

To the Graduate Council:

I am submitting herewith a dissertation written by Matthew L. Hoag entitled “Is All Goodwill Created Equal? An Analysis of the Association Between Agency Conflicts, Board Monitoring, and Goodwill in U.S. Mergers and Acquisitions.” I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Business Administration.

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IS ALL GOODWILL CREATED EQUAL?
AN ANALYSIS OF THE ASSOCIATION BETWEEN AGENCY CONFLICTS, BOARD
MONITORING, AND GOODWILL IN U.S. MERGERS AND ACQUISITIONS

A Dissertation Presented for
the Doctor of Philosophy
Degree
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Matthew L. Hoag
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DEDICATION

This dissertation is dedicated to my wife, Cara, for her continual patience, support and love. To my parents, Mike and Mary, for a lifetime of nurturing, encouragement and love. And to my brother, James, for continually inspiring me to dream.

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ABSTRACT

The objective of this study is to examine the association between goodwill and governance structures – specifically, potential agency conflicts and internal and external board monitoring mechanisms – over a four-year period (2004-2007). To do this, I perform two distinct analyses to test (1) whether governance structures appear to be determinants of aggregate goodwill, and (2) whether governance structures appear to moderate investors’ perceptions of aggregate goodwill. I then extend these tests to a sample of U.S. merger and acquisition (M&A) transactions where I calculate a more refined measure of residual goodwill and re-perform the tests using this alternative goodwill measure. I find that potential agency conflicts are associated with both goodwill and residual goodwill, whereas monitoring mechanisms appear to have little measureable association with either of the goodwill measures. In addition, I provide evidence that investors perceive goodwill balances less favorably when agency conflicts are high and limited evidence that their perceptions of goodwill improve when external monitoring is strong. Based on these findings, I conclude that governance structures should be considered when evaluating goodwill. My results also suggest that previous findings based on residual goodwill may need to be reevaluated. Specifically, my analyses highlight an important distinction between the purchase price and consideration elements of residual goodwill, and I propose future avenues of research which may be used to investigate this important distinction further.

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“In many regards the market for corporate control is the ultimate governance mechanism. As managers compete in the product market, assets (companies) go to the highest value use and thus inefficient managers are disciplined. However, the market for corporate control may be double-edged in that it also provides a means by which inefficient managers may indulge in empire building through ill-advised acquisitions.”
(Gillan 2006)

1. INTRODUCTION

Mergers and acquisitions (“M&A”) are significant and complex corporate governance events in the lifecycle of the firm (Jensen 1993; Gillan 2006). M&A can dramatically alter the broad corporate landscape, affecting managers, employees, investors and all other stakeholders of the involved firms (Jensen 1993). Reflecting the significance of these important events, accounting for M&A is incredibly complex, involving significant use of valuation and estimates. In 2001, the Financial Accounting Standards Board (FASB) concurrently issued “SFAS 141: Business Combinations” and “SFAS 142: Goodwill and Other Intangible Assets” in order to increase the comparability of reported M&A transactions and to provide higher quality accounting information on intangible assets, including goodwill (FASB 2001).¹

Under the purchase accounting method required by SFAS 141, goodwill is allocated in M&A as the purchase price less all other separately identifiable assets (including intangible assets such as in-process R&D, customer lists, and patents/trademarks). Thus, goodwill is clearly linked to a firm’s M&A activities. Although several accounting studies have investigated determinants and investors’ perceptions of goodwill (Chauvin and Hirschey 1994; McCarthy and Schneider 1995; Jennings et al. 1996; Henning et al. 2000; Bugeja and Gallery 2006), none of these studies consider the association between goodwill and key corporate governance factors – specifically, potential agency conflicts and the internal and external monitoring structures that arise in response to these agency conflicts. Goodwill is a unique account in that it can only be allocated through M&A and thus, goodwill balances may be associated with the many governance forces and mechanisms that interact in the context of a firm’s M&A activities.

The governance implications of business combinations have been well established in previous academic research. In theory, business combinations serve as an important corporate governance mechanism in maintaining efficient market economies (Jensen 1993). Successful acquisitions create value

¹ FASB uses the term business combinations (also commonly used in the law literature), which is synonymous with M&A. Collectively, M&A may refer to any of three transactions pursued individually or in combination: (1) statutory mergers, (2) stock purchase transactions (including tender offers) and (3) asset purchase transactions.

for shareholders of both the acquiring and target firms by imposing discipline on corporate managers (Jensen 1993; Weisbach 1993; Andrade et al. 2001; Gillan 2006). Among the factors that contribute to these gains are improved operating performance through synergies achieved in the combined firm and superior returns resulting from greater economies of scale (Andrade et al. 2001; Halebian et al. 2008). In fact, these synergies are thought to be a prime economic component of goodwill (Johnson and Petrone 1998; Henning et al. 2000).

However, there is a significant and growing body of research suggesting that managers may engage in M&A for reasons other than shareholder value maximization, imposing significant costs on investors, employees, and numerous other stakeholders of the acquiring firm (Morck et al. 1990). Agency theory provides an explanation as to why managers will not always maximize shareholder value. When the functions of ownership and control are separated within the firm, managers are faced with opportunities to maximize their own personal utility to the detriment of the firm's shareholders (Jensen and Meckling 1976).

To counteract potential agency conflicts, firms institute monitoring mechanisms meant to limit managerial power and protect shareholders. Accordingly, Dey (2008) finds that firms with high agency conflicts tend to implement stronger monitoring activities. Prior research also shows that monitoring mechanisms may impact M&A activities pursued by firm management by ensuring that only those acquisitions that maximize shareholder value are pursued (Byrd and Hickman 1992; Gillan 2006; Netter et al. 2009). Stronger monitoring may also lead managers to better integrate the operations of the newly acquired firm post-merger, further enhancing shareholder value. Overall, the interplay between agency conflicts and monitoring mechanisms may be reflected in M&A in two broad ways: (1) in the consummation of business combinations; and (2) in the post-acquisition integration activities and subsequent operating performance. In this study, I structure tests to examine how governance mechanisms and indicators of potential agency conflicts may affect M&A decisions and subsequent investors' perceptions using goodwill as the focal point. Citing recent empirical works by Larcker et al (2007) and Dey (2008), I create three distinct measures; one capturing potential agency conflicts and two measuring the strength of monitoring mechanisms (internal and external) operating within the context of M&A. To do so, I perform principal component analysis (PCA) to capture the potential effects of numerous governance mechanisms and sources of agency conflicts affecting M&A decisions – and ultimately goodwill – within the 2004-07 sample period. After defining the measures, I test whether governance mechanisms and potential agency conflicts are determinants of aggregate goodwill. I next analyze investors' perceptions of aggregate goodwill after splitting the sample firms into groupings based on their

governance and agency risk characteristics to examine whether investors' perceptions vary depending on governance structures and underlying agency risks.²

According to the work of Johnson and Petrone (1998) and empirical findings of Henning et al. (2000), aggregate goodwill balances might be better evaluated in separate elements. Henning et al. (2000) find that investors assign differential values to the various elements of goodwill. In their study, the authors break goodwill into four basic elements according to the framework of Johnson and Petrone (1998). These four elements are: (1) the ability to earn a higher return on a collection of assets than would be expected if those assets were acquired separately (going-concern element); (2) the fair value of synergies obtained by combining the acquirer's and target's assets and operations (synergy element); (3) payments resulting from over- or under-valuation of the consideration used in the acquisition (consideration element); and (4) purchase premiums paid (or discounts obtained) in the course of acquisition negotiations (purchase price element). Under SFAS 141, goodwill balances may include all four elements; however some could argue that the consideration and purchase price elements do not imply future economic value for the acquiring firm. Henning et al. (2000) provide some support for this argument, providing evidence that investors value the synergy and going concern components of goodwill and discounting the residual goodwill components (e.g., residual goodwill is negatively associated with a firm's market valuation).

I adopt this more refined approach to goodwill measurement and re-perform the previous tests using these more refined residual goodwill measures. Following prior research, I employ two different residual goodwill measures. The first follows the methodology of Johnson and Petrone (1998) and Henning et al. (2000), which I outline above. The second measure follows the methodology outlined in Shalev (2009), using the residuals from a regression of the ratio of allocated goodwill over the total purchase price on three variables : (1) target firm industry classification; (2) acquiring firm industry classification; and (3) a measure of acquiring firm growth prospects. Calculating these residual goodwill measures requires hand-collected, transaction-level data and thus, my sample is constrained to a subset of the full sample of firms comprising my initial tests.³

² An important limitation of the aggregate goodwill tests I perform is that aggregate goodwill balances may be allocated prior to the sample period and therefore, may not correspond with the governance variables I capture during the four-year sample period. Further, aggregate goodwill serves as a noisy measure of a firm's prior acquisition activity. The aggregate goodwill balances may include goodwill balances allocated prior to the passage of SFAS 141 (and thus subject to amortization prior to 2001) as well as goodwill allocated in M&A involving foreign entities. In these cases, it is likely that the determinants and perceptions of the corresponding goodwill balances differ, which may be impacting the aggregate goodwill analyses I perform. See additional discussion in *Section 7.A*.

³ In order to avoid complications arising from foreign currency exchange rate fluctuations I specifically exclude foreign firms and acquisitions from these analyses, as is implied in the title of the paper. However, I acknowledge that aggregate goodwill balances may include balances allocated in M&A transactions involving foreign firms.

Overall, this study should illustrate the role of governance structures in the incidence and reporting of M&A transactions and the allocation of goodwill in these transactions. Further, the study should help to assess whether goodwill balances provide useful information to market participants for valuing firms in M&A events, while considering the effects of a firm's governance environment. M&A transactions are significant business events, and accurate accounting for these transactions is crucial for interpreting the merits and/or potential pitfalls of these transactions. If the reported accounting information is not accurate, investors and other users of financial statements may not be able to reasonably assess the risks associated with these transactions.

The remainder of the paper is organized as follows: In Section 2, I provide a literature review and discuss the relevant theories that pertain to the study. Hypotheses are presented in Section 3. In Section 4, I describe the empirical analyses including model specification, sample selection, summary statistics and the construction of the governance variables. Results of the primary hypotheses tests are presented in Section 5 and additional tests are described in Section 6. I conclude with Section 7, in which I discuss the study's primary implications and limitations, and synthesize future related research avenues.

2. LITERATURE REVIEW

A. *M&A: two illustrative examples*

i. *The case of Microsoft and Yahoo!*

On January 31, 2008, Microsoft shocked Wall Street with the announcement of a proposed \$41+ billion offer to acquire the beleaguered Internet giant, Yahoo!. Investors responded with enthusiasm, quickly bidding Yahoo's stock up nearly 50 percent on extremely heavy volume.⁴ However, Yahoo! executives quickly rebuffed the offer reportedly stating that Microsoft's offer "substantially undervalues Yahoo!" (Delaney et al. 2008).⁵ Microsoft quickly responded with a revised \$47.5 billion offer in order to "secure the goodwill of Yahoo! staff and management" (Delaney et al. 2008). However, this offer was similarly rejected and the transaction ultimately fell through. An article in the *San Francisco Chronicle* dated November 8, 2008 quotes Microsoft CEO, Steve Ballmer, on the topic of the failed bid. He comments, "[w]e made an offer, we made another offer, and it was clear that Yahoo! didn't want to sell the business to us and we moved on." However, the article acknowledges that Yahoo! CEO, Jerry Yang, "is open to a takeover and even went so far as to suggest that Microsoft should make an offer" (Kopytoff 2008). Yang has since been ousted as CEO and the investing world waits to see whether Microsoft will again bid for Yahoo! with the firm's powerful founding CEO no longer at the helm (Waters and Nuttall 2008).⁶

Although this proposed M&A transaction was never consummated, this widely publicized bid involving two technology giants highlights several fascinating aspects of M&A activity. First, M&A reflect the culmination of often lengthy negotiations and represent the interests of multiple parties and persons. Second, they reflect trends in the current business environment, characteristics of both the target and acquiring firms, as well as those of the managers, board members, and significant investors involved throughout the lengthy merger process. Third, these corporate events reflect the operation of several critical corporate governance mechanisms at work to determine whether a merger bid is ultimately accepted and at what price. I elaborate on these important theories, motivations and related governance

⁴ Stock opened at \$28.68 on 2/1/98 from a previous closing price of \$19.18 according to Yahoo historical stock prices obtained from Yahoo finance (<http://finance.yahoo.com>)

⁵ Yahoo executives were reportedly holding out for at least \$40/share, which would value the transaction upwards of \$57.5 billion. In a press release, Yahoo stated that Microsoft's offer undervalued its "global brand, large world-wide audience, significant recent investments in advertising platforms and future growth prospects, free cash flow and earnings potential[.]"(Delaney et al. 2008)

⁶ The article also reports on the changing dynamics of Yahoo's board of directors following the appointment of a prominent activist shareholder, Carl Icahn, to the Board. Icahn had long been a vocal critic of Yahoo's former executive, Jerry Yang (Waters and Nuttall 2008).

mechanisms in section 2.B below. Before doing so, I present a second illustrative example to further frame and motivate the study.

ii. *The case of WorldCom*

In July of 2002, the once high-flying telecom company, WorldCom, Inc., filed for Chapter 11 bankruptcy protection.⁷ A key area of interest during the bankruptcy proceedings was WorldCom's M&A history and activity. The court-appointed Examiner (Dick Thornburgh) paid considerable attention to the firm's accounting for M&A to determine "[w]hether WorldCom, in addition to using acquisition reserves in a "cookie jar" fashion, might, without sufficient justification, have reduced the book value of the tangible assets of some of the companies that it acquired, including MCI, while commensurately increasing the amount allocated to goodwill (Thornburgh 2002, 2003)." These allegations, if true, suggest that WorldCom's CEO, Bernie Ebbers, may have pursued value-decreasing M&A transactions opportunistically in order to engage in "empire building."⁸ Furthermore, this M&A activity may have been used to conceal an ongoing fraud perpetrated by key executives by propping up accounting earnings by improperly increasing the amount of goodwill allocated in business combinations.

WorldCom's case is a rare and extreme example of the financial reporting risks inherent in M&A accounting, but it illustrates several important points related to M&A. First, WorldCom's management apparently pursued M&A for reasons other than to maximize shareholder value. Second, the board of directors seemingly failed to adequately monitor the firm's management team with respect to M&A activity, suggesting a failure in WorldCom's internal governance mechanisms. Third, the financial reporting of WorldCom's M&A activities may have been manipulated to manage future earnings upwards by understating acquired identifiable assets and overstating the amounts allocated to goodwill.

Clearly, business combinations are complex, newsworthy, and potentially controversial events. There has been a considerable stream of literature devoted to these important corporate transactions and a number of theories for M&A have emerged, most notably in the finance area. However, it is surprising that there has been relatively little research on the topic of M&A performed by accounting scholars. Accounting for M&A is as complex and controversial as the transactions themselves and therefore thoughtful accounting research on the subject is both necessary and desirable. However, no research on

⁷ WorldCom's bankruptcy filing, at the time, was the largest Ch. 11 bankruptcy filing in U.S. history. Lehman Brothers has since claimed this dubious distinction when it filed for Ch. 11 protection in September 2008.

⁸ The term "empire building" is used by Gillan (2006) and is meant to illustrate a theory of managerial behavior, where executives may pursue M&A in an effort to bring more assets under their control rather than for maximization of shareholder value.

the subject of M&A can be completed without considering the economic theories which underlie the transactions themselves, which I address next.

B. M&A: background & theory

i. Background: why do firms engage in M&A?

Mergers and acquisitions are significant corporate events which can have a profound effect on the corporate landscape (Jensen 1993). Given the importance of these events, there are several proposed theories and rationales that attempt to explain why firms and their management teams engage in M&A. I begin my theoretical development with a survey of the reasons why firms (and their respective management teams) may engage in M&A.

A literature review by Andrade et al. (2001) is a good starting point. In their paper, the authors classify the underlying motivations for M&A into five categories: (1) efficiency related reasons; (2) attempts to create market power; (3) fulfilling the self-serving interests of managers; (4) market discipline; and (5) taking advantage of opportunities for diversification.⁹ The authors acknowledge that some M&A may not be pursued with the shareholders' best interests at heart. "We would like to believe that in an efficient economy, there would be a direct link between causes and effects, that mergers would happen for the right reasons, and that their effects would be, on average, as expected by the parties during negotiations. However, the fact that mergers do not seem to benefit acquirers provides reason to worry about this analysis." (Andrade et al. 2001)

Morck et al. (1990) provides empirical evidence that would support this observation, finding that announcement period returns are significantly lower when firms engage in diversifying M&A, acquire rapidly growing firms, and when its managers perform poorly prior to the M&A transactions. The authors conclude that this evidence serves as strong evidence that managers may pursue M&A for self-serving reasons. Of the five M&A motivations listed above, only the third item (self-serving managerial interests) would explain this empirical observation that M&A, on average, do not appear to benefit shareholders of the acquiring firm.

Prior research has also identified five different scenarios in which self-serving managerial interests may impact a firm's M&A decisions. First, managerial hubris predicts that managers may overpay in M&A because they overestimate their own ability to derive synergies in the combined company (Roll 1986). Masulis et al. (2007) provide evidence that poor M&A may be associated with increasing managerial power (or entrenchment). In a sample of more than 3,000 M&A transactions

⁹ I note that this list is not exhaustive. For instance, managers may also pursue M&A in connection with a firm's organizational tax strategies.

between 1990 and 2003, the authors find that acquiring firms with potentially entrenched managers (those firms with significant anti-takeover provisions, operating in less competitive industries, and holding dual CEO/Chairman positions) see significantly lower announcement-period returns.

Second, managers may desire to grow the firm beyond reasonable levels, a practice which has been referred to as “empire building” (Gillan 2006). Empire building may allow managers to increase their notoriety or to secure higher compensation as more assets are acquired and placed under their control. In a disclosure setting, Hope and Thomas (2008) provide evidence that the quality of foreign operations’ disclosure varies inversely with growth in foreign revenues. The authors deem this as proof of empire building, suggesting that managers who engage in aggressive expansion through M&A into foreign markets are less transparent in disclosing the related operating activities in order to avoid scrutiny for making ill-advised M&A decisions.

Third, managers may engage in M&A in order to collect M&A bonuses and equity payouts directly related to a completed M&A transaction. Grinstein and Hribar (2004) provide evidence that M&A bonuses are more prevalent at firms where CEOs hold considerable power. Further, they show that more powerful CEOs acquire larger firms, receive higher M&A bonuses as a result, and that the market responds more negatively to the corresponding merger announcements.

Fourth, the agency costs of free cash flow theory (Jensen 1986) predicts that managers in control of large free cash flows may also be more likely to pursue ill-advised M&A. Harford (1999) provides a direct test of this theory using a large sample of attempted M&A transactions between 1977 and 1993. The author presents strong evidence, measured in both stock returns and operating performance, that cash rich firms are more likely to engage in value-decreasing M&A.

And fifth, managers may engage in low quality M&A as part of a broader effort to conceal or perpetrate earnings management or fraud. A prime example of this is WorldCom, whose management perpetrated one of the largest frauds in U.S. history. In the bankruptcy proceedings, the firm’s examiner specifically describes a pattern of M&A activity that should have raised red flags with investors, auditors and regulators (Thornburgh 2002, 2003). Empirically, both Heron and Lie (2002) and Louis (2004) examine operating performance for the acquiring firm in the time period preceding a M&A transaction to test whether there is evidence of earnings management. These studies yield mixed results as Heron and Lie (2002) find no evidence of earnings management while Louis (2004) documents strong evidence that acquiring firms may manage pre-M&A operating performance to boost stock prices ahead of a M&A transaction in which the acquiring firm issues equity.

All of these examples of self-serving managerial interest build on theoretical underpinnings widely known as the agency problem. Specifically, they imply a scenario in which managers wield

considerable power in the decision making process, with little effective monitoring oversight. The relation between the agency problem, monitoring and M&A has been extensively studied, predominantly in the finance literature. Accordingly, I would be remiss to begin any theoretical examination of M&A without first discussing the implications of agency theory and monitoring.

ii. *Theory: the agency problem in M&A*

According to agency theory, the separation of ownership and control creates opportunities for corporate managers to extract benefits from the firm thereby increasing their own personal utility by acting in ways that may not be in the best interests of the firms' shareholders (Jensen and Meckling 1976). This paradox is widely recognized as the "agency problem" and it creates a demand for corporate governance, giving rise to a number of the mechanisms outlined by Gillan (2006) in his paper. All of the mechanisms entail some economic cost to the firm, or agency costs, which are those incurred to ensure managers act in the best interests of their firms' shareholders (Jensen and Meckling 1976; Fama 1980).

The agency problem manifests itself in two ways with respect to business combinations, representing the double-edged sword described in earlier published studies (Bittlingmayer 2000; Gillan 2006). "On the one hand, it allows managers to indulge their penchant for acquiring businesses they are not able to manage well and to pay too much when they do so, but, on the other hand, it also provides the ultimate corrective" (Bittlingmayer 2000). That is, managers with too much power may pursue value-decreasing M&A to the detriment of their firms' shareholders. Thus, it is important that firms implement effective governance mechanisms to monitor and limit managerial power in order to protect the interests of the respective shareholders.

iii. *Theory: internal governance mechanisms in M&A*

Gillan (2006) proposes a governance framework that includes five broadly defined categories of internal monitoring mechanisms: (1) board of directors, (2) managerial incentives, (3) capital structure, (4) bylaw and charter provisions, and (5) internal control systems. This framework illustrates the interplay between potential sources of agency conflict and monitoring mechanisms within the firm. Several different studies have empirically examined these important governance structures within the context of M&A.

Focusing first on the board of directors, Byrd and Hickman (1992) examine 128 tender offer bids made from 1980 through 1987 and find evidence of higher announcement-date abnormal returns for firms possessing greater board independence, suggesting that strong independent board monitoring leads to better M&A. Prior research has also shown an association between *target* firm board characteristics and

the likelihood of a hostile takeover (Shivdasani 1993; Weisbach 1993). The authors conclude that poor monitoring by the target's board of directors leads to an increased incidence of a hostile takeover event, using variables such as independence, board stock ownership, and other corporate directorships to measure the quality of a board's monitoring activities. However, several recent studies have extended these findings by analyzing CEO involvement in the selection of directors. These studies find that CEO involvement in the director selection process limits the effectiveness of boards in fulfilling their monitoring responsibilities (Shivdasani and Yermack 1999; Carcello et al. 2010).¹⁰ In all, the board fulfills an important role in monitoring and ratifying management decisions and to the extent this important mechanism is compromised, managers may misuse their power and influence to the detriment of the firm's shareholders (Fama and Jensen 1983; Gillan 2006).

