the focal objective, not the organizing of labor, capital and materials as a production function. Once viewed from this perspective, capital itself is a governance structure (Williamson, 1988) and not merely an input in the production function.

Williamson argued that debt mirrors the rule (Kydland & Prescott, 1977) based governance of markets, while equity mirrors the discretion based governance of hierarchies (see Table 5 above). I argue that these distinctions extend to heterogeneity within debt and equity holder groups. Furthermore, I propose that the fundamental dimensions underlying these groups are time horizon and risk tolerance. These two dimensions allow me to treat different debt and equity holders on an equal footing and hypothesize their associations with strategic actions. Thus, I aim to gain fuller theoretical insights from a transaction cost approach through a simultaneous investigation of governance structures, irrespective of their manifest forms.

Strategic actions such as diversification and innovation involve significant investments, firm resources and management attention. Furthermore, these initiatives influence future firm performance. As such it is not surprising that

capital structure research has provided us insights into the associations between capital structure heterogeneity and diversification (Ngah-Kiing Lim et al., 2009; Ramaswamy et al., 2002; Tihanyi et al., 2003) as well as innovation (David et al., 2008; Hoskisson et al., 2002; Lee & O'Neill, 2003). However, this literature treats capital as a production input by assuming either debt holder or equity holder groups homogenous. Surprisingly this assumption is implicit even in research invoking transaction cost arguments. In such cases, the focus is on attributes of transactions (uncertainty and asset specificity) to the neglect of governance structures embedded in firm capital structure. Since transaction costs arise due to both transaction attributes and governance structure attributes, focus on just one of these understates transaction costs reasoning (Williamson, 1985).

Opportunism and Governance Structures

The fundamental theoretical incompleteness created by the implicit assumption discussed above is evident in the root metaphor at the beginning of this work "...equity is a pillow, debt a sword..." Recognition of heterogeneity within debt and equity holder groups was the first step in overcoming this incompleteness; the insights generated by extant research reflect these positive developments. As a next step, I elaborate on the governance structures latent in these diverse debt holder and equity holder groups and posit that the underlying dimensions of time horizon and risk tolerance are common to both the "Yin and Yang" of firm capital structure. These governance structures map onto particular forms of opportunism that are often conflated in the literature. This extends transaction cost reasoning and contributes to overcoming one of its key

weaknesses – especially in the context of capital structure investigations – namely, that it has “given disproportionate attention to the abstract description of transactions as compared with the abstract description of governance” (Williamson, 1991: 270).

Within the framework of transaction cost economics, “the object is not merely to resolve conflict in progress but also to recognize potential conflict in advance and devise governance structures that forestall or attenuate it” (Williamson, 1985: 29). These conflicts are an inevitable outcome of behavioral factors like bounded rationality and opportunism leading to incomplete contracting and contractual hazards. These problems are exacerbated when they merge with characteristics of transactions such as asset specificity. But the capital structure literature has primarily focused on transaction attributes such as asset specificity. Thus, the critical importance of the governance structures embedded in firm capital structure remains underappreciated. We still do not have a comprehensive view of exactly how attributes of governance structures differ amongst dissimilar capital structure groups and their interactions. Further, what are the common underlying dimensions across these diverse governance structures and how are they related to mitigating opportunism (Williamson, 1993)?

Opportunism is “self-seeking with guile” (Williamson, 1985: 47) or simply, the opposite of trust (Barney & Hansen, 1994). The behavioral assumption of opportunism has received trenchant criticism (Ghoshal & Moran,

1996) and has been labeled “neo-Hobbesian” (Granovetter, 1985) for taking a needlessly dark view of human nature. Unfortunately reality doesn’t correspond to the utopia envisioned by such critics. Reality suggests that “but for opportunism, most forms of complex contracting and hierarchy vanish” (Williamson, 1993: 97). If opportunism were wished away, market governance would predominate since the key factor for market failure disappears. It therefore becomes important to understand how different forms of opportunism are related to diverse governance structures.

Opportunism comes in many varieties (Alchian & Woodward, 1988; Williamson, 1993). Unfortunately, much of transaction cost theorizing and empirical testing ignores these differences (Alchian & Woodward, 1988; Tsang, 2006). Perhaps this assumption of *opportunism homogeneity* is also an artifact of the relative neglect of governance structures in the capital structure literature invoking transaction cost arguments. These distinctions are important although underdeveloped. This in spite that fact that “differential contractual hazards that are associated with alternative forms of governance” (Williamson, 1993: 104).

Some types of opportunism are adverse selection, moral hazard, holdup and appropriability hazard. The first of these, adverse selection (Akerlof, 1970) is an ex ante form of opportunism, while the latter three are ex post and more germane to this study. Moral hazard (Hölmstrom, 1979) refers to an incomplete

contracting problem that arises from information asymmetries between principals and agents. Monitoring is the preferred containment device for moral hazard.

Holdup (Klein, 1996; Klein, Crawford, & Alchian, 1978) refers to the threat of appropriable specialized quasi rents arising from asset specificity. Holdup hazards are most often dealt with by shifting transactions within a hierarchy and remain one of the most common justifications for the existence of hierarchical governance structures. In fact, asset specificity (i.e., cause of holdup hazard) is the most common construct incorporated in transaction cost investigations (David & Han, 2004). This focus on asset specificity is reminiscent of arguments made earlier about the relative focus on transaction attributes to the detriment of explicating governance structures.

Appropriability hazards (Oxley, 1997) are provoked by weak property rights, usually in the context of technology and knowledge transfer. Appropriability remains a key driver of innovation centric transactions being subsumed in hierarchical governance structures. Fundamentally, I argue that holdup and appropriability hazard plague market governance; while, moral hazard hampers hierarchical governance (see Table 6 below). This distinction remains underappreciated in the capital structure literature. However, it is germane to this research since governance structures differentially deal with opportunism hazards.

The fundamental attributes of all governance structures are ownership autonomy, incentive intensity, administrative controls and adaptation (Ebers & Oerlemans, 2014; Williamson, 1985; Williamson, 1991). Nonetheless, these four attributes can be further unpacked into other features of governance structures that constrain or enable strategic actions (see Table 6). These additional features of governance structures are especially relevant in the context of capital structures because they indicate the economic institution (i.e., markets or hierarchies) that these disparate groups of debt and equity holders resemble. I argue that transactional debt and transient equity (i.e., impatient capital) are akin to market governance, while relational debt and dedicated equity (i.e., patient capital) are akin to hierarchical governance. Extant literature, by bifurcating debt and equity heterogeneity research has overlooked the governance similarities across debt and equity holder groups.

In addition, I argue that the dimensions of time horizon and risk tolerance are fundamental to debt and equity holder groups and determine their sorting into governance structures akin to markets or hierarchies. What lies beneath these disparate groups are their differences in preferences that can be bifurcated along time and risk. These dimensions are either restrained or enabled by the attributes of governance structures.

For example, *relational debt* is long-term in nature and may, in some cases, even involve the presence of bankers on board (Stearns & Mizruchi, 1993).

These relationships not only affect the type of financing but also the nature of governance. Firms with embedded social ties to bankers often get favorable loan conditions (Uzzi, 1999) and avoid late-payment penalties (Uzzi & Gillespie, 2002). Such discretionary regimes (Boot, Greenbaum, & Thakor, 1993) are supported by exchange of proprietary information (David et al., 2008) over long periods of time (Boot, 2000), thus potentially supporting riskier strategic actions. Therefore, relational debt, *ceteris paribus*, has features of hierarchical governance.

Long-term institutional investors, i.e. *dedicated equity*, help counter an excessive focus on short-term earnings at the expense of longer term strategic actions (Bushee, 1998). Such dedicated investors (attributed by Porter 1992 to countries like Germany and Japan) are more invested in monitoring management through devices like outside board members (Schnatterly & Johnson, 2014). Thus, due to their propensity to provide hierarchical governance, dedicated equity holders are more associated with long-term strategic actions, which may also entail risk. This assertion is supported by the literatures categorizing equity holders by type (Hoskisson et al., 2002) as well as by actual behavior (Bushee, 2001).

Transactional debt is fundamentally arms length and covenant driven. The dispersed nature of bonds and lack of proprietary information about the firm make them susceptible to the exchange hazards of uncertainty and asset specificity in the context of both innovation (David et al., 2008; Wang & Thornhill, 2010) and

diversification (O'Brien et al., 2014). In fact, most of the capital structure literature, by assuming debt homogeneity, has focused on such market governance provided by transactional debt. This situation underscores the theoretical incompleteness in the literature addressing debt heterogeneity. This assumption of homogeneity drives researchers to focus on the specific elements of transactions (usually uncertainty and asset specificity) and neglect governance structures rooted in capital structure.

Short-term equity holders have long been criticized as the enablers of managerial myopia (Porter, 1992) by focusing excessively on short-term earnings (Bushee, 2001). Such *transient equity* neglect their monitoring function to such an extent that their presence in the capital structure has been associated with financial misreporting by firms (Burns, Kedia, & Lipson, 2010). Such findings contradict the assumption of equity homogeneity in the debt heterogeneity literature that ascribes hierarchical governance to all equity. I therefore argue that, similar to transactional debt, transient equity is generally akin to market governance (cf. O'Brien *et al.* 2014).

Thus, extending the transaction cost logic to within debt and equity holder groups, I posit that the original claim (Williamson, 1988) of debt offering market and equity offering hierarchical governance is an oversimplification. On investigating the empirical and theoretical developments in the last couple of decades, it is clear that reality is more nuanced. Relational debt exhibits elements

of hierarchical governance such as close monitoring (Mizruchi & Stearns, 1994b; Stearns & Mizruchi, 1993), forbearance in the event of debt covenant violation (Chava & Roberts, 2008), exchange of non-public proprietary information between the lender and borrower (Demiroglu & James, 2010; Uzzi & Lancaster, 2003) etc.

Concurrently, transient equity generally exhibits features of market governance (see Table 6 above) that have been overlooked in the literature. The focus of transient equity investors on short-term firm earnings (Bushee, 2001) is largely driven by their own incentives being tied to quarterly fund performance (Hoskisson et al., 2002). There is high level of competition between these fast moving equity investors to gain funds under management by demonstrating short-term portfolio gains (Graves & Waddock, 1990; Porter, 1992). When viewed as governance structures, such transient equity exhibits features of stark market governance in which firms are penalized (through sell-offs, portfolio turnover being a key feature of transient equity) for underperforming.

Applying a comprehensive transaction cost perspective – i.e. incorporating both governance structure arguments and transaction/exchange hazards – I argue that the underlying dimensions of time horizon and risk tolerance transcend the conventional bifurcation of debt and equity holders and necessitate their simultaneous treatment. The full categorization is depicted in Table 7. Quadrant 1 in Table 7 represents *impatient capital* with low risk tolerance and short-time

horizons, such impatient capital constituted transactional debt and transient equity. Quadrant 3 in Table 7 represents *patient capital* with high-risk tolerance and long-time horizons; such patient capital is constituted by relational debt and dedicated equity.

Quadrant 2 contains debt and equity holders who combine high-risk tolerance with short-time horizons. Such debt or equity holders can best be characterized as *activist*, they often seek corporate control to bring about management and/or strategic change (Harner, 2011). Quadrant 4 in Table 7 represents owner-managed or family firms that tend to have long-time horizons and general focus on preserving socioeconomic wealth (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007). The scope of this dissertation precludes discussion of these latter two categories of capital structure constituents. The next section develops specific hypotheses on patient and impatient capital.

Capital Structure Heterogeneity And Diversification

The diversification strategy of a firm invariably shuffles its resource bundle, either making it more (related diversification) or less (unrelated diversification) firm specific. Firms with a well developed stock of intangible resources often try to leverage them over multiple related businesses (Chatterjee & Wernerfelt, 1991). However, the very intangibility, firm specificity and internalization of these resources reduces firms debt (transactional) capacity (Vicente-Lorente, 2001). The reduced debt capacity is not surprising since transaction cost arguments suggest that increased asset specificity would negatively influence the ability of debt holders to redeploy assets in the case of financial distress. Thus, from the perspective of debt-holders, related diversification is a high-risk endeavor that increases asset specificity and reduces liquidation values. Unrelated diversification is the opposite.

Concomitantly, short-term equity investors have a greater focus on short-term firm performance. Prior research suggests that “pressure-resistant” investors are negatively associated with unrelated diversification (Ramaswamy et al., 2002). However, as mentioned earlier, such research conflates multiple institutional owners (pension, mutual and investment funds) into one category in addition to ignoring their actual investment styles (Bushee, 2001). I posit that these different owners will have a differential association with firm diversification strategy due to their varied risk and time horizons.

From a firm strategy perspective, related diversification allows firms to leverage existing assets to generate competitive advantage which often confers immediate stock price gains (Tihanyi et al., 2003) that are attractive to investors seeking high returns over short time horizons. However, fuller application of the transaction cost lens suggests that the governance structures provided by equity holder groups are also germane. The predominance of market governance provided by transient equity holders should ideally put a pause to strategies dependent on unrelated diversification due to their generally higher risk and payoff time horizons (Palich et al., 2000) from the firm perspective.

Unfortunately, research also indicates that short-term institutional investors, characterized by diversified portfolios and high turnover, are likely to neglect their monitoring duties (Dharwadkar, Goranova, Brandes, & Khan, 2008; Schnatterly & Johnson, 2014). I posit that transient equity holders due to these factors are likely to allow unrelated diversification to go on unchecked. Thus, the impact of impatient capital (transactional debt and transient equity) on diversification is the same.

Hypothesis 1a: Transactional debt is positively associated with unrelated diversification.

Hypothesis 1b: Transient equity is positively associated with unrelated diversification.

An unintended consequence of the market-like, rules driven regime of impatient capital is lack of investments in capabilities and long-term competitive advantage (Porter, 1992) that accrue from related diversification. This suggests:

Hypothesis 1c: Transient equity is negatively associated with related diversification.

The long-term nature of relational debt necessitates private knowledge accumulation about the borrower by the lender, in effect “specialization leads to more efficient credit analysis and the development of better monitoring techniques because of cross-sectional and intertemporal information reusability” (Greenbaum & Thakor, 2007: 531). The long-term performance of both the borrower and lender are closely tied together, a connection that is further enhanced by cross selling of other financial products by the relational lender.

Fundamentally, relational lending confers four distinct benefits (Boot, 2000): One, it manifests as hierarchical governance by adopting a discretionary regime. Two, due to the long-term nature of the relationship, relational debt allows lenders to permit strategies that pay off over the long term. Three, the loan covenants themselves can be extensive as they are informed by intimate knowledge of firm strategy and capabilities. Four, relationship lending may involve collateral that requires close monitoring (2000:13). The first two of these push the firm to obtain higher levels of diversification. However, the latter two put a break on unsustainable unrelated diversification.

Dedicated equity is in an especially precarious position, being residual claimants with a low diversified portfolio. I posit that their attention to diversification is triggered when it is excessively high and runs the risk of impairing firm performance (Palich et al., 2000) and increasing their portfolio risk. This is a concern since leveraging of firm resources to garner high performance is enabled by related diversification and hampered by unrelated diversification (Palich et al., 2000). Thus, patient capital is likely to support related diversification even though it develops firm specific assets and capabilities; and dedicated equity (being residual claimants) is likely to discourage unrelated diversification.

