ERASMUS UNIVERSITEIT ROTTERDAM
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ERASMUS UNIVERSITY ROTTERDAM

MASTER THESIS

DOES CORPORATE GOVERNANCE INFLUENCE THE PERFORMANCE OF MERGERS AND ACQUISITIONS?

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ABSTRACT

This thesis investigates the impact of equity corporate governance and debt corporate governance on the financial performance of M&A deals for US firms in the period from 2007 until 2018. Additionally, this study seeks to identify which corporate governance mechanisms are associated with the acquiror's cumulative abnormal returns. Corporate governance variables taken into consideration in this study include board-related variables, ownership-related variables, compensation related variables and monitoring-related variables. The sample includes M&A deals between 2007 and 2018 and is analyzed by multiple regression models. Results indicate an interaction effect of equity corporate governance and debt corporate governance on cumulative abnormal returns. This study supports evidence for reducing the agency problem by implementing equity and debt corporate governance.

Key words*: Equity corporate governance, Debt corporate governance, Cumulative Abnormal Return, Term Loan, Revolver Loan, Sweep, M&A performance, M&A deals.*

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Rotterdam, August 2019

Marlies Caroline van Dasler

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INTRODUCTION

The publicly held corporation has outlived its usefulness in many sectors of the economy and is being eclipsed (Jensen, 1989). New types of organizations are emerging in its place – organizations that are corporate in form but have no public shareholders and are not listed or traded on stock exchanges (Jensen, 1989). Takeovers, acquisitions, mergers, corporate breakups, divisional spin-offs, leveraged buyouts and going-private transactions are the most visible manifestations of this massive organizational change in the economy (Jensen, 1989). Mergers and acquisitions (M&A) are seen as one of the most critical corporate decisions for a firm. M&A can become a tool to increase firm value when the firm has already reached its peak performance by acquiring another company to realize additional growth (DePamphilis, 2009). Globally, M&A activity has currently become one of the key strategies for many corporations (DePamphilis, 2009).

Merger and acquisition activity grew rapidly until 1990 - when a large number of high-profile leveraged buyouts resulted in default and bankruptcy and caused a financial liquidity crisis (Nielsen, 2008 and Kaplan and Strömberg, 2009). In the mid-2000s, M&A reappeared and then got contracted before again growing even more rapidly and much larger through 2007, when it became involved in another liquidity crisis (Nielsen, 2008 and Kaplan and Strömberg, 2009). The financial crisis resulted in a massive downturn across most national economies and caused enormous losses in both public and private equity markets (Gaughan, 2009 and Beltratti and Paladino, 2013). During the financial crisis, the overall M&A activity significantly declined, due to the fact that, even for trustworthy borrowers, credit was difficult to receive (Gaughan, 2009). For financing a merger or acquisition, it was remarkably even more difficult (Gaughan, 2009).

Nowadays, mergers and acquisitions are booming after a period of relatively low activity, due to the last financial crisis (Bain & Company, 2018). During 2017, the worldwide M&A activity has exceeded $3,5 trillion for the fourth consecutive year, extending a wave of deal-making that bankers say is set to accelerate (Financial Times, 2017).

Taking the great popularity of M&A activity in mind, it seems that M&A activities provide benefits for many parties involved in the transactions. However, this is not always the case, as, according to the research of Jensen & Ruback (1983), the acquiror company tends to receive negative gain or zero gain in the period around the announcement date of the merger and acquisition. Furthermore, Morck et al., (1988) discuss that the negative returns of acquirer firms are due to overpaying of target firms. This can be explained by the agency problem (Jensen, 1986). The agency problem appears when there is a misalignment of interests between the principal and agent, resulting in the conflict of interests (Jensen,

1986). The agency problem exists because of the disengagement of ownership and control (Jensen and Meckling, 1976).

According to Jensen and Meckling, (1976), this misalignment of interest can be reduced through *good* corporate governance. This is also supported by Thomsen and Conyon, (2012), who claim that applying effective corporate governance resolves the agency conflicts between shareholders, creditors and the management.

In accordance with previous literature, corporate governance has been illustrated as *one of the most important* mitigation mechanisms of the agency problem. However, it remains unclear what the impact is on the M&A performance. Therefore, this study focuses on the following research question:

"Do equity and debt corporate governance influence the performance of M&A deals?"

Prior research regarding the impact of corporate governance on M&A performance by deals mainly focuses on the equity part of corporate governance, instead of the effect of debt corporate governance. Leading examples of the effect of equity corporate governance on M&A deals are for example the studies of Masulis et al., (2007), Hermalin and Weisbach, (2001), Faleye et al., (2011), Jensen, (2003), Carline et al., (2009), Jensen and Murphy, (1999), Dalton et al., (1998) and McConnell and Servaes, (1995). From these studies can be concluded that equity corporate governance has a positive impact on M&A performance by deals. However, the possible effect of debt corporate governance on M&A performance and its connection to equity corporate governance are yet to be determined.