Managerial incentives also play an important role in reducing agency conflicts. According to Gillan (2006), managerial incentives fall into three categories including (a) ownership, (b) compensation, and (c) employment agreements. Considering the ownership component, Datta et al. (2001) find that managers compensated more heavily with equity-based compensation tend to make better M&A decisions overall. However, there has been evidence that would suggest that managerial ownership cannot be viewed monotonically, giving rise to a theory known as managerial entrenchment (Morck et al. 1988). The theory posits that managers may become "entrenched" when the important internal governance mechanisms meant to regulate their behavior are ineffective (Morck et al. 1988; Shleifer and Vishny 1989).¹¹ Morck et al. (1988) document a non-monotonic association between managerial shareholdings and a measure of firm valuation (Tobin's Q). Managerial shareholdings lead to higher firm value in cases when they are low (e.g. below five percent) or relatively high (e.g. above 25 percent). However, the findings imply that managerial entrenchment occurs between five percent and twenty-five percent ownership and that incentive alignment does not occur unless managers hold considerable percentages of the firm's stock.

Managerial compensation is also a key element for aligning the incentives of managers and the firm's shareholders. There have been a number of studies examining the impact of managerial compensation on M&A activity. Harford and Li (2007) find that CEOs tend to receive higher total compensation after undertaking a business combination and that this association is insensitive to stock

¹⁰ Shivdasani and Yermack (1999) examine stock price reactions around the announcement of new director appointments and find significantly lower stock returns persist when the CEO is involved in the selection process. In a related study, Carcello et al. (2010) provide evidence that CEO involvement in the selection of board members who also serve on the firm's audit committee is associated with diminished financial reporting quality.

¹¹ Factors contributing to entrenchment include, but are not limited to, significant managerial shareholdings, weak board monitoring, strong anti-takeover provisions, CEO/Chair duality, and having a CEO who is also founder of the firm.

returns and shareholder wealth. Grinstein and Hribar (2004) show that more powerful CEOs (e.g. those holding seats on the nominating committee or those holding dual CEO and chair positions) receive significantly higher M&A bonuses. Further, the authors provide evidence that these bonuses are not sensitive to deal performance and that more powerful CEOs tend to engage in relatively larger M&A transactions to the detriment of the firm's shareholders. Finally, Datta et al. (2001) find that managers who receive considerable equity-based compensation tend to make better M&A decisions overall. Specifically, the authors document a high association between equity-based compensation and stock price performance around the M&A transaction announcement date. The evidence they provide also suggests that managers receiving higher equity-based compensation pay lower M&A premiums, acquire firms with greater growth potential, and engage in M&A that increase firm risk, coinciding with the increased opportunities for increased returns. It is important to note that compensation agreements may not always lead managers to act in the shareholders' best interest. Bebchuk and Fried (2003) acknowledge that managerial compensation arrangements can, themselves, be compromised by managerial power and so it is important to consider that compensation incentives may not always lead managers to engage in value-increasing M&A.

Employment agreements can also be used to ensure managers act with shareholders' interests in mind through the threat of termination due to poor performance. Lehn and Zhao (2006) find that 47 percent of acquiring firm CEOs are replaced within five years of the M&A event. Furthermore, the authors find evidence of a strong negative association between acquiring firm returns and the likelihood of CEO turnover. Overall, their study shows internal governance mechanisms may work to protect shareholders by removing managers who pursue ill-advised M&A.

Capital structure is a term that describes the overall financing structure of the firm as a mix of equity and debt. The agency costs free cash flow theory describes the important agency implications of free cash flow in managerial decision making. Free cash flow is defined as cash which accumulates in a firm that has no other viable positive net present value projects. When confronted with free cash flow, managers are more likely to invest in value-decreasing projects, which include M&A investments (Jensen 1986). Jensen illustrates how debt may be used to limit the agency conflicts associated with free cash flow. When a firm issues debt in exchange for stock, they replace voluntary dividend payments with contractual interest payments and thus reduce the levels of free cash flow. Maloney et al. (1993) provide empirical support for this theory documenting a positive association between leverage and abnormal returns for acquiring firms. Other studies have included leverage as a control variable when studying M&A for both the target (Moeller 2005; Wang and Xie 2009) and the acquiring firms (Harford 1999; Moeller et al. 2004; Masulis et al. 2007; Wang and Xie 2009). Surprisingly, none of these studies

document a significant association between leverage and the measure of M&A performance (typically announcement-period returns or transaction premiums paid).

Bylaw and charter provisions, such as anti-takeover mechanisms (e.g. “poison pills”), have been shown to significantly impact the level of a firm’s M&A activity. Brickley et al. (1994) are among the first to examine the impact of anti-takeover measures on firm performance and management behavior. The authors provide evidence of a positive stock-market reaction to the adoption of poison pills when a board has an independent board and a negative stock-market reaction when the board is not independent. Thus, anti-takeover measures are clearly viewed to be valuable when they are perceived to serve the interests of shareholders rather than as a mechanism to further entrench the firm’s management against outside takeover bids. Masulis et al. (2007) provide compelling evidence that acquiring firms with predominant anti-takeover provisions tend to experience significantly lower announcement period abnormal stock returns as compared to acquiring firms with few (if any) anti-takeover measures. The authors conclude that the presence of anti-takeover provisions may provide a signal of possible empire building, which is widely viewed as detrimental to shareholders. Finally, Wang and Xie (2009) find that there is a corporate governance transfer effect in M&A. In other words, the wider the gap in shareholder rights between the acquiring and target firm (stronger rights at acquiring firms relative to the target firms’ shareholder rights), the greater the abnormal announcement-period stock returns.

Finally, internal control systems are important monitoring mechanisms which have received considerable attention recently. The passage of the Sarbanes Oxley Act (SOX) in 2002 requires firms and their auditors to identify any internal control deficiencies and separately opine on the quality of the firm’s overall internal control structures. Although internal audit costs and structures cannot be readily accessed through public sources for ex ante analysis, several researchers have used the newly available internal controls data to perform ex post governance research on this important mechanism.^{12,13}

iv. *Theory: The role of M&A as an external governance mechanism*

External governance mechanisms may also work to reduce the agency problem of the firm. In the following sections, I discuss several of the relevant external governance mechanisms. Gillan (2006) presents five broad categories of external governance mechanisms: (1) law/regulation, (2) markets, (3) capital market information/analysis, (4) accounting, financial and legal services, and (5) private sources of

¹² Studies include Doyle et al. (2007a; 2007b), Ashbaugh-Skaife et al. (2007; 2008), and Hogan and Wilkins (2008).

¹³ An effective set of internal controls may also have an effect on M&A decisions and post-merger integration activities. As a result, internal controls could impact the initial allocation of goodwill and subsequent investors’ perceptions of this asset. Though not the focal point of my study, I perform limited analyses regarding the association between internal controls and goodwill in *Section 6* below.

external oversight. Within the context of M&A, I focus on three of these categories for further discussion: markets, accounting services, and law/regulation.¹⁴

M&A transactions, themselves, reflect a market known as the market for corporate control. Jensen (1993) concludes that M&A serve as a relatively efficient measure as compared to other external “control forces” (such as legal, political, and regulatory systems or the product markets) when it comes to disciplining inefficient managers. However, he notes that M&A should be relied upon only as a last resort when a firm’s internal control systems and other more efficient external mechanisms have failed. Product and labor markets are two such mechanisms. Jensen (1993) suggests that takeover targets are typically firms that have lost their competitive edge in providing goods and services to their customers. Ultimately, firms that cannot compete in the product markets will either dissolve, be forced into bankruptcy, or become takeover targets to more successful competitors.

Labor markets reward more competent managers and directors with more prestigious appointments and higher salaries while punishing ineffective managers and directors through termination. Lehn and Zhao (2006) find that CEOs who pursue takeovers that are poorly received by investors are more likely to be terminated in the months following the M&A transaction. Harford (2003) finds that directors of the target firm are punished in the labor markets as a result of the takeover event in that they hold fewer board seats and have lower future board compensation after a successful bid. These studies provide empirical evidence of the role that labor markets play in M&A.

Another markets category is the capital markets category. Capital markets are made up of either debt or equity holders, with the equity holders being the most pertinent to M&A. Specifically, Gillan (2006) identifies the presence of institutional shareholders and blockholders to be of particular importance from a governance standpoint. The reason for this is clear; significant stakeholders in the firm actively monitor management because they have a significant economic interest in the firm. Both Dey (2008) and Larcker (2007) show the existence of significant institutional or other outside blockholders to be vital mechanisms for monitoring management. Furthermore, a diffuse ownership structure (e.g., no institutional or outside blockholders) is widely believed to contribute to the agency problem (Jensen and Meckling 1976; Chen et al. 2007; Dey 2008).

Accounting service providers, particularly a firm’s auditors, serve as watchdogs commissioned with the responsibility of providing an independent outsider’s opinion on the financial statements, including the reporting of M&A activity. Louis (2005) finds that acquiring firms with non-Big N auditors

¹⁴ Gillan (2006) further classifies markets into four sub-categories: (1) capital markets, (2) market for corporate control, (3) labor markets, and (4) product markets. Given the scope of the market for corporate control, I devote most of the discussion of external markets to this important topic.

outperform those with Big N audit firms. He interprets these results as evidence that non-Big N audit firms offer a comparative advantage in assisting their clients in the implementation of a M&A transaction. There has been an entire stream of accounting literature devoted to audit quality differences between Big N and non-Big N audit firms, with the consensus view being that Big N auditors offer higher quality audits than do small- and mid-sized audit firms.¹⁵

Finally, laws and regulation may serve as an effective – albeit inefficient – monitoring mechanism (Jensen 1993). The passage of SOX, the sweeping regulatory and legal response to a swath of corporate scandals in 2001 and 2002, is a prime example. Accounting standard setters may also change the monitoring landscape through the passage of new accounting standards and/or disclosure requirements. For instance, the Financial Accounting Standards Board (FASB) issued SFAS141 in 2001 with the stated goals of improving the comparability and representational faithfulness of reported financial information (FASB 2001). This standard superseded Accounting Principles Board (APB) Opinion No.16: *Accounting for Business Combinations*, which had allowed either the purchase or the pooling-of-interests method of accounting for business combinations. SFAS 141 *requires* the purchase method of accounting for M&A activity, no longer giving firms an option between the two methods of accounting for M&A.¹⁶

Under the pooling-of-interests method, an equity-only transaction is considered to be a rearrangement of ownership interest and the assets of the target and acquiring firm are combined at *book value* (Libby et al. 1998). As such, no fair value estimates are required, eliminating a significant area of management judgment and estimation in the reporting of M&A transactions. Though FASB has removed considerable complexity in requiring a single accounting method for business combinations, application of the purchase method is itself complex and technical. Accounting for business combinations requires significant management judgments and estimates, thereby leading to an increased risk of material misstatement.

C. *Accounting for M&A: background & theory*

One of the more technical and complex topics addressed in the SFAS 141 is the treatment of goodwill, which has long been a contentious component of accounting for business transactions. FASB

¹⁵ For the sake of brevity, I do not expand further on this point, but refer the interested reader to DeAngelo (1981), Palmrose (1988), and Francis et al. (1999).

¹⁶ SFAS 141(R) was issued in 2007 with the intention of limiting the use of certain loopholes in the financial reporting of business combinations and clarifying the reporting of in-process research and development, transaction costs, and restructuring charges (Deng et al. 2008). The standard became effective for firms with fiscal year ends after December 15, 2008. Given the sample period under examination does not extend beyond December 31, 2007, the revised standard is not expected to significantly impact the results of the analyses.

defines goodwill as “[a]n asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized” (FASB 2001). Under SFAS 141, goodwill is calculated as the aggregate purchase price less the net of all other separately identifiable assets acquired. Another critical element of the standard was the elimination of goodwill amortization, which was allowed under APB Opinion No. 16.¹⁷ As such, this oft-significant element remains capitalized on the entity’s balance sheet, unless it is later found to have been impaired.

Given the nature of goodwill, its initial allocation is subject to the various M&A motivations, environmental factors and ultimately the outcomes of business combination transactions, which I describe in the preceding sections. Thus, goodwill balances may include important information about the quality of a firm’s M&A. In the mid-nineties, there were a handful of studies which examined the components of goodwill under APB Opinion No. 16. Collectively, these studies provide evidence that goodwill balances fairly represent a firm’s ongoing reputational value (Chauvin and Hirschey 1994), and that these balances do serve as useful predictors of future earnings and are thus incorporated by investors in their valuation of the firms (McCarthy and Schneider 1995). A subsequent study by Jennings et al. (1996) confirms a positive association between goodwill balances and equity valuations for a sample of 259 firms for fiscal years between 1982 and 1988.¹⁸ Furthermore, the authors find a weak negative association between equity valuation and goodwill amortization and conclude that investors perceive declines in the value of goodwill differently across the cross-section of firms. In this study, I build upon this previous research to analyze how indicators of potential agency conflicts and governance mechanisms may be associated with both aggregate and residual goodwill measures.

¹⁷ Under APB Opinion No. 16, firms were required to amortize goodwill over a period not to exceed forty years. Under SFAS142, which was issued concurrently with SFAS 141, firms are required to perform annual goodwill impairment assessments.

¹⁸ Full data for their study (n=253 firms) were collected from published financial statements and from a mail survey sent out to firms reporting goodwill balances during the sample period.

3. HYPOTHESES DEVELOPMENT

A. *Hypotheses 1 & 2: M&A, governance and aggregate goodwill*

As is described in the preceding sections, M&A are impacted by numerous governance mechanisms which are put in place to monitor management, such as the board of directors, managerial compensation contracts, significant independent blockholder/activist shareholdings, and bylaw and charter provisions (namely anti-takeover measures). Collectively, effective operation of these important monitoring mechanisms should mitigate the agency problem (Jensen and Meckling 1976; Fama 1980), resulting in the alignment of managerial and shareholder interests. However, if these mechanisms are ineffective in their design or operation then managers wield significant power and may become entrenched, increasing the likelihood that they pursue value-decreasing M&A (Roll 1986; Morck et al. 1990; Harford 1999; Grinstein and Hribar 2004; Masulis et al. 2007; Hope and Thomas 2008).

Value-decreasing M&A imply overpayment at the time the transaction is completed. If true, then goodwill balances allocated through the transaction will be larger than they would have been had the firm not overpaid in the M&A transaction. If firms are more likely to complete value-decreasing M&A when agency conflicts are high and monitoring mechanisms are weak, then I would expect to find a positive (negative) association between potential agency conflicts (the strength of monitoring mechanisms) and aggregate goodwill. Further, M&A may provide an opportunity for managers to entrench themselves, thereby increasing potential agency conflicts (Shleifer and Vishny 1989), which would lead to similar expectations regarding the association between aggregate goodwill and both potential agency conflicts (positive) and the strength of monitoring mechanisms (negative).

On the other hand, stronger monitoring mechanisms may also lead to stronger firm performance, creating a larger pool of resources with which to pursue M&A (Jensen 1993). Thus, aggregate goodwill balances could actually be higher for firms with strong monitoring mechanisms. In this case, I would expect to find a negative (positive) association between potential agency conflicts (the strength of monitoring mechanisms) and aggregate goodwill. Given these conflicting rationales, I do not make a directional prediction regarding the association between goodwill balances and the monitoring mechanisms operating within a firm nor between goodwill balances and variables that proxy for agency conflicts. Thus, I propose the following two non-directional hypotheses:

H1a: There is an association between the strength of monitoring mechanisms and aggregate goodwill balances.

H1b: There is an association between the level of potential agency conflicts and aggregate goodwill balances.

Previous studies have shown aggregate goodwill to be significantly and positively associated with market value of equity (Chauvin and Hirschey 1994; McCarthy and Schneider 1995; Jennings et al. 1996), suggesting that goodwill implies future economic returns to the firm. However, some studies in finance provide compelling evidence that ill-advised M&A erode firm value, especially in cases where potential agency conflicts are high (Morck et al. 1990; Harford 1999; Grinstein and Hribar 2004). Investors may have differing perceptions of a firm's aggregate goodwill balance dependent on the varying governance environments in which the firm operates.

Firms with high potential agency conflicts (strong monitoring mechanisms) are more (less) likely to have completed ill-advised M&A in the past implying lower (greater) economic returns associated with the aggregate goodwill balances that are a byproduct of these transactions. In addition, firms with high potential agency conflicts (strong monitoring mechanisms) are less (more) likely to be successful in creating value from its previous M&A activities as a result of possible managerial entrenchment. These observations imply a weaker (stronger) positive association between goodwill and market value of equity for firms with high potential agency conflicts (strong monitoring mechanisms). I propose the following two hypotheses:

H2a: Investors' perceptions of the value of aggregate goodwill (the association between aggregate goodwill and market valuation) are more positive for firms with strong monitoring mechanisms.

H2b: Investors' perceptions of the value of aggregate goodwill (the association between aggregate goodwill and market valuation) are less positive for firms with high potential agency conflicts.

B. *Hypotheses 3 & 4: M&A, governance and residual goodwill*

Since aggregate goodwill balances may not provide a sufficiently refined measure for assessing the quality of M&A activity nor for assessing the impact that potential agency conflicts and monitoring mechanisms may have on M&A, I define a more precise *residual* goodwill measure for the next set of hypotheses. To define this measure, I follow prior research, which decomposes goodwill into distinct components to perform more refined tests of goodwill (Johnson and Petrone 1998; Henning et al. 2000;

Bugeja and Gallery 2006; Shalev 2009) and use these more refined goodwill measures to analyze the association between M&A, governance structures and *residual* goodwill balances.

Prior research identifies four components which together constitute aggregate goodwill (Johnson and Petrone 1998; Henning et al. 2000). Two of these components – the synergy and going concern elements – imply future economic returns to the firm and should be deemed valuable by the firms' investors. The other two components – the purchase price and consideration elements – capture factors associated with the final negotiated purchase price that do not clearly imply future economic benefits. Henning et al. (2000) combine these last two components to form their residual goodwill measure, which they show to be negatively associated with market value.

Adopting this conceptualization, I focus on residual goodwill in developing hypotheses three and four (H3 and H4), in an effort to more thoroughly examine the associations between M&A, governance structures and goodwill balances. I measure residual goodwill using both the Henning et al. (2000) method and an alternative approach adopted by Shalev (2009). Conceptually, residual goodwill is comprised of two elements: a purchase price element and a consideration element. To the extent residual goodwill is dominated by the purchase price element, higher residual balances imply a growing gap between the consideration offered in a M&A transaction and the fair values of identifiable assets acquired, suggesting possible overpayment. Overpayment in M&A is more likely to occur as potential agency conflicts increase and/or in the presence of weaker monitoring mechanisms. Thus, a positive (negative) association between potential agency conflicts (the strength of monitoring mechanisms) and residual goodwill suggests that a larger residual goodwill balance is indicative of overpayment in the M&A transaction (e.g. a “low quality” transaction).

Residual goodwill may also represent the value of consideration offered in payment in the M&A transaction (i.e., the consideration element). The consideration element of residual goodwill stems from the valuation of the underlying assets exchanged by the acquiring firm in the transaction. Two examples of this are: (1) foreign exchange rate fluctuations corresponding with M&A involving foreign firms; and (2) over/under-valuation of acquiring firms' shares exchanged in stock transactions. Given that foreign firms and M&A are excluded from the residual goodwill analyses performed in this study, the consideration component should only be capturing the effects of any equity purchase price components for these tests. Unfortunately, the direction of the association between governance structures and the (equity-based) consideration element of residual goodwill is not clear-cut. On the one hand, managers may use over priced shares to pursue ill-advised M&A (Gu and Lev 2008). In fact, some managers appear to manage earnings in advance of an equity-based acquisition in order to boost the value of the acquiring firm's shares, effectively reducing the cost to the acquiring firm (Louis 2004). These observations imply a

positive (negative) association between potential agency conflicts (the strength of monitoring mechanisms) and residual goodwill balances related to the consideration element.

However, the agency theory of the firm predicts an inverse relation between firm value and potential agency conflicts (Jensen and Meckling 1976). Several studies in finance build upon this expected relation as a foundation for empirical analysis. For example, Morck et al. (1988) present evidence that firm value is inversely associated with agency conflicts arising from managerial shareholdings, and Coles et al. (2008) use a measure of firm value in tests to determine whether there exists an optimum board size. To the extent that share values imply lower potential agency conflicts (stronger monitoring mechanisms), a negative (positive) association is expected between these corresponding measures and the consideration element of residual goodwill. I propose the following two non-directional hypotheses:

H3a: There is an association between the strength of monitoring mechanisms and residual goodwill balances.

H3b: There is an association between the level of potential agency conflicts and residual goodwill balances.

Henning et al. (2000) find that investors value the synergy and going concern components of goodwill, but discount the residual component. However, the authors do not consider governance structures in their analysis. It is plausible that investors will place differing values on the residual component of goodwill depending on the level of potential agency conflicts and the strength of a firm's monitoring mechanisms. As is the case with H3, the expected associations between market value, residual goodwill and governance structures are likely to depend on which element of residual goodwill is predominantly captured by the measure. The purchase price element of residual goodwill suggests overpayment in a M&A transaction, which should be discounted by investors as it implies little, if any, future economic benefits to the acquiring firm's shareholders. However, the consideration element of residual goodwill effectively captures a purchase price discount to the extent the consideration offered by the acquiring firm is over-valued at the time of the transaction, leading investors to be more optimistic in valuing this element of residual goodwill. Ultimately, these two residual goodwill elements may be difficult to disentangle, so investors may look to a firm's governance environment in making their assessments of residual goodwill.

I test whether investors' perceptions of residual goodwill differ based on a firm's governance environment. Henning et al. (2000) provide evidence that investors discount residual goodwill, however, I

expect that this association may be moderated by governance structures. When potential agency conflicts are high, managers are more likely to have engaged in lower-quality M&A, resulting in high residual goodwill balances that investors would be expected to discount in valuing the firm. Alternatively, when monitoring mechanisms are strong, managers are more likely to have opportunistically used over-priced shares to pursue higher-quality M&A at an effective discount. If true, this would also result in higher residual goodwill balances, however investors should be more optimistic about these residual goodwill allocations related to the consideration element in this scenario. I propose the following two hypotheses:

- H4a:** Investors' perceptions of the value of residual goodwill (the association between residual goodwill and market valuation) are more positive for firms with strong monitoring mechanisms.
- H4b:** Investors' perceptions of the value of residual goodwill (the association between residual goodwill and market valuation) are less positive for firms with high potential agency conflicts.

4. EMPIRICAL ANALYSES

A. *Model specification*

Chauvin and Hirschey (1994) identify five firm-specific exogenous variables, which they expect to be prime determinants of goodwill. Fully specified, they employ the following model to test whether each of these determinants is associated with aggregate goodwill balances:¹⁹

$$GDWL = \beta_0 + \beta_1 XAD + \beta_2 XRD + \beta_3 MKTSHR + \beta_4 INTANLG + \beta_5 TANA + e_1 \quad (1)$$

Their findings suggest a reliably positive association between goodwill and both advertising expenditures and tangible assets. Although the association between R&D expenditures and goodwill is positive in the full sample, the association does not persist in sub-samples broken out between firms in manufacturing versus nonmanufacturing sectors. In fact, the association is significantly negative for the R&D intensive manufacturing sector. No reliable association is shown between goodwill and the remaining variables, market share and intangible assets. Overall, the R-squared value for the full sample is 31.2 percent (Chauvin and Hirschey 1994).