Hypothesis 2a: Relational debt has a positive association with related diversification.

Hypothesis 2b: Dedicated equity has a positive association with related diversification.

Hypothesis 2c: Dedicated equity has a negative association with unrelated diversification.

Capital Structure Heterogeneity And Innovation

Innovation is one of the lynchpins of competitive advantage as it generates firm specific assets, learning and capabilities (Zott, 2003). But, according to extant literature these very attributes of innovation expose firms to information asymmetries and exchange hazards (Balakrishnan & Fox, 1993; David et al., 2008; O'Brien, 2003; Vicente-Lorente, 2001). Although valid, this perspective only gives us partial insight into the ability of transaction cost arguments to explain the linkages between capital structure heterogeneity and innovation. Another element of the transaction cost argument are the governance structures embedded in capital structure.

The classical agency function of debt is represented by transactional debt which curtails discretionary managerial spending by tying up free cash flow (Jensen, 1986; Jensen & Meckling, 1976). The restrictive covenants and interest payments of this market regime siphon away capital from internal investments in R & D. This directly implicates transactional debt as a restraint on innovation through firm R & D spending (Long & Ravenscraft, 1993). This phenomena is distinct from the positive impact of relational debt on R & D spending due to reduced exchange hazards (David et al., 2008).

Combining governance structure arguments with transaction attributes gives us a richer picture of the association between capital structure heterogeneity

and strategic actions like innovation. Innovation has long been considered to entail uncertain and long-term payoffs (Hill & Snell, 1988). By focusing primarily on transaction attributes, i.e. uncertainty and asset specificity, extant transaction cost explanations have underplayed the latter, i.e. governance structure attributes. Market-like governance structures (i.e., transactional debt and transient equity) are impatient and therefore mismatched for the long-term time horizons that innovation requires. Concurrently, hierarchical governance structures enable long-term capability development through investments in intangibles such as R & D.

However, impatient capital is driven by short-term market performance of firms. On occasion, innovation may spur such short-term performance. Such a situation emerges in the case of acquisitions. Mergers and acquisitions are high risk endeavors (King, Dalton, Daily, & Covin, 2004) with highly variable performance implications. However, in the context of externally acquired innovations, they confer unique advantages (Ahuja & Katila, 2001) such as enhanced absorptive capacity to internalize and exploit external knowledge (Cohen & Levinthal, 1990; Todorova & Durisin, 2007), faster market entry (Berger, Bonime, Goldberg, & White, 2004), new opportunities for recombinations (Henderson & Clark, 1990; Kogut & Zander, 1992) etc.. Such advantages via externally acquired innovation are likely to speed firm performance by helping them overcome time compression diseconomies (Dierickx & Cool, 1989) – making it attractive to transient equity holders.

Another significant factor that makes such external innovation attractive to impatient capital is the reduced information asymmetry. Research suggests that more forthcoming disclosures by acquiring companies are associated with higher firm performance (Shalev, 2009). When viewed as market-like governance structures, transient equity holders are at a disadvantage compared to hierarchical governance structures such as dedicated equity and relational debt. There is a lack of proprietary information exchange between firms and their transient equity holders and transactional debt holders. External innovation, due to disclosure requirements, offers such market-like governance structures an opportunity to mitigate the risk that innovation carries. I posit that due to these factors, impatient capital has a very different view of externally acquired innovation as compared to internal innovation via R & D spending. Thus:

Hypothesis 4a: Transactional debt is positively associated with external innovation.

Hypothesis 4b: Transient equity is positively associated with external innovation.

Research also suggests that transient equity holders are intrinsically against innovation due to the required immediate expensing of R & D (i.e. internal innovation) costs (Bushee, 1998) that dampens short-term firm performance. Poor performing portfolios negatively impact the incentives of these fund managers who are judged primarily on short-term performance. This leads them to discount the long term gains that accrue from investing in intangibles like research and development (Hoskisson et al., 2002). Thus, I hypothesize:

Hypothesis 4c: Transient equity is negatively associated with internal innovation.

Relational debt is fundamentally a hierarchical governance structure. Relational lenders combine close monitoring, occasionally through board representation (Stearns & Mizruchi, 1993), with a discretionary approach to covenant enforcement (Uzzi & Gillespie, 2002). These long-term lenders are often trusted with proprietary firm-level information that mitigates information asymmetries between lender and borrower. Such factors suggest a positive association between relational debt and firm innovation through R & D investments.

Hypothesis 5a: Relational debt has a positive association with internal innovation.

Dedicated equity holders are interested in the long-term performance of the firm and are willing provide latitude to managers by “forgiving their sins” in the pursuit of innovation based strategies that are critical for competitive advantage (Porter, 1992). An example of such patient capital are the domestic owners of Japanese firms who take a long-term, communitarian view (O'Brien & David, 2014) and support innovation (Lee & O'Neill, 2003).

Hypothesis 5b: Dedicated equity has a positive association with innovation.

Such dedicated equity holders are also likely to be concerned by the uncertainty of merger and acquisition success, since research suggests “anticipated acquisition synergies are not realized by acquiring firms” (King *et al.*, 2004: 194). Externally acquired innovation is further complicated by the importance of factors like technological overlap (Sears & Hoetker, 2013) and relatedness of knowledge base, which has a curvilinear impact on subsequent innovation output (Ahuja & Katila, 2001). This suggests that external innovation that at face value appears impressive to impatient capital may not be easy to integrate post-acquisition (Zollo & Singh, 2004). Therefore, I posit that dedicated equity holders will have a more circumspect attitude to externally acquired innovations.

Hypothesis 5c: Dedicated equity has a negative association with external innovation.

The Mediating Role Of Executive Compensation: Mitigating Risk Aversion Or Aggravating Loss Aversion?

“Parties engaged in a trade that is supported by nontrivial investments in transaction-specific assets are effectively operating in a bilateral trading relation with one another. Harmonizing the contractual interface that joins the parties, thereby to effect adaptability and promote continuity, becomes the source of real economic value.”

- Williamson (1985: 30)

Agency theory has been the predominant means of investigating *ex ante* incentive alignment between principals and agents. This is not surprising since fundamentally, all contracting contains elements of agency (Ross, 1973). This tradition has a long history and intellectual roots in mathematical “mechanism design” research (Myerson, 1983) and positivist agency (Jensen, 1983), the two key subsets of agency theory (Eisenhardt, 1989).

Transaction cost economics acknowledges the importance of incentive mechanisms but differs from these *ex ante* incentive design traditions due to its focus on the governance of *ex post* contractual relations (Williamson, 1985). Transaction cost economics is therefore complementary to positivist agency theory with its focus on “governance mechanisms that limit the agent’s self-serving behavior” (Eisenhardt, 1989: 59), i.e. opportunism. In the context of this

current study, I therefore propose that the associations between the governance structures within debt and equity and strategic actions are mediated by executive compensation. Theory suggests that holdup due to asset specificity plagues markets and incentives may relieve these problems.

Also, positive agency theory (Eisenhardt, 1989) assumes that managers are risk averse while owners are risk neutral or seeking. This fundamental asymmetry can be overcome using optimal contracting that better aligns managers with firm owners. Compensation becomes a key alignment device within the agency framework. For example, stock options have been found to encourage managerial risk taking through increased investment outlays (Sanders & Hambrick, 2007) and corporate risk taking (Wright, Kroll, Krug, & Pettus, 2006). This suggests that the combination of reduced monitoring by impatient capital and increased incentives will fuel unrelated diversification and external acquisitions. Therefore, based on agency arguments that executive compensation mitigates risk aversion, I hypothesize:

Hypothesis 7a: CEO stock options will positively (and partially) mediate the association between transactional debt and unrelated diversification.

Hypothesis 7b: CEO stock options will positively (and partially) mediate the association between transient equity and unrelated diversification.

Hypothesis 7c: CEO stock options will positively (and partially) mediate the association between transactional debt and external innovation.

Hypothesis 7d: CEO stock options will positively (and partially) mediate the association between transient equity and external innovation.

However, in direct contrast to agency theory, behavioral-agency (Wiseman & Gomez-Mejia, 1998) proposes that agents are primarily loss averse and not risk averse. Thus, “stock option schemes may increase risk bearing of the executive (and, thus, increase risk aversion) rather than decrease risk aversion” (1998: 141). This suggests opposing hypotheses to the ones above since CEO stock options may have unintended consequences by aggravation of loss aversion.

Hypothesis 8a: CEO stock options will negatively (and partially) mediate the association between transactional debt and unrelated diversification.

Hypothesis 8b: CEO stock options will negatively (and partially) mediate the association between transient equity and unrelated diversification.

Hypothesis 8c: CEO stock options will negatively (and partially) mediate the association between transactional debt and external innovation.

Hypothesis 8d: CEO stock options will negatively (and partially) mediate the association between transient equity and external innovation.

The Mediating Role Of The Board Of Directors: Mitigating Moral Hazard

“It has long been recognized that a problem of moral hazard may arise when individuals engage in risk sharing under conditions such that their privately taken actions affect the probability distribution of the outcome.”

- Holmstrom (1979: 74)

Hierarchies are an efficient way to deal with holdup problems, triggered by asset specificity, that are endemic in markets. However, the discretionary regime within hierarchies engenders moral hazards due to information asymmetries. This trade-off is a choice between Scylla and Charybdis. Viewed from a transaction cost lens (Williamson, 1985), providers of long term capital are at a unique disadvantage. Unlike consumers, labor and suppliers, the firm’s equity holders invest for the life of the firms and are residual claimants. These equity holders are the only voluntary stakeholders in the firm whose contracts are not renewed/ renegotiated regularly. Even debt holders occasionally have opportunities to renegotiate terms.

Another issue further exacerbating this contractual impasse for equity holders is the fact that “their investments are not associated with particular assets...the diffuse nature of their investments puts shareholders at an enormous disadvantage in crafting...bilateral safeguards” (Williamson, 1985: 305). It is to safeguard against this risk of opportunism that the fiduciary role of the board of

directors arose (Alchian & Woodward, 1988; Williamson, 1985). Although it has been argued that concentrated equity holders may offer a substitute to board governance (Desender et al., 2013). Research also suggests that relational governance and contractual/ fiduciary arrangements are complementary (Poppo & Zenger, 2002).

At this juncture, it is important to point out an important distinction. Unlike the focus on equity holder representation in much of the board of directors' literature, the transaction cost perspective (Williamson, 1985) explicitly notes the possibility that other constituencies of the firm may have impact on its management via the board of directors. Similar to long-term equity holders (i.e., dedicated equity), long term lenders “usually carefully align incentives and protect themselves with safeguards” (1985: 307) that may involve board representation (Stearns & Mizruchi, 1993).

I argue that these providers of patient capital (dedicated equity and relational debt), due to their unique position are especially exposed to a particular type of opportunism: moral hazard. Moral hazard is fundamentally driven by information asymmetries between two parties in a transaction. It “arises in agreements in which at least one party relies on the behavior of another and information about that behavior is costly” (Alchian & Woodward, 1988: 68). This is distinct from the holdup problem (due to asset specificity) that has been the

primary focus of most capital structure research invoking transaction cost arguments.

Such information asymmetries are endemic in the context of strategic actions that have long-term payoffs. Information asymmetries suggest that the alignment between hierarchical governance structures in the capital structure and strategic actions takes place partially through intermediaries who specialize in mitigating moral hazard. I argue that these intermediaries are the board of directors.

The role and contribution of outside members in the board of directors to corporate governance has been controversial and research has questioned their utility (Bhagat & Black, 2001). Five possibilities arise when we question the value and contribution of these independent directors: One, perhaps director independence is a mirage that is propped up by titles but belied by social ties (Cohen, Frazzini, & Malloy, 2012; Hwang & Kim, 2009). Second, resource dependence suggests that directors are valuable to the extent they can channel resources to a firm (Hillman, Cannella, & Paetzold, 2000), thus independence and monitoring may be overshadowed by their resource provision role. Third, perhaps the conduit for monitoring by outside directors is committee membership (especially audit and compensation). Thus, operationalization of outside directors that ignores committee membership is insufficient. Fourth, contingencies like past performance and CEO power may influence the monitoring attention of the board

(Tuggle, Sirmon, Reutzel, & Bierman, 2010). Fifth, independent directors need to be better incentivized to align their interests with those of the equity holders.

It is the last of these, director incentives, which I focus on since research indicates that in the context of strategic actions entailing risk, director compensation is a key factor. In the case of acquisitions, the relationship between outside director compensation and acquisition rate is curvilinear (inverted-U) (Deutsch, Keil, & Laamanen, 2007) suggesting that the ability of incentives to reduce risk aversion tapers off. Deutsch *et al.* (2007) label this effect “dual-agency” since it implies that compensation of both executives and board members matters.

The fundamental agency problem between managers and providers of long term capital is rooted in their differential risk preferences (Eisenhardt, 1989; Jensen & Meckling, 1976). Managers, due to employment risk, tend to be risk-averse while equity-holders might be risk-neutral or risk-seeking. The monitoring function of the board is meant to mitigate this agency problem. In the context of strategic actions such as innovation or diversification, focus has traditionally been on “outsider” or “independence” leading to equivocal findings (Deutsch, 2005). Stock options ostensibly provide directors with the pecuniary incentives to carry out this monitoring and low absolute levels of director incentives have been found to be negatively associated with R & D (Deutsch, 2005). This suggests that

director incentives influence their monitoring performance in the context of strategic actions. Thus, I hypothesize:

Hypothesis 9a: Director incentives positively mediate the association between relational debt and related diversification.

Hypothesis 9b: Director incentives positively mediate the association between dedicated equity and related diversification.

Hypothesis 9c: Director incentives positively mediate the association between relational debt and innovation.

Hypothesis 9d: Director incentives positively mediate the association between dedicated equity and innovation.

Figure 1 depicts the full model of hypothesized relationships in the context of diversification.

Figure 2 depicts the full model of hypothesized relationships in the context of innovation.

CHAPTER 4

METHODS

Sample

My base sample includes all firms with data available on equity heterogeneity (Bushee classification), and company financials (Compustat Annual). Considering that my study incorporates multiple dependent variables – using a single sample would create selection bias. In order to sidestep this I created three separate samples. One dataset each to investigate firm diversification, M & A (Mergers and Acquisitions) and R & D (Research and Development). The first dataset combines the base sample described above with firm diversification data from Compustat Business Segments and includes of 5,025 firm-year observations. The second dataset is a combination of the base sample and M & A data from SDC Platinum and comprises of 2,790 firm-year observations. The third and final dataset combines the base sample with R & D data from Compustat and has 12,161 firm-year observations.

All three datasets are of public U.S. firms from 1996 – 2010 in the form of unbalanced panels. To each of these three datasets I added CEO and Director options data from ExecuComp as well as debt data from Osiris. Lack of pre-1996 data in ExecuComp and limited bank loan data available from Osiris (data item 21070) were the main constraints on the sample. The unbalanced nature of the panel combined with the use of Generalized Method of Moments (GMM,

described in Analysis section below) regression reduced the usable sample to firms with multi-year data available. Below I describe the construction of this sample.