Overall, the results indicate that executive compensation, board size and institutional ownership have a negative impact on M&A performance, whereas blockholder has a positive effect on M&A performance. When it comes to the debt corporate governance variables, the results indicate that sweep has a positive effect on M&A performance. Last, the interaction effects of equity corporate governance and debt corporate governance indicates that good equity corporate governance is complementing to the presence of term loans and revolver loans, whereas good equity corporate governance is substituting the presence of sweeps and facility amount. This indicates that when term loans and/or revolver loans are applied with good equity corporate governance, the M&A performance is expected to be higher.

The findings in this study shows evidence that equity and debt corporate governance influence the performance of M&A deals. This indicates that equity and debt corporate governance are a solution to reduce the agency costs relating to M&A deals.

This thesis contributes to existing literature by examining a new perspective of corporate governance by investigating the possible impact of debt corporate governance on M&A deals. Next to that, this study has a relatively long sample period - from 2007 until 2018 - estimating the possible effects of equity and debt corporate governance on M&A performance. Additionally, this study controls for the impact of the last financial crisis on corporate governance and M&A performance by dividing M&A deals into pre-crisis and post-crisis deals.

The structure of this thesis is as follows. Part II discusses the literature review related to M&A, agency theory, equity corporate governance, debt corporate governance and the financial performance of M&A deals. Part III presents the hypothesis development. Part IV consists of the data and the methodology. Part V elaborates on the empirical results and, additionally, provides analysis for the results. Finally, part VI presents a discussion on the outcomes resulting from this study.

LITERATURE REVIEW

M&A: concept and issues

According to DePamphilis, (2009), M&A can be one solution to increase firm value by acquiring another company to boost its own performance in a more rapidly way. Currently, M&A activity has become one of the key strategies for many corporations to realize continuous growth (DePamphilis, 2009).

There are several motives and determinants for companies to engage in merger and acquisition activities. Macro-level factors that encourage firms to engage in M&A are for instance technological development and institutional development (Capron, 1995). Micro-level factors are firm-specific and can be decomposed into value-creating and non-value creating motives (Seth, 1990). Value-creating motives are risk diversification, improvement of operating efficiency and the augmentation of market power (Seth, 1990). Non-value creating motives are the hubris hypothesis and managerial discretion hypothesis (Roll, 1986, Jensen, 1986 and Mathur et al., 1994). Additionally, the main reason to engage in merger and acquisition activities are faster growth and creation of synergy benefits (Gaughan, 2010). Furthermore, according to Gaughan, (2010), Andrade et al., (2010), DePamphilis, (2012) and Jensen and Ruback, (1983), the most cited reason for firms to engage in mergers and acquisitions activities is that M&A is value-enhancing on a large scale for acquirer firms, as previous literature suggested that the total value of equity at the combined firm at one month after the announcement significantly escalates, compared to the value of equity of the month before.

As M&A activities do have a lot of benefits, one problem is that it does not always directly benefit the shareholders, as ownership and control are separated, resulting in different interests among parties that are conflicted with each other in the context of a M&A (Shleifer and Vishny, 1997 and Jensen and Meckling, 1976). This is also known as the agency theory.

Agency theory and issues

The agency relationship can be defined as a contract under which one or more persons – being the principal(s) - engage other person(s) – being the agent(s) – to perform service on their behalf which involves delegating some decision-making authority to the agent (Coase, 1937, Berhold, 1971, Ross, 1973, 1974, Wilson, 1968, 1969 and Heckerman, 1975). The agency theory seeks to illustrate the relationship using the analog of a contract (Jensen and Meckling, 1976). In accordance with Berle and Means, (1932) and Pratt and Zeckhauser, (1987) the agency theory discusses that, within the modern corporation where share ownership is extensively held, managerial actions differ from those required to maximize shareholder returns. The agency theory is indicating two problems that exist in businesses (Jensen and Meckling, 1976). Firstly, the goals of the principal and agent can differ (Jensen and Meckling, 1976). Secondly, the difficultness and the expensiveness for the principal to check what the agent is doing (Jensen and Meckling, 1976). As for the principal, it is hard to verify whether the agent acted in line with the principal's goals. Furthermore, because of the (possible) existence of the different risk preferences, the agent and principal could have different attitudes towards risk, resulting in different viewpoints about actions that need to be taken (Jensen and

Meckling, 1976). In short, the agency problem occurs because of the fact that there is a separation between ownership and control.