Thus, the Chauvin and Hirschey (1994) model explains less than one-third of the variation in goodwill throughout the sample time period meaning that crucial determinants of goodwill are likely excluded from this model and captured in the error term. This is not surprising as governance structures are not considered in the model. Given that goodwill can *only* be allocated in a business combination and given the significant impact of governance mechanisms and agency conflicts on M&A activity described in the preceding pages, I expect that governance structures will be significantly associated with goodwill balances.

In *Section 2.B* above, I describe several governance mechanisms that may impact a firm's M&A decisions which could potentially affect the allocation of goodwill. However, operationalizing these measures into a tractable model presents several unique challenges (Larcker et al. 2007; Dey 2008). First among these challenges is incorporating the sheer number of governance structures and mechanisms that have been identified to date. For instance, Larcker et al. (2007) identify 39 different structural measures of governance that have yielded mixed results in prior research. Focusing on the agency problem, Dey (2008) identifies 22 individual governance variables. To suitably incorporate all of the important governance measures, both sets of authors use principal component analysis (PCA) to identify the

¹⁹ Variable descriptions are provided in *Appendices B and C*.

primary dimensions of corporate governance. In so doing, the authors capture the strongest combinations of variables which are believed to represent the important dimensions of corporate governance. Following a similar approach, I calculate three distinct governance structure variables: two monitoring measures (INSIDEMON and OUTSIDEMON) and a separate measure that proxies for the level of agency conflicts present (AGENCY).

A second issue that must be considered when performing a study involving corporate governance is the availability of data. Given the wide range of governance variables to consider, a researcher often must make use of several different databases which inevitably leads to loss of observations due to missing data. Further, the inclusion of governance variables from several different databases is likely to restrict the resulting sample to larger firms as these firms are more likely to be included in the available governance datasets. These are certainly challenges that I face in this study and I discuss the implications on my sample construction in *Section 4.B* below.

The third – and potentially most daunting – challenge present in most governance studies is the problem of endogenously determined governance structures (Hermalin and Weisbach 1998; Bushman and et al. 2004; Dey 2008). An example of how this joint hypothesis would be manifested in the proposed hypotheses is described in Hermalin and Weisbach (1998) and Bushman et al. (2004). Hermalin and Weisbach suggest that director selection and board effectiveness are likely to be endogenously dependent on environmental characteristics such as the CEO's involvement in the director selection process. Bushman et al. suggest that board structures and effectiveness are associated with firm operating environment (factors such as operational complexity and earnings timeliness).

Larcker et al. (2007) address the endogeneity problem in a related study, acknowledging that the endogenous nature of a firm's governance choices may lead to inconsistent estimates of the true association between the governance variables (regressors) and the accounting outcome variable (dependent variable). Similarly, the theoretical linkages I draw between goodwill (the accounting outcome/dependent variable) and *internal* monitoring mechanisms are likely to be overly simplified (i.e. H1 and H3 only).²⁰ I attempt to address the potential endogeneity problem in two ways. First, I perform the H1 hypotheses tests using a fixed-effects OLS regression, controlled at the firm level. This approach should control for any of the firm-specific endogenous factors that do not change over time. However, I note that this approach is not feasible for the H3 determinants tests given the reduced sample size. Further, the fixed-effects regression approach would not be expected to capture the impact of endogenous

²⁰ Given that the H2 and H4 analyses focus on investors' perceptions of goodwill, the endogeneity concerns are eliminated as the governance structure variables (regressors) are no longer endogenous choice variables in the shareholder perceptions models. Instead, these variables are considered to be environmental moderators of shareholder perceptions of goodwill.

firm-level factors that change from year-to-year. Therefore as a second approach, I perform the Hausman (1978) procedure and two-stage least squares (2SLS) analyses to ensure the findings are not induced through the presence of endogeneity. I expand upon this second approach and related findings in *Section 5.C* below.

To test H1a and H1b, I extend model (1) by including three separate governance structure variables that capture the effects of potential agency conflicts and internal/external monitoring activities. The full model is specified as follows (with firm-year fixed effects and industry/ year dummies):

$$\begin{aligned} GDWL = & \beta_0 + \beta_1 XAD + \beta_2 R\&D + \beta_3 MKTSHR + \beta_4 INTANLG \\ & + \beta_5 TANA + \beta_6 AGENCY + \beta_7 INSIDEMON + \beta_8 OUTSIDEMON + e_1 \end{aligned} \quad (2)$$

In the next set of tests, I examine whether governance structures and potential agency conflicts impact investors' perceptions of goodwill. A prior study by McCarthy and Schneider (1995) employs a modified version of the Feltham and Ohlson (1995) simple clean surplus valuation model to test the association between goodwill and market valuation.²¹ According to Feltham and Ohlson, the market value of the firm can be better measured using a model that includes both a stock concept (book value of the firm) and a flow concept (income variables) of the firm. McCarthy and Schneider (1995) split book value into three components: assets less goodwill (ALGW), goodwill (GW), and liabilities (LIAB). Additionally, the authors include a measure of income (INC). The fully specified model is:

$$MVE = \beta_0 + \beta_1 ALGW + \beta_2 GW + \beta_3 LIAB + \beta_4 INC + e_1 \quad (3)$$

To test hypotheses 2a-2b, I include in model (3) each of the three governance measures described above and interactions between each of these measures and goodwill. Thus, the fully specified model is as follows (controls for firm-year fixed effects and also includes industry and year dummies):

$$\begin{aligned} MVE = & \beta_0 + \beta_1 GW + \beta_2 ALGW + \beta_3 LIAB + \beta_4 INC + \beta_5 HIGHAGENCY + \\ & \beta_6 STRINSMON + \beta_7 STROUTMON + \beta_8 HIGHAGE \times GW + \\ & \beta_9 STRIMON \times GW + \beta_{10} STROMON \times GW + e_1 \end{aligned} \quad (4)$$

²¹ Bugeja and Gallery (2006) adopt a similar approach in their investigation of aged goodwill balances in a sample of Australian listed firms.

There are a number of published studies that examine investors' perceptions of goodwill in different contexts and settings. For instance, Bugeja and Gallery (2006) find that investors value recently acquired goodwill, but place little value on goodwill balances acquired more than two years prior. Henning et al. (2000) decompose goodwill into four goodwill elements: (1) going-concern goodwill (GC_GDWL), (2) synergistic goodwill (SYN_GDWL), (3) purchase price goodwill and (4) consideration goodwill.²² Together the authors refer to these final two elements as residual goodwill (RESID_GDWL). The authors find that investors' perceptions vary predictably between these elements. Henning et al. document a consistent positive association between both the synergy and going concern elements of acquired goodwill and firm market value of equity. The authors also provide evidence in support of a significant negative association between residual goodwill and market value of equity. This second finding suggests that higher residual goodwill balances imply lower quality M&A leading to a lower market valuations. Since residual goodwill is likely to be a better proxy for M&A quality than would the synergy and going concern elements of goodwill, I focus the next set of hypotheses tests on residual goodwill. I first examine the associations between residual goodwill balances, levels of potential agency conflicts and governance mechanisms. I then test whether investors' perceptions of the residual goodwill component vary according to the agency conflicts and governance mechanisms for a particular firm. To perform these analyses, I calculate residual goodwill using two distinct methods.

The primary method I adopt is consistent with Henning et al. (2000). The authors calculate residual goodwill as the excess of purchased goodwill less the going concern and synergistic goodwill components. Going concern goodwill is measured as the pre-offer market value of the acquired (target) firm less the fair value of the assets acquired (Henning et al. 2000). The authors calculate synergistic goodwill using a model first proposed by Bradley et al. (1988) and I adopt the same approach. To proxy for the expected synergistic gains from the transaction, Henning et al. (2000) calculate the 11-day cumulative abnormal returns (CARs) for *both* the target and acquiring firm, centered on the M&A transaction announcement date.^{23,24} I follow this approach to identify residual (RESID_GDWL), going concern (GC_GDWL) and synergy (SYN_GDWL) components of goodwill.

²² These classifications follow distinctions first identified by Johnson and Petrone (1998).

²³ Consistent with Henning et al. (2000), I aggregate abnormal returns over the initial announcement *and* subsequent bids when the initial bid is rejected. I calculate abnormal returns using market model prediction errors and parameters are estimated for the target and acquiring firms separately using a (-300, -61) day window relative to day 0 when the first bid is made public.

²⁴ I calculate synergy goodwill consistent with Henning et al. (2000). This measure is based on a paper by Bradley et al. (1988), who examine synergistic returns in M&A and the allocation of these returns between the acquirers and target shareholders. Including the target firm returns may over-represent the true synergy element of goodwill that is allocated in the M&A transactions, however the impact is expected to be slight given that synergy goodwill is the smallest of the three components in this study as I find that the acquiring firms tend to be significantly larger than the targets in this sample.

A second method for estimating residual goodwill is employed by Shalev (2009) in his analysis of M&A disclosure quality. Shalev calculates his residual goodwill measure by taking the residuals of the following equation:

$$GDWLCONS = \beta_1 + \beta_2 INDACQ + \beta_3 INDTRG + \beta_4 GROWTH + e_i \quad (5)$$

GDWLCONS is the ratio of goodwill acquired to the total purchase price. INDACQ and INDTRG are the two-digit SIC codes of the acquiring and target firms respectively. Finally, growth is the median analyst long-term growth forecast for the acquiring firm. I include this separate measure to ensure the results are robust to different methods of calculating residual goodwill.

To test hypotheses 3a and 3b, I regress model (2) above replacing the dependent variable, goodwill (GDWL), with either of the residual goodwill measures I describe above. Given the hand collected nature of the data necessary to calculate these residual goodwill measures, I perform these analyses over a much more limited sample. Also, observations no longer represent firm-years, rather I will be using transaction-level data (where n_i represents a specific M&A transaction during the sample time period for firm i). Thus, the aggregate financial statement variables from model (2) are replaced with equivalent amounts allocated in the total purchase price for the corresponding M&A transaction. I describe the sampling procedure I use to form the residual goodwill analyses sub-sample in the following section. Given the importance of target firm characteristics, which I describe above in the background and theory development sections, I also control for transaction-level and target firm (TLTF) control variables, which I define in *Table 8, Panel B*.²⁵ Fully specified, the model I use to test hypotheses 3a and 3b is as follows (also includes industry and year dummies):

$$\begin{aligned} RESID_GDWL = & \beta_0 + \beta_1 PURCH_IPRD + \beta_2 MKTSHR + \\ & \beta_3 PURCH_INTAN + \beta_4 PURCH_TAN + \beta_5 AGENCY + \\ & \beta_6 INSIDEMON + \beta_7 OUTSIDEMON + \beta_k TLTF \text{ control variables} + e_i \end{aligned} \quad (6)$$

To test hypotheses 4a and 4b, I follow a similar modeling approach as I describe above for model (4), with three important changes. First, I select a new market value measure that ensures investors have time to obtain and review the purchase price allocation for each specific transaction in the sample. I note that purchase price disclosures tend to be inconsistent in quarterly filings and so I elect to use the market

²⁵ All tables are located in *Appendix A*.

value of the firm based on the closing share price of the firm's common stock 90-days (one-quarter) after the first purchase price allocation provided in the acquiring firm's annual 10-K filing.²⁶

Second, I include in the model TLTF control variables similar to those included in model (6) above. Third, I replace total goodwill with the residual goodwill measures described above and control for acquired synergy and going concern goodwill as well as goodwill acquired in other (prior) transactions. Fully specified, I define the following model to test H4a and H4b (also includes industry and year dummies):

$$\begin{aligned} MVE2 = & \beta_0 + \beta_1 RESID_GDWL + \beta_2 SYN_GDWL + \beta_3 GC_GDWL \\ & + \beta_4 OTH_GDWL + \beta_5 ALGW + \beta_6 LIAB + \beta_7 INC \\ & + \beta_8 HIGHAGENCY + \beta_9 STRINSMON + \beta_{10} STROUTMON \\ & + \beta_{11} HIGHAGE \times GW + \beta_{12} STRIMON \times GW + \beta_{13} STROMON \times GW \\ & + \beta_k TLTF \text{ control variables} + e_i \end{aligned} \quad (7)$$

I define the main test and control variables in *Appendix B*. Underlying governance variables are described at length in *Appendix C* and TLTF control variables are defined in *Table 8, Panel B*.

B. Sample selection and databases

I start by obtaining firm-level financial data from the full population of Compustat firms for the sample period 2004 through 2007 (n=23,073). Given that the focus of this study is on U.S. firms, I drop all foreign domiciled firms (n=3,253). In addition, this study only focuses on those firms listed on one of the three major U.S. exchanges (NASDAQ, AMEX, or NYSE). As such, I drop all firms not listed on one of these three exchanges from the study (n=1,901).

Like Chauvin and Hirschey (1994), I apply a market capitalization screen to avoid valuation errors associated with thinly traded securities. I choose a cut-off market capitalization of \$75M (n=2,997), which is the market capitalization cut-off for firms to comply with SOX (PCAOB 2004).²⁷ Due to the inherent complexity of regulations governing the financial industries (SIC codes 6000-6999), I withhold

²⁶ Typically the initial allocation is disclosed in the first quarterly (10-Q) filing following the completion of the merger (or the 10-K for M&A transactions made during the last quarter of the fiscal year). However, using the 10-K date ensures that the purchase price allocation disclosures are more consistent amongst the sample firms and further ensures that these allocations have been subjected to year-end audit procedures. As a sensitivity test, I also perform the H4 analysis using the market value six days after initial disclosure of the purchase price as the dependent variable as described in *Section 5.C*.

²⁷ Chauvin and Hirschey (1994) apply a \$100M screen in their analysis. I would not expect the findings to be influenced unreasonably by applying a more relaxed screen in this study.

these firms from analyses (n=3,547). Finally, I require all sample firms to have positive goodwill balances. Thus, I drop those firms with goodwill balances that are either zero or missing (n=3,463).

The above screens leave a total of 7,912 observations, representing (2,534) unique firms with positive goodwill values. I next merge this dataset with a dataset of governance variables compiled from five additional databases: (1) broad governance data provided by The Corporate Library (TCL); (2) executive compensation data provided by Compustat's *Execucomp*; (3) certain agency conflict variables use data compiled in the quarterly Compustat database; (4) external monitoring / shareholder data provided by Thomson's *Spectrum* database; and (5) data on anti-takeover mechanisms provided by Riskmetrics/IRRC. As a result of these merges, the sample is further reduced by more than half (n=4,169) due to the exclusion of certain firms in one or more of these five databases.²⁸ After completing the governance merge, I drop observations where one or more of the required governance variables are missing (n=486). Finally given discrepancies between Big N and non-Big N auditors in an M&A context identified by Louis (2005), I drop those observations where a non-Big N firm is the auditor (n=108).

The resulting *aggregate goodwill* dataset includes 3,149 firm-year observations representing 904 unique firms, which will be used in the tests of H1 and H2. Requiring data from several datasets invariably leads to significant loss of data, which may limit my ability to generalize results to the broad spectrum of firms. However, I note that my sample compares favorably with Dey (2008), whose sample consists of 371 firms from 2000 and 2001 using data obtained from *Spectrum* and *ExecuComp*. *Table 1, Panel A* presents the above sample construction process in tabular form. Of the 904 unique firms, 642 firms are included in each of the four years represented in the sample (e.g., the constant sample).

In the tests of H3 and H4, the focus shifts to residual goodwill requiring hand collected information from a variety of sources. Given the intensity of this task, I limit the analyses to a subsample of firms that engage in M&A during 2004-2007. To identify the M&A transactions, I first obtain from CRSP a listing of all merger related delistings for 2003 through 2007 in which the listed acquiring firm is included in the *aggregate goodwill* sample used to test H1 and H2. I initiate this search in CRSP because the residual goodwill calculations require that both the target and acquiring firms have returns and market value data available for certain key dates surrounding each transaction. Based on this search, I identify

²⁸ For example, *The Corporate Library* contains information on more than 4,000 firms, but this number represents the available information for the entire 2001-2007 period and not consistent firm reporting across all years. The database includes data on approximately 2,000 unique firms in 2004 and 2005 and more than 3,000 unique firms in 2006 and 2007. However, these subtotals include financial firms, firms not reporting positive goodwill, non-U.S. firms and a small number of OTC firms which are all excluded from my sample through one of the screens I describe above. Thus, it is not unreasonable to observe substantial attrition in the sample size when including these governance variables, especially considering that the governance data is compiled from five separate databases which are likely to track and report data for different sets of firms.

305 possible M&A transactions closing between 2003 and 2007. I next compare the merger close dates to each acquirer's fiscal year-end dates and eliminate those transactions that did not close during the 2004-2007 sample period (n=83). I further eliminate 22 transactions representing multiple M&A transactions by the acquiring firm in the same fiscal year. For the remaining 200 transactions, I obtain the initial purchase price allocations disclosed in the first 10-K filed subsequent to the close of the transaction and I eliminate an additional eight M&A transactions where no purchase price allocation is provided.

I search press releases and target and acquiring firm proxy statements to obtain other transaction-level information to include as control variables and I use EVENTUS to calculate synergistic returns surrounding the announcement date(s).²⁹ I obtain target firm financial information prior to the M&A transaction from Compustat and target and acquiring firm's stock returns data and market value data from CRSP. Required returns data is missing for an additional two transactions, resulting in a final residual sample comprised of 190 M&A transactions with complete data. I provide a tabular breakdown of the residual goodwill sample in *Table 1, Panel B*.

The final residual goodwill sample includes 160 unique firms. Two of these firms have M&A transactions included in each of the four *residual goodwill sample* years (8 total transactions) and another two firms have transactions in three of the four *residual goodwill sample* years (6 total transactions). 20 firms have M&A transactions in two of the four sample years (40 total transactions) and 136 firms have a single M&A transaction included in the residual goodwill sample. Of the 160 unique residual goodwill sample firms, 126 are included amongst the 642 constant sample firms I refer to above. See *Table 1, Panel C* for a representative breakdown of the unique *residual goodwill* sample firms across the four-year sample period.

In tests of H2 and H4, I classify the observations into one of two potential agency conflict (high/low) and internal and external monitoring (strong/weak) groupings. For each of the three governance structure variables, I create a dummy variable taking the value of "1" for those observations whose corresponding governance structure scores fall above the 66th percentile.³⁰ *Table 1, Panel D* provides a breakdown of the full and residual goodwill samples into each of the governance structure buckets (8 in total). By construction, approximately one-third of the *aggregate* goodwill sample (n=1,071) is classified into any of the four "high agency" buckets, however this percentage increases to nearly one-half (n=92) of the 190 *residual goodwill* sample observations. This provides some evidence

²⁹ See footnotes 20 and 21 for additional details regarding the measurement of synergistic returns.

³⁰ Admittedly, using a cut-off at the 66th percentile is arbitrary so I perform sensitivity analyses with cut-offs at the both the 75th percentile and the median values, which are described in *Section 5.C*.

that firms operating in the presence of higher agency conflicts are more likely to pursue M&A of publicly-listed targets that comprise the residual goodwill sample.³¹

Table 2, Panel A presents the industry breakout based on the two-digit SIC codes for the full sample firms (n=904) in comparison to all non-financial, U.S.-based firms included in the Compustat database.³² Business services (SIC 73) firms are the most heavily represented in the full sample (13.2%), which is similar to the representation amongst the Compustat population of firms (14.1%). Other industries heavily represented in the sample are Electrical (SIC 36 – 9.7%), Chemicals (SIC 28 – 8.7%), Instruments (SIC 38 – 8.0%), and Industrial (SIC 35 – 7.5%). Together, firms in these top five industries comprise nearly half of the sample (47.1%).

The table presents mean, minimum and maximum goodwill by industry. Communications (SIC 48) has the highest mean goodwill amongst all industries and it is also the industry with the firm reporting the highest goodwill in the sample (\$70,713 million). The industry breakout for the residual goodwill sample is presented in *Table 2, Panel B*. The top five industries for the full sample are also the top five industries in the residual goodwill sample, where they comprise over 60% of the represented industries.

Descriptive statistics for the 28 underlying governance variables are provided in *Table 3, Panel A*. For the six variables used to construct the agency conflict measure, I note that the sample firms are very similar in size and ownership structure to the firms analyzed by Dey (2008) in her study. However, the GROWTH and LEV variables are notably different reflecting distinct market conditions likely to be unique to each study (Dey's study spans 2000-01 versus the 2004-07 time period for this study). The sample firms in this study have significantly higher GROWTH (book-to-market) and significantly lower LEV (leverage) statistics as compared to the 371 firms comprising Dey's sample. The RISK and FCF scores appear to be slightly lower than those reported by Dey, however the scores are likely reasonable given that my sample covers a broader cross section of firms. I would expect the larger number of small firms in my sample to portray lower RISK and FCF scores overall, driving the mean scores down for these variables.

Blockholder and activist shareholder variables are relatively consistent with the statistics presented in Larcker et al. (2007), with a mean 2.6 blockholders holding an average of 20% percent of the company. The mean holdings for the largest shareholder are 11%. I report a higher presence of activist shareholders (average is 11 activists compared with seven reported in Larcker et al.'s study), but activist

³¹ Requiring market value and returns data for both the acquiring and the target firm implies that the target firms are publicly traded firms. Thus, they represent a certain set M&A which may not be representative of *all* M&A. This is a limitation of my study which I describe further in *Section 7* below.

³² In the main analyses, I use the Fama-French 11 industry specification to identify the industry dummy variables. However, I also re-run all of the tests using industry dummies based on *all* represented two-digit SIC codes and obtain similar results in each case.

shareholdings remain relatively small as a percentage of outstanding shares at 2.8%, consistent with the numbers reported in this study.

Companies have an average of nine board members, of which nearly 72% are unaffiliated with the company (i.e., independent). Further, I note that the average board holds approximately eight meetings per year. Approximately 89% of board directors sit on fewer than four outside boards whereas 74% do not currently serve as an acting CEO in addition to their board responsibilities.

The chairman is also the CEO in 1,868 of the firm-year observations (61%), which is consistent with both the Larcker et al. (2007) and Dey (2008) studies.³³ The CEO is also the founder in approximately 220 cases (7%) and the founder sits on the board in another approximately 564 cases (18%). Altogether, equity-based compensation comprises 63% of the total compensation package for CEOs in this sample, whereas bonuses constitute 13% of total pay. In five percent of the observations, managers hold shares totaling between 5% and 25% of the company, and the CEO_TURN variable indicates the CEO turnover occurred in 37.3% of the observations (or 317 unique firms, representing 35% of the 904 sample firms). Sample firms are more likely than not to have poison pill provisions (59%) and staggered boards (59%), but are unlikely to have unequal voting rights (1%) or supermajority voting provisions (17%). Only 10% of the observations represent firms based in states that offer greater protections to management.