The use of multiple datasets in a study of this nature means that the final usable samples are obtained after significant data loss. The initial sample of equityholder classification and Compustat annual data (Bushee data combined with Thompson Reuters 13f and Compustat annual data) comprised 35,705 firm-year observations. This initial dataset encompassed the S & P 1500 universe of firm that is the focus of the publicly available Bushee classification. (Bushee, 2013). In order to prevent data loss at the merging stage, full merging option was carried out in R (data replication code is provided in Appendix).

Reduction in usable samples in studies incorporating multiple datasets is common, especially in studies incorporating executive option data. For example, another study (Lim & McCann, 2013), published in the *Strategic Management Journal*, incorporating director options had a final usable sample of 2,004 firms. The inclusion of debt heterogeneity in a sample of U.S. firms is a significant challenge since such data “is not readily available for U.S. firms” (O’Brien *et.al.* 2014: 1021). To overcome this, I utilized Osiris bank loan data. Osiris is a credible data source, that is increasingly being used in studies published in top journals like the *Academy of Management Journal* (Rogan, 2014; Surroca, Tribó,

& Zahra, 2013). Since this is the first study of its kind – incorporating both equity and debt heterogeneity – the datasets required to conduct it are also unique.

The importance of the equity classification (Bushee, 1998; Bushee, 2001; Connelly et al., 2010b) used in this study cannot be overstated. The literature has for long suggested (Graves, 1988; O'Brien et al., 2014; Porter, 1992) that capital providers are differentially associated with strategic actions due to their varying time horizons. However, scholars have assumed these investment time horizons to be linked with institution type. For example, pension fund providers have long term horizons, while mutual funds exhibit short-term horizons (Hoskisson et al., 2002). However, classifications based on actual equityholder behavior – rather than assumed behavior – are likely to provide richer opportunities to disentangle the complex relationships between risk bearers (capital structure) and risk takers (management).

Therefore, I utilize the Bushee classification that divides equityholders as transient, dedicated or quasi-indexer based on their past investment patterns in the areas of portfolio turnover and portfolio diversification (Bushee, 1998). Specifically, Bushee used factor and cluster analysis of nine variables that describe institutional investor behavior: level of portfolio concentration (average percentage of an institutions ownership position in portfolio firms), average percentage holding, percentage of institutions equity that is invested in firms where institution has greater than 5 percent ownership, a Herfindahl measure of

concentration (squared percentage ownership in each portfolio firm), portfolio turnover, stability of holdings (percentage of holdings held for over two years). In addition to these six variables, Bushee includes three measures of institutions sensitivity to firm earnings (1998: 324).

The superiority of this classification is evident from the fact that Bushee found significant heterogeneity by type across these equityholder categories, i.e. simple type-based classifications do not capture the real time horizon (and risk preferences, as argued in chapter 3) heterogeneity observed amongst equityholders (1998: 310). This data is at the institution (ID mgrno, i.e. Manager Number) level with multiple institutions holding equity positions (obtained from Thompson-Reuters 13f data) in any given sample firm. Following standard practice in the literature (Connelly et al., 2010b), I create a separate dataset which incorporated the last known holdings for each manager and firm combination for each year. This dataset was used to calculate the final aggregate shareholdings of Transient and Dedicated equityholders for each sample firm-year. This firm-year data combined with the Compustat annual fiscal year forms the base sample from which the three datasets in this study were created.

The descriptive statistics for the three samples are provided in Tables 8a (Diversification), 8b (M & A) and 8c (R & D).

Variables

Independent variables. Equity heterogeneity studies have usually been carried out using type based classification schemes for investors that overestimates their stability and ignores actual investor behavior (Bushee, 1998; Bushee, 2001). Use of the Bushee classification scheme allows me to bypass this common weakness of extant studies, i.e. assumption of stable time horizons amongst institutional investors. This classification scheme extends between 1981 and 2010 for institutional investors in (largely) the S & P 1500 companies. The classification trifurcates investors into transient, dedicated and quasi-investors based on investment horizons and portfolio turnover. As described above, I merged Bushee's publicly available classification scheme with Thompson-Reuters 13f data to identify actual ownership stakes of these different types of equity holders in the sample firms.

Following established methodology (Connelly et al., 2010b), I calculated aggregate equityholdings (as percentage of shares outstanding) for each type of investor at the firm level. For the purposes of this study, I incorporate only the transient and dedicated equity holders since by definition quasi-indexers are passive investors. This gives me a dataset that captures actual equity holder behavior that mirrors market or hierarchical governance rather than classification by type of institution. The variable for both transient and dedicated equity holders is their percentage shareholding of total firm outstanding shares.

Debt heterogeneity data comprises of transactional and relational debt obtained through Compustat annual dataset (Wang & Thornhill, 2010) and Osiris. Relational debt is the bank loan (Data item 21070) information available through the Osiris dataset. Transactional debt is primarily corporate bonds and includes notes, debentures and subordinates. Fundamentally, transactional debt is the debt remaining that is not classified as relational (Boot, 2000; Wang & Thornhill, 2010). This leads to high correlation between relational and transactional debt, but that is not a concern for this study since none of the hypothesized models incorporate both together. The debtholder variables were calculated using standard practice in the literature (Vicente-Lorente, 2001; Wang & Thornhill, 2010) and are their ratios to the sum of book value of equity (Compustat variables book value per share BKLVPS multiplied by shares outstanding CSHO) and long-term debt (Compustat variable DLTT).

Dependent variables. The strategic action of innovation is bifurcated into internal and external to reflect their differing risks and time horizons. *Internal innovation* is measured using firm R & D intensity (Hoskisson et al., 2002). Following prior capital structure research (Balakrishnan & Fox, 1993; Wang & Thornhill, 2010), I calculated R & D intensity as the ratio of R & D expenditures to net sales.

External innovation refers to focal firms acquiring innovations developed outside through mergers and acquisitions. I follow the same methodology as

developed in prior research on external innovation (Puranam, Singh, & Zollo, 2006; Sears & Hoetker, 2013) which identifies acquisitions using the SDC Platinum M & A database. Following established practice, first I calculated the aggregate value of completed M & A by each firm in the sample. The ratio of this aggregate completed M & A value to assets is the dependent variable.

The theory developed in this dissertation predicts that heterogeneous groups of equity and debt-holders have different time horizons and risk tolerance. Prior research has either assumed homogeneity of innovation strategies (i.e., focused solely on internal innovation – R & D expenses) or focused on either debt or equity heterogeneity. In this dissertation, I extend the literature by combining both internal and external innovation and investigating their association with capital structure heterogeneity that encompasses both equity and debt-holders.

For diversification, I calculated the well-established entropy measure (Davis & Duhaime, 1989; Jacquemin & Berry, 1979; Palepu, 1985) using the Compustat Business Segments database for the sample firms. This measure takes into account two elements: first, the number of SIC segments in which a firm operates and second, the relative importance of each SIC segments to total firm sales. In addition it also takes into account the relatedness of segments. Following established methodology (Palepu, 1985: 252 and Davis & Duhaime, 1989: 11) I first calculated firm sales in each industry group (SIC two digit level) and industry segment (SIC four digit level). Unrelated diversification is the weighted

average of all firm industry group shares that arises out of operating in several industry groups. If P^j is the share of j th group sales in total sales of the firm, then unrelated diversification is:

$$DU = \sum_{j=1}^M P^j \ln(1/P^j)$$

Related diversification is the weighted average of firm segment-to-group shares across segments within all firm groups. If P_i^j is defined as the share of the segment i of group j in the total sales of the group and DR_j is defined as the related diversification arising out of operating in several segments within an industry group j , then:

$$DR_j = \sum_{i \in j} P_i^j \ln(1/P_i^j)$$

Since a firm may operate in multiple industry groups, its total related diversification is:

$$DR = \sum_{j=1}^M DR_j P^j$$

The entropy measure provides me with separate indices of unrelated and related diversification to highlight their differing risk and time characteristics (Boyd et al., 2005). The sum of this related and unrelated index is the firm's total diversification. This measure factors in diversity of the firm's activities both by number and relative size of the segments. The separation of related and unrelated diversification into separate indices adds more nuance to this study and the use of the entropy measure is standard practice in the literature exploring the capital

structure and diversification relationship (Ngah-Kiing Lim et al., 2009; O'Brien et al., 2014).

Mediator variables. A contribution of this dissertation is the mediation mechanism that intervenes in the association between capital structure heterogeneity and strategic actions. Two separate sets of governance variables are posited as mediators – CEO stock options and the outside Director stock options.

Executive option data is available through ExecuComp (available from 1996 onwards). Following prior research (Devers, Wiseman, & Holmes, 2007; Larraza-Kintana, Wiseman, Gomez-Mejia, & Welbourne, 2007; Martin, Gomez-Mejia, & Wiseman, 2013) I utilize the measure of CEO stock options available in ExecuComp. The Black-Scholes option value of fiscal year awards are used for CEO options variable. This variable is available directly via ExecuComp.

Also following extant research (Lim & McCann, 2013), I utilize the outside director stock options data is also available from ExecuComp. This measure is the average value of director stock options awarded to outside (i.e. non-employee) directors and therefore the perfect proxy for Board incentives for monitoring.

Controls. The set of controls used in this study are standard in investigations of capital structure. I control for firm size using *Assets*. Since the

purpose of this study is to investigate the similarities and dissimilarities between various capital providers – across both debt and equity – alternative sources of capital, especially firm *cash or near cash* holdings were also controlled for. Unlike Transaction Cost Theory' focus on capital structure as governance structures, Agency theory argues that the key battles amongst capital providers is over control of the firm's free cash flow (Jensen, 1986). Therefore, varying levels of *free cash flow* (Operating cash flow – capital expenses) could be a rival explanation for the results, hence were controlled for. Finally, to account for growth options and market-based performance, firm *market-to-book* (using Compustat variables PRCC_F and CSHO, i.e. fiscal year closing stock price and shares outstanding) ratio was also included as a control.

Details on the various components of this dataset are in Table 9. The correlations for these variables in the three datasets are depicted in Tables 10a, 10b and 10c.

Following standard practice in the literature (Martin et. al. 2013), prior to analysis, all variables were winsorized at the 1% and 99% level to limit the influence of outliers and then standardized to have mean zero and standard deviation one.

Analysis

One of the biggest challenges facing organizational scholars is that statistical results generated by commonly used OLS or fixed/random panel regressions may be driven by endogeneity. Endogeneity – which refers to correlation between the independent variable(s) and error terms – arises from four sources: measurement error, simultaneous causality, autoregression and omitted variables (Bascle, 2008; Hamilton & Nickerson, 2003; Semadeni, Withers, & Certo, 2013). Some or all of these sources may add endogeneity to studies of firm strategy since:

“The field of strategic management is fundamentally predicated on the idea that management decisions are endogenous to their expected performance outcomes – if not, managerial decision making is not strategic, it is superfluous.”

- Hamilton & Nickerson

(2003: 51)

This study is not immune to the possibility of endogeneity, especially since the association between capital providers (both equity and debt) and firm strategic actions may suffer from simultaneous causality, i.e. the causal direction may be two-way. Therefore, conventional OLS, or panel fixed/random effects regressions are unsuitable for estimation of parameters in this study.

In order to account for endogeneity, the estimation method I utilize are two-step Blundell and Bond (Blundell & Bond, 1998) generalized methods of

moments (GMM) for dynamic panels with robust inference and firm fixed effects (through differencing of data). The R package plm (Croissant & Millo, 2008) was used for estimating the models. The last model (# 4) in each table is for CEO or Director stock options to test the mediation hypotheses. The different dependent variables are shown together in each model in order to test for the mediation hypotheses (Shaver, 2005). One limitation of using GMM methodology was that the use of lag structure of variables as instruments led to loss of usable data, this is visible from the observations used numbers for each regression model.

Nonetheless, the Blundell and Bond dynamic panel approach – which utilizes generalized method of moment's estimator – offers numerous advantages for this study: First, it accounts for unobserved firm-level heterogeneity since individual fixed effects are accounted for by differencing the data. Second, it accounts for the dynamic nature of panel data and the dependent variables whose values depend on their lagged values. Third, GMM allows me to account for endogeneity between capital providers and different strategic actions. Fourth, the robust GMM estimator with Windmeijer corrected standard errors (Blundell, Bond, & Windmeijer, 2000; Windmeijer, 2005) utilized in this study accounts for the potential presence of both heteroskedasticity and serial correlation. Fifth, the GMM estimator uses the fact that in panel data, the number of instruments increases with time t , this overcomes a key weakness of conventional 2SLS (Two-stage least squares) – namely, the difficulty of finding adequate number of suitable instruments for firm-level studies. Sixth, use of GMM to test all models

also allows me to bypass the common oversight found in tests of mediation in management journals – namely, that testing system of equations (independent variables regressed on the mediator as well as regressed on dependent variable with the mediator present to test for combined effect) using OLS (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002) will lead to biased estimates since error terms in these equations will be correlated. Use of instrumental variable regression is recommended to ensure correct estimation, especially in the presence of feedback effects (Shaver, 2005), a concern in this study. Finally, the system-GMM estimator (Blundell & Bond, 1998) produces smaller bias and more precise estimates compared to the difference-GMM (Arellano & Bond, 1991) approach, especially in unbalanced panels with many firms having only a few years of data available, a common feature of firm level panel data.

All these advantages have led to greater use of GMM in recent management research (Alessandri & Seth, 2014; Patel & Cooper, 2014). The instruments utilized in the Blundell and Bond GMM are lagged values of the independent variables (at t-1 and further lags), as well as lagged values of the dependent variables (at t-2 and further lags). These ensure that the results presented are free from endogeneity.

CHAPTER 5

RESULTS

Table 8a, 8b and 8c present the key descriptive statistics for each of the datasets in this study. Table 10a, 10b and 10c provide the correlations with associated significance levels. The results of the GMM regressions are presented in Tables 11 – 14: for the dependent variables of Unrelated Diversification, Related Diversification, Mergers & Acquisition and R & D Intensity respectively. The last model (#4) in each table tests the effect of the independent variables on the hypothesized mediators (either CEO or outside Director options). Combined analysis of model #3s (full range of predictors, mediators and controls on strategic actions) and #4s (full range of predictors and controls on mediator) is used to test for mediation.

Prior to a discussion of the results, it is important to note that two key statistics indicate the validity of these two-step system GMM regression models. First, the Hansen-Sargan test for overidentifying restrictions in which the null hypothesis is that the specified lagged variables are valid instruments. Non-significance of the Hansen-Sargan chi-square statistics for models confirms instrument validity.

The second key test for GMM models is the Arellano-Bond test of serial correlation (Arellano & Bond, 1991). A robust estimator was used in the computation of these measures. Although some first order autocorrelation tests

are significant. None of the second order autocorrelation tests were significant. Therefore the assumption of no serial correlation in these models is reasonable (Alessandri & Seth, 2014; Arellano & Bond, 1991).

Capital Structure And Diversification

I first consider the results of the GMM dynamic panel regressions for Unrelated and Related Diversification. Unrelated Diversification (see Table 11) has been negatively associated with firm performance (Palich et al., 2000) since the “marginal costs of diversification increase rapidly as diversification hits high levels” (2000: 159). This is perhaps the main driver of the two key shifts in diversification witnessed amongst U.S. firms, an increase during the 1960’s and a decrease in the 1980’s (Denis, Denis, & Sarin, 1997). The main arguments against such “conglomerate” diversification are increased complexity of managing diverse businesses, internal capital market inefficiencies and diseconomies related to other inefficiencies.