Residual loss is the consequence of agency loss that occurs when the returns of the residual claimants fall below what they would be if the agents directly acted in line with the expectations of the principals (Jensen and Meckling, 1976). The agency problem occurs because of goal incongruence but also because of the presence of asymmetric information between the principal and the agent, as the agent has more information about his own ability and performance compared to the principal (Shleifer and Vishny, 1997). This could result in a moral hazard problem, which is expected to increase the agency costs of the principal and agent (Jensen and Meckling, 1976). In order to reduce agency problems – and thus, reducing the residual loss - the agency theory specifies some mechanisms (Eisenhardt, 1989). The main goal of the agency theory is to design the most valuable contract guiding principal-agent relationship's given beliefs about people (self-interest, bounded rationality and risk aversion), organizations (goal misalignment between members), and information (Jensen and Meckling, 1976). The mechanisms reduce agency loss consist of e.g. appropriate incentives for the agent, incurring monitoring costs designed to limit the aberrant activities of the agent and bonding cost to guarantee that the agent chooses not to take certain actions which could harm the principal (Jensen and Meckling, 1976). These incentive schemes for managers are with the intent to reward them financially for maximizing shareholders' interests (Donaldson and Davis, 1991). Although the agency theory implies to reduce the agency loss, it is impossible for the principal to ensure that the agent makes optimal decisions from the principal's viewpoint (Jensen and Meckling, 1976).

Corporate governance in M&A deals

One issue regarding engaging in M&A activity is that it does not always directly benefit the shareholder, as a consequence of the conflicted interests among the parties involved, resulting in the agency problem. One solution to align the different interests within a company is the implementation of good corporate governance. Corporate governance are mechanisms whereby stakeholders of a corporation exercise control over corporate insiders and management such that their interest is protected (John and Senbet, 1998). The stakeholders of a corporation include equity-holders, creditors and other claimants, who supply capital, as well as other stakeholders such as employees, consumers, suppliers and the government (John and Senbet, 1998).

The typical model of corporate governance mainly focuses through the lens of equity interests (Gilson and Kraakman, 1993), as shareholders play a central role in the internal disciplinary mechanisms – voting for directors, engaging in proxy contests presenting shareholder proposal and suing enforce fiduciary duties owed to the firm (Triantis and Daniels, 1995). Internal mechanisms include an effectively structured board, compensation contracts that encourage shareholder orientation and concentrated ownership holdings that lead to active monitoring of executives (Darlton, Daily, Certo and Roengpitya, 2003). Internal control mechanisms are designed to bring the interests of managers, shareholders and credit holders into congruence

(Walsh and Seward, 1990). One internal structural mechanism to diminish the managerial opportunism is the board of directors, as the board of directors supports monitoring of managerial actions on behalf of the shareholders and credit holders (Donaldson and Davis, 1991). Another internal control mechanism that can be applied to reduce agency loss within corporate governance is shareholder activism (Darlton, Daily, Certo and Roengpitya, 2003). Shareholders with significant ownership have major influence, as they have the incentive to monitor executives and the influence to bring changes (Bethel and Liebeskind, 1993). In accordance with Blair, (1995) institutional investors have some incentives to actively monitor executives, as they tend to hold much larger stakes, compared to board members. However, debtholders can also play a big and important role in monitoring and screening, as lending through financial intermediaries also resolve problems as freeriding and duplicative monitoring efforts (Benston and Smith, 1976, Black, 1975, Campbell, 1979 and Kracaw and Campbell, 1980).

In this thesis, corporate governance is divided into two different mechanisms, being equity corporate and debt corporate governance (Williamson, 1998, Rechner and Dalton, 1991, Donaldson and Davis, 1991, Hermalin and Weisbach, 2001, Darlton, Daily, Certo and Roengpitya, 2003 and Walsh and Seward, 1980). In this research, three mechanisms of equity corporate governance are discussed, consisting of the board of directors, executive compensation and ownership structure (e.g. Rechner and Dalton, 1991, Donaldon and Davis, 1991, Hermalin and Weisbach, 2001, Darlton, Daily, Certo and Roengpitya, 2003 and Walsh and Seward, 1980). In this study, debt is linked to corporate governance through monitoring and screening by lenders and through monitoring and detecting managerial slack by banks (Triantis and Daniels, 1995, Gilson and Kraakman, 1993, Black and Coffee, 1994 and Williamson, 1988).

Equity corporate governance in M&A deals: Board of Directors

In accordance with Hermalin and Weisbach, (2001), characteristics of the board of directors can determine firm performance and the quality of decision-making in M&A and take-over defenses. Board characteristics in this study consist of two parts, being board composition and board size (Hermalin and Weisbach, 2001). As for board composition, in accordance with Faleye et al., (2011), there is a positive relationship between monitoring role performed by independent directors and the quality of board monitoring.

According to Yermack (1996), board size has a significant influence on firm value, as the higher the number of directors above a certain limit, the lower the expected firm value. This is supported by Jensen, (1993). In accordance with Jensen, (1993), a small number of the board of directors ensures higher firm performance. Additionally, Lipton and Lorsch, (1992), claim that the optimal board size contains of eight to nine people. Furthermore, Rechner and Dalton, (1991) claim that at firms where there is CEO duality, shareholders' interests can be protected by aligning the interests of the CEO and the shareholders, resulting in a more long-term focus and strategy. This impacts the acquisition decision-making, as whether a firm decides to engage in M&A activities or not.

Equity corporate governance in M&A deals: Executive Compensation

According to Jensen and Murphy