Financial variable summary statistics are highlighted in *Table 3, Panel B*. The typical *aggregate goodwill* sample firm has more than \$6.9 billion in average total assets and the median firm reports assets of nearly \$1.9 billion. Average goodwill is approximately \$1.2 billion, representing nearly 18% of total assets. The *residual goodwill* sample firms are significantly larger with mean (median) assets of \$20.7 (\$6.8) billion and mean (median) goodwill of \$4.5 (\$1.4) billion. Goodwill represents approximately 21% of the total assets for the residual goodwill sample firms.

C. *Agency and monitoring variables construction (principle components analysis)*

Consistent with Larcker et al. (2007) and Dey (2008) I employ exploratory principle component analysis (PCA) in order to define three governance structure measures: (1) sources of potential agency conflicts; (2) outside (external) monitoring sources; and (3) inside (internal) monitoring sources. I choose

³³ Note that percentage reported here (in addition to those provided throughout this paragraph) describe cases where the applicable criteria is *met* (e.g., CEO is also the chair in 61% of the firm-year observations). Alternatively, the statistics in *Table 3*, present the inverse of these percentages, representing cases where the criteria is *not met*. This note applies to each of the percentages that follow in this paragraph *except* for CEO_BONUS/CEO_EBC.

to model internal and external monitoring mechanisms separately given the unique roles distinguishing these two sets of mechanisms and due to possible substitute/complement relationships that arise between these distinct sets of monitoring mechanisms (Gillan 2006). I perform PCA separately for each of the three broad governance structure measures using a total of 28 underlying governance variables: (1) sources of potential agency conflicts – six underlying variables; (2) external monitoring sources – five underlying variables; and (3) internal monitoring sources – 17 underlying variables.³⁴

Table 4, Panels A through C present the PCA correlation tables for each of the three sets of underlying governance variables. In PCA, higher correlations are desirable suggesting interrelationships in the underlying data that can be collapsed into broader factors. However, I note that none of the underlying agency variables have correlations exceeding 0.30, suggesting that these six variables likely measure unique elements of potential agency conflicts. The correlations suggest that larger firms tend to have more diffuse ownership, higher free cash flow and leverage, whereas high growth firms tend to have smaller free cash flow.

For the external monitoring variables, BLOCKPCT is found to be significantly correlated with both BLOCKHOLDER (0.910) and LRGSHRHLDR (0.711), suggesting a strong correlation between total blockholdings and the total number of blockholders and the holdings of the largest unaffiliated blockholder. Examining the internal monitoring variables posted in *Panel C* reveals two significant correlations above 0.50: (1) CEO_EBC and CEO_BONUS and (2) FOUND_CEO and FOUND_BD.

(Insert Table 4 approximately here)

In performing the PCA analysis, I retain all factors with an eigenvalue exceeding 1.0 and group together the underlying governance variables loading significantly (i.e., exceeding 0.40) on a factor consistent with Larcker et al. (2007). Like Dey et al. (2008), I perform an orthogonal rotation when evaluating the factor loadings instead of an oblique rotation because the orthogonal rotation provides for a cleaner interpretation of the factor loadings. PCA is an iterative process and in some cases I note that certain underlying governance variables do not load consistently on any of the retained factors. In these cases, they are deemed to be measuring a unique dimension and are excluded from further PCA iterations. Instead I include these variables (GROWTH, LEV for *AGENCY* and BD_UNAFFOUTSIDE,

³⁴ It is important to note that other potential external monitoring sources have been accounted for (either directly or indirectly) in the analyses. Product markets have been included *directly* through the inclusion of financial statement variables such as total assets and market share. Leverage (included as one of six underlying agency variables) may also provide some indication of external monitoring related to debt contracting. Alternatively, auditor quality has been addressed *indirectly* as only Big N auditors are included in the sample and all firms are potential takeover targets subject to the market for corporate control.

BD_MTGS, CEO_SHR and UNEQVOTE for *INSIDEMON*) individually in calculating the final governance structure measures. Considering only those underlying variables that are included in the final PCA analyses, the AGENCY, OUTSIDEMON and INSIDEMON factors capture 61.3%, 71.4% and 64.3% of the total variance in the underlying data, respectively.

Table 5, Panel A presents a summary of the final PCA factors and loadings. I tabulate Cronbach's alpha measures for each of the individual PCA components and as an average for each of the three measures [reported in brackets]. As is the case with both the Larcker et al. (2007) and Dey (2008) studies, the Cronbach's alpha scores are lower than the suggested benchmark of 0.70. As is stated by Larcker et al. (2007), this is not uncommon in exploratory PCA and further, these combined measures of governance would be expected to provide greater reliability than would individual governance measures.

After identifying each of the distinct governance factors (or components) through PCA (ten in total; two each for AGENCY and OUTSIDEMON and six factors for INSIDEMON), I next construct the three governance structure measures in a manner consistent with Larcker et al. (2007). To do this, I standardize all of the underlying governance variables and calculate a score for each governance factor using the averages of the standardized variables loading on that factor. I note that only the CEOCOMP factor has variables loading in opposite directions. The calculation of each of the remaining nine governance components is relatively straightforward. I calculate each corresponding governance component by summing the underlying governance variables and then dividing by the number of variables included (for instance, the LARGE component of the AGENCY measure would be calculated by summing the standardized SIZE and OWN scores and dividing by two).

I follow the same process to calculate the remaining eight agency and monitoring components (CEOCOMP is an exception as it is a unique case).³⁵ Once I have calculated the 10 underlying governance factors attributable to AGENCY, OUTSIDEMON and INSIDEMON, I construct the governance structure variables themselves, which will be used as test variables throughout the analyses. To form these measures I include the factors identified in PCA and also include any of the original underlying governance variables that did not load in PCA and were subsequently dropped from the analysis.³⁶ Descriptive statistics for each of the governance measures are provided in *Table 5, Panel B* and median scores within each of the two groupings (high/low or strong/weak) are provided in *Table 5, Panel C*.

³⁵ Since CEO_EBC and CEO_BONUS load in opposite directions for this particular component, CEOCOMP is calculated by subtracting the standardized CEO_BONUS scores from the CEO_EBC scores and dividing by two.

³⁶ For example, the final AGENCY structure score is calculated as the sum of its two PCA components LARGE and CASH, summed with the standardized scores for each of the two underlying governance variables that did not load significantly in PCA – GROWTH and LEV – all divided by four.

5. RESULTS

A. *Agency conflicts, monitoring mechanisms and aggregate goodwill*

The first series of analyses test H1 and H2, which focus on the associations between agency conflicts, monitoring mechanisms and aggregate goodwill. *Table 6, Panel A* presents the correlation table for the H1 regression variables. The correlation scores suggest that larger firms tend to have larger advertising expenses. The table also highlights a significant correlation between GDWL and INTANLG as well as GDWL and the AGENCY measure. This is to be expected as goodwill itself is an intangible asset. I estimate VIF scores, which are below the threshold of 10 cited by McCarthy and Schneider (1995), suggesting the multicollinearity is not likely to be an issue.

Table 6, Panel B presents the correlation scores for the H2 regression variables. Consistent with McCarthy and Schneider (1995), I note a highly significant correlation between ALGDWL and LIAB (Spearman score is 0.905). As a consequence, multicollinearity could be present in the data. I calculate variance inflation factors (VIFs) and find them to be above the benchmark value of 10 when ALGDWL and LIAB are included in the regression specifications. Thus, to ensure inferences are not affected by possible multicollinearity issues, I sum ALGDWL and LIAB to form a combined NETALGDWL measure. I obtain results that are unchanged from the original specification(s) when I employ regressions using this combined NETALGDWL measure..

Table 7, Panel A presents the H1 tests of the association between governance measures and aggregate goodwill. Specification (1) is a baseline model, which I run to ensure relative consistency with the Chauvin and Hirschey (1994) study and to identify potential differences given the large gap in the sample years between their study and this analysis.³⁷ I note that advertising expense data (XAD) is not available for nearly 60% of the sample, reducing the sample size to 1,338 firm year observations. Consistent with this prior study, I document a significant positive association between both tangible assets (TANA) and research and development expenses (XRD) and aggregate goodwill (GDWL) balances. A notable difference in my study is that advertising expenses (XAD) do not appear to be significant determinants of goodwill, whereas they are shown to be significantly, positively associated with goodwill in the Chauvin and Hirschey study. Additionally, I identify a significant positive association between INTANLG and GDWL, which was not consistently supported in this previous study. In fact, my regressions indicate that intangible assets are among the most significant predictors of goodwill across all

³⁷ The Chauvin and Hirschey (1994) study includes data from 1989-1991, whereas my sample period spans 2004-2007. Thus, there is a 13-year lapse between the end of the Chauvin and Hirschey sample period and the time period from which my sample is drawn.

specifications, marking a dramatic shift from the Chauvin and Hirschey (1994) results. While only conjecture, the contrasting findings may highlight the shift in the nature of businesses away from the fixed asset intensive, manufacturing-based businesses to the technology-heavy firms that have permeated the business landscape over the past decade.

In specification (2) I add the three governance structure variables to the baseline model used in specification (1). The associations between goodwill and each control variable are consistent with those described for specification (1). Examining the results related to the governance structure variables suggest a significant positive association between the AGENCY variable and aggregate goodwill, however neither INSIDEMON nor OUTSIDEMON appear to be associated with aggregate goodwill balances.

Noting that XAD remains insignificant in specification (2), I drop XAD from the regression model and run the specification (2) regression without this variable allowing for analysis on the full *aggregate goodwill* sample (n=3,149). The findings are generally consistent with those reported in specification (2); AGENCY is positively associated with aggregate goodwill but neither of the monitoring structure measures appear to be significantly associated with aggregate goodwill balances. I also run the specification (2) and specification (3) regressions on a year-by-year basis (without year dummies and firm-year fixed effects) and find the results (untabulated) are similar to those reported above.

Finally, in specification (4) I regress specification (3) on the reduced *residual goodwill* sample to identify possible differences in the distribution of firms that comprise the H3 and H4 tests. As with the previous three specifications, I document a significant positive relationship between GDWL and both INTANLG and AGENCY. For the subset of firms comprising the residual goodwill sample, I observe a *negative* association between GDWL and XRD, which is opposite of what I observe in the previous three specifications. This observation supports the findings of Higgins and Rodriguez (2006), who show that M&A amongst pharmaceutical firms provides acquiring firms an opportunity to “outsource” research and development activities, especially as internal R&D productivity declines.

Overall the findings provide support for H1b, suggesting that higher agency conflicts are associated with larger aggregate goodwill balances. The strength of internal and external monitoring mechanisms do not appear to be associated with aggregate merger balances and thus, I fail to reject the null hypothesis (H1a) that monitoring strength is not associated with aggregate goodwill balances. I next turn to tests of investors’ perceptions of goodwill to perform the H2a and H2b tests.

Table 7, Panel B documents the results of the H2 tests of investors’ perceptions of aggregate goodwill balances. In specification (1), I run a baseline model similar to the model used in McCarthy and Schneider (1995) in order to evaluate how my sample data compares (or fails to compare) to the data presented in their study. The results are very similar between the two studies, suggesting that the model

appears to be applicable despite the significant time lag between the two studies. It is interesting to note that the R-squared values are significantly lower in my study as compared to both McCarthy and Schneider (1995) and a study published by Henning et al. (2000).³⁸ This may be evidence of a growing gap between (fair) market value and the book value of firms in the recent high technology era, which would be expected to diminish the association between the market value (dependent variable) and the decomposed balance sheet variables (regressors). Further, I note that the industry composition of my sample firms is likely to vary substantially from these prior studies given the significant changes in business and technology in the years between their corresponding sample periods and mine. Finally, the relative strength of the stock market during the corresponding sample periods would be expected to have a significant bearing on the r-squared scores in this analysis. Overall stock market performance was strong during my 2004-2007 sample period, which could lead to lower r-squared scores due to reduced variance in the dependent measure.

In specification (2), I include interactions involving the three dichotomous governance grouping variables (HIGHAGENCY, STROUTMON and STRINSMON) with goodwill (GDWL) to test whether investors' perceptions of goodwill vary predictably depending on the agency risks and/or strength of monitoring present within each firm. Similar to the baseline model of specification (1), I identify a significant, positive association between the dependent variable, MVE, and the control variables ALGDWL and INC. I also document a strong, negative association between LIAB and MVE. The results provide evidence that investors value goodwill, however the negative coefficient on β_8 suggests that investors' perceptions of goodwill are significantly weaker when agency costs are high.

In specification (3), I re-estimate the specification (2) regression on the *residual goodwill* sample (n=189). The associations between MVE and GDWL, ALGDWL, and LIAB remain unchanged from specification (2). However, I note that HIGHAGExGDWL is no longer significant (p=.107) and UI is only marginally significant (0.072) in the predicted direction in specification (3).³⁹ Thus, the specification (3) findings further highlight important differences between the *residual* and *aggregate* goodwill samples that ultimately may limit my ability to generalize the findings of subsequent tests of H3 and H4 to a broader population of firms. I expand on this point further in *Section 7*.

³⁸ In annual regressions (untabulated), I note R-squared statistics ranging between 0.38 and 0.42, which are significantly lower than those reported in these two earlier studies (which are in the 0.80 to 0.90 range).

³⁹ As I describe in the "Limitations" section (7.A), the mean ratio of acquirer-to-target MVE is 66 for the residual goodwill sample, suggesting that the acquiring firms are substantially larger than the target firms. Thus, it is possible that the investors' perceptions tests are weakened simply because the corresponding M&A activities are not significant to the acquirers' total operations and therefore, do not weigh heavily in valuing the acquiring firm. I find that the H4 results are stronger when I limit my analysis to those M&A transactions where the acquiring and target firms are closer in size (n=95) and when I re-perform the H2 tests on this subsample, I find that HIGHAGExGDWL is negative and significant once again, as expected (results untabulated).

In *Table 7, Panel C*, I summarize the joint tests for specification (2), which document the association between goodwill and market value of equity within each of the eight (8) possible governance environment buckets. In each case, investors' are shown to positively value goodwill in the market, but the negative, significant interaction term coefficient (β_8) suggests that the strength of this association weakens when agency conflicts are high, providing support for H2b. Surprisingly, H2a is not supported in the data suggesting that investors' perceptions of goodwill are not affected by the strength of a firms internal or external monitoring mechanisms.

B. Agency conflicts, monitoring mechanisms and residual goodwill

Residual goodwill is the focal point for the next series of tests, which should allow for a more refined assessment of the associations between M&A, agency conflicts, monitoring mechanisms and goodwill. *Table 8, Panel A* presents the descriptive statistics for the set of 190 M&A transactions that comprise the residual goodwill sample. The average purchase price is approximately \$2.68 billion, but this figure is skewed upwards by giant transactions such as AT&T's merger with BellSouth (approximately \$68 billion) and the Gillette transaction completed by Procter and Gamble (approximately \$53 billion). The median purchase price is \$1.075 billion dollars, represented by Georgia Gulf Corporation's 2006 purchase of Royal Group Technologies, Ltd, and the median column of *Table 8, Panel A* presents the purchase price allocation and goodwill breakout for this transaction. The average write-up across all transactions is \$369.4 million, or 13.8% of the total purchase price, and the mean allocated goodwill of nearly \$1.5 billion represents 54.3% of the total purchase price. These percentages are very consistent with corresponding percentages of 16.1% and 56.8% reported of by Henning et al. (2000). Further, I note the average ratio of goodwill to total purchase price for the 190 transactions in this study is similar to the 55.4% reported by Shalev (2009) in a recently published study.

Further breaking down total allocated goodwill into its going concern (GC_GDWL), synergy (SYN_GDWL) and residual (RESID_GDWL) components highlights two notable deviations from the Henning et al. (2000) study. In this prior study, the authors report GC_GDWL, SYN_GDWL and RESID_GDWL that represent 21.0%, 48.5% and 30.5% of total allocated goodwill respectively. I report a corresponding breakout in which nearly 62% of allocated goodwill is GC_GDWL whereas SYN_GDWL only represents 16% of total allocated goodwill. The remaining 22% percent of allocated goodwill is classified as RESID_GDWL. Thus, GC_GDWL and SYN_GDWL appear to have switched in prominence. This is most likely due to a large size discrepancy between bidder and target. Acquirers are nearly 66 times larger than the target firms measured using the ratio of acquirer-to-target net assets (MVE) in the 190 transactions comprising the residual goodwill sample. These ratios are dramatically

larger than the corresponding ratios of 7 (3.5) reported in the Henning et al. (2000) study. The sizable differences are likely due to the governance variable requirements I impose, which cause the sample to predominantly include larger firms. Further, I note that the sample appears to be dominated by technology and pharmaceutical firms where a substantial portion of the purchase price is allocated to in-process research and development (IPR&D). To the extent that the target firm R&D activities are valued by the market prior to the M&A transaction, the going concern calculations will be higher as IPR&D activities are not included in the fair value of net assets acquired. Although Henning et al. do not provide an industry breakout for their sample, it does appear as though financial services firms are included in their sample highlighting at least one additional area where the samples may differ. Based on these observations, the goodwill component breakdowns appear to be reasonable based on the distribution of M&A transactions that comprise the *residual goodwill* sample.

Table 8, Panel B presents summary statistics for the TLTF control variables that are to be used as controls in the H3 and H4 regressions. Variable definitions are presented in the footnotes to the table. The average acquisition spans nearly four months (116 days) between the initial announcement and the close date. The median time between the initial offer announcement and the acquisition close is 91 days and the longest closing period runs 430 days. I note that 63% of acquisitions involve targets in the same two-digit SIC code as the acquiring firm and that equity consideration represents approximately 28% of the purchase price in the average acquisition. Competing bids are publicly disclosed in eight percent of the acquisitions. The target firm CEO is also the chair in 44% of the acquisitions and the target firm CEO joins the acquiring firm in an employee (director) capacity in 28% (13%) of the acquisitions. The target firm CEO retires upon the closing of the merger in five percent (5%) of the 190 acquisitions.

Table 9, Panel A presents the correlation table for the H3 regression variables. The H3 regression variables are slightly modified from those tested in H1 as the focus shifts to the individual transaction level. Thus, I replace financial statement control variables (XRD, INTANLG and TANA) with acquisition-level equivalents (PURCH_IPRD, PURCH_INTAN, and PURCH_NA). Although the tests focus on residual goodwill, I also control for synergy (SYN_GDWL) and going concern goodwill (GC_GDWL). I note the Spearman correlation scores are significant and at or above 0.50 for RESID_GDWL and GC_GDWL and PURCH_INTAN and GC_GDWL. Further I note the Pearson correlation is significant and greater than 0.50 for PURCH_INTAN and SYN_GDWL. These correlations indicate that the “high quality” synergy and going concern elements of goodwill tend to increase in the level of intangible assets acquired. To ensure multicollinearity is not present in the data, I estimate VIFs and find the scores are all well below the threshold of 10.

The correlation table for the H4 regression variables is presented in *Table 9, Panel B*. Although the focal point remains centered on the 190 acquisitions comprising the *residual goodwill* sample in the H4 analysis, I do not include the purchase allocation amounts as I do in the H3 regression. Instead, I once again include aggregated firm level financial statement control variables (identical to the H2 tests) as the acquisition-level equivalents I include in the H3 regressions would not be expected to have a significant impact on overall firm market value of equity measure.⁴⁰ Thus, the primary modification I make to the H2 regression is to split the goodwill corresponding to each acquisition out into its separate components. I then include an aggregated “other goodwill” (OTH_GDWL) measure which separately captures all other goodwill reported at year-end (including goodwill allocated in other acquisitions during the year and goodwill allocated in previous years). As a second modification, the original year-end market value of equity measure from (H2) is replaced with a new market value of equity measure consistent with Henning et al. (2000). The modified MVE measure represents the market value (scaled by shares outstanding) 90 days after the first 10-K disclosure of the acquisition. Using the MVE corresponding with this date ensures that the purchase price allocation has been subjected to a year-end audit and further allows sufficient time for investors to make an assessment on the qualities of the acquisition.

As is the case with the H2 regression variables, I find LIAB and ALGDWL to be highly correlated (Spearman score is 0.93) introducing potential multicollinearity issues. As such, I re-run the H4 analyses using NETALGDWL in place of ALGDWL and LIAB and find the results unchanged. I also note the Pearson correlation score between RESID_GDWL and HIGHAGExR_GDWL is extremely high (0.95), which is not unusual to find between an interaction variable and one of its component variables. However, the VIFs for RESID_GDWL and HIGHAGExR_GDWL are also above the benchmark of 10 due to the high correlation between these two variables. Unfortunately, as these are both test variables I cannot drop or combine these variables to reduce or circumvent the effects of multicollinearity as I do with ALGDWL and LIAB. As a result, the variances and standard errors are inflated for the affected variables leading to wider confidence intervals and making it more difficult to reject the null hypotheses.

When interpreting these results, it is important to consider the breakout illustrated in *Table 1, Panel D*, which classifies each of the 190 acquisitions into the eight possible agency conflict/monitoring strength groupings. Some of the groupings have only a small number of observations, which would likely result in higher standard errors and wider confidence intervals. This, when coupled with the multicollinearity issues described above, suggests the results of the H4 tests of investors’ perceptions of

⁴⁰ However, I note that these other purchase price allocation elements are included in the aggregated year-end financial statement numbers that I use (PURCH_TAN and PURCH_INTAN in the appropriate tangible/intangible assets accounts and PURCH_IPRD included in the annual research and development expenses).

residual goodwill must be interpreted with caution. I further elaborate on this important limitation and possible future research opportunities that may be used to strengthen the findings in *Section 7* below.

I present the results of the H3 (H4) regressions in *Table 10, Panel A (Panels B & C)*. In the H3 specifications, I regress each of the governance structure variables on the residual goodwill measures. I include variables to control for the allocation of the purchase price amongst tangible assets, intangible assets and in-process research & development (PURCH_TANA, PURCH_INTAN, and PURCH_IPRD). In specification (1) and (2) of the H3 regressions the dependent measure is the Henning et al. (2000) residual goodwill measure (RESID_GDWL_H). In specifications (3) and (4), I include the Shalev (2009) residual goodwill measure (RESID_GDWL_S) as the dependent variable. Since the Shalev residual goodwill measure is constructed differently from the Henning et al. residual goodwill measure, I do not include the other goodwill elements and purchase price allocation variables as control variables in specifications (3) and (4). Also, I include the TLTF control variables summarized in *Table 8, Panel B* in specifications (2) and (4).

In specification (1) I document a significant, positive association between RESID_GDWL and both PURCH_NA and PURCH_INTAN, indicating the residual goodwill increases in the size of the acquisition and the magnitude/intensity of intangible assets acquired. In addition, I observe a significant negative association between PURCH_IPRD and RESID_GDWL. Under SFAS 141, the amount of the purchase price allocated to in-process research and development (IPR&D) is expensed in an acquisition. Since goodwill is no longer amortized under SFAS142, there could be incentive for managers to understate the amount of IPR&D and overstate goodwill. The observed association between residual goodwill and IPR&D may be indicative of this behavior. Surprisingly, none of the three governance structure test variables appear to be significantly associated with RESID_GDWL in specification (1).