Model 3 of Table 11 suggests that Transient equityholders are negatively associated with Unrelated diversification. Therefore, Model 3 (full model with both compensation and capital structure variables) confirms – contrary to the hypothesized relationship – the negative association between Transient equity holders and Unrelated Diversification. Thus, hypothesis 1b is marginally (0.1 level) significant but with an unexpected sign; the association between Transient equity and Unrelated Diversification is significant but negative. This suggests that

Transient equity holders provide a sort of market discipline in spite (or perhaps because) of their reputation for being ‘fluid capital’ (Porter, 1992: 8). Being aware of the performance drawbacks of unrelated diversification, they do not support it via an error of omission (to monitor) as Transaction Cost reasoning would suggest.

The non-significance of the coefficient for Dedicated equity shows that, in this sample, after accounting for endogeneity, no association exists between Dedicated equityholders and unrelated diversification (H2c not supported). Similarly, none of the other hypotheses for unrelated diversification are supported.

The results for Related Diversification are presented in Table 12. Transient equity remains negatively associated with related diversification too (Model 3) thus supporting hypothesis 1c. Taken together with the results of unrelated diversification, it is clear that the negative influence of short-term equity holders is persistent over both types of diversification. Interestingly, relational debt is marginally significant and negative in Model 1 and 3, opposite the predicted direction in hypothesis 2a. Outside director options are significant and negatively associated with related diversification (hypothesis 9 a) in Model 2. These results are further discussed in the Discussion section. I now turn my attention to the results for innovation.

Capital Structure And Innovation

The GMM regression models for external innovation/ M & A are presented in Table 13. In Model 1, coefficients for both Transactional Debt and Transient Equity are significant and positive. These results are in line with hypotheses 4a and 4b, which postulates a positive relationship between impatient capital and external innovation in the form of Mergers and Acquisitions.

In Model 1, Dedicated equity also shows a significant and negative relationship with M & A, thus supporting hypothesis 5c. This relationship has reduced significance ($p < 0.1$) in model 3 (full model with controls, capital structure and compensation), while the positive influence of Transient Equityholders on M & A remains positive and highly significant ($p < 0.01$). The relationship between Transactional Debt and M & A loses significance in the full Model 3.

The influence of CEO options on M & A is negative and highly significant in Models 2 & 3, this is in line with research suggesting that acquirer firms suffer poorer performance (Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). Interestingly, Models 3 and 4 show the existence of a mediating relationship in which Transient Equity has a positive association with M & A (Model 1 & 3) and a negative association with CEO options (Model 4) – thereby supporting hypothesis 8d.

Results for Research and Development are presented in Table 14.

Contrary to prior findings in the literature (David et al., 2008; Wang & Thornhill, 2010), lagged values of relational debt are negatively associated with Research and Development (Models 1 & 3), i.e. hypothesis 5a is significant but in an unexpected direction. None of the other hypotheses are significant. This suggests, in accordance with results for unrelated diversification, that once endogeneity – an omission in the bulk of capital structure research – is accounted for, some prior results in the literature between capital structure and firm strategy may not hold.

A summary of all significant results is presented in Table 15.

CHAPTER 6

DISCUSSION AND LIMITATIONS

Prior research has devoted a substantial amount of effort to investigate the associations between firm capital structure and firm strategic actions. In this dissertation, I contribute to this vast literature by developing and testing theory that integrates both equity and debt heterogeneity. The results demonstrate that after controlling for endogeneity – an omission in most of the capital structure literature – the hypothesized dimensions of risk tolerance and time horizon definitively and parsimoniously describe the key factors at play in the association between capital providers and Mergers and Acquisitions. On the other hand, the mixed results for Diversification and Research and Development suggest that the role of capital providers is much more nuanced than extant theory explains.

Capital Structure And Diversification

In the case of firm diversification, a broad consensus has developed over the last decade or so (Palich et al., 2000) that there is an optimal level of related diversification that is rewarded through higher firm performance. Firms that go beyond this level into unrelated diversification suffer from diseconomies that hamper performance.

This firm performance driven support for related diversification stems largely from resource based reasoning (Markides & Williamson, 1996). According to this logic, “diversification will only support long-run superior returns when it allows a firm to exploit resources or assets that are unavailable to its rivals at a competitive cost” (1996: 341).

In order to delve deeper into the unexpected results for diversification I further analyze the association between firm diversification and performance. I conducted additional post-hoc analysis – presented in Table 16 – in which market-to-book and firm return-on-assets were used as dependent variables to test the performance implications of diversification. The results are in line with the consensus view in that unrelated diversification has clear and significant negative influence on firm performance. Model 3 of Table 16 shows significance for the quadratic term for total diversification (sum of related and unrelated diversification), suggesting an inverted-U shaped relationship between firm diversification and performance (market-to-book). This confirms that even after accounting for endogeneity, the results of the meta-analysis conducted by Palich and colleagues holds.

However, the coefficients for related diversification are neither significant nor substantial, suggesting that at least for the sample under study the benefits of related diversification may be overstated. This in spite the fact that, as hypothesized, Dedicated equityholders support related diversification and

Transient equityholders do not. Relational debt is, opposite to hypothesized direction, negatively associated with related diversification. These results combined with the post-hoc performance analysis suggest a more nuanced relationship between related diversification and capital structure. *Four interrelated explanations exist for these results for diversification.*

First, Markides and Williamson argue that “diversification will only support long-run superior returns when it allows a firm to exploit resources or assets that are unavailable to its rivals at a competitive cost...any measure of relatedness that fails to take into account the characteristics of the resources or assets being shared” will lead to erroneous conclusions about competitive advantage (1996: 341). This is perhaps the key reason that related diversification as measured by conventional industry counts, Herfindahl or Entropy measures fails to take into account the specific nature of resources being “shared” – which *may* in turn drives the lack of meaningful performance benefits of related diversification.

When discussing their results supporting a curvilinear (inverted-U shaped) relationship between diversification and firm performance, Palich *et.al.* (2000: 167) point out that for related diversification, “the effect sizes are not quite as strong as expected...diversification may not be quite as strong a player as some have imagined...” When we consider the performance implications, the results for diversification (especially, the strong and negative association of Transient

equityholders) are not surprising. In the face of a real performance drawback, firms clearly suffer a diversification discount (Denis et al., 1997) as witnessed by the results in Table 16. The curvilinear relationship between firm diversification and performance holds even after accounting for endogeneity (see Model 3 of Table 16).

The second probable explanation for the diversification results is that for firms to enjoy the fruits of synergy that related diversification promises there must exist enabling mechanisms within the firm, if not, then these firms either focus or falter (Nayyar, 1992). Implementation difficulties arising from increased bureaucratic/ coordination costs, internal transaction costs, intra-firm competition, incentive distortion and incompatible technologies are some of the factors that maybe driving the poor performance of even related diversifiers. Fundamentally, these organizational barriers hamper attempts at obtaining cooperation from multiple units within firms.

Thirdly, firm knowledge base and technological diversity are key factors in its ability to leverage related diversification (Miller, 2006), this more nuanced version of the resource-based argument in favor of related diversification echoes the rational outlined in the first explanation above. However, similar to the first explanation, the exclusion of patent based measures of technological diversity in this study precludes any additional post-hoc tests that incorporate more nuanced measures of firm resources under consideration for diversification. This limitation

is indeed one of the most fruitful areas of future research possible for me since publicly available technology and patenting data of firms is a valuable resource for investors and researchers alike.

Finally, the results for related diversification (Table 12) suggest that in spite of their greater involvement in firms, Relational debt holders and Dedicated equityholders have differing perspectives on related diversification. In spite of reduced information asymmetries engendered by long-term relationships, Relational debts negative association with related diversification suggests that they do not support the firm-specific assets and capabilities generated through related diversification. On the other had, as hypothesized, Dedicated equityholders are wholly supportive of related diversification.

The inexorable links between firm resources and diversification strategy have been part of management discourse at least as far back as Penrose (1959). The results obtained after rigorous analysis suggest that agency arguments (Eisenhardt, 1989; Jensen & Meckling, 1976) that underlie the early diversification literature are sound. I have argued earlier that viewed from a transaction cost lens, debt and equity are de facto governance structures (Williamson, 1988). However, the self-interest of debt and equityholders seems to surmount any other considerations. Only partial support is found for transaction cost reasoning, the clear and negative consequences of firm diversification on

performance are not in favor of capital providers who seem to prefer more focused firms.

Capital Structure And Innovation

Similar to diversification, results for Research and Development present a nuanced picture of capital structure, one that runs contrary to current theory. The only significant relationship is one between Relational Debt and R & D, and it is counter to the positive relationship predicted by theory. The difference between these and prior results may be driven by either lack of endogeneity controls in prior work (Bushee, 1998; Bushee, 2001) or the nature of samples used: either Japanese firms (David et al., 2008) and 1980's U.S. oil companies (Wang & Thornhill, 2010).

A more optimistic explanation maybe that the *myopic investor* behavior institutional investors have been accused of, is a legacy of the 1980's, and is no longer the case as the level of sophistication of institutional investors and corporate governance practices have evolved. An early indicator of this is visible in Bushee' 1998 study that investigated institutional investor holdings and its impact on managerial tendency to cut R & D expenditures when facing an earnings shortfall:

“A possible explanation for the negative relation between institutional ownership and the decision to cut R & D is that institutions prefer to invest in more innovative firms that are unlikely to cut R & D under any circumstances.”

A more pessimistic explanation maybe that lack of significance for equityholder influence on R & D in this large sample suggest the possibility that prior results obtained by Bushee are either an artifact of endogeneity or sampling period (1980's-early 1990's). A future direction for my research will be to expand both the sample size and period to investigate this possibility.

The negative and significant relationship of relational debt and R & D is contrary to prior findings amongst Japanese firms (David et al., 2008). Perhaps the more communitarian nature of Japanese banking (O'Brien et al., 2014) compared to U.S. banks explains these results. The opaque nature of R & D that develops firm-specific “stock of strategic resources such as innovative capabilities” (Vincente-Lorente, 2001: 162) may be too opaque even for relational debt holders. A limitation of this study, and concomitant future direction, is to directly account for relational debtholders by incorporating their representation on firm board of directors. It is likely that board representation is a mediating or moderating factor in their influence on firm strategic actions.

The issue of strategic opacity and information asymmetries may also explain why the theoretical framing (see Table 7) of capital providers along the dimensions of risk tolerance and time horizon perfectly explains their attitudes towards Mergers and Acquisitions. Unlike internal, operationally focused

strategic actions like diversification and R & D, M & A activity tends to make more data publicly available due to higher business combination disclosures (Shalev, 2009).

This explains why impatient capital (quadrant 1 in Table 7), which doesn't have the firm-specific knowledge to evaluate either diversification or R & D strategies, can act on publicly disclosed M & A strategies and events. Contrary to such impatient capital, Dedicated equityholders and CEO's have firm-specific investments that are long-term in nature and maybe harmed by the negative performance impact (Haleblian et al., 2009) acquirers face. Furthermore, these strong results suggest future directions for investigating capital structure and M & A: does hubris increase CEO propensity for mergers (Hayward & Hambrick, 1997), i.e. would the negative impact of CEO options on M & A change if CEO hubris was accounted for? How would the presence of diverse capital providers affect these relationships?

Levers Available To Capital Providers

The lack of support for most of the hypothesized mediation relationships (except H8 d) suggests that levers other than CEO options and Director options may be linking capital structure and strategic actions. These levers run the gamut from proxy fights and corporate resolutions available to equityholders to Board of Director representation, and litigation available to both equity and debtholders. In

addition, debt covenant violations are another source of influence available to debtholders.

Proxy fights are perhaps the most direct way in which equityholders can influence management (Campbell, Campbell, Sirmon, Bierman, & Tuggle, 2012). A key example of such use of proxy contests is the selection of Board members. Post the 2007-08 financial crisis, the SEC (Securities and Exchange Commission) recognized the broad failure of corporate governance and responded by introducing Rule 25 in 2010 to directly address a key point of governance failure – the lack of truly independent members on the Board. This rule allows long-term shareholders (at least 3 years of equity ownership in firm) with 3% or greater equityholdings in firms to nominate their own choices for the Board of Directors. Campbell and colleagues found that the passing of Rule 25 increased firm value (measured by abnormal return around the event). This finding highlights that post 2010 (the ending year for my dissertation sample), equityholder influence on director selection improved – thereby suggesting another future research direction: expanding my sample period beyond 2010 and incorporating proxy contests as a mediation mechanism between capital providers and firm strategic action. A similar role could be played by corporate resolutions.

A lever of influence available to both equityholders and debtholders is litigation. For example, firms whose Boards are dominated by insiders are known to suffer from more shareholder lawsuits (Kesner & Johnson, 1990). Such

securities class-action lawsuits can be detrimental to management and have been linked with executive turnover, higher capital costs, reputational penalties, reduced payouts to shareholders etc. (Shi, Connelly, & Sanders, 2015). A recent (Shi et al., 2015) study found that higher vertical pay gaps – i.e. between CEO and other top executives – also lead to managerial misconduct, a common precursor to such equityholder litigation. Interestingly, such litigation has also been found to raise the cost of relational debt (Deng, Willis, & Xu, 2014).

A lever specifically available to debtholders is debt covenants (e.g. maintaining a minimum current ratio). Violation of these covenants in debt contracts directly influences managerial discretion over investment (Chava & Roberts, 2008). For example, violation of even financial covenants (those not related to payment of interest or principal), termed *technical defaults*, shift control rights from management to debtholders. Such violations have been linked with a 13% decline in capital expenditures compared to pre-violation levels (2008: 2007) as debtholders proceed to punish management for perceived misbehavior. These levers, along with Board representation discussed in Chapter 2 (see page 45) suggest multiple future directions to further investigate the mediating mechanisms between capital structure and firm strategic actions.

Limitations And Contributions

Like all research, this study is not devoid of limitations. Some of these are: restricted sample size due to limited data availability for relational debt through Osiris, exclusion of technological diversity measures based on patents to better account for relational diversification, lack of Board level data to test for actual Board representation by capital providers. A methodological limitation due to the use of GMM is the bias in this study towards firms with multi-year data available, thereby eliminating newly public/ young firms from the sample. Nonetheless, none of these are insurmountable challenges, and in fact offer fruitful directions for future research.

In this dissertation I offer four significant contributions to the capital structure literature. First, the key contribution of this study is the incorporation of diverse capital providers – across both debt and equity – to explore their commonalities and differences. Extant research highlights that neither all equity holders (Hoskisson et al., 2002) nor all debt holders (David et al., 2008) speak with the same voice. This suggests the possibility that some equity holders may be aligned less with other equity holders and more with certain debt holders, and vice versa. The usual separation of the equityholder and debtholder literatures may, in other words, undermine our ability to credibly understand the relationship between capital structure and strategic choices made by firms.

The results clearly indicate that the nature of strategic actions matter and that the commonalities between debtholders and equityholders – as clearly visible in the results for Mergers and Acquisitions – have been ignored in the literature. Equity is not a pillow and Debt is not a sword, but these have highly contextual and variegated influences on firm management and strategy. Therefore their persistent separation in the literature is detrimental to both theory development and practical resonance. This work offers to be a first step in remedying this lapse.