Specification (2) adds the TLTF control variables to the specification (1) model. The associations between the purchase price allocation variables and RESID_GDWL are the same as described above. Specification (2) also provides marginal evidence that residual goodwill declines when the target and acquiring firms are in the same industry (SAMEIND) and that residual goodwill increases when the target-firm CEO retires (TC_RETIRE). In addition, the results indicate a marginally significant positive association between RESID_GDWL and OUTSIDEMON. This finding provides limited evidence that residual goodwill increases with the strength of external monitoring mechanisms, which is more likely to be related to the consideration element of residual goodwill. I provide an expanded analysis in which I attempt to further disentangle the consideration and purchase price elements of residual goodwill in *Section 6.E.* below.

I next perform the H3 tests using the RESID_GDWL_S measure as the dependent variable. The results of specification (3) indicate a significant positive association between AGENCY and RESID_GDWL_S. Further, this association holds when the TLTF control variables are included in specification (4). Recall that the RESID_GDWL_S measure includes analyst long-term growth forecasts for the acquiring firm, implying that this measure may better capture the effects that increased pressure to meet or beat analysts' forecasts might have on the association between the governance structure measures and residual goodwill. To the extent this pressure leads managers to pursue value-decreasing mergers to conceal slower than expected growth, the observed association could be indicative of overpayment in the acquisition leading to higher residual goodwill (purchase price element). This finding could also be interpreted as providing support for Louis (2004), who shows that managers may manage earnings in advance of an acquisition in order to increase the share price. The inclusion of over-priced shares as part of the total consideration offered to complete an acquisition will lead to higher residual goodwill (consideration element).

In specification (4), I also find that EQTYPP is positively associated with RESID_GDWL_S. This is to be expected as acquiring firms are more likely to use over-priced shares in M&A, resulting in higher residual goodwill pertaining to the consideration element. As is the case with specification (2), I observe a negative association between RESID_GDWL_S and SAMEIND. However, the observed association between RESID_GDWL_S and TC_RETIRE is negative, while it was positive and significant in specification (2).

In summary, I observe a significant association between potential agency conflicts and residual goodwill that varies dependent on the setting and residual goodwill variable used. Thus, I view the collective evidence as providing limited support for H3b. I fail to provide consistent support for H3a suggesting that internal and external monitoring mechanisms have little impact on residual goodwill based on the sample of acquisitions that form the basis for these analyses.

The H4 tests examine whether investors' perceptions of residual goodwill vary dependent on potential agency conflicts and the strength of internal/external monitoring mechanisms. In specification (1), I perform a baseline analysis similar to Henning et al. (2000), while also including the INC measure from the H2 regressions. Consistent with the observed results of the H2 regression, MVE is positively associated with ALGDWL and negatively associated with LIAB. Investors value OTH_GDWL, however none of the decomposed goodwill elements are found to be significantly associated with MVE2. Recall that the acquiring firms tend to be large firms, so it may be that the acquisitions are not significant enough to affect shareholders' valuation assessments. Focusing on residual goodwill specifically, it is also possible that divergent investors' perceptions based on the firm's governance environment result in this

net zero finding. Thus, in specification (2) I include the governance measures and interaction variables necessary to examine how investors' perceptions of goodwill may differ between the eight agency/monitoring groupings.

The results of specification (2) suggest that investors' perceptions of residual goodwill vary based on the governance environment in which the acquiring firm operates. The main interaction effects indicate a reliably positive association between STROMONxR_GDWL and MVE2. This finding suggests that investors value residual goodwill more strongly when monitoring by outside institutions (blockholders and activist institutions) is stronger. Further I observe a marginally significant negative association between HIGHAGExR_GDWL and MVE2, suggesting that investors are more likely to discount residual goodwill as potential agency conflicts increase. The corresponding joint tests described in *Table 10, Panel C*, reveal two additional interesting results. First, absent strong internal and external monitoring mechanisms, I observe a negative association between residual goodwill and market value when agency conflicts are high. This finding suggests that managers are more likely to pursue a value-decreasing acquisition (implying an overpayment) when agency conflicts are high and monitoring mechanisms are more likely to be ineffective. Consistent with the findings of Henning et al. (2000), investors discount the resulting residual goodwill as it implies little future economic benefit and may even provide a signal to investors that the management team has completed a lower quality acquisition. It is interesting to note that this association does not persist in the remaining high agency groupings as the strength of monitoring mechanisms increase. Second, I observe a positive association between residual goodwill and MVE in the presence of strong internal and external monitoring mechanisms and low potential agency conflicts. This finding extends the Henning et al. (2000) study by showing that investors' perceptions of residual goodwill will not always be pessimistic. In fact, investors may be optimistic about this element of goodwill allocated in an acquisition to the extent it represents instances where savvy managers have been able to convert over-priced equity into assets that can be used to fuel positive future growth for the acquiring firm.

In specification (3), I re-estimate the specification (2) model and include the TLTF variables as additional controls. I note that the specification (2) results are robust to the inclusion of these additional control variables. I also perform similar analyses using the alternative RESID_GDWL_S measure, but found the results to be largely inconclusive. This is likely because this measure is fundamentally different in its construction from the RESID_GDWL_H measure. The RESID_GDWL_H measure allows for the calculation of an estimated dollar amount attributable to residual goodwill, which would be expected to have some economic impact on the corresponding market value. However, the RESID_GDWL_S measure does not capture economic elements of residual goodwill as the measure itself is constructed

using residuals from a regression model. Therefore it is not surprising that the model would yield inconclusive results given that the residual estimates for residual goodwill should not have any bearing on firm market value. Overall, the results of the H4 tests provide some support for H4a and marginal support for H4b, suggesting that investors' perceptions of residual goodwill vary according to potential agency conflicts and the strength of *external* monitoring mechanisms.

C. *Sensitivity Analyses*

I perform several different sensitivity analyses in order to test whether the findings described in the preceding sections are robust to a variety of alternative specifications, methods and approaches. I categorize these sensitivity analyses into four groupings based on the hypotheses tests to which they relate: (i) sensitivity analyses performed on all of the hypotheses tests; (ii) sensitivity analyses pertaining to potential endogeneity issues; (iii) sensitivity analyses performed on both of the investors' perceptions tests (aggregate *and* residual goodwill); and (iv) sensitivity analyses performed specifically on the tests of investors' perceptions of residual goodwill.

i. Sensitivity analyses performed on all of the hypotheses tests (H1-H4)

An alternative approach in constructing the PCA based governance measures is to use the standardized factor scores to calculate each governance component instead of the standardized values of each underlying governance variable. I adopt this approach as a second alternative governance measure and find that the reported results hold in each of the analyses when factor scores are used as a basis for constructing the agency and monitoring measures. As a second sensitivity test, I perform the four hypotheses tests on a restricted "constant" sample of firms that are included in each of the four sample years and find the results are quantitatively similar in each of the analyses to those presented above.

ii. Sensitivity analyses pertaining to potential endogeneity issues (H1 and H3)

As I discussed previously, endogeneity is a critical issue confronting all governance research. Although I am able to control for the impact of firm-specific endogenous choice factors that do not change over time in the H1 tests using the fixed-effects OLS regression technique, I cannot control for endogenous factors that change over time. In addition, I do not employ the fixed-effects regression in the H3 analyses due to the restricted sample size. Thus, to further assess the likelihood that the results are induced by the inclusion of the endogenous inside monitoring variable, I conduct a Hausman test (Hausman 1978). In this two-stage test, I first specify INSIDEMON as the dependent variable, predicted by the remaining variables in *Table 7, Panel A*, plus additional variables that may also be associated with

OUTSIDEMON, but that are not expected to be associated with goodwill balances (i.e. instrumental variables). I choose company age and return on assets (ROA) as the two instrumental variables for the first stage model. First, I choose company age because a company is likely to implement different monitoring mechanisms depending on the stage of its development (for which company age should serve as a proxy). Second, ROA should capture how differences in the business operating environment may influence the implementation of monitoring mechanisms. To perform the Hausman test, I save the residuals from this first-stage regression – which represent the uncontrolled determinants of INSIDEMON – and re-run the original regression specifications with the residuals included in the model.⁴¹

In the Hausman test for the H1 analyses, the coefficients of both instrumental variables are significant suggesting a negative association between these variables and INSIDEMON. In the second stage, the residual is not significant ($p = 0.328$), and the overall model significance does not improve, suggesting that inside monitoring does not appear to be endogenously determined. Turning to the Hausman test for the H3 analyses, I note that neither of the instrumental variables is significantly associated with INSIDEMON. This could be due to the reduced variation I note in the residual goodwill subsample firms. Also, I note that the other variables included in addition to the instrumental variables pertain to the specific acquisition transaction which would not be expected to be theoretical predictors of INSIDEMON. Unsurprisingly, I find this model to be a substantially weaker model of INSIDEMON. Once again, I capture the residuals from this first-stage regression and include them as an additional variable in the second stage regression on the determinants of residual goodwill. The corresponding coefficient is insignificant ($p=0.524$) and the primary regression model significance and results do not change.

Given the weaker results for the first-stage analysis of the H3 Hausman test, I perform a secondary test in which I use the residuals from the first-stage regression of the H1 Hausman test. Given that these residuals are calculated using a broader sample of firms, it is possible that they more accurately capture the true uncontrolled determinants of INSIDEMON. Once again, I find the coefficient on the residuals to be insignificant ($p=0.835$) and the regression results unchanged from the main analyses results. As a final sensitivity analyses, I use the *xtivreg* and *ivreg* commands in *Stata* to perform a two-stage analysis using the instrumental variables described above and find the results do not change materially from those originally reported. Overall, I conclude that the results related to the INSIDEMON variable presented in the H1 and H3 tests are robust to potential endogeneity issues.

⁴¹ Specifically, I base the Hausman tests on *specification (3)* for the H1 tests presented in *Table 7, Panel A* and on *specification (1)* for the H3 tests presented in *Table 10, Panel A*.

iii. *Sensitivity analyses performed on both of the investors' perceptions tests (H2 & H4)*

As a primary sensitivity analysis, I adjust how I define the high agency and strong monitoring groups. Recall in the primary tests that the groupings are distinguished at the 66th percentiles. To ensure the results I describe are robust to alternative grouping criteria, I also use 75% and 50% as the breakpoints in sensitivity analyses. Maintaining a focus on the high agency and strong monitoring groupings, I find that the results are even stronger when the groupings are made at the quartiles. When the break is made at the median, the results generally hold but are weaker. These findings are not surprising as quartiles (medians) provide more (less) refined distinctions of the agency and monitoring groups. Overall, the findings do not seem to indicate that the results are induced through the definition of the group breakpoints.

Additionally, I note that McCarthy and Schneider (1995) perform a sensitivity test in which they employ an alternate income measure. They obtain similar results using a clean surplus income measure in place of the unexpected income measure I use in my primary H2 and H4 tests. Thus, I replace INC with this clean surplus measure of income and reperform the H2 and H4 analyses noting the primary findings are unchanged as a result.⁴² Noting that Henning et al. (2000) do not include an income measure in their tests of investors' perceptions of goodwill, I also run the regressions with the income variable dropped altogether and the results do not change. Finally, as I mention above, I combine ALGDWL and LIAB to form a NETALGDWL measure to reduce the effects of multicollinearity on the H2 and H4 models and obtain results that are quantitatively similar to those reported in the original analyses.

iv. *Sensitivity analyses performed on investors' perceptions of residual goodwill tests (H4)*

Given the complexities inherent in the H4 regression analyses, there are a number of alternative specifications that may affect the results. First, I identify an alternative date to calculate MVE (the dependent variable) defined as the acquiring firm's market value 6 days after the first public disclosure of the acquisition. Using this specification, I note that the main effects for AGENCY and OUTSIDEMON are significantly negative and positive, respectively, and the joint tests suggest a positive association between residual goodwill and this alternative MVE measure in all of the low agency groupings (except when internal *and* external monitoring mechanisms are weak). It is important to note that this MVE specification does not imply disclosure in the audited 10-K so there may be reporting differences that create noise in the estimation.

⁴² Consistent with McCarthy and Schneider (1995), I define clean surplus income as the change in book value from the prior year plus dividends paid during the year.

Second, when coding the purchase price allocations, I note there were 19 instances where goodwill was pooled across several acquisitions. In these cases, I *estimated* goodwill using the relative weight of the sample acquisition relative to the total firm-wide acquisition activity for the year. Where possible, I was able to identify the goodwill allocated to a particular operating segment during the year, which allowed for more precise estimation. However, I re-estimate the base H4 models on the subsample of firms where goodwill was reported separately in the purchase price allocation (n=170). Despite the reduced sample size, the results are slightly stronger when these 19 firms are excluded from the analyses.

Finally, I note that 24 firms engage in multiple acquisitions during the 2004-2007 sample period (representing a total of 54 acquisitions). To ensure that the findings are not driven by these multiple acquisition firms, I drop them and re-estimate the H4 regressions on a reduced sample of 135 acquisitions. The results hold on this reduced sample of firms indicating that the results are not driven by the multiple acquisition firms.

6. ADDITIONAL TESTS

A. *High goodwill industries*

I note that the incentives to engage in M&A may be different in industries where M&A activity is more common and so I run the H1 and H2 regressions on a sample broken out into high/low industry M&A activity splits as I describe in the footnotes to *Table 2*. This table also identifies the industries (listed in **bold**) that I classify as being High M&A activity industries. Admittedly, using goodwill to measure industry specific merger activity is a rough estimation, however I note that 63% of the residual goodwill sample acquisitions occurred between firms operating within the same industry. Therefore, industries in which a greater number of firms have goodwill balances should provide an approximation of industry-wide merger activity.

The results of basic H1 regression specification split on industry M&A activity (untabulated) suggest that market share (MKTSHR) is significantly, positively associated with aggregate goodwill (GDWL) for the low M&A industry firms. This is an interesting finding because MKTSHR was found to be only marginally associated with GDWL in one of the original four regression specifications. Further, I note that this association does not hold for the high M&A industry firms, suggesting that the marginal significance noted in specification (3) is driven by the low M&A industry firms. In theory, goodwill *should* be associated with market share as increasing market share represents the ability for a firm to derive greater synergies from its operations and earn superior returns based on this dominant market presence. However, such a scenario may also involve instances where managers of more dominant firms are able to further entrench themselves by pursuing “empire-building” acquisitions. I turn to the H2 regressions in an attempt to distinguish between these two competing views.

Splitting the H2 regressions based on the levels of industry-wide M&A activity (untabulated) reveal that the negative coefficient on HIGHAGExGDWL is driven by firms in low M&A activity industries. In addition, the coefficient on STRIMONxGDWL is negative and significant indicating the investors further incrementally discount goodwill in valuing the firm when internal monitoring is strong. This is an intriguing finding which may warrant future research. I note that agency conflicts do not lead investors to discount goodwill in high M&A activity industries.

Altogether, I view the results as evidence of the differing sets of motivations for firms in high and low M&A activity industries. In low M&A activity industries, it appears as though managers of dominant firms are likely to use M&A as a means to further entrench themselves and that shareholders react by discounting the firm’s shares as a result. In high M&A activities, acquisitions appear to be viewed more favorably by investors as these acquisitions tend to be more common and thus, acquiring firms may be

better equipped to integrate the target firm's business activities after the merger, driving stronger performance post-merger. Given that most of the high M&A activity industries tend to be in technology-intensive environments, these acquisitions may also be viewed as an acceptable means of staking claim to new technologies that are expected to provide future benefits to shareholders.

B. *Other goodwill elements (SYN/GC)*

It is possible that the three distinct goodwill elements I measure (SYN_, GC_, and RESID_GDWL) have unique sets of determinants. Therefore, I perform additional tests of the determinants of the SYN_GDWL and GC_GDWL elements in order to better illustrate the determinants of aggregate goodwill. To do this, I re-run the H3 regressions after interchanging GC_GDWL (or SYN_GDWL) with RESID_GDWL while keeping the rest of the regression structure and control variables unchanged from the original specifications. Unlike with the RESID_GDWL component of goodwill, the results of the GC_GDWL determinants regression (untabulated) indicate that there is no significant association between GC_GDWL and acquisition size and the intensity of intangible assets acquired. Interestingly, there is a significant negative association ($p < 0.10$) between MKTSHR and GC_GDWL and a strong positive association between AGENCY and GC_GDWL ($p < 0.01$). While only conjecture, this finding implies that the going concern element of goodwill may be capturing acquisitions that are used to grow a firm that is lagging market leaders (explaining the negative association between MKTSHR and GC_GDWL). Further, the strong positive association between GC_GDWL and AGENCY suggests that these types of mergers may be used as an entrenchment mechanism by managers. I also note a strong positive association between GC_GDWL and the LONGCLOSE indicator suggesting acquisitions resulting in higher GC_GDWL tend to be subject to protracted negotiations, which may be indicative of hostile bids. Shifting focus to the SYN_GDWL component, I find the determinants are very similar to those noted in the main RESID_GDWL analysis. SYN_GDWL is increasing in the size of the acquisition (PURCH_NA) and in the value of intangible assets (PURCH_INTAN) acquired and decreasing in in-process research and development (PURCH_IPRD). This finding suggests that SYN_GDWL and RESID_GDWL are more similar than not when governance structures are factored in. However, a more thorough analysis comparing and contrasting the various goodwill elements in different scenarios would be an interesting topic for future research, and I elaborate on this point in *Section 7.C*.

C. *Internal Controls Analysis*

I am also interested in how the operation of a firm's system of internal controls may impact the allocation of goodwill in an acquisition. I obtain data on internal control opinions now required under

Section 404 of SOX for 785 of the 904 sample firms. Of these firms, 143 firms report adverse internal control opinions, representing 193 unique firm-years. I note only 11 of the adverse internal control opinion firm-year observations are subsequently included in the residual goodwill sample. I run two separate sets of analyses based on the internal control opinion data. First, I drop all firm year observations where an adverse internal control opinion is reported and re-run the main regression specifications testing H1-H4. In each case, I obtain results (untabulated) that are unchanged from the original analysis, indicating that the results are not sensitive to the exclusion of firms reporting internal control weaknesses. Second, I re-run the H1 goodwill determinants tests with an indicator for whether the firm reported an internal control weakness in the given year to test whether an association exists between aggregate goodwill balances and internal control weaknesses. These (untabulated) regressions do not appear to indicate that aggregate goodwill is associated with the operation of a firm's internal control systems.

D. Hostile versus friendly takeovers

Shivdasani (1993) distinguishes between hostile and friendly takeovers in his investigation of board effectiveness. It is possible that unique characteristics between hostile and friendly acquisitions may impact residual goodwill balances. Therefore, I classify acquisitions as being either hostile or friendly using a similar method as Shivdasani. An acquisition is considered to be hostile if the target board rejects or does not respond to the initial offer and the merger is considered to be friendly otherwise. I note that only five of the sample acquisitions are classified as hostile making rigorous analysis difficult. I compare the average residual goodwill balances of the five hostile takeover firms and remaining friendly acquisitions noting no statistical difference ($p\text{-value}=0.98$). In addition, I drop these five firms and re-run the H3 and H4 regression analyses noting no differences in results. Based on these limited procedures, it does not appear as though residual goodwill balances differ between hostile and friendly acquisitions; nor does it appear as though investors' perceptions of residual goodwill differ depending on whether the acquisition is hostile or friendly.

E. Acquisitions involving the exchange of equity consideration

In the main H3 and H4 tests, I provide new evidence suggesting that the composition and investors' perceptions of residual goodwill differ based on the governance environment in which a company operates. In addition, I provide evidence in the H4 tests that investors may assign a positive valuation weight to residual goodwill when monitoring is high, suggesting that managers may opportunistically convert over-priced shares into tangible assets through an acquisition (i.e., the consideration element of residual goodwill). In an attempt to disentangle these two residual goodwill

elements further, I re-estimate the H3 specification (2) model on a subsample of the *residual goodwill* sample acquisitions where equity is included as part of the purchase price (untabulated; n=90). I do so because I want to examine whether there is an association between governance structures and the consideration element of residual goodwill. The consideration element requires the exchange of equity as a part of the purchase price and so these acquisitions represent a subset of the acquisitions where the consideration element must be considered in interpreting residual goodwill. On this subset of acquisitions I observe a significant negative association between AGENCY and RESID_GDWL_H (p-value <0.05). This finding suggests that, absent potential agency conflicts, firms may opportunistically use over-priced shares to pursue acquisitions. Further, this finding does not hold for the subset of firms completing all cash acquisitions. These findings coupled with the results of the H4 analyses presented above provide new evidence that residual goodwill does not merely reflect possible overpayment in an acquisition. Instead, residual goodwill may also capture the benefits accruing to acquiring firm shareholders in the event the company can complete a merger using over-priced equity. Again, these findings highlight the complexity of residual goodwill and suggest that governance and other environmental factors need to be considered when assessing the quality of allocated (residual) goodwill.

F. Current year changes in goodwill

In the H1 and H2 tests, I focus on aggregate goodwill as a rough proxy for a firm's acquisition activity. Previous research has shown that older goodwill balances are perceived different than relatively newer goodwill balances (Henning et al. 2000; Bugeja and Gallery 2006). I re-perform the H1 and H2 analyses (in untabulated tests) to examine how the results may be influenced by a firm's *previous* acquisitions activity. To do so, I split total goodwill balances into current year goodwill changes (CURRGDWL) and prior year goodwill balances (PYGDWL). In re-performing the H1 analyses, I use CURRGDWL as the dependent variable and find that the coefficients on PYGDWL and OUTSIDEMON are significant and negative (p=0.00 and p=0.02 respectively). I also document a significantly positive association between CURRGDWL and AGENCY. While I must caveat that negative current goodwill changes (impairments) are included in this analysis, the results suggest that outside monitoring is negatively associated with current goodwill allocations whereas agency conflicts appear to be positively associated with current year goodwill. These findings appear to be consistent with (and relatively stronger than) the main results obtained using aggregate goodwill, which is to be expected given the refinement in splitting aggregate goodwill into its current year and prior year components.

In re-performing the H2 analyses, I retain MVE as the dependent variable but split goodwill into its PYGDWL and CURRGDWL components to examine whether investors' perceptions differ between

relatively newer and older goodwill while considering the moderating effects of the governance environment. I find the results are very consistent with the main H2 findings where only high potential agency conflicts appear to have a moderating effect on shareholders' perceptions of goodwill. Further, the regression results suggest that this result is driven by the prior year interaction term $HIGHAGExPYGDWL$ ($p=0.02$), whereas the interaction coefficient on $HIGHAGExCURRGDWL$ is not significant ($p=0.25$).

7. LIMITATIONS, IMPLICATIONS AND SYNTHESIS OF FUTURE RESEARCH

A. *Limitations*

Like any empirical examination, this study is subject to a number of limitations. I try to address these limitations where possible, but many are related to the availability of data and the nature of the transactions from which I draw my sample and are thus largely unavoidable. That my samples (especially the residual goodwill sample) may not be representative of all firms or all acquisitions is certainly an important limitation as it restricts my ability to generalize the findings to the full population of firms and M&A transactions.⁴³ In particular, I note that certain of the H1 and H2 findings do not hold in the *residual goodwill* sample used to test H3 and H4, likely due to the fact the *residual goodwill* sample firms are substantially larger (as is illustrated in *Table 3, Panel B*). Overall, I find the H3 and H4 test results to be more interesting and cohesive as I am able to focus on a more precise measure of goodwill. But, given the distinct nature of the set of M&A transactions I study, these results may not generalize to all acquisitions.