The second contribution I make in this dissertation is conceptualizing capital providers along the dimensions of risk tolerance and time horizon. By creating a parsimonious categorization of capital – across equity and debt – and testing it across multiple strategic actions, I demonstrate the commonalities and not just the differences between types of equity and debt. The results for M & A definitively show that the two proposed dimensions of risk tolerance and time horizon drive capital providers association with M & A. This supports the theory proposed in this dissertation – namely, that through applying a transaction cost lens, capital providers can be categorized along their underlying dimensions of time horizon and risk tolerance. Please see page 65 onwards for a more detailed discussion of these two dimensions.

The third contribution of this dissertation is to specify and test executive options as a mediating mechanism linking capital structure and strategic actions. The results for M & A again demonstrate the critical role CEO options play in

aligning the interests of capital providers with firm management. The support found for hypothesis 8d (positing that CEO stock options will negatively and partially mediate the association between transient equity and M & A) gives greater credence to the behavioral-agency (Wiseman & Gomez-Mejia, 1998) view that executive stock options increase risk-bearing of executives and thereby reduce their risk-taking by aggravating loss-aversion. The lack of support for the mediation hypotheses for diversification and R & D suggest that capital providers may influence firm management through some other lever(s), such as those discussed above. Incorporation of these additional levers is a potentially promising future direction for my research.

Fourth and finally, a key contribution I make in this dissertation is the methodological choice of GMM that allows me to control for endogeneity. The fact that after controlling for endogeneity, many of the “established” results in the literature disappear in this study suggests that they may be driven by methodological choices made in previous works. Seminal works from the 1980’s-early 2000’s on capital structure used analytical tools like OLS, structural equation modeling and more recently fixed effects regressions. None of these account for the endogenous nature of the capital structure and firm strategy relationship. Although recent capital structure research accounts for endogeneity, much of prior theory remains open to reassessment. This along with the other issues mentioned earlier indicate that the conversation on capital structures’

influence on firm strategy is far from settled, thereby giving me ample scope for research projects beyond this dissertation.

TABLES & FIGURES

TABLE 1: Homogeneous debt & equity

Citation	Capital Structure Measures	Sample	Theoretical Lens	Strategic Variables & Implications
Bettis (1983)	N/A, theory paper	N/A, theory paper	Call for synthesis between financial theory and corporate strategy	Three conundrums: 1) financial theory suggests equity markets don't reward firm specific (unsystematic) risk – the core of strategy. 2) Info asymmetries due to competitive secrecy and 3) Capital availability and performance differences between U.S. & international firms
Peavy (1984)	N/A, theory paper	N/A, theory paper	Response to Bettis (1983) and reconciliation between financial theory and corporate strategy	Response to two Bettis' (1983) conundrums: 1) Recommendation of financial theory to diversify unsystematic (i.e. firm-level) risk is not contradictory to management of such risks through strategy. 2) Information increasing cash flow predictability, without damaging future cash flows, should be released

Barton & Gordon (1987)	N/A, theory paper	N/A, theory paper	Critique of financial theory. Posits that strategy (i.e. managerial choice) helps explain capital structure decisions	Firm level capital structure affected by context and managerial values. Therefore, this decision better studied through managerial/strategy perspective
Sandberg et al. (1987)	Firm leverage	456 S & P industrial firms with publicly traded debt (in 1978)	Managerial choice	Debt coverage. Historical mean and standard deviation of ROA can be used to determine probability of debt default
Lubatkin & O'Neill (1987)	Leverage (book value of long term debt/book value of assets)	297 U.S. mergers and large acquisitions (> \$10 million) between 1954-1973	Capability and competitive advantage: tangible, intangible and competitor interrelationships (1987: 670)	Diversification via mergers. Leverage positively associated with related diversification as these reduce systematic risk, i.e. market-level risks (1987: 671, 680)
Barton & Gordon (1988)	Owner's equity/Invested capital (inverse of leverage)	279 U.S. firms part of 1974 Fortune 500 list still active in 1982	Managerial choice	Diversification (proxy for managerial propensity for risk-taking). Unrelated diversification and growth rates positively associated with debt levels. Profitability negatively associated with debt

Chatterjee & Wernerfelt (1991)	Debt (Long term debt to market value)	118 U.S. firms between 1981 and 1985	Resource & capabilities	Diversification. Physical & intangible assets support related diversification. Financial assets support unrelated diversification. Innovation associated with related diversification in both high and low-performing firms
Balakrishna & Fox (1993)	Leverage (book value of total debt-to-market value of equity & book value of debt, this ratio then log transformed)	295 single business U.S. firms between 1978 and 1987	TCE (Transaction Cost Economics)	Asset attributes (tangibility & specificity). Fundamental conflict between a resource driven strategy and debt financing. Generally, RBV (Resource Based View) pushes for firm-specific assets while debt holders want redeployable assets. Advertising (intangibility of assets) builds reputational advantages and increases debt capacity
Long & Ravenscraft (1993)	Debt	72 U.S. LBOs (leveraged buyouts) between 1981 and 1987	Agency & capital market imperfections (information asymmetries & moral hazard)	R & D in firms undergoing LBOs. R & D intensity drops by 40% in firms undergoing LBOs. Agency theory (debts disciplines managers' propensity for pet projects, including R & D) predicts the direction of this decline. Capital market imperfections predict the extent of this decline
Lowe et al. (1994)	Debt to equity	Replication of Barton &	Firm risk and debt	Diversification. Corporate strategy influences capital structure, especially

		Gordon (1988) using Australian data (176 firms between 1984-88)		in the most diversified firms
Taylor & Lowe (1995)	Debt to equity (inverse of Barton & Gordon, 1988 measure)	176 Australian and 279 U.S. firms	Capital market imperfections	Diversification. Capital markets reward focused (i.e. low diversification) firms since they are easier to understand
Kocchar & Hitt (1998)	Debt & equity	187 U.S. manufacturing firms following diversification strategy between 1982 and 1986	TCE	Diversification. Reciprocal relationship between capital structure and diversification. Equity financing associated with related diversification and debt financing associated with unrelated diversification
Simerly & Li (2000)	Leverage	700 large U.S. firms	Agency & TCE	Environmental dynamism. Leverage positively associated with firm performance in stable environments, negatively associated with firm performance in dynamic environments

Vincente-Lorente (2001)	Leverage: Market (total debt to market value of equity) and Accounting (total debt to book value equity plus book value of debt)	52 nonfinancial Spanish firms between 1990 and 1994	Resource Based View (RBV): Factor market imperfections	Resource features (opacity and specificity). Resource specificity and opacity limit borrowing capacity. A resource driven strategy creates financial constraints for firms
O'Brien (2003)	Leverage (book value of debt to total market value of firm)	16,358 U.S. firms listed on Compustat for at least 2 years between 1980 and 1999. 91,000 firm-year observations	Behavioral theory of the firm (BTOF)	Slack and innovation. R & D intensity of firm is not merely its stock of intangible resources, but indicates the strategic importance of innovation to the firm. Such an innovation strategy is negatively associated with leverage
Ngah-Kiing Lim et al. (2009)	Debt (long-term debt to total capital, log transformed)	245 publicly listed firms in Singapore between 1995 and 2000	Agency and Contingency	Environmental dynamism and Diversification. Debt association with unrelated diversification: positive in dynamic environments, and negative in stable. Argue that managers exploit dynamic environments to raise more debt. Bidirectional causal relation

				between debt financing and diversification strategy
Ofori-Dankwa & Julian (2013)	Equity to sales ratio	100 largest Ghanaian companies between 1996 and 1999	Institutional theory subset of institutional difference hypothesis	Environmental dynamism. Contingency effects of environment on capital structure and performance relationship are different in emerging market context. Specifically, unlike findings in developed countries, in Ghana, sector dynamism (environmental dynamism measured at industry sector level, see 2013: 1429) negatively moderates relationship between equity and firm performance

TABLE 2: Equity heterogeneity

Citation	Capital Structure Measures	Sample	Theoretical Lens	Strategic Variables & Implications
Hill & Snell (1988)	Stockholder concentration and Insider ownership	94 research intensive firms listed in the Fortune 500 in 1980	Agency and Contingency theory.	Innovation and Diversification. Stock concentration positively associated with innovation and negatively associated with diversification. Outsiders on board discourage innovation and support diversification (opposite of hypothesized relationship). Diversification relevant in declining industries. R & D relevant in industries with changing product and process technologies
Graves (1988)	Institutional ownership concentration	22 computer manufacturing firms between 1976 to 1985	Investor myopia	Innovation. Confounding of time trend and institutional ownership effects on innovation. Generally, negative association between institutional owners and innovation
Baysinger et al. (1991)	Institutional ownership concentration	176 Fortune 500 firms (1980)	Corporate governance	Innovation. Institutional equity holder concentration positively associated with firm innovation
Chaganti & Damanpour (1991)	Outside institutional equity holders and insider ownership	80 U.S. manufacturing firms between 1983 and 1985	Power and resource dependence	Debt-capital ratio & firm performance. Family ownership increases debt-capital ratio, while outside institutional ownership reduces it. Combined, they lower the debt-capital ratio. Influence of institutional and executive ownership are additive to performance

Hansen & Hill (1991)	Institutional and insider ownership	125 U.S. research intensive firms between 1977 and 1987	Investor myopia vs. efficient markets	Innovation. No evidence for myopic institutional investors. Positive (but weak) relationship observed between institutional ownership and innovation
Bethel & Liebeskind (1993)	Blockholder and insider ownership	100 (93 final sample) randomly selected U.S. firms from Fortune 500 list of 1981 that survived as public firms till 1987	Agency vs. Environmental antecedents (e.g. deregulation and financial innovation) of restructuring	Restructuring. Outside blockholders have the incentives and power to ensure efficient firm management. Blockholders associated with reduced diversification, i.e. refocusing
Gibbs (1993)	Blockholders and management equity. Leverage	70 firms selected from Business Week 1982 Corporate Scoreboard	Agency	Restructuring (financial & portfolio). Restructuring motivated by agency costs. Board power associated with reduced restructuring. Overall support for free cash flow hypothesis of restructuring (Jensen, 1986)

Hoskisson et al. (1994)	Debt and insider equity	203 U.S. firms initiating divestments between 1985 and 1990	Agency	Restructuring (divestment). Diversification positively associated with relative debt intensity (adjusted for industry), which in turn is positively associated with divestment. Outside board members associated with debt-intensive strategies in divesting firms. Greater equity per blockholder detrimental to performance
Graves & Waddock (1994)	Number and equity concentration of institutional investors	453 of S & P 500 firms in 1990	Risk-reduction and efficient markets	Corporate social performance (CSP). Investments in CSP reduce risk (due to potential regulatory sanctions, legal and consumer retaliation). CSP found to be positively associated with number of institutional investors
Davis & Thompson (1994)	N/A	N/A	Social movements	Shareholder activism. Three trends drove activism trend in 1980's: 1) Concentration of ownership amongst public pension funds, 2) Elaboration of fiduciary duties for such funds and 3) Spread of antitakeover activity amongst corporations. Structure of corporations not only driven by capital markets but also by political processes drive opportunities for activism
Wright et al. (1996)	Insider, institutional ownership and blockholders	358 U.S. firms in 1986 and 514 in 1992	Incentives, growth opportunities and risk-taking	Corporate risk-taking (standard deviation of analyst's forecast of earnings per share). High levels of insider ownership associated with lower risk-taking for firms with growth opportunities. Institutional ownership associated with greater risk-taking for firms with growth opportunities

Zahra (1996)	Institution (by type) and executive ownership.	127 Fortune 500 firms in 1988	Agency	Corporate entrepreneurship. Long-term institutional ownership (mutual, pension & retirement funds) associated with both innovation and venturing. Short-term institutions (investment banks & private funds) negatively associated with both innovation and venturing
Kocchar & David (1996)	Brickley <i>et al.</i> (1988) equity holder classification.	135 U.S. manufacturing firms in 1989	Comparison of investor myopia, superior investor and active investor hypotheses	Innovation (new product announcements). Pressure-resistant institutions associated with innovation (active investor hypothesis)

Lane et al. (1998)	Strong-owner controlled (30% or greater equity), weak-owner control (30-10% equity) and management-controlled (10% or less equity)	Study 1: 309 U.S. firms between 1957 and 1972 Study 2: 289 mergers between 1980 and 1987	Replication of Amihud & Lev (1981). Argues against any agency theoretic link between equity holders and diversification	Diversification. Study 1: Blockholders have no impact on acquisition strategy. 40% of management-controlled firms are constrained diversifiers, which offers the best combination of risk and return (1998: 565) Study 2: No association between ownership and merger type. No evidence of board vigilance (sum of standardized outsiders on board and their equity) and corporate strategy
Li & Simerly (1998)	Insider (CEO) ownership and leverage	90 U.S. firms between 1990 and 1993. 51 from computer and electronics industry and 39 firms from food and beverage	Contingency in the form of environmental dynamism	Firm performance. Greater positive association between insider ownership and performance in industries experiencing high environmental dynamism

Johnson & Greening (1999)	Institution (by type)	252 firms randomly selected from KLD (Kinder, Lydenberg, Domini, and Company database) for 1993	Institutional & signaling theory	CSP. Public pensions funds, outsider director representation and top management equity positively associated with product quality dimension of CSP
Thomsen & Pedersen (2000)	Institution (by type)	435 European firms between 1990 and 1995	Owner identity	Firm performance. Owner identity (i.e. equity holder heterogeneity) associated with differential firm performance. Corporate, family and government owners negatively associated with market-to-book. Bank ownership positively associated with market-to-book (as well as ROA) compared to institutional owners. Sales growth highest when majority owner is family firm or another company
David et al. (2001)	Public pension funds	Panel data of 73 firms between 1987 and 1993	Activism	Innovation (R & D inputs/investments, and outputs/products). Institutional activism (proxy-based) positively associated with R & D inputs. This association is amplified in strategic contexts where innovation is critical, i.e., high-tech industries. Also, the R & D inputs mediate the association between activism and R & D outputs

Hoskisson et al. (2002)	Institution (by type)	234 firms (> \$ 30 million revenues) between 1985 and 1991	Investment horizons	Innovation (Internal/R & D, and External/Acquisitions). Pension funds more positively associated with internal innovation (i.e. R & D), while investment managers more positively associated with external innovation (acquisitions)
Ramaswamy et al. (2002)	Brickley <i>et al.</i> (1988) equity holder classification	88 Indian manufacturing firms between 1993 and 1994	Agency	Diversification. In their Indian sample, authors find that pressure-sensitive investors (banks) support unrelated diversification while pressure-resistant investors (mutual funds and financial institutions) discourage it
Gedajlovic & Shapiro (2002)	Ownership concentration	344 Japanese firms between 1986-1991	Agency and redistribution.	Inter-corporate profit redistribution. Ownership concentration positively associated with corporate profitability. Large stakes held by financial and non-financial partners associated by profit redistribution; i.e., least profitable firms (ROA levels < 2%) benefit, while the most profitable firms experience negative associations between profitability and such equity owners. Overall, redistribution effects stronger than agency effects (2002: 573)
Chang (2003)	Controlling equity holders in Korean group-affiliated companies.	419 Korean chaebol affiliates between 1986 and 1996	Agency	Firm performance. Performance associated with ownership but not vice versa. Controlling equity holders exploit insider information to increase equity stakes in profitable companies

Lee & O'Neil (2003)	Ownership concentration.	1,044 U.S. firms and 270 Japanese firms in 1995.	Agency and stewardship	Innovation. Country context matters, agency perspective more appropriate for U.S. while stewardship more appropriate for Japan. Stock concentration associated with innovation in U.S., but not in Japan. On average, Japanese firms invest more in innovation
Sanders & Carpenter (2003)	Insider ownership	250 randomly selected S & P 500 firms between 1992 and 1995	Behavioral-agency theory	Innovation and stock repurchases. Executives use stock repurchases to mollify shareholders and mitigate information asymmetry generated by innovation. Such "strategic satisficing" exacerbated by executive stock options and firms missing performance expectations.
Tihanyi et al. (2003)	Institution (by type)	197 firms from 1996 S & P 1500 population	Agency	Diversification (international). Professional investment funds and pension funds positively associated with international diversification. The former association positively moderated by outside directors, and the latter by inside director incentives
Citation	Capital Structure Measures	Sample	Theoretical Lens	Strategic Variables & Implications
Keister (2004)	State ownership	769 Chinese firms between 1980 and 1989	Resource dependence and Institutional theory	Firms in transition economies imitate local and high status firm's borrowing strategies. Retained earnings associated with increased borrowing from external sources, in order to reduce state dependence

Yoshikawa et al. (2005)	Institution (by type)	996 Japanese manufacturing firms between 1998 and 2002	Stakeholder-Agency theory. Foreign vs. domestic owners	Wage intensity (wages to sales ratio). Equity holder heterogeneity associated with firm investments in human resources. Domestic owners positively and foreign owners negatively associated with wage intensity. Domestic owner support for human capital higher in low performing firms but foreign owners reduce support for human capital in such firms
Gedajlovic et al (2005)	Institution (by type) and insider ownership	247 Japanese manufacturing firms between 1996-1998	Market-oriented vs. stable investors	Dividend payouts positively associated with foreign shareholders and pension funds. Capital expenditures positively associated with foreign ownership and negatively with insider ownership. Stock market beta positively associated with investment trusts, and negatively with pension funds
Neubaum & Zahra (2006)	Institution (by type)	Fortune 500 firms: 357 in 1995 and 383 in 2000	Stakeholder salience	CSP. Long-term institutional investors (pension funds) positively associated with CSP. This relationship strengthened by investor activism
Kim et al. (2008)	Institution (by type)	253 Korean R & D intensive manufacturing firms between 1998 and 2003	Agency	Slack and Innovation. Financial slack has inverted-U shaped relationship with R & D. Family ownership positively moderates the slack and innovation association. Domestic institutional investors and foreign investors negatively moderate this relationship

David et al. (2010)	Domestic vs. foreign owners in Japan.	1,180 Japanese firms between 1990 and 2004	Relational vs. transactional governance.	Diversification (international). For relational (Japanese) owners, sales and employment growth is the objective of diversification. Transactional (foreign) owners more focused on profits
Connelley et al. (2010)	Transient and dedicated institutional investors (Bushee, 1998 & 2001).	72 Fortune 500 firms, between 1997 and 2006, comprising 36 rivalries	Agency	Competitive actions (strategic vs. tactical). Tactical actions (e.g. price changes & service improvements) positively associated with transient investors. Strategic actions (long term actions involving significant firm resources) positively associated with dedicated investors and negatively associated with transient investors
Le & O'Brien (2010)	State ownership and debt	1300 Chinese firms between 2003 and 2005	Agency	Agency role of debt offsets the negative impact of state ownership (principal-principal problem) on firm performance
Bruton et al. (2010)	Ownership concentration and private equity type (business angels and venture capitalists)	224 IPO's in the United Kingdom and France.	Agency	IPO performance. Ownership concentration positively associated with IPO performance, however this association is negative in U.K. IPO's compared to French IPO's. Association of price premium is negative with venture capital ownership and positive with business angel ownership

Okhmatov skiy (2010)	Government ownership (>5%), state owned enterprise (>25%), number and proportion of government officials on board	Russian banks. 450 in 2001, 640 banks in 2003 and 555 banks in 2005	Political embeddedne ss	Firm performance (ROA and ROE). Banks with board and ownership ties to state owned enterprises have higher ROA. Banks with government officials on board have lower ROA than “unconnected” banks, suggested use of banks by government for low interest funding of projects
Colpan et al. (2011)	Domestic vs. foreign owners in Japan.	96 Japanese electronics firms between 1992 and 2002	Relational vs. transactional governance.	Domestic corporate owners positively associated with product diversification. Firm performance positively moderates relationship between foreign ownership and changes in capital investment. Even domestic owners have heterogeneous goals, with domestic financial owners exhibiting characteristics between foreign portfolio investors and domestic relational owners (2011: 612)
O’Brien & David (2013)	Domestic vs. foreign owners in Japan.	2,123 Japanese firms between 1992 and 2004	Behavioral theory of the firm	Innovation. For performance exceeding expectations “communitarian” (Japanese) owners increase R &D to greater extent than “contractarian” (foreign) owners

Julian & Ofori-Dankwa (2013)	ROE	41 Ghanaian firms between 2003 and 2005 that were African controlled	Institutional difference hypothesis	Corporate Social Responsibility (CSR measured as ratios of firm expenditures on CSR initiatives to sales and equity, as well as log of CSR expenditures). Greater availability of financial resources (ROS, ROE and net profits) associated with lower CSR
Inoue et al (2013)	Minority state ownership	367 Brazilian firms between 1995 and 2009	Institutional voids in emerging markets	Firm performance and capital investments. Minority state ownership positively associated with firm ROA as well as capital investments by financial constrained firms with growth opportunities
Liu et al (2014)	Share turnover, concentration and financial leverage	221 North American establishments	Strategic Human Capital	Share turnover, concentration and financial leverage associated with short-term thinking i.e. reduced investments in strategic human capital

TABLE 3: Debt heterogeneity

Citation	Capital Structure Measure	Sample	Theoretical Lens	Strategic Variables & Implications
Stearns & Mizruchi (1993)	Debt holders on board of directors.	22 large U.S. manufacturing firms between 1956 and 1983	Resource dependence	Firm financing. Positive association between: money market banker and investment banker with short-term borrowing. Presence of either money market banker or investment banker associated with long-term public bonds. Insurance company executive negatively associated with long-term public bonds
Mizruchi & Stearns (1994)	Financial representation on board of directors.	22 large U.S. manufacturing firms between 1956 and 1983	Resource dependence	Firm financing. Firms with CEOs from finance background more likely to tap debt financing. Representative of financial institution on board is strong predictor of debt financing. Also, family firms more likely to tap debt markets than management-controlled firms
Davis & Mizruchi (1999)	Centrality of banks in corporate networks. Shift from private (bank) debt to public (bond)	50 largest commercial bank holding companies and the 500 largest industrial firms (the Fortune 500),	Financial intermediation	Director interlocks. Decline in bank centrality in corporate networks from 1980's onwards. Between 1982-1994 bank boards shrunk, with fewer corporate executives on their boards. Firms under threat (low solvency) appoint bankers on board

	debt.	25 largest diversified financials, 25 largest retailers, and 25 largest transportation firms in the U.S. during each of four panel years: 1982, 1986, 1990, and 1994 (1999: 226)		
Uzzi & Gillespie (2002)	Banks of small and medium sized firms.	Mixed methods, ethnography and quantitative analysis using National Survey of Small Business Finances data	Embeddedness & capability	Firm financing. Embedded ties between banks and firm's lead to greater access to bank capital and networks. These in turn enhance firm's management of trade credit and reduce late payment penalties
Tihanyi & Hegarty (2007)	N/A	Longitudinal multiple case studies in Czech Republic and Hungary	Organizational fields	In transition from central planning to market economies, both Czech Republic and Hungary witnessed co-evolution of banking as well as regulatory institutions

David et al. (2008)	Debt heterogeneity (relational vs. transactional).	1,853 Japanese firms between 1982 and 2002	TCE	Innovation. Debt homogeneity assumption false. Debt heterogeneity indicates that relational (bank loan) debt has features that support innovation This in spite of hazards of asset specificity, uncertainty and appropriability
O'Brien & David (2010)	Debt heterogeneity (relational vs. transactional)	2,182 Japanese firms between 1992 and 2002	Agency and rules vs. discretion	Firm growth. Transactional debt similar to a rules regime while relational debt similar to a discretionary regime. Transactional debt effective in curtailing wasteful growth
Wang & Thornhill (2010)	Debt heterogeneity (relational vs. transactional). Also incorporates financing instruments (i.e. common & convertible securities).	39 U.S. petroleum firms between 1976 and 2005	TCE	Innovation. Innovation has an inverted U-shaped effect on financing through relational debt.
O'Brien et al. (2013)	Debt heterogeneity (relational vs. transactional).	1,986 Japanese firms between 1991 and 2001	Agency, RBV & TCE.	Diversification. Relational debt mirrors hierarchies and transactional debt mirrors markets. Related diversification improves

				performance. Debt (especially transactional debt) negatively affects magnitude of these performance gains
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TABLE 4: The market-hierarchy dichotomy

	Market	Hierarchy
<i>Forbearance</i>	No	High/Negotiable
<i>Ownership Concentration</i>	Low/Dispersed	High
<i>Regime</i> (Kydland & Prescott, 1977)	Rules	Discretion
<i>Cultural Orientation</i> (O'Brien & David, 2014)	Contractarian	Communitarian

TABLE 5: Capital structure through a transaction cost lens

	Market	Hierarchy
<i>Time Horizon</i>	Short	Long
<i>Risk Tolerance</i>	Low	High
<i>Forbearance</i>	No	High/Negotiable
<i>Ownership Concentration</i>	Low/Dispersed	High
<i>Regime</i> (Kydland & Prescott, 1977)	Rules	Discretion
<i>Capital Structure as Governance Structure</i> (Williamson, 1988)	Debt	Equity
<i>Cultural Orientation</i> (O'Brien & David, 2014)	Contractarian	Communitarian
<i>Capital Structure:</i>		
<i>Debt</i> (Boot, 2000)	Transactional	Relational
<i>Equity</i> (Bushee, 1998)	Transient	Dedicated

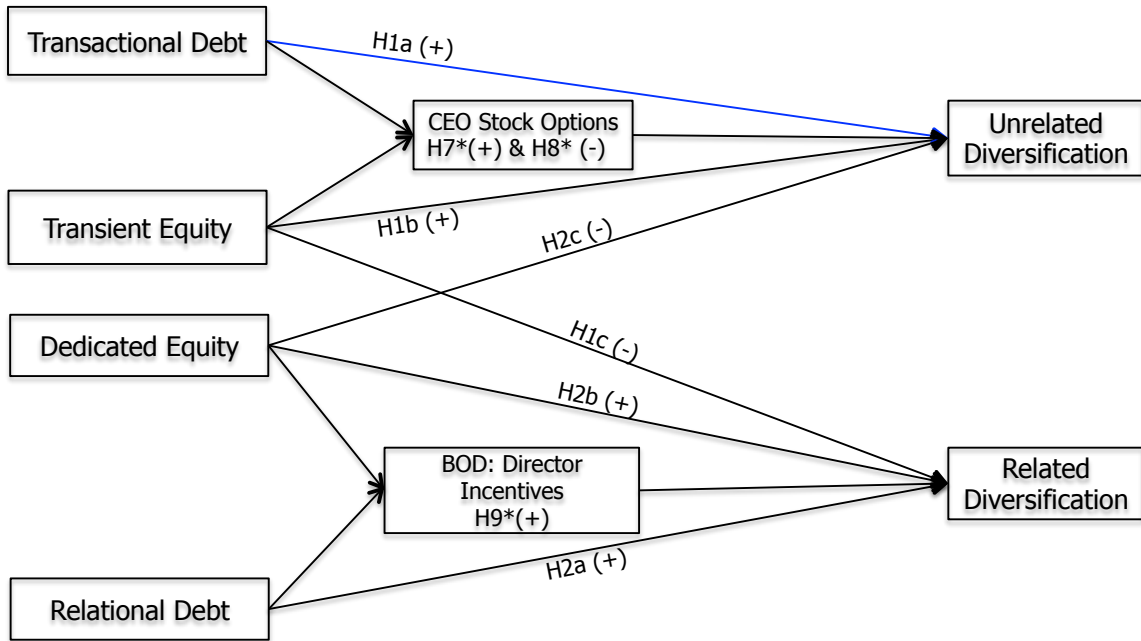
TABLE 6: Governance attributes of capital structure

Attributes of Governance Structure	Market (transactional debt & transient equity)	Hierarchy (relational debt & dedicated equity)
1. Resource ownership	Autonomous.	Joint.
2. Incentive intensity	High-powered incentives.	Flat or low-powered incentives.
3. Primary control mechanisms	Contracts, covenants, ratings and pricing signals.	Administrative (e.g. Board of Directors).
4. Adaptation	Autonomous (usually price driven).	Cooperation.
5. Regime (Kydlan & Prescott, 1977)	Rules regime.	Discretionary regime.
6. Contract Law (Williamson, 1991)	Classical (arbitration and litigation).	Neoclassical (excuse doctrine and forbearance).
7. Type of Opportunism most likely (Alchian & Woodward, 1988; Hennart, 1993; Oxley, 1997)	Holdup due to specificity and Appropriability hazard due to weak property rights.	Moral Hazard due to plasticity/discretion.
8. Alignment mechanism (mediators)	Executive compensation.	Board of Directors.

TABLE 7: Risk tolerance & time horizon

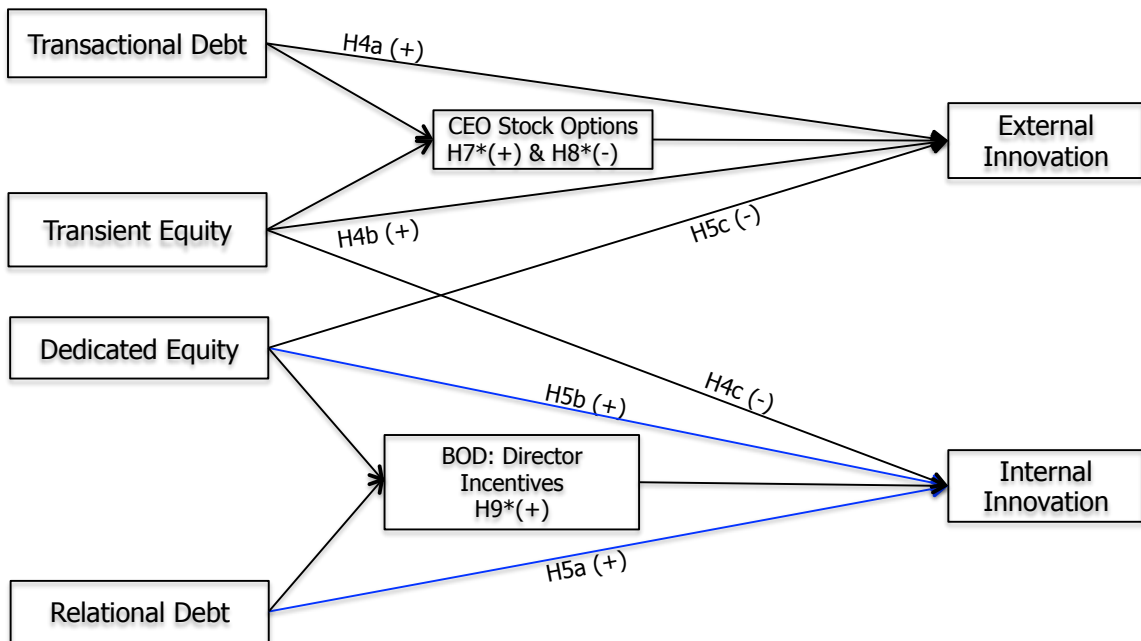
		Risk Tolerance	
		<i>Low Risk</i>	<i>High Risk</i>
Time Horizon	<i>Short Time Horizon</i>	Transactional debt Transient equity Impatient Capital 1	Activist Debt & Equity 2
	<i>Long Time Horizon</i>	Owner-managed & Family firms 4	Dedicated equity Relational debt Patient Capital 3

FIGURE 1: Capital Structure and Diversification



* Mediation hypotheses 7, 8 & 9. *H1a* established in literature.