Further, the aggregate goodwill measure used in the H1 and H2 analyses provides only a rough measure of a firm's M&A activities relative to its governance structures, raising two additional limitations. First, aggregate goodwill balances represent collective allocations through past transactions, which may or may not be matched with the corresponding governance structures I measure during the four-year sample period. Second, perceptions of aggregate goodwill may differ depending on whether the goodwill was allocated prior to the issuance of SFAS141 and would have been subject to amortization prior to 2001.

Countering some of the potential issues raised with these limitations are the findings of Henning, et al. (2000) and Bugeja and Gallery (2006) who find that older goodwill tends to be weighted less by investors in valuing the firm. Thus, I would expect the older goodwill balances are less likely to be driving the results than goodwill acquired more recently. To ensure there were not any drastic changes in goodwill activity surrounding the passage of SFAS141, I perform an analysis on 394 sample firms with goodwill information available for 2000-2007. I note that the ratio of goodwill to total assets for these firms increases from 14.5% in 2000 to 17.8% in 2004. Further, the change around the passage of SFAS 141 in 2001 appears to be relatively modest as firms report goodwill totaling 15.7% of assets in 2001 and 16.5% of assets in 2002. Overall, there appears to be a steady trend upwards in the proportion of goodwill to total assets, but I do not observe any significant changes which might suggest that investors' would

⁴³ Here the full population of firms would be the 7,912 firm year observations described on the "Screened Compustat sample" line in *Table 1*. The population of M&A should also include the M&A involving private targets, however I could not identify a suitable measure for estimating residual goodwill for private M&A similar to the RESID_GDWL_H measure I use in the primary regressions.

value goodwill very differently in the years following the passage of SFAS 141. In a final attempt to address these concerns, I re-perform the H1 and H2 analyses with a focus on current goodwill and find that the results of both tests are generally consistent with the main findings.

Another limitation of the study is the small number of firms in each of the eight sample groupings for the H4 residual goodwill analyses. Although I implement interaction terms to increase the power of the tests, the coefficient estimates are still based on a relatively small sample size overall ($n=190$), which may be compounded when these observations are split into the eight agency/monitoring groupings. In addition, I note that multicollinearity appears to be present in the H4 regressions, which would lead to increased variances and wider confidence intervals, making it more difficult to reject the null hypothesis. On the one hand, this makes the observation of a significant positive or negative association between MVE and the test variables (including joint tests) more convincing given multicollinearity would bias *against* finding results. On the other hand, this implies that the underlying data may suggest other important associations exist that are effectively masked by the observed multicollinearity issues.

Another possible limitation is in the execution of the H4 sample design. Specifically, the acquisitions included in the sample may not register as sufficiently important events with the acquiring firm's investors to observe an association between the test variables and MVE. This is especially important in my sample given the substantial size differences between acquirer and target firms that I observe.⁴⁴ In untabulated tests, I create an indicator variable for each of the acquisitions where the market-value based size comparison falls *below* the median (11.57). I then run the H4 regression on this subsample of firms where the acquirer is much closer in size to the target firm. As expected, the results are stronger in this specification given that the acquisition is much more important to the acquiring firms' shareholders. I find that each of the governance interaction variables is significant. HIGHAGExR_GDWL is negatively associated with MVE2 ($p\text{-value} < 0.10$) and both STRIMONxR_GDWL and STROMONxR_GDWL are positively associated with MVE2 ($p\text{-values}$ of 0.091 and 0.005 respectively).

Overall, this supplementary analysis provides rather convincing evidence that governance does affect shareholders' perceptions of residual goodwill consistent with H4. If agency costs are high, investors appear to perceive residual goodwill as reflecting a lower-quality acquisition and they discount this element of goodwill in valuing the firm. However, in the presence of effective monitoring mechanisms, shareholders assign a positive valuation weight to these elements suggesting, either (1) that managers at well-governed firms use over-priced shares to complete acquisitions at an effective discount (consideration element of residual goodwill); or (2) that investors are more optimistic about the abilities

⁴⁴ Recall that acquirers are 66 times larger than the target firms, on average, measured using both market value of equity and assets.

of managers at well-governed firms to maximize the returns from the acquisition (whether through stronger monitoring or better managerial performance), even in cases where managers paid a merger premium (purchase price element).

Finally, despite my attempts to identify broad measures of a firm's underlying governance structures, the measures I use are not expected to be perfect measures of a firm's potential agency conflicts and the true quality/effectiveness of monitoring mechanisms. For instance, the six variables underlying the AGENCY measure are included because they indicate the *possible* presence of agency conflicts. It is important to caveat that variables such as SIZE and FCF are likely to be positively correlated with M&A, but do not necessarily indicate an agency problem. To the extent these (and other) governance structure variables are instead measuring some alternative underlying construct, the inferences I make may not be correct.

B. *Implications*

Bearing in mind the limitations I describe in the preceding section, this study has several important implications. First, this study should help users of financial statements and standard setters assess whether goodwill balances provide useful information to market participants. In this way, the paper builds upon empirical work by Johnson and Petrone (1998) and Henning et al. (2000). Johnson and Petrone identify four distinct elements of goodwill and Henning et al. find that investors' perceptions vary predictably amongst these elements. Overall, these two studies suggest that certain elements of goodwill do, indeed, imply future economic benefits to the firm and its shareholders (synergy and going concern components), whereas other elements do not appear to do so (purchase price and consideration elements, collectively defined as residual goodwill).

My study extends upon this work in two ways. First, my findings suggest that investors' perceptions of goodwill vary based on the governance environment in which a firm operates. Contrary to the findings of the Henning, et al study, I provide evidence that shareholders may assign a *positive* valuation weight to residual goodwill when monitoring is strong and potential agency conflicts are weak. Second, my study illustrates and provides some evidence to the opposing effects of the purchase price and consideration elements of residual goodwill. I note that important differences in these elements do not necessarily imply a negative valuation weight on the residual element of goodwill. By incorporating measures of potential agency conflicts and monitoring structures in my tests, I am able to disentangle these two elements of residual goodwill to some degree. In this way, my study should help foster a broader understanding of goodwill.

I believe that a broader understanding of this important asset is important for two reasons. First, recent global market declines have led to a dramatic increase in the number of goodwill impairments. Unsurprisingly, academics have been quick to follow this trend and there have been a number of goodwill impairment studies that have emerged in recent years. A working paper by Chambers (2007) asks whether goodwill reporting under SFAS 142 has improved financial reporting. His findings suggest while annual impairment testing did improve the quality of financial reporting, the elimination of systematic amortization reduced financial reporting quality. A second working paper by Gu and Lev (2008) adopts a similar framework as my study to investigate goodwill impairments. The authors provide convincing evidence that the practice of using over-priced shares to fund acquisitions is a significant predictor of future goodwill impairments. My study focuses on the allocation and investors' perception of goodwill and in so doing, provides information that may be useful to academics in analyzing subsequent goodwill impairment decisions.

Finally, this study ties together important elements in financial reporting and corporate governance that have an impact on several academic disciplines, particularly accounting, finance and management sciences. I adopt a governance framework for analyzing goodwill and provide marginal evidence that goodwill captures elements of a firm's governance environment in the context of M&A. Further, I leverage my accounting knowledge of the goodwill account to provide unique evidence that investors' reactions to mergers vary depending on the potential agency conflicts and monitoring mechanisms that interact in the completion of a merger.

C. *Future Research Synthesis*

There are several interesting avenues for future research that emerge from this study. First, it would be interesting to develop an *economic* residual goodwill measure (e.g. Henning et al. (2000)) that can be equally applied in both public and private acquisitions. While the Shalev (2009) measure can be applied to the acquisition of the private firm, I note that it is not easily incorporated in economic analyses such as the ones I perform in this study. Development of a new residual goodwill measure would allow for equivalent analysis of public and private targets, which should help to further identify distinctions amongst the four goodwill components.

I perform limited analyses regarding the determinants of going concern and synergy goodwill. It may be interesting to perform a more robust examination of these elements of goodwill, especially within a governance context as they suggest differing motivations and incentives for acquiring firms. In the future, I may be able to further extend these analyses to examine whether investors' perceptions vary based on firm operating environment and corporate governance structures. I can also envision a study

which includes firm operating performance measures to evaluate whether the distinct goodwill elements are associated with future accounting returns as is implied in the initial allocation of goodwill. Once again, governance structures may have an interactive effect in the association between goodwill elements and future firm operating performance.

Finally, the limited analyses I perform on “high vs. low M&A” industries had several interesting findings that encourage a more thorough investigation. In particular, it would be interesting to examine how goodwill balances differ across industries. Although I control for industry effects in these analyses, I do not investigate industry effects themselves. I would expect that goodwill balances are fundamentally different for a company like Coca-Cola compared to a pharmaceutical company such as Abbott Laboratories. Future research that helps illustrate these differences may lead to an even deeper understanding of this unique and important asset.

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APPENDICES

APPENDIX A: TABLES

Table 1 - Sample Selection and Composition

Panel A: Full Goodwill Sample Construction

	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>Total</u>
Full population of Compustat firms	5,953	5,855	5,717	5,548	23,073
(Less): Foreign registrants	(825)	(823)	(819)	(786)	(3,253)
Firms not listed on a primary U.S. exchange ¹	(619)	(521)	(427)	(334)	(1,901)
Non-accelerated filers ²	(835)	(788)	(652)	(722)	(2,997)
Financial services institutions ³	(886)	(923)	(906)	(832)	(3,547)
Screened Compustat sample	<u>2,788</u>	<u>2,800</u>	<u>2,913</u>	<u>2,874</u>	<u>11,375</u>
Missing or zero goodwill value(s)	(875)	(835)	(874)	(879)	(3,463)
Goodwill Sample in Compustat	<u>1,913</u>	<u>1,965</u>	<u>2,039</u>	<u>1,995</u>	<u>7,912</u>
Firm not included in governance dataset(s) ⁴	(1,028)	(1,030)	(1,059)	(1,052)	(4,169)
Missing governance variables	(116)	(107)	(138)	(125)	(486)
Non Big-4 auditor	(18)	(25)	(30)	(35)	(108)
<u>Aggregate sample for H1 and H2 tests</u>⁵	<u>751</u>	<u>803</u>	<u>812</u>	<u>783</u>	<u>3,149</u>

Panel B: Residual Goodwill Sample Construction

	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>Total</u>
Possible acquisitions identified in CRSP	-	-	-	-	305
(Less): Acquisitions not closing during 2004-07	-	-	-	-	(83)
Acquisitions closing during 2004-07	<u>41</u>	<u>52</u>	<u>65</u>	<u>64</u>	<u>222</u>
(Less): Multiple acquisitions during fiscal year	(2)	(4)	(10)	(6)	(22)
No purchase price allocation provided	(2)	(2)	(2)	(2)	(8)
Missing returns data for residual goodwill	(-)	(-)	(1)	(1)	(2)
<u>Residual sample for H3 and H4 tests</u>⁵	<u>37</u>	<u>46</u>	<u>52</u>	<u>55</u>	<u>190</u>

(Table continued on next page)

Panel C: Number of Firms Included in Sample

	Full Sample	Residual Sample
Maximum Firm Years	3,149	190
Maximum <i>Unique</i> Firms:	904	160
- Represented in one year	56	3
- Represented in two years	93	14
- Represented in three years	113	17
- Represented in four years (<i>constant sample</i>)	642	126

Panel D: Breakdown of Observations into Agency/Monitoring Groupings

Agency Conflicts (High/Low)	Internal (Strong/Weak)	External (Strong/Weak)	Full Sample (n = 3,149)	Residual Sample (n = 190)
Low	Weak	Weak	940	31
Low	Strong	Weak	432	29
Low	Weak	Strong	462	27
Low	Strong	Strong	244	11
High	Weak	Weak	462	33
High	Strong	Weak	244	39
High	Weak	Strong	214	10
High	Strong	Strong	151	10

Panel A provides details into the sampling approach and screens applied to derive the full sample used to test H1 and H2. Panel B contains information on the sampling approach undertaken to derive the residual sample used to test H3 and H4. Panel C highlights the distribution of firms throughout the four-year sample period (2004-2007). Panel D displays the breakdown of the firms into each of the 8 agency conflict/monitoring groupings which are utilized in the H2 & H4 regression analyses.

¹ Primary exchanges are considered to be the NYSE, AMEX and NASDAQ stock exchanges.

² Consistent with the provisions of the Sarbanes-Oxley Act (2002), non-accelerated filers are defined as those firms with a market capitalization below \$75 million for the year.

³ Financial services institutions are defined as firms with SIC codes ranging from 6000-6999.

⁴ Governance variables are obtained from *Board Analyst*, *RiskMetrics/IRRC*, *CompuStat Quarterly*, *Spectrum* and *Execucomp*. The majority of this data attrition is due to lack of reporting by *Board Analyst* (resulting in the exclusion of 3,929 firm-year observations).

⁵ The income variable to be included in the market value of equity regressions is missing for a handful of observations, resulting in a slightly reduced sample size for the H2 and H4 analyses.

Table 2 - Sample Industry Composition
(\$ Millions for Goodwill Balances)

Panel A: Full Sample Industry Composition and Comparison to Compustat Cross-Section

Two-Digit SIC	Industry	Number	Percent of Sample	Compustat Composition ¹	<u>Goodwill Balances²</u>		
					Mean	Min	Max
1	Crops	4	0.4 %	0.4%	759.4	4.2	2,625.0
10	Ores	3	0.3	0.4	2,173.9	8.7	6,105.0
12	Coal	2	0.2	0.3	79.6	37.4	240.7
13	Oil & Gas³	24	2.6	3.5	654.0	1.5	6,172.0
14	Quarry	4	0.4	0.2	541.2	20.6	3,789.1
15	Building - Light	0	0.0	0.6	-	-	-
16	Building - Heavy	6	0.7	0.3	200.0	9.9	626.7
17	Construction	2	0.2	0.2	484.4	279.4	1,355.1
20	Food³	29	3.2	2.2	2,603.4	20.2	31,193.0
21	Tobacco	2	0.2	0.2	3,151.9	2.6	8,175.0
22	Textile Mill	2	0.2	0.3	1,273.6	153.0	2,797.3
23	Apparel	8	0.9	1.0	553.2	12.6	1,278.2
24	Lumber	4	0.4	0.5	1,191.0	123.8	4,408.0
25	Furniture	10	1.1	0.6	731.2	2.4	6,131.0
26	Paper	17	1.9	0.9	1,109.1	2.8	5,043.0
27	Printing	19	2.1	1.3	1,663.7	30.5	10,060.4
28	Chemicals³	79	8.7	11.0	2,039.9	0.9	56,552.0
29	Petroleum	10	1.1	0.5	3,733.3	34.9	31,488.0
30	Rubber	12	1.3	1.1	447.0	10.1	2,608.7
31	Leather	5	0.5	0.5	72.9	0.9	238.7
32	Stone	6	0.7	0.5	540.6	9.3	3,009.1
33	Metal Work - Basic	22	2.4	1.2	575.9	8.0	6,541.0
34	Metal Work - Fabrication	16	1.7	1.4	915.5	42.7	4,345.6
35	Industrial³	68	7.5	6.1	1,081.2	0.6	21,773.0
36	Electrical³	88	9.7	9.6	576.1	0.5	8,165.1
37	Transport - Equipment	23	2.5	2.3	2,364.2	24.8	16,120.0
38	Instruments	72	8.0	7.8	1,192.3	2.6	17,672.0
39	Misc. Manufacturing ³	12	1.3	0.9	266.5	1.4	1,116.6

(Table continued on next page)

Two-Digit SIC	Industry	Number	Percent of Sample	Compustat Composition ¹	<u>Goodwill Balances²</u>		
					Mean	Min	Max
40	Railroad	2	0.2	0.3	34.8	10.6	73.0
42	Motor Freight	9	1.0	0.9	681.5	4.8	2,577.0
44	Water Transport	5	0.5	0.4	159.3	9.0	328.8
45	Air Transport	2	0.2	0.7	1,499.1	8.4	3,497.0
47	Transport – Services	5	0.5	0.4	135.8	7.8	380.5
48	Communications³	15	1.6	3.6	11,053.9	4.8	70,713.0
49	Utilities³	10	1.1	3.7	1,906.9	11.4	8,202.0
50	Durables - Wholesale³	30	3.3	2.5	336.1	3.0	1,779.2
51	NonDurables - Wholesale	11	1.2	1.4	1,045.7	4.2	4,866.1
52	Garden	3	0.3	0.1	1,078.7	10.2	6,314.0
53	General Stores	8	0.9	0.7	2,008.5	9.3	13,759.0
54	Food Stores	7	0.8	0.5	1,303.7	8.2	5,921.0
55	Auto Dealers	6	0.7	0.6	661.5	4.2	2,799.7
56	Apparel – Retail	14	1.5	1.3	201.2	3.6	1,676.0
57	Home Equipment	6	0.7	0.6	155.6	2.5	919.0
58	Eating	18	2.0	1.7	251.0	1.6	2,301.3
59	Misc. Retail	19	2.1	2.3	1,302.4	5.9	23,922.3
70	Hotels	3	0.3	0.4	1,560.5	921.0	3,710.0
72	Personal Services	4	0.4	0.4	702.0	25.1	1,264.3
73	Business Services³	119	13.2	14.1	977.7	0.6	14,285.0
75	Auto Repair	2	0.2	0.2	108.4	1.0	166.6
78	Movies	2	0.2	0.5	450.0	11.2	1,138.5
79	Amusements	4	0.4	1.1	383.7	26.7	1,314.6
80	Health	25	2.8	2.1	850.2	1.7	5,220.1
82	Educational	5	0.5	0.5	327.6	190.0	579.8
83	Social	1	0.1	0.2	144.4	123.7	165.0
87	Engineering - Retail	19	2.1	2.5	408.9	13.7	3,139.6
99	Nonclassifiable	1	0.1	0.5	322.5	291.3	365.4
		904	100.0	100.0	1,231.6	0.5	70,713.0

(Table continued on next page)

Panel B: Residual Sample Industry Composition (Acquiring Firms)

2-Digit SIC	Industry	Number	Residual Goodwill Balances ²		
			Mean	Min	Max
1	Crops	1	25.5	25.5	25.5
13	Oil & Gas³	8	176.5	0	387.5
17	Construction	1	152.8	152.8	152.8
20	Food	3	132.5	0	393.6
23	Apparel	1	92.5	92.5	92.5
25	Lumber	1	0	0	0
26	Paper	2	251.0	166.66	335.3
27	Printing	4	205.7	0	816.7
28	Chemicals	18	427.4	0	9,662.9
29	Petroleum	3	3,531.2	594.2	5,299.5
31	Leather	1	0	0	0
33	Metal Work - Basic	3	44.4	0	133.2
34	Metal Work - Fabrication	1	0	0	0
35	Industrial	12	278.9	0	1,708.0
36	Electrical	20	156.7	0	1,308.0
37	Transport-Equipment	4	319.8	0	733.8
38	Instruments	20	130.4	0	1,262.0
39	Misc. Manufacturing	2	0	0	0
42	Motor Freight	1	0	0	0
44	Water Transport	2	0	0	0
48	Communications	6	1,124.4	0	5,833.8
50	Durables - Wholesale	1	0	0	0
51	NonDurables - Wholesale	3	278.6	0	851.7
52	Garden	1	28.1	28.1	28.1
54	Food Stores	2	6.3	0	18.4
59	Misc. Retail	4	419.1	0	1,373.5
72	Personal Services	1	96.9	96.9	96.9
73	Business Services	27	203.3	0	2,394.5
79	Amusements	1	0	0	0
80	Health	3	871.8	121.2	2,044.0
87	Engineering - Retail	3	356.4	20.4	773.7
Total		160	316.9	0	9,662.9

Panel A summarizes the industry composition (two-digit SIC codes) for the 904 unique sample firms in the full sample in addition to the mean, minimum and maximum goodwill balances by industry. Panel B provides an industry breakout for each of the 160 acquiring firms in the residual goodwill sample in addition to the mean, minimum and maximum residual goodwill balances by industry.

¹The Compustat composition figures are based on all U.S. based, non-financial firms included in the Compustat database (n=3,921)

² The figures presented here summarize the goodwill (residual goodwill) balances within each industry grouping and are based on the full sample of 3,149 (190) firm-year observations for consistency with descriptive statistics presented in Table 4.

³ Denotes the industry is deemed to be a “high” M&A activity industry. This classification is assigned to any industry comprising more than 3% of either the full sample or the full population of Compustat firms. This classification is made based on the assumption that an industry with a greater number of firms reporting goodwill is indicative of higher levels of M&A activity. Where this classification is used, a tighter 5% criteria is also applied as a sensitivity analysis and inferences are unchanged as a result.

Table 3 - Descriptive Statistics: Governance and Financial Statement Variables
(Financial Statement Variables in Panel B in \$ Millions)

Panel A: Descriptive Statistics – Governance Variables

Ref	Variable¹	Mean	Median	Std. Dev.
<u><i>Agency Variables</i></u>				
(A1)	SIZE	7.649	7.526	1.454
(A2)	OWN	0.698	0.723	0.185
(A3)	RISK	0.024	0.017	0.026
(A4)	FCF	0.073	0.067	0.103
(A5)	GROWTH ²	0.426	0.374	0.245
(A6)	LEV ²	0.265	0.201	0.314
<u><i>Outside Monitoring Variables</i></u>				
(O1)	BLOCKHOLDER ³	2.634	2.508	1.673
(O2)	LRGSHRHLDR	0.110	0.108	0.045
(O3)	BLOCKPCT	0.203	0.189	0.125
(O4)	ACTIVIST ³	11.082	11.000	2.259
(O5)	ACTIVISTPCT	0.028	0.029	0.009
<u><i>Inside Monitoring Variables</i></u>				
(I1)	BD_UNAFFOUTSIDE	0.717	0.75	0.149
(I2)	BD_SIZE ⁴	9.258	9.000	2.149
(I3)	BD_MTGS ²	7.939	7.000	3.505
(I4)	CEO_SHR ²	0.950	1.000	0.219
(I5)	CEO_TURN	0.373	0.000	0.484
(I6)	BD_UNDER4	0.891	0.909	0.130
(I7)	BD_NOTACTCEO	0.742	0.750	0.130
(I8)	CEO_COB	0.391	0.000	0.488
(I9)	FOUND_CEO	0.930	1.000	0.255
(I10)	FOUND_BD	0.821	1.000	0.384
(I11)	CEO_EBC	0.629	0.691	0.253
(I12)	CEO_BONUS	0.130	0.070	0.163
(I13)	POISON ²	0.411	1.000	0.492
(I14)	STATEINC	0.897	1.000	0.304
(I15)	STAGBD	0.406	0.000	0.491
(I16)	SUPER	0.829	1.000	0.376
(I17)	UNEQVOTE	0.989	1.000	0.103

(Table continued on next page)

Panel B: Descriptive Statistics – Financial Statement Variables

Variable ⁵	Full Sample (N=3,149) ⁶			Residual Sample (N=190) ⁶		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
AT	6,916.30	1,883.32	17,538.75	20,661.84	6,778.68	39,697.07
MVE	9,595.11	2,333.80	24,436.94	28,947.69	8,154.11	48,783.48
GDWL	1,231.61	257.32	3,757.70	4,474.26	1,433.25	9,360.78
LIAB	3,855.99	931.75	9,935.79	11,080.98	2,864.27	22,341.21
XAD ⁶	231.34	38.52	619.53	569.24	94.90	1,101.60
XRD	179.42	10.02	707.23	785.83	97.02	1,694.95
INTANLG	536.22	40.68	3,379.70	2,509.31	324.37	8,413.04
TANA	5,148.47	1,399.50	12,843.86	13,678.26	4,191.63	25,484.58
MKTSHR	0.19	0.09	0.24	0.21	0.11	0.25
ALGDWL	5,739.86	1,543.26	15,010.12	16,187.57	4,714.50	31,908.76
INC ⁶	62.20	16.75	795.19	120.50	33.00	978.97

Panel A reports the descriptive statistics (mean, median and standard deviation) for the 28 total governance variables which are used to derive the three governance measures: (1) AGENCY; (2) OUTSIDEMON; and (3) INSIDEMON. Panel B reports descriptive statistics for the financial statement variables used in regression analyses, broken out between the full (n=3,149) and residual (n=190) samples. All financial statement variables are winsorized (1% and 99%) to reduce the impact of outlier observations and are scaled by common shares outstanding at year-end in subsequent regression analyses (excluding MKTSHR) consistent with Henning, et al. (2000).

¹ Governance variables are defined in Appendix C.

² These variables (GROWTH, LEV, BD_UNAFFOUTSIDE, BD_MTGS, CEO_SHR and POISON) did not load significantly in PCA and are included in the calculation of the internal monitoring score individually (using standardized values).

³ ACTIVIST and BLOCKHOLDER variables are calculated as yearly averages based on quarterly 13-f filings and thus, the variables may not be round numbers.

⁴ BD_SIZE and will be multiplied by negative one (-1) to ensure consistent observation for PCA, as this variable is expected to be inversely associated with quality of internal monitoring (Dey 2008)

⁵ Financial statement variables are defined in Appendix B with the exception of total assets (AT), which I include here merely for reference purposes.

⁶ Advertising expense (XAD) data is only available for 1,338 (81) observations in the full (residual) sample.

Unexpected income (INC) data is only available for 3,139 (189) observations in the full (residual) sample.

⁷ RESID_GDWL_S is the Shalev (alternative) residual goodwill measure. This variable is only calculated for the H3/H4 residual sample. Long-term analyst growth forecasts are required for the calculation of this alternative residual goodwill measure and are obtained from I/B/E/S. Data is missing for seven of the residual sample firms, leaving 183 observations for regression analyses involving this variable.

Table 4 - Governance Principle Component Analysis (PCA) Correlation Tables

Panel A: Agency PCA Correlation Table – Pearson (Spearman) Correlations are Presented in the Upper (Lower) Diagonal¹

COMPONENT	INDEX	A1	A2	A3	A4	A5	A6
SIZE	A1	-	0.24	-0.04*	0.10	-0.09	0.04*
OWN	A2	0.27	-	-0.06	-0.01	-0.16	-0.11
RISK	A3	-0.01	-0.08	-	0.18	-0.10	-0.13
FCF	A4	0.17	0.05	0.18	-	-0.17	0.09
GROWTH	A5	-0.11	-0.17	-0.12	-0.25	-	0.05
LEV	A6	0.18	-0.03^	-0.21	0.06	0.07	-

Panel B: External Monitoring PCA Correlation Table – Pearson (Spearman) Correlations are Presented in the Upper (Lower) Diagonal¹

COMPONENT	INDEX	O1	O2	O3	O4	O5
BLOCKHOLDER	O1	-	0.38	0.81	-0.29	0.10
LRGSHRHLDR	O2	0.49	-	0.66	-0.12	0.06
BLOCKPCT	O3	0.91	0.71	-	-0.27	0.18
ACTIVIST	O4	-0.35	-0.16	-0.30	-	0.19
ACTIVISTPCT	O5	0.09	0.07	0.15	0.18	-

(Table continued on next page)

Panel C: Internal Monitoring PCA Correlation Table: Spearman Correlations²

	<u>I1</u>	<u>I2</u>	<u>I3</u>	<u>I4</u>	<u>I5</u>	<u>I6</u>	<u>I7</u>	<u>I8</u>	<u>I9</u>	<u>I10</u>	<u>I11</u>	<u>I12</u>	<u>I13</u>	<u>I14</u>	<u>I15</u>	<u>I16</u>
I2	-0.08	-														
I3	0.08	-0.00	-													
I4	0.14	-0.05	0.10	-												
I5	0.06	-0.07	0.10	0.12	-											
I6	-0.10	0.15	0.00	-0.05*	-0.04*	-										
I7	-0.07	-0.07	0.05	0.01	0.01	0.25	-									
I8	-0.17	0.02	0.11	0.10	0.16	0.09	0.14	-								
I9	0.11	-0.14	0.02	0.26	0.11	-0.05	-0.02	0.14	-							
I10	0.21	-0.12	0.02	0.14	0.05	-0.08	-0.10	-0.08	0.59	-						
I11	0.15	-0.11	0.12	0.07	0.06	-0.03^	0.01	-0.01	0.06	0.02	-					
I12	-0.06	-0.05*	-0.04*	-0.03	0.00	-0.13	-0.11	-0.03	0.02	0.06	-0.63	-				
I13	-0.21	-0.01	-0.01	-0.09	-0.08	0.02	0.03^	0.03^	-0.03*	-0.08	-0.02	-0.02	-			
I14	-0.08	0.05	0.03	-0.02	0.07	-0.02	0.07	0.06	-0.03	-0.06	0.04*	-0.01	0.02	-		
I15	-0.04*	0.06	-0.00	0.02^	-0.06	0.01	-0.02	0.03^	-0.02	0.01	0.04*	-0.06	0.24	0.08	-	
I16	-0.00	0.12	0.03	0.05*	0.07	-0.03	-0.03	0.02	-0.04*	-0.01	0.04*	-0.02	0.09	0.09	0.13	-
I17	0.03	0.06	0.02	-0.02	0.04*	-0.01	-0.02	0.04*	0.02	-0.00	-0.00	-0.01	0.01	0.01	-0.00	0.02

Panel A displays the correlation coefficients between the six agency variables. Panel B displays the correlation coefficients between the five external monitoring variables. Finally, Panel C displays the correlation coefficients (Spearman only) for the 17 internal monitoring variables. All governance variables are defined in Appendix C.

¹ **Bolded** scores denote significance at less than 0.01.

² Due to the large number of correlates presented, only the Spearman correlation scores are reported. Pearson correlation scores do not differ materially from those reported above. Bolded scores denote significance at less than 0.01. The * (^) symbols denote significance at less than 0.05 (0.10) levels, respectively. The reference numbers in Panel C (I1, I2, ..., I17) index to the 17 inside monitoring variables as follows: (I1) BDUNAFFOUTSIDE; (I2) BD_SIZE; (I3) BD_MTGS; (I4) CEO_SHR; (I5) CEO_TURN; (I6) BD_UNDER4; (I7) BD_NOTACTCEO; (I8) CEO_COB; (I9) FOUND_CEO; (I10) FOUND_BD; (I11) CEO_EBC; (I12) CEO_BONUS; (I13) POISON; (I14) STATEINC; (I15) STAGBD; (I16) SUPER; and (I17) UNEQVOTE.

Table 5 - Governance Principle Component Analysis (PCA) Factors and Factor Descriptive Statistics

Panel A: PCA Factors, Factor Scores and Reliability Measures

Variable	Factor	Components	Loadings	Cronbach's Alpha
<u>AGENCY</u> (2 factors)¹ [0.3851]	LARGE	SIZE	0.7029	0.3971
		OWN	0.6796	
	CASH	RISK	0.6878	0.3731
		FCF	0.7115	
<u>OUTSIDEMON</u> (2 Factors) [0.5889]	BLOCK	BLOCKHOLDER	0.5549	0.8548
		LRGSHRHLDR	0.4827	
		BLOCKPCT	0.6223	
	ACTIVIST	ACTIVIST	0.6525	0.3230
		ACTIVISTPCT	0.7509	
<u>INSIDEMON</u> (6 Factors)² [0.4573]	CEOCOMP	CEO_EBC	0.7037	0.8008
		CEO_BONUS	-0.7036	
	BDANTI	STAGBD	0.6423	0.3848
		POISON	0.6789	
	FOUND	FOUND_CEO	0.6867	0.7396
		FOUND_BD	0.7014	
	BDQUAL	BD_UNDER4	0.6805	0.3614
		BD_NOTACTCEO	0.5809	
	CEOPWR	CEO_COB	0.5193	0.2448
		STATEINC	0.4558	
	BDVOTE	CEO_TURN	0.6131	0.2122
		BD_SIZE	0.7910	
		SUPER	0.4413	

(Table continued on next page)

Panel B: Descriptive Statistics – Governance Factors

Variable	Mean	Std Dev.	Q1	Median	Q3	Min	Max
AGENCY ¹	0.000	0.409	-0.282	-0.024	0.239	-1.252	1.915
OUTSIDEMON	0.000	0.560	-0.340	0.014	0.352	-2.126	3.206
INSIDEMON ²	0.000	0.310	-0.156	0.031	0.196	-1.489	1.166

Panel C: Descriptive Statistics – Governance Factors (by grouping)

Variable	<u>Median Scores:</u>	
	Low/Weak	High/Strong
AGENCY ¹	-0.229	0.444
OUTSIDEMON	-0.296	0.574
INSIDEMON ²	-0.154	0.299

This table presents the results of the PCA analysis on the three sets of governance variables. Consistent with Larcker, et al. (2007) and Dey (2008), factors with an eigenvalue exceeding one are retained and components with a factor loading exceeding 0.40 are reported in Panel A. Components not loading significantly on a factor are considered distinct factors as described below (GROWTH, LEV for AGENCY and BD_UNAFFOUTIDE, BD_MTGS, CEO_SHR and UNEQVOTE for INSIDEMON). Panel A also displays the Cronbach's Alpha scores for each of the separate PCA analyses. In each case, the Cronbach's Alpha scores are lower than the benchmark of 0.70 identified in Larcker, et al. (2007) and Dey (2008). However, the reliability scores appear to be similar to those obtained by these authors and further I note that these low reliability scores are not unusual in exploratory PCA analyses such as this (Larcker et al. 2007). Panel B presents descriptive statistics for the three governance structure variables, which are calculated consistent with Larcker, et al. (2007) as the average of each factor's standardized components (see notes 1 and 2 below for additional details). Panel C presents a breakdown of the median governance into the high/strong and low/weak binary grouping categories used in the main analyses, which are used in the analyses of investors' perceptions of goodwill (tests of H2 and H4).

¹ AGENCY scores are calculated as the average standardized components comprising these two distinct factors *and* the standardized scores of two additional components (measured as the standardized variables, GROWTH and LEV). See *Panel B* for additional descriptive statistics.

² INSIDEMON scores are calculated as the average standardized components comprising these six distinct factors *and* the standardized scores of four additional components (measured as the standardized variables, BD_UNAFFOUTSIDE, BD_MTGS, CEO_SHR and UNEQVOTE). See *Panel B* for additional descriptive statistics.

Table 6 - Regression Analysis Correlation Tables (H1 & H2)

Panel A: Correlation Table – H1 Regression Variables – Pearson (Spearman) Correlations are Presented in the Upper (Lower) Diagonal¹

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GDWL	(1)	-	0.219	0.046*	0.473	0.299	0.167	0.462	0.041*	0.073
XAD	(2)	0.222	-	-0.128	0.321	0.384	0.180	0.249	0.004	0.142
XRD	(3)	0.022	-0.356	-	0.072	0.046	-0.058	-0.141	0.091	0.096
INTANLG	(4)	0.555	0.264	0.188	-	0.168	0.037*	0.357	-0.012	0.054
TANA	(5)	0.327	0.499	-0.128	0.127	-	0.223	0.245	-0.025	0.102
MKTSHR	(6)	0.284	0.389	-0.204	0.125	0.334	-	0.191	-0.014	-0.017
AGENCY	(7)	0.428	0.411	-0.198	0.283	0.334	0.301	-	0.047	0.023
INSIDEMON	(8)	0.041	-0.024	0.097	0.022	-0.035*	-0.034 [^]	0.053	-	0.072
OUTSIDEMON	(9)	0.058	0.088	0.049	0.017	0.086	-0.033 [^]	-0.005	0.080	-

Panel B: Correlation Table – H2 Regression Variable s– Pearson (Spearman) Correlations are Presented in the Upper (Lower) Diagonal¹

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MVE	(1)	-	0.531	0.368	0.477	0.167	-0.032	-0.027	-0.003
ALGDWL	(2)	0.524	-	0.389	0.918	0.175	0.246	-0.016	0.052
GDWL	(3)	0.322	0.397	-	0.593	0.053	0.387	0.048*	0.025
LIAB	(4)	0.457	0.905	0.567	-	0.146	0.326	0.022	0.047*
INC	(5)	0.259	0.186	0.075	0.154	-	-0.005	-0.062	-0.019
HIGHAGENCY	(6)	-0.034 [^]	0.287	0.349	0.392	-0.040*	-	0.051*	-0.008
STRINSMON	(7)	-0.039 [^]	-0.025	0.040*	0.010	-0.087	0.051*	-	0.043*
STROUTMON	(8)	-0.013	0.020	0.008	0.002	-0.033	-0.008	0.043*	-

Panel A (Panel B) presents the correlation scores for the H1 (H2) regressors. Variable definitions are provided in Appendix B. All correlation scores are based on n=3,149 except for those including the INC variable (n=3,139).

¹ **Bolded** scores denote significance at less than 0.01. The * (^) symbols denote significance at less than 0.05 (0.10) levels, respectively

Table 7 - Regression Analysis Results (H1 & H2)

Panel A: H1 Regression Table – Determinants of Goodwill

GDWL_{i,t} = α + $\beta_{n,i,t}$ x Control Variables + $\beta_{m,i,t}$ x Test Variables + ε						
Variable¹	Test / control	Exp. Sign	(1) Coeff (t-Stat)	(2) Coeff (t-Stat)	(3) Coeff (t-Stat)	(4) Coeff (t-Stat)
INTERCEPT	<i>n/a</i>	<i>n/a</i>	0.240 (0.55)	0.330 (0.77)	0.461 (1.24)	4.991 (1.82*)
XAD	<i>control</i>	+	0.578 (1.09)	0.639 (1.20)	-	-
XRD	<i>control</i>	+	1.313 (4.02***)	1.267 (3.84***)	0.859 (3.70***)	-1.517 (-2.52***)
INTANLG	<i>control</i>	+	1.147 (13.12***)	1.091 (12.44***)	1.039 (11.72***)	0.895 (5.55***)
TANA	<i>control</i>	+	0.054 (2.16**)	0.055 (2.22**)	0.115 (8.18***)	0.071 (1.91**)
MKTSHR	<i>control</i>	+	0.134 (0.15)	0.095 (0.11)	1.228 (1.30*)	-1.103 (-0.54)
AGENCY	<i>test</i>	?	-	1.051 (3.46***)	1.660 (6.81***)	8.601 (5.17***)
INSIDEMON	<i>test</i>	?	-	0.186 (0.55)	-0.018 (-0.08)	0.866 (0.45)
OUTSIDEMON	<i>test</i>	?	-	-0.076 (-0.56)	0.003 (0.02)	0.056 (0.06)
YR05	<i>control</i>	<i>n/a</i>	-0.016 (-0.15)	0.008 (0.97)	0.087 (1.08)	0.782 (0.56)
YR06	<i>control</i>	<i>n/a</i>	0.144 (1.29)	0.154 (1.25)	0.174 (1.85*)	-1.567 (-1.14)
YR07	<i>control</i>	<i>n/a</i>	0.306 (2.07**)	0.219 (1.28)	0.222 (1.99**)	0.237 (0.17)
Adjusted R ²			0.3554	0.3687	0.3080	0.5429
F-value			47.86	37.48	58.85	11.88
No. of firms			1,338	1,338	3,149	190
Industry Dummies?			No	No	No	Yes
Fixed Effects?			Yes	Yes	Yes	No

(Table continued on next page)

Panel B: H2 Regression Table – Investors' Perceptions of Goodwill

$MVE_{i,t} = \alpha + \beta_{j,i,t} \times \text{Control Variables} + \beta_{k,i,t} \times \text{Test Variables} + \varepsilon$						
Variable ¹	Ref	Test/ control	Predict. Sign	(1) Coeff. (t-Stat)	(2) Coeff. (t-Stat)	(3) Coeff. (t-Stat)
INTERCEPT	α	n/a	n/a	14.056 (9.18 ^{***})	14.720 (7.71 ^{***})	8.668 (1.65 [*])
GDWL	β_1	test	+	0.884 (5.38 ^{***})	1.329 (7.71 ^{***})	1.852 (3.50 ^{***})
ALGDWL	β_2	control	+	1.473 (12.83 ^{***})	1.426 (12.54 ^{***})	1.190 (6.71 ^{***})
LIAB	β_3	control	-	-1.203 (-8.92 ^{***})	-1.141 (-8.73 ^{***})	-1.010 (-3.90 ^{***})
INC	β_4	control	+	0.791 (5.37 ^{***})	0.713 (5.10 ^{***})	1.151 (1.47 [*])
HIGHAGENCY	β_5	control	n/a	-	-4.697 (-5.93 ^{***})	-11.757 (-3.35 ^{***})
STRINSMON	β_6	control	n/a	-	0.241 (0.33)	-1.520 (-0.43)
STROUTMON	β_7	control	n/a	-	-1.383 (-1.97 ^{**})	-0.954 (-0.24)
HIGHAGExGDWL	β_8	test	-	-	-0.316 (-2.79 ^{***})	-0.523 (-1.25)
STRIMONxGDWL	β_9	test	+	-	-0.068 (-0.74)	0.294 (0.93)
STROMONxGDWL	β_{10}	test	+	-	0.053 (0.62)	-0.059 (-0.21)
YR05		control	n/a	0.253 (0.56)	0.275 (0.63)	3.502 (1.23)
YR06		control	n/a	1.227 (2.63 ^{***})	1.071 (2.33 ^{**})	3.352 (0.96)
YR07		control	n/a	1.813 (3.12 ^{***})	1.838 (3.10 ^{***})	5.469 (1.66 ^{**})
Adjusted R ²				0.3434	0.3959	0.5460
F-value				43.14	36.29	17.27
No. of firms				3,139	3,139	189
Industry Dummies?				No	No	Yes
Fixed Effects?				Yes	Yes	No

(Table continued on next page)

Panel C: H2 Regression Table – Governance Interaction Effects

Specification (2)	Monitor: ² Int. / Ext.	Weak / Weak	Strong / Weak	Weak / Strong	Strong / Strong
		(β_1)	($\beta_1 + \beta_9$)	($\beta_1 + \beta_{10}$)	($\beta_1 + \beta_9 + \beta_{10}$)
	Agency = Low	1.33 (7.71 ^{***})	1.26 (6.71 ^{***})	1.38 (7.91 ^{***})	1.31 (7.11 ^{***})
	Agency = High	1.01 (6.08 ^{***})	0.94 (5.14 ^{***})	1.07 (6.29 ^{***})	1.00 (5.51 ^{***})

Panel A presents the H1 regression table. The dependent variable is GDWL in each of the H1 regression specifications. Panel B presents the H2 regression table. The dependent variable is MVE in each of the H2 regression specifications. Panel C presents the joint tests for specification (2) of the H2 regression analyses amongst the eight agency (low and high) and internal and external monitoring (weak and strong) groupings.

*, **, *** Indicates significance at the 10 percent, 5 percent, and 1 percent levels, respectively (based on one-tailed tests when a sign is predicted, two-tailed otherwise). Coefficient estimates are presented for each variable corresponding with the distinct specification column in which they are presented and t-statistics are reported below in parentheses.

¹ Variable definitions are provided in Appendix B.

² Internal (Int.) and External (Ext.) monitoring

Table 8 - Descriptive Statistics - Residual Goodwill Analyses*Panel A: Descriptive Statistics – Purchase Price Allocation and Additional Regression Variables*

Variable	Mean¹	Median¹	Std. Dev.
Cash Purchase Price (n=181)	1,256.2	1,075.0	2,407.2
Equity Purchase Price (n=90)	1,426.5	0.0	6,664.5
Total Purchase Price (TPP)	2,682.7	1,075.0	7,342.3
BV of Assets Acquired (BVAA)	772.1	1,048.0	2,223.1
FV of Net Tangible Assets Acquired*	534.5	670.0	3,036.8
FV of Intangible Assets Acquired*	607.0	93.0	2,441.8
FV of Assets Acquired (FVAA)	1,141.5	763.0	3,772.4
FV Write-up (FVAA-BVAA)	369.4	(285.0)	-
<i>Write-up Percentage (% of TPP)⁴</i>	<i>(13.8%)</i>	<i>(-26.5%)</i>	<i>-</i>
In-Process R&D*	83.7	0.0	359.4
Allocated Goodwill	1,457.5	312.0	3,852.5
<i>Percent of Purchase Price</i>	<i>(54.3%)</i>	<i>(29.0%)</i>	<i>-</i>
Going-Concern Goodwill (GC_GDWL)*	903.1	24.7	2,704.7
<i>Percentage of Allocated Goodwill</i>	<i>(62.0%)</i>	<i>(7.9%)</i>	<i>-</i>
Synergy Goodwill (SYN_GDWL)*	237.5	23.9	591.2
<i>Percentage of Allocated Goodwill</i>	<i>(16.3%)</i>	<i>(7.7%)</i>	<i>-</i>
Residual Goodwill (RESID_GDWL)*	316.9	263.4	999.4
<i>Percentage of Allocated Goodwill</i>	<i>(21.7%)</i>	<i>(84.4%)</i>	<i>-</i>

(Table continued on next page)

Panel B: Descriptive Statistics – Transaction-Level and Target Firm (TLTF) Control Variables

Target/Acquisition Control Variables²	Mean	Median	Std. Dev.
RESID_GDWL_S	0.003	0.022	0.199
Days from initial announcement to close ³	116.29	93	75.62
LONGCLOSE*	0.49	0	0.50
SAMEIND*	0.63	1	0.48
OTH_BIDS*	0.08	0	0.28
EQTYPP*	0.28	0	0.39
TC_JOIN_DIR*	0.13	0	0.34
TC_JOIN_EMP*	0.28	0	0.45
TC_RETIRE*	0.05	0	0.22
TC_CHAIR*	0.44	0	0.50

Panel A provides descriptive statistics relative to the purchase price allocations for the 190 transactions comprising the residual goodwill sample. Panel B provides the mean, median and standard deviation statistics for the target firm and transaction-level control variables.