FIGURE 2: Capital Structure and Innovation



* Mediation hypotheses 7, 8 & 9. H 5a & 5b established in literature.

TABLE 8a: Descriptive statistics of unstandardized Diversification data

Descriptive Statistics Diversification Sample					
Statistic	N	Mean	St. Dev.	Min	Max
Dedicated	4,593	8.56	7.74	0.01	36.81
Transient	4,936	17.19	13.28	0.01	61.97
Relational	3,248	0.0004	0.002	0.00	0.05
Transactional	3,248	1.00	0.002	0.95	1.00
Unrelated Diversification	4,307	1.06	1.20	0.00	5.25
Related Diversification	4,982	0.86	1.18	0.00	5.07
R and D Intensity	2,499	0.07	0.12	0.00	0.74
CEO Stock Options	1,990	2,206,870	3,955,621	0.00	23,469,756
Director Options	1,157	5,656.24	5,657.53	500	30,000
Assets	5,025	12,302,517,864	36,943,648,349	8,423,280	288,760,000,000
Cash_NearCash	5,024	1,031,027,228	3,384,527,552	86,460	25,885,000,000
Market-To-Book	4,990	2.83	2.75	0.37	17.83
Free Cash Flow	4,966	444,230,863	1,607,459,357	-1,675,859,250	11,635,000,000

TABLE 8b: Descriptive statistics of unstandardized M & A data

Descriptive Statistics M & A Sample					
Statistic	N	Mean	St. Dev.	Min	Max
Dedicated	2,773	9.84	7.14	0.09	32.23
Transient	2,790	22.41	13.35	2.46	67.41
Relational Debt	2,478	0.26	0.21	0.00	0.86
Transactional Debt	2,478	0.74	0.21	0.14	1.00
Unrelated Diversification	2,739	0.99	0.77	0.00	3.63
Related Diversification	2,713	0.36	0.67	0.00	3.19
R & D Intensity	2,207	0.08	0.09	0.00	0.52
MA/Assets	2,659	2.33	6.04	0.00	173.78
CEO options	1,704	2,818,215	4,880,283	0	30,551,340
Director options	1,145	6,454.74	6,059.14	500	31,140
Assets	2,790	10,478,216,654	52,936,388,784	34,472,000	1,120,650,000,000
Cash_NearCash	2,790	989,482,690	6,475,831,634	0	225,037,000,000
Free Cash Flow	2,769	501,503,424	1,410,087,852	-451,430,840	10,043,260,000
Market-to-Book	2,790	3.42	2.89	0.13	17.57

TABLE 8c: Descriptive statistics of unstandardized R & D data

Descriptive Statistics R & D Sample					
Statistic	N	Mean	St. Dev.	Min	Max
Dedicated	10,866	8.99	7.65	0.01	33.85
Transient	11,772	20.78	15.20	0.01	66.68
Relational	6,935	0.001	0.01	0.00	0.32
Transactional	6,935	1.00	0.01	0.68	1.00
R & D Intensity	12,161	0.38	1.45	0.001	11.98
CEO Stock Options	3,708	2,844,196	5,033,139	0.00	31,620,977
Director Options	2,759	8,064.53	7,623.23	527.84	40,000
Assets	12,161	4,614,167,293	14,595,616,280	3,613,200	108,400,000,000
Cash_NearCash	12,161	550,005,784	1,623,595,279	143,000	11,487,758,800
Market-To-Book	12,052	4.28	5.22	0.40	36.90
Free Cash Flow	12,065	319,883,106	1,172,022,142	-317,113,440	8,720,000,000

TABLE 9: List of Variables

Variable	Definition	Source
<i>Capital Structure</i>		
1. Relational debt	Proportion of bank debt held by firm. Denominator is sum of book value of equity (BKLVPS X CSHO) and long-term debt (DLTT)	Bank loan data available from Osiris dataset. Proportion calculated as standard in literature (Wang & Thornhill, 2010).
2. Transactional debt	Debt not classified as relational. Denominator is sum of book value of equity (BKLVPS X CSHO) and long-term debt (DLTT)	(Wang & Thornhill, 2010).
3. Transient equity	Proportion of shares outstanding (Compustat variable CSHO) held by short-term investors with highly diversified portfolios	Online public data (Bushee, 2013) merged with Thompson-Reuters 13f data. (Bushee, 2001).
4. Dedicated equity	Proportion of shares outstanding held by long-term investors with less diversified portfolios.	Same as above.
<i>Mediators</i>		
1. CEO Stock Options	Product of CEO stock option grants awarded during firm's fiscal year and the Black-Scholes option value at that fiscal year end. Variable directly available via ExecuComp.	ExecuComp. (Lim & McCann, 2013).
2. Outside Director stock options	Outside director stock options. This variable is average of stock option grants to outside directors. Same calculation as CEO stock options.	ExecuComp.
<i>Diversification</i>		
Entropy measure	Unrelated diversification is the weighted average of all firm industry group shares. Related diversification is the weighted average of firm segment-to-group shares across segments within all firm groups.	Compustat Business Segments dataset. (Davis & Duhaime, 1989; Palepu, 1985)
<i>Innovation</i>		
1. Innovation	R & D intensity (XRD/ SALE)	Compustat Annual Financials

2. External Innovation	Acquisitions. Measured as M & A completed value/ Assets (Compustat variable AT).	SDC Platinum M & A dataset. (Puranam & Srikanth, 2007)
<i>Controls</i>		
1. Assets	Firm assets.(AT)	Compustat Annual Financials.
2. Cash & Near Cash	Firm holdings of cash or near cash market instruments	Same as above.
3. Free Cash Flow	Operating Cash flow – capital expenditures (OANCF – CAPX)	Same as above.
4. Firm Performance	Market-to-Book (Market value of equity/ Book value of equity) calculated using Compustat fiscal year closing stock price (PRCC_F)	Compustat Annual Financials. (Patel & Cooper, 2014)

TABLE 10a: Correlations for Diversification Sample

	1	2	3	4	5	6	7	8	9	10	11	12
1. Dedicated												
2. Transient	0.15***											
3. Relational Debt	0.06**	-0.03										
4. Transactional Debt	-0.06**	0.03	-1.0***									
5. Unrelated Diversification	0.05**	-0.09***	0.05**	-0.05**								
6. Related Diversification	0.00	-0.07***	-0.02	0.02	0.10***							
7. R & D Intensity	-0.06**	0.07***	-0.04	0.04	-0.10***	-0.06**						
8. CEO Stock Options	0.02	0.02	-0.08**	0.08**	0.01	0.09***	0.23***					
9. Director Options	0.02	0.15***	-0.05	0.05	-0.08*	-0.09**	0.42***	0.24***				
10. Assets	-0.07***	-0.13***	-0.05**	0.05**	0.12***	0.24***	-0.06**	0.24***	0.00			
11. Cash_NearCash	-0.07***	-0.11***	-0.05**	0.05**	0.08***	0.19***	0.04*	0.22***	0.08**	0.81***		
12. Market-To-Book	-0.03	0.04**	0.03	-0.03	-0.04*	0.00	0.19***	0.24***	0.10***	-0.03	0.02	
13. Free Cash Flow	-0.08***	-0.12***	-0.05*	0.05*	0.14***	0.19***	-0.02	0.22***	0.03	0.60***	0.63***	0.09***

TABLE 10b: Correlations for M & A Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Dedicated													
2. Transient	0.05**												
3. Relational Debt	0.09***	-0.01											
4. Transactional Debt	-0.09***	0.01	-1.00***										
5. Unrelated Diversification	-0.07***	-0.16***	0.01	-0.01									
6. Related Diversification	-0.06**	-0.22***	0.01	-0.01	0.62***								
7. R & D Intensity	0.02	0.24***	-0.17***	0.17***	-0.19***	-0.17***							
8. MA/Assets	-0.05*	0.16***	-0.08***	0.08***	-0.13***	-0.11***	0.14***						
9. CEO options	-0.05*	-0.02	-0.10***	0.10***	0.03	0.06**	0.28***	-0.10***					
10. Director options	0.06	0.25***	-0.16***	0.16***	-0.09**	-0.15***	0.44***	0.07*	0.25***				
11. Assets	-0.06***	-0.14***	-0.12***	0.12***	0.25***	0.16***	-0.06**	-0.07***	0.12***	0.06			
12. Cash_NearCash	-0.06**	-0.09***	-0.11***	0.11***	0.13***	0.11***	0.06**	-0.05**	0.08***	0.16***	0.73***		
13. Free Cash Flow	-0.10***	-0.21***	-0.21***	0.21***	0.24***	0.20***	0.01	-0.12***	0.28***	0.06	0.62***	0.47***	
14. Market-to-Book	0.00	-0.01	0.05*	-0.05*	-0.11***	-0.04*	0.12***	0.04	0.27***	0.05	0.03	0.02	0.15***

TABLE 10c: Correlations for R & D Sample

	1	2	3	4	5	6	7	8	9	10	11	12
1. Dedicated												
2. Transient	0.11***											
3. Relational	0.00	-0.03**										
4. Transactional	0.00	0.03**	-1.00***									
5. Unrelated Diversification	-0.01	-0.11***	0.01	-0.01								
6. Related Diversification	0.01	-0.10***	-0.01	0.01	0.40***							
7. R & D Intensity	0.02	0.00	-0.01	0.01	-0.07***	-0.07***						
8. CEO Stock Options	0.00	-0.01	-0.05*	0.05*	0.00	0.06**	0.02					
9. Director Options	-0.02	0.15***	-0.04	0.04	-0.15***	-0.13***	0.15***	0.25***				
10. Assets	-0.10***	-0.19***	-0.02	0.02	0.40***	0.38***	-0.07***	0.23***	-0.05*			
11. Cash_NearCash	-0.10***	-0.16***	-0.02	0.02	0.27***	0.24***	-0.05***	0.29***	0.12***	0.82***		
12. Market-To-Book	-0.01	0.05***	0.01	-0.01	-0.06***	-0.05***	0.11***	0.24***	0.09***	-0.03***	0.00	
13. Free Cash Flow	-0.10***	-0.17***	-0.02	0.02	0.28***	0.30***	-0.06***	0.22***	0.01	0.85***	0.82***	0.02*

TABLE 11: GMM Results for Unrelated Diversification

GMM Results for Unrelated Diversification (Diversification sample)				
	Unrelated Diversification			CEO options
	Model 1	Model 2	Model 3	Model 4
Assets	0.29** (0.11)	0.09 (0.13)	0.40*** (0.11)	0.18** (0.06)
Market-To-Book	-0.05 (0.10)	-0.08 (0.10)	-0.08 (0.13)	0.41* (0.17)
Cash_NearCash	- 0.35*** (0.10)	-0.10 (0.13)	- 0.47*** (0.12)	0.00 (0.07)
Free Cash Flow	0.31*** (0.08)	0.14 (0.11)	0.18° (0.10)	0.12 (0.08)
Transactional Debt	-0.11 (0.09)		0.01 (0.12)	0.08 (0.31)
Transactional Debt _{t-1}	-0.04 (0.33)		-0.20 (0.35)	-0.03 (0.19)
Transient	-0.05 (0.09)		-0.20° (0.11)	-0.27° (0.16)
Transient _{t-1}	-0.03 (0.08)		-0.04 (0.11)	0.25° (0.14)
Dedicated	0.00 (0.08)		0.02 (0.10)	
Dedicated _{t-1}	0.12 (0.09)		0.10 (0.10)	
CEO options		-0.03 (0.10)	-0.04 (0.09)	
CEO options _{t-1}		0.05 (0.05)	0.10 (0.06)	
Num. obs. used	2047	1621	1182	1301
Sargan Test: X ²	285.81	176.53	149.83	145.69
Wald Test Coefficients: X ²	35.23***	3.83	40.04***	59.84***
Arellano-Bond autocorrelation test (1)	2.31*	1.57	-0.05	-2.05*
Arellano-Bond autocorrelation test (2)	-0.62	-1.24	-0.38	1.00

*** p < 0.001, ** p < 0.01, * p < 0.05, ° p < 0.1

TABLE 12: GMM Results for Related Diversification

GMM Results for Related Diversification (Diversification sample)				
	Related Diversification			Director Options
	Model 1	Model 2	Model 3	Model 4
Assets	0.33 (0.20)	0.17 (0.16)	0.13 (0.20)	-0.11 (0.07)
Market-To-Book	-0.14* (0.07)	0.07 (0.09)	-0.00 (0.10)	0.08 (0.12)
Cash_NearCash	-0.13 (0.17)	-0.09 (0.17)	-0.16 (0.21)	0.18* (0.08)
Free Cash Flow	0.11 (0.09)	0.21° (0.11)	0.19 (0.13)	0.11 (0.08)
Relational	-0.02 (0.12)		-0.10 (0.19)	-0.07 (0.15)
Relational _{t-1}	-0.29* (0.12)		-1.00° (0.57)	-0.23° (0.13)
Dedicated	-0.03 (0.06)		0.28** (0.10)	-0.13 (0.15)
Dedicated _{t-1}	0.12° (0.06)		-0.14 (0.10)	0.02 (0.10)
Transient	-0.12 (0.08)		-0.09 (0.10)	
Transient _{t-1}	-0.08 (0.05)		-0.35** (0.12)	
Director options		0.13 (0.19)	0.02 (0.11)	
Director options _{t-1}		-0.49* (0.22)	-0.35* (0.17)	
Num. obs. used	2597	1077	673	754
Sargan Test: X ²	338.39	130.08	106.01	119.53
Wald Test Coefficients: X ²	31.98***	18.96***	26.92**	15.91**
Arellano-Bond autocorrelation test (1)	1.39	-0.7	-0.1	-0.84
Arellano-Bond autocorrelation test (2)	-0.44	-0.92	-0.17	-1.05

*** p < 0.001, ** p < 0.01, * p < 0.05, °p < 0.1

TABLE 13: GMM Results for Mergers & Acquisitions

GMM Results for Mergers & Acquisitions (M & A Sample)