¹ The statistics presented in the mean column represent the mean values for each of the variables listed at the left. The statistics presented in the median column are each representative of the median transaction in terms of purchase price and thus, they do not typically reflect the median values for each of the variables listed at the left.

² Variables are defined as follows: LONGCLOSE takes the value of “1” if the median days between the initial announcement date and closing are above the sample median values; SAMEIND is coded “1” if the target is in the same two-digit SIC (industry) as the acquirer; OTH_BIDS is “1” if other bids were publicly disclosed; EQTYPP represents the ratio of purchase price consideration that is equity-based; TC_JOIN_DIR (TC_JOIN_EMP) are coded “1” if the target CEO joins the acquiring firm as a director (employee); TC_RETIRE is coded “1” if the target CEO retires upon the closing of the M&A transaction; and (TC_CHAIR) is coded “1” if the target firm CEO is also the chair.

³ This row presents the mean/median/standard deviation time (in days) between the initial M&A transaction announcement and the corresponding close date.

⁴ The book value of assets acquired (BVAA) exceeds the fair value of assets acquired (FVAA) in 68 transactions. I run a limited sensitivity analyses by dropping these firms and reperforming the subsequent H3 and H4 tests and obtain results that are qualitatively similar, but weaker. It is likely that different motives may underlie these transactions where the write up percentage is negative and thus, these M&A transactions highlight an interesting area for future research.

* Variable is included in one or more of the residual goodwill analyses (H3 and H4).

Table 9 - Regression Analyses Correlation Tables (H3 & H4)

Panel A: Correlation Table – H3 Regression Variables – Pearson (Spearman) Correlations are Presented in the Upper (Lower) Diagonal¹

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
RESID_GDWL	(1)	-	0.26	0.32	-0.07	0.41	0.40	-0.10	0.33	0.10	0.10
SYN_GDWL	(2)	-0.18*	-	0.38	-0.03	0.61	0.07	0.05	0.26	0.09	0.13 [^]
GC_GDWL	(3)	0.50	0.14 [^]	-	0.05	0.47	-0.04	-0.07	0.43	0.02	-0.02
PURCH_IPRD	(4)	-0.21	-0.16*	-0.05	-	0.04	0.01	-0.14 [^]	0.05	-0.08	0.16*
PURCH_INTAN	(5)	0.38	0.23	0.60	0.02	-	-0.21	0.04	0.25	-0.00	0.12 [^]
PURCH_NA	(6)	0.22	0.24	0.09	-0.03	-0.08	-	-0.19	0.17*	0.13 [^]	0.02
MKTSHR	(7)	-0.19 [^]	0.12	0.00	-0.17*	0.02	-0.26	-	0.07	0.02	-0.10
AGENCY	(8)	0.22	0.32	0.32	-0.23	0.22	0.14 [^]	0.13 [^]	-	0.09	-0.08
INSIDEMON	(9)	0.11	0.13 [^]	0.01	-0.03	-0.01	0.07	0.00	0.10	-	-0.06
OUTSIDEMON	(10)	0.05	0.09	0.02	0.03	0.11	0.14 [^]	-0.20	-0.11	-0.05	-

Panel B: Correlation Table – H4 Regression Variables – Pearson (Spearman) Correlations are Presented in the Upper (Lower) Diagonal¹

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
MVE2	(1)	-	0.03	0.15*	0.32	0.17*	0.54	0.45	0.12	-0.09	0.00	0.07	-0.02	0.04	0.03
RESID_GDWL	(2)	-0.03	-	0.32	0.26	0.22	0.29	0.49	-0.02	0.23	0.04	0.02	0.95	0.69	0.62
GC_GDWL	(3)	0.13 [^]	0.50	-	0.38	0.27	0.17*	0.35	0.04	0.31	-0.05	-0.12	0.33	0.15*	0.01
SYN_GDWL	(4)	0.07	-0.18*	0.14*	-	0.10	0.52	0.61	0.02	0.21	0.06	0.07	0.26	0.31	0.04
OTH_GDWL	(5)	0.30	0.02	0.24	0.18*	-	0.08	0.28	0.08	0.37	0.05	-0.07	0.28	0.15*	0.02
ALGDWL	(6)	0.61	0.20	0.21	0.28	0.32	-	0.91	0.09	0.20	0.01	0.16*	0.28	0.24	0.14 [^]
LIAB	(7)	0.53	0.27	0.31	0.35	0.45	0.93	-	0.05	0.27	0.00	0.11	0.48	0.39	0.23
UI	(8)	0.28	-0.02	0.01	0.12	0.13 [^]	0.19	0.13 [^]	-	-0.02	-0.06	0.05	-0.03	-0.06	-0.01
HIGHAGENCY	(9)	-0.07	0.17*	0.28	0.30	0.32	0.27	0.38	-0.03	-	0.12 [^]	-0.18*	0.33	0.16*	0.05
STRINSMON	(10)	-0.02	0.04	-0.03	0.13 [^]	0.01	-0.01	0.02	-0.10	0.12 [^]	-	-0.14*	0.03	0.30	-0.05
STROUTMON	(11)	0.04	-0.03	-0.10	0.02	-0.04	0.11	0.06	0.01	-0.18*	-0.14 [^]	-	-0.03	-0.06	0.30
HIGHAGExR_GDWL	(12)	-0.04	0.64	0.43	0.11 [^]	0.20	0.28	0.38	-0.04	0.70	0.05	-0.18*	-	0.63	0.55
STRIMONxR_GDWL	(13)	-0.03	0.50	0.21	0.03	-0.00	0.09	0.13 [^]	-0.15	0.09	0.70	-0.12	0.34	-	0.10
STROMONxR_GDWL	(14)	-0.03	0.35	0.04	-0.11	-0.12 [^]	0.12 [^]	0.11	-0.03	-0.15	-0.09	0.71	0.02	0.07	-

Panel A (Panel B) presents the correlation scores for the H3 (H4) regressors. Variable definitions are provided in Appendix B. All correlation scores are based on n=190 except for those including the INC variable (n=189).

¹ **Bolded** scores denote significance at less than 0.01. The * (^) symbols denote significance at less than 0.05 (0.10) levels, respectively

Table 10 - Regression Analyses Results (H3 & H4)

Panel A: H3 Regression Table – Determinants of Residual Goodwill (Acquisition-Level Analysis)

<i>RESID_GDWL_{j,t} = $\alpha + \beta n_{i,t} \times \text{Control Variables} + \beta m_{i,t} \times \text{Test Variables} + \varepsilon$</i>						
Variable¹	Test/ Control	Predict. Sign	(1) Coeff. (t-Stat)	(2) Coeff. (t-Stat)	(3) Coeff. (t-Stat)	(4) Coeff. (t-Stat)
INTERCEPT	n/a	n/a	0.040 (0.05)	-0.089 (-0.11)	0.007 (0.08)	0.017 (0.19)
SYN_GDWL	control	?	-0.228 (-1.12)	-0.211 (-1.03)	-	-
GC_GDWL	control	?	0.089 (1.21)	0.076 (0.91)	-	-
MKTSHR	control	+	-0.536 (-0.85)	-0.851 (-1.28)	-	-
AGENCY	test	?	0.756 (1.57)	0.662 (1.20)	0.089 (2.25 ^{**})	0.115 (2.92 ^{***})
INSIDEMON	test	?	0.203 (0.41)	0.249 (0.52)	0.024 (0.37)	0.015 (0.22)
OUTSIDEMON	test	?	0.474 (1.55)	0.591 (1.71 [*])	-0.034 (-1.27)	-0.034 (-1.27)
PURCH_IPRD	control	-	-0.699 (-2.64 ^{***})	-0.796 (-2.67 ^{***})	-	-
PURCH_INTAN	control	+	0.361 (2.22 ^{**})	0.356 (2.09 ^{**})	-	-
PURCH_NA	control	+	0.275 (2.64 ^{***})	0.274 (2.84 ^{***})	-	-
SAMEIND	control	-	-	-0.346 (-1.68 ^{**})	-	-0.051 (-1.63 [*])
LONGCLOSE	control	?	-	0.266 (0.68)	-	-0.007 (-0.24)
OTH_BIDS	control	?	-	0.430 (0.63)	-	-0.031 (-0.71)
EQTYPP	control	?	-	0.023 (0.07)	-	0.096 (2.29 ^{**})
TC_JOIN_DIR	control	?	-	0.251 (0.55)	-	-0.062 (-1.44)
TC_JOIN_EMP	control	?	-	0.443 (1.64)	-	0.026 (0.76)
TC_RETIRE	control	?	-	1.165 (1.69 [*])	-	-0.165 (-2.03 ^{**})
TC_CHAIR	control	?	-	-0.036 (-0.12)	-	0.006 (0.21)
YR05	control	n/a	-0.059 (-0.13)	-0.078 (-0.15)	-0.007 (-0.16)	0.024 (0.58)
YR06	control	n/a	-0.394 (-0.98)	-0.394 (-0.88)	-0.036 (-0.83)	-0.009 (-0.22)
YR07	control	n/a	-0.124 (-0.41)	0.024 (0.07)	-0.035 (-0.88)	-0.015 (-0.38)
Adjusted R ²			0.5223	0.5402	0.1917	0.2515
F-value			6.42	4.79	3.08	2.84
No. of firms			190	190	185	185
Industry Dummies?			Yes	Yes	Yes	Yes
Fixed Effects?			No	No	No	No

(Table continued on next page)

Panel B: H4 Regression Table – Investors’ Perceptions of Residual Goodwill

$MVE_{i,t} = \alpha + \beta_{j,i,t} \times \text{Control Variables} + \beta_{k,i,t} \times \text{Test Variables} + \varepsilon$						
Variable ¹	Ref	Test/ control	Predict. Sign	(1) Coeff. (t-Stat)	(2) Coeff. (t-Stat)	(3) Coeff. (t-Stat)
INTERCEPT	α	n/a	n/a	6.983 (1.33)	10.040 (1.91*)	10.436 (1.89*)
RESID_GDWL_H	β_1	test	-	-0.617 (-0.77)	0.769 (0.29)	0.771 (0.30)
SYN_GDWL	β_3	control	+	0.845 (0.72)	1.042 (1.09)	1.633 (1.78**)
GC_GDWL	β_2	control	+	0.815 (1.52*)	1.405 (2.64***)	1.549 (2.81***)
OTH_GDWL	β_4	control	+	0.793 (2.33**)	1.434 (5.35***)	1.398 (5.16***)
ALGDWL	β_5	control	+	1.153 (5.33***)	1.265 (6.77***)	1.324 (6.56***)
LIAB	β_6	control	-	-0.781 (-2.76***)	-0.912 (-3.46***)	-1.046 (-3.71***)
INC	β_7	control	+	1.437 (1.31*)	0.846 (0.95)	0.738 (0.83)
HIGHAGENCY	β_8	control	n/a	-	-12.533 (-4.23***)	-11.520 (-3.95***)
STRINSMON	β_9	control	n/a	-	-1.290 (-0.44)	-1.750 (-0.57)
STROUTMON	β_{10}	control	n/a	-	-5.792 (-1.80)	-4.552 (-1.37)
HIGHAGExR_GDWL	β_{11}	test	-	-	-3.746 (-1.45*)	-3.561 (-1.55*)
STRIMONxR_GDWL	β_{12}	test	+	-	1.848 (1.19)	1.862 (1.27)
STROMONxR_GDWL	β_{13}	test	+	-	2.996 (2.00**)	3.010 (2.20**)
YR05	B_{14}	control	n/a	5.185 (0.92)	4.818 (1.60)	3.037 (0.95)
YR06	B_{15}	control	n/a	0.759 (0.21)	4.032 (1.19)	2.093 (0.60)
YR07	β_{16}	control	n/a	3.810 (1.17)	3.935 (1.09)	2.155 (0.56)
Adjusted R ²				0.4853	0.5838	0.6110
F-value				8.20	11.12	9.97
No. of firms				189	189	189
Industry Dummies?				Yes	Yes	Yes
Acquisition/Target Controls?				No	No	Yes
Fixed Effects?				No	No	No

(Table continued on next page)

Panel C: H4 Regression Table – Governance Interaction Effects

Specification (2)		Monitor: ² Int. / Ext.	Weak / Weak	Strong / Weak	Weak / Strong	Strong / Strong
		Agency = Low	(β_1)	($\beta_1 + \beta_{12}$)	($\beta_1 + \beta_{13}$)	($\beta_1 + \beta_{12} + \beta_{13}$)
			0.77 (0.30)	2.62 (1.00)	3.58 (1.41)	5.61 (1.68*)
		Agency = High	($\beta_1 + \beta_{11}$)	($\beta_1 + \beta_{11} + \beta_{12}$)	($\beta_1 + \beta_{11} + \beta_{13}$)	($\beta_1 + \beta_{11} + \beta_{12} + \beta_{13}$)
			-2.98 (-1.94*)	-1.13 (-1.53)	0.02 (0.03)	1.87 (1.14)

Specification (3)		Monitor: ² Int. / Ext.	Weak / Weak	Strong / Weak	Weak / Strong	Strong / Strong
		Agency = Low	(β_1)	($\beta_1 + \beta_{12}$)	($\beta_1 + \beta_{13}$)	($\beta_1 + \beta_{12} + \beta_{13}$)
			0.77 (0.29)	2.63 (1.13)	3.77 (1.39)	5.73 (1.97**)
		Agency = High	($\beta_1 + \beta_{11}$)	($\beta_1 + \beta_{11} + \beta_{12}$)	($\beta_1 + \beta_{11} + \beta_{13}$)	($\beta_1 + \beta_{11} + \beta_{12} + \beta_{13}$)
			-2.79 (-2.00**)	-0.93 (-1.24)	0.31 (0.49)	2.17 (1.33)

Panel A presents the H3 regression table. The dependent variable is RESID_GDWL_H in specifications (1) and (2) and RESID_GDWL_S in specifications (3) and (4). Panel B presents the H4 regression table. The dependent variable is MVE2 in each of the H4 regression specifications. Panel C presents the joint tests for specifications (2) and (3) of the H4 regression analyses amongst the eight agency (low and high) and internal and external monitoring (weak and strong) groupings.

*, **, *** Indicates significance at the 10 percent, 5 percent, and 1 percent levels, respectively (based on one-tailed tests when a sign is predicted, two-tailed otherwise). Coefficient estimates are presented for each variable corresponding with the distinct specification column in which they are presented and t-statistics are reported below in parentheses.

¹ Variable definitions are provided in Appendix B.

² Internal (Int.) and External (Ext.) monitoring

APPENDIX B: VARIABLE DESCRIPTIONS (FINANCIAL VARIABLES)

#	Mnemonic	Variable Name	Cite	Source	Variable Definition
1	GDWL	Goodwill	Various	Compustat (CS)	Total goodwill
2	MVE	Market Value of Equity	Various	CS	Market value of equity at year-end
3	MVE2	Market Value of Equity (Alternate)	Modification of Henning, et al. (2000)	CRSP & Hand-Collected	Market value of equity 90 days (one quarter) after the initial purchase price allocation in annual 10-K filing.
4	RESID_GDWL_H	Residual Goodwill	Henning, et al. (2000)	CRSP & Hand-Collected	Excess of purchased goodwill over (1) going concern and (2) synergistic goodwill.
5	GC_GDWL	Going Concern GW	Henning, et al. (2000)	CRSP & Hand-Collected	Difference between the FV of assets recognized and the pre-acquisition market value of the target firm.
6	SYN_GDWL	Synergistic GW	Henning, et al. (2000)	CRSP & Hand-Collected	Bradley, et al.'s (1988) measure represented as the combined CAR for both the target AND acquiring firms in the 11-day window centered on the acquisition announcement.
7	RESID_GDWL_S	Residual Goodwill 2	Shalev (2009)	Various	Residuals from regression of the proportion of goodwill allocated to the total purchase price on the following three variables: (1) acquiring firm industry; (2) target firm industry; (3) median analyst long-term growth forecast for the acquiring firm.
8	XAD	Advertising	Chauvin and Hirschey (1994)	CS	Advertising expenditures
9	XRD	Research & Development	Chauvin and Hirschey (1994)	CS	Research & Development expenditures
10	INTANLG	Intangible Assets	Chauvin and Hirschey (1994)	CS	Total intangible assets less total goodwill

11	TANA	Tangible Assets	Chauvin and Hirschey (1994)	CS	Total assets less total intangible assets
12	MKTSHR	Market Share	Chauvin and Hirschey (1994)	CS	Total firm-level sales revenue divided by total industry sales (where industry sales are aggregated by 4-digit SIC code for the population of CS firms for a given year)
13	ALGDWL	Assets Less Goodwill	McCarthy, et al (1995)	CS	Total assets less total goodwill
14	INC	Unexpected Net Income	McCarthy, et al (1995)	CS	Change in net income from PY net income
15	OTH GDWL	Other goodwill	This study	CS & Hand Collected	Equal to the goodwill <u>not</u> corresponding with the selected residual goodwill sample acquisition, calculated as the total goodwill at year-end less the goodwill allocated in the acquisition.
16	LIAB	Total Liabilities	McCarthy, et al (1995)	CS	Total liabilities
17	AGENCY / HIGHAGENCY	Agency Conflicts	Dey (2008)	Various – See Below	Variable(s) proxying for the presence of potential agency conflicts based on PCA performed on the following six variables: SIZE, LEV, OWN, RISK, GROWTH and FCF (defined below).
18	INSIDEMON / STRINSMON	Strength of Internal Monitoring Governance Mechanisms	Dey (2008), Larcker, et al (2007) & Gillan (2006)	See Appendix C	Variable(s) proxying for the strength of a firm's governance mechanisms based on PCA performed over seventeen internal governance mechanisms described in Appendix C
19	OUTSIDEMON/ STROUTMON	Strength of Internal Monitoring Governance Mechanisms	Dey (2008), Larcker, et al (2007) & Gillan (2006)	See Appendix C	Variable(s) proxying for the strength of a firm's governance mechanisms based on PCA performed over five external governance mechanisms described in Appendix C
20	SIZE	Size	Dey (2008)	CS	Natural log of annual sales

21	LEV	Leverage	Dey (2008)	CS	Long-term debt divided by total assets
22	OWN	Ownership	Dey (2008)	The Corporate Library (TCL)	1 - (Value of shares held by directors, executive officers and listed institutional shareholders) / market value of equity
23	RISK	Risk	Dey (2008)	CS	Standard deviation of operating cash flows from the previous four quarters.
24	GROWTH	Growth	Dey (2008)	CS	Book-to-market ratio
25	FCF	Free Cash Flow	Dey (2008)	CS	Difference between cash flow from operations for the previous quarter and the previous three quarter average of capital expenditures all scaled by current assets.
26	PURCH_IPRD	In-process R&D acquired	This study	Hand Collected	Represents the dollar amount allocated to in-process R&D in the purchase price allocation.
27	PURCH_INTAN	Intangible assets acquired	This study	Hand Collected	Represents the dollar amount allocated to intangible assets in the purchase price allocation.
28	PURCH_NA	Tangible assets acquired	This study	Hand Collected	Represents the dollar amount allocated to net assets (tangible assets less liabilities) in the purchase price allocation.

APPENDIX C: VARIABLE DESCRIPTIONS (GOVERNANCE VARIABLES)

#	Category	Variable Description	Source	Mnemonic	Variable Definition
1	Internal	Independent Directors	The Corporate Library (TCL)	BD_UNAFFOUTSIDE	Percent of unaffiliated outside directors
2	Internal	Board Size	TCL	BD_SIZE	Total number of directors multiplied by negative one (-1)
3	Internal	Busy Directors – Other Directorships	TCL	BD_UNDER4	Percent of directors with fewer than four outside directorships
4	Internal	Busy Directors – Active CEOs	TCL	BD_NOTACTCEO	Percent of directors that are not acting CEOs
5	Internal	Number of Board Meetings	TCL	BD_MTGS	Total number of board meetings
6	Internal	Dual CEO/Chair	TCL	CEO_COB	Coded "1" if the CEO is NOT also the board's chair, otherwise "0"
7	Internal	Founding CEO	TCL	FOUND_CEO	Coded "1" if the CEO is NOT also the company's founder, otherwise "0"
8	Internal	Founder on Board	TCL	FOUND_BD	Coded "1" if the company's founder is NOT a board member, otherwise "0"
9	Internal	Executive Turnover	TCL	CEO_TURN	Coded "1" if there is CEO turnover during the four-year sample period.
12	Internal	Executive Stock Ownership	TCL	CEO_SHR	Coded "1" if the CEO holds less than 5% or greater than 25% of outstanding stock of the company.
10	Internal	Executive Bonus Pay	ExecuComp	CEO_BONUS	Yearly bonus compensation divided by total annual compensation

11	Internal	Executive Equity-based Compensation (EBC)	ExecuComp	CEO_EBC	Calculated as: (total annual compensation less salary, bonus, and other compensation) divided by total annual compensation
13	Internal	Staggered Board	RiskMetrics (IRRC)	STAGBD	Coded "1" if the company does NOT have a staggered board; otherwise "0"
14	Internal	Supermajority Vote	IRRC	SUPER	Coded "1" if the company does NOT have a supermajority voting provision; otherwise "0"
15	Internal	Unequal Voting	IRRC	UNEQVOTE	Coded "1" if the company does NOT have unequal voting rights across its share classes; otherwise "0"
16	Internal	State Incorporated	IRRC	STATEINC	Coded "1" if the company is NOT based in PA, OH, MA, or WI – states with greater protections for incumbent managers.
17	Internal	Poison Pill Provisions	IRRC	POISON	Coded "1" if the company does NOT have a poison pill provision.
1	External	Percent of Shares Held by Blockholders	Thomson Research (Spectrum)	BLOCKPCT	Percent of shares held by blockholders
2	External	Number of Blockholders	Spectrum	BLOCKHOLDER	Total number of blockholders
3	External	Percent of Shares Held by Largest Blockholder	Spectrum	LRGSHRHLDR	Percent of shares held by the single largest unaffiliated shareholder

4	External	Number of Activists	Spectrum	ACTIVIST	Total number of activist institutions holding shares
5	External	Percent of Shares Held by Activists	Spectrum	ACTIVISTPCT	Percent of shares held by activist institutions

VITA

Matt obtained his B.B.A degree in Accounting from Gonzaga University in Spokane, Washington in 2003, graduating with Honors. He then worked for three years as an auditor for KPMG, LLP in the firm's Seattle office before returning to school to obtain his Ph.D. During his time with KPMG, Matt performed audit work for clients in a wide range of industries including health care, higher education, technology, manufacturing, real estate and not-for-profits. Matt received his Ph.D. in Business Administration (Accounting) from the University of Tennessee, Knoxville in 2010 (Summer term). His research interests include mergers and acquisitions, auditing and corporate governance research and his teaching preferences include financial accounting and auditing. Matt and his wife, Cara, enjoy camping, hiking, running, biking and skiing in their spare time.