	M & A			CEO options
	Model 1	Model 2	Model 3	Model 4
Assets	0.03 (0.02)	0.04 (0.03)	0.01 (0.02)	0.06 (0.06)
Market-to-Book	-0.02 (0.04)	-0.06 ^o (0.03)	-0.04 (0.03)	0.30*** (0.08)
Cash_NearCash	-0.03 (0.03)	-0.29** (0.10)	-0.10 (0.08)	0.57 (0.68)
Free Cash Flow	-0.11** (0.03)	-0.01 (0.03)	-0.03 (0.02)	-0.18 (0.24)
Transactional Debt	0.13* (0.06)		0.07 (0.06)	0.15 ^o (0.09)
Transactional Debt _{t-1}	-0.06 (0.06)		0.03 (0.05)	-0.01 (0.07)
Transient	0.12* (0.05)		0.19** (0.07)	-0.27* (0.11)
Transient _{t-1}	-0.03 (0.04)		-0.04 (0.05)	-0.04 (0.09)
Dedicated	-0.11* (0.06)		-0.06 ^o (0.03)	
Dedicated _{t-1}	0.12 (0.08)		0.04 (0.05)	
CEO options		-0.04* (0.02)	-0.06** (0.02)	
CEO options _{t-1}		-0.05* (0.02)	-0.06** (0.02)	
Num. obs. used	1837	1080	980	1169
Sargan Test: X ²	211.18	152.32	148.35	160.43
Wald Test Coefficients: X ²	54.96***	33.30***	81.66***	312.85***
Arellano-Bond autocorrelation test (1)	-2.66**	-2.48*	-2.34*	-2.1*
Arellano-Bond autocorrelation test (2)	-0.36	-0.01	-0.01	-1.25

*** p < 0.001, ** p < 0.01, * p < 0.05, ^op < 0.1

TABLE 14: GMM Results for Research & Development

	GMM Results for R & D (R & D Sample)			Director options
	Model 1	Model 2	Model 3	Model 4
Assets	-0.05*	-0.09**	-0.02	-0.55***
	(0.02)	(0.03)	(0.04)	(0.15)
Market-To-Book	0.03	-0.05°	-0.01	-0.04
	(0.05)	(0.03)	(0.02)	(0.08)
Cash_NearCash	0.03	-0.00	-0.04	0.42*
	(0.03)	(0.03)	(0.03)	(0.17)
Free Cash Flow	-0.05	0.01	-0.01	0.09
	(0.03)	(0.03)	(0.03)	(0.11)
Relational	-0.02		0.21	-0.64°
	(0.02)		(0.25)	(0.35)
Relational _{t-1}	-0.02***		0.22	-1.14
	(0.01)		(0.25)	(0.85)
Dedicated	0.05		0.13	-0.18°
	(0.06)		(0.10)	(0.10)
Dedicated _{t-1}	-0.01		-0.04	0.03
	(0.04)		(0.04)	(0.07)
Transient	0.12		-0.01	
	(0.09)		(0.03)	
Transient _{t-1}	-0.03		-0.02	
	(0.06)		(0.03)	
Director options		-0.02	0.07	
		(0.02)	(0.06)	
Director options _{t-1}		-0.04	-0.02	
		(0.03)	(0.04)	
Num. obs. used	6869	3544	2034	2213
Sargan Test: X ²	452.68	263.54	235.16	203.48
Wald Test Coefficients: X ²	48.93***	42.43***	28.46**	15.21*
Arellano-Bond autocorrelation test (1)	-2.66*	-0.19	-0.90	-2.02*
Arellano-Bond autocorrelation test (2)	-0.88	-0.99	-1.66	-0.74

*** p < 0.001, ** p < 0.01, * p < 0.05, ° p < 0.1

TABLE 15: Summary of Significant Results

Hypothesis	Independent Variable	Result
Unrelated Diversification (Table 11)		
H1b (Model 3)	Transient Equity	Sign opposite of hypothesis, negative association. Significant at 0.1 level.
Related Diversification (Table 12)		
H1c (Model 3)	Transient Equity	As hypothesized, negative association.
H 2a (Model 1 & 3)	Relational debt	Sign opposite of hypothesis, negative association with Related diversification.
H 2b (Model 3)	Dedicated Equity	As hypothesized, positive association.
H 9 (Model 2 & 3)	Director options	Sign opposite of hypothesis. Director options are negatively associated with related diversification.
M & A (Table 13)		
H 4 b (Model 1 & 3)	Transient Equity	As hypothesized, positive association.
H 5 c (Model 1 & 3)	Dedicated Equity	As hypothesized, negative association.
H 4 a (Model 1)	Transactional Debt	As hypothesized, positive association.
H 7 & 8 Mediation (Model 3 & 4)	Transactional Debt, Transient Equity & CEO options	Transient equity positively associated with M & A (model 3) and negatively associated with CEO options (model 4). CEO options negatively associated with M & A supporting H8.
R & D (Table 14)		
H 5 a (Model 1)	Relational debt	Sign opposite of hypothesis, negative association.

TABLE 16: Post-hoc Analysis of Firm Diversification, R & D and Performance

	Market-to-Book				ROA			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Assets	-0.14** (0.05)	-0.06 (0.06)	-0.09° (0.05)	-0.22*** (0.04)	-0.22*** (0.04)	-0.15*** (0.03)	-0.22*** (0.03)	-0.17*** (0.04)
Cash_NearCash	0.08 (0.05)	0.05 (0.06)	0.05 (0.05)	0.14** (0.05)	0.12** (0.04)	0.06* (0.03)	0.12** (0.04)	0.01 (0.04)
Free Cash Flow	0.10* (0.04)	0.08* (0.03)	0.07* (0.03)	0.05° (0.03)	0.19*** (0.05)	0.17*** (0.04)	0.20*** (0.05)	0.25*** (0.05)
Unrelated Diversification	0.11 (0.17)				0.11 (0.09)			
Unrelated Diversification _{t-1}	-0.25 (0.18)				-0.12 (0.11)			
Related Diversification		-0.00 (0.09)				-0.06 (0.07)		
Related Diversification _{t-1}		-0.05 (0.10)				0.06 (0.07)		
Diversification Total			-0.20 (0.13)				0.15 (0.11)	
Diversification Total _{t-1}			-0.06 (0.08)				-0.05 (0.06)	
Diversification Total ²			0.07* (0.03)				-0.02 (0.03)	
R and D Intensity				-0.04 (0.06)				-0.09 (0.20)
R and D Intensity				0.06 (0.05)				-0.51*** (0.07)

Num. obs. used	3906	4937	3834	14633	2979	3914	2926	10256
Sargan Test: X^2	284.37	303.49*	321.73	585.09**	246.85	242.07	264.43	355.15**
Wald Test Coefficients: X^2	12.75*	8.05	15.88*	33.18**	41.96***	35.53***	49.76***	225.34***
Arellano-Bond autocorrelation test (1)	-2.80**	-3.00**	-2.49*	-3.44**	-3.54**	-4.12***	-3.41**	-6.97***
Arellano-Bond autocorrelation test (2)	0.59	0.19	0.39	-3.08**	-2.18*	-2.34**	-2.11*	-3.20**

APPENDIX

R CODE FOR DATA REPLICATION

```
(# Precede comments, rest is R code)
#Adding e1996 files (Bushee + 13f)

e2010<-read.csv("e2010.csv", header = TRUE)

#Data check using GE as example, all OK

GE2010<-subset(e2010,e2010$ticker=="GE")

#Getting last known holdings for each ticker by mgrno (Manager Number in
Bushee and 13f filings) to avoid double counting of shareholdings

e1996$date<-as.Date(as.character(e1996$date),"%Y%m%d")

e1996$sharesoutstanding<-(e1996$shrout1*1000000)

library(dplyr)

laste1996<-e1996 %>% group_by(ticker,mgrno)
%>%filter(date==max(date))

#Separate Calculation of proportion of shares held by Transient,
Dedicated and Quasi-indexer using R package dplyr

library(dplyr)

laste1996q <-laste1996 %>% group_by(ticker) %>%
  filter(permclass=="QIX")%>%
  mutate(QIXshares=sum(shares))

laste1996t <-laste1996 %>% group_by(ticker) %>%
  filter(permclass=="TRA")%>%
  mutate(TRAshares=sum(shares))

laste1996d <-laste1996 %>% group_by(ticker) %>%
  filter(permclass=="DED")%>%
  mutate(DEDshares=sum(shares))
```

```

e1996temp<-merge(laste1996q, laste1996t, by=c("ticker"), all=TRUE)

e1996holdings <-merge(e1996temp, laste1996d, by=c("ticker"), all=TRUE)

e1996holdings<-unique(e1996full [, 1:3])

#Combined Bushee classification data with Thompson-Reuters 13F filings and then with
WRDS Compustat fiscal year data, firm-years =35,705 Original in file, add
ewrdsfullYEAR files and holdingYEAR files to merge

ewrdsfull1996<-read.csv("ewrdsfull1996.csv", header = TRUE)

holdings1996<-read.csv("eholdings1996.csv", header = TRUE)

eh1996<-merge(ewrdsfull1996, holdings1996, by=c("tic"), all.x=TRUE)

#Diversification calculation, calculate DU, DR & DT, remove duplicates

d1996<-read.csv("d1996.csv", header = TRUE)

library(pylr)

d1996 <-ddply(d1996, .(gvkey), transform, totalsales = sum(sales))

d1996 <-ddply(d1996, .(gvkey,SICS1), transform, segmentsales = sum(sales))

d1996 <-ddply(d1996, .(gvkey,SICS1_2), transform, groupsales = sum(sales))

dr1996 <-ddply(d1996, .(gvkey),
  summarize,
  DR = sum((segmentsales/groupsales)*log(groupsales/segmentsales)))

du1996<-ddply(d1996, .(gvkey),
  summarize,
  DU = sum((groupsales/totalsales)*log(totalsales/groupsales)))

D1996<-merge(du1996, dr1996, by='gvkey',all=T)

D1996$DT<-D1996$DR + D1996$DU

head(D1996,25) #data check

#adding Diversification file D1996 to eh1996 without loss of primary data and
removing duplicate observations

```

```

ehd1996<-merge(eh1996, D1996, by=c("gvkey"), all.x=TRUE)

ehd1996<-ehd1996[!duplicated(ehd1996$gvkey),]

#Stacking yearly files (ehdYEAR) to create panel

ehd1997_2010<-rbind(ehd1997,ehd1998,ehd1999,ehd2000,ehd2001,ehd2002,
ehd2003,ehd2004,ehd2005,ehd2006,ehd2007,ehd2008, ehd2009,ehd2010)

cols<-intersect(colnames(ehd1997_2010), colnames(ehd1996))

ehd1996_2010<-rbind(ehd1997_2010[,cols], ehd1996[,cols])

#Adding relational debt from Osiris, using CIK numbers to get GVKEYS from WRDS,
then merging with main data.

bankloanO1<-read.csv("bankloanO1.csv", header=TRUE)

Changing Osiris data from factor to numeric before calculating full variable and
downloading gvkeys from WRDS

bankloanO1$BankLoanOsiris<-as.numeric(as.character(bankloanO1$DATA21070))

bankloanO1$AllLoansOsiris<-as.numeric(as.character(bankloanO1$DATA21010))

osiristic<-read.csv("osiristic.csv",header=TRUE)

osiriscik<-read.csv("osiriscik.csv", header=TRUE)

bankloan03<-merge(bankloan02, osiristic, by=c("tic","fyear"), all.x=TRUE)

bankloan04<-merge(bankloan03, osiriscik, by=c("CIK","fyear"), all.x=TRUE)

bankloan04$fyear.x<-as.Date(as.character(bankloan04$fyear), "%Y")

bankloan05<-subset(bankloan04, fyear.x > "1995-12-31")

bankloan06<-subset(bankloan05, fyear.x < "2010-12-31")

#Most common identifier available is still ticker, so used for merging after renaming
columns.

ehdb<-merge(ehd1996_2010, bankloan06,
by.x=c("tic","fyear.x"),by.y=c("tic.x","fyear"), all.x=TRUE)

#Removing duplicate observations created by full merge

ehdb2<-ehdb[!duplicated(ehdb[c("tic","fyear.x")]),]

```

```

#cleaned ehdb (EquityHolderDiversificationBankloan) file version #3 used for further
combinations.

#Combining with ExecuComp data : ceoanncomp, CoDirectorFull using GVKEY (no
missing values in ExecuComp data) and YEAR

ceoanncomp<-read.csv("ceoanncomp.csv", header=TRUE)

CoDirectorFull<-read.csv("CoDirectorFull.csv", header=TRUE)

ehdbceo<-merge(ehdb3, ceoanncomp, by=c("GVKEY","YEAR"), all.x=TRUE)

ehdbceodir<-merge(ehdbceo, CoDirectorFull, by=c("GVKEY","YEAR"), all.x=TRUE)

#ehdbceodir has dimensions 34,546 by 259; but most firm years have missing data due
to full merge used. Check data again using GE as example

GEfull<-subset(ehdbceodir,tic=="GE") #all OK

#subsetting ehdbceodir to get variables for setting up final panel.

panelsetup<-subset(ehdbceodir, select=c(GVKEY, YEAR, tic, DEDholdings,
TRAholdings, csho, BankLoanOsiris, at,che, dltd, bkvlps, DU, DR, DT, revt,sale, prcc_f,
re, wcap, xrd, xsga, dlc, ebit, emp, intan, ni, capx, oancf,
OPTION_AWARDS_BLK_VALUE, OPTION_AWARDS_RPT_VALUE, TDC1,
ANNDIRRET, NUMMTGS, DIRSTK, DIROPT, SALECHG, NICHG, EPSEXCHG,
ROEAVG, ROA,MKTVAL, SHRSOUT,sich,naicsh))

panelsetup$Sharesoutstanding<-panelsetup$csho*1000000

panelsetup$Sharesoutstanding2<-panelsetup$SHRSOUT*1000000

#Institution holdings converted to percentage ownership.

panelsetup$Dedicated<-((panelsetup$DEDshares/panelsetup$Sharesoutstanding)*100

panelsetup$Transient<-((panelsetup$TRASHares /panelsetup$Sharesoutstanding)*100

panelsetup$LongTermDebt<-panelsetup$dltd*1000000

panelsetup$BookValueofEquity<-panelsetup$Sharesoutstanding*panelsetup$bkvlps

panelsetup$Relational<-panelsetup$BankLoanOsiris/(panelsetup$LongTermDebt+
panelsetup$BookValueofEquity)

panelsetup$Transactional<-(1-panelsetup$Relational)

panelsetup$CEOSTockOptionsBS<-
panelsetup$OPTION_AWARDS_BLK_VALUE*1000

```

```
panelsetup$Assets<-panelsetup$at*1000000  
panelsetup$Cash_NearCash<-panelsetup$che*1000000  
panelsetup$MarketToBook<-  
(panelsetup$prcc_f*panelsetup$Sharesoutstanding)/panelsetup$BookValueofEquity  
panelsetup$OperatingCashFlow<-panelsetup$oancf*1000000  
panelsetup$CapitalExpenditures<-panelsetup$capx*1000000  
panelsetup$FreeCashFlow<-(panelsetup$OperatingCashFlow -  
panelsetup$CapitalExpenditures)  
panelsetup$RandDIntensity<-(panelsetup$xrd/panelsetup$sale)
```

For any queries, please contact me: chetanchawla@gmail.com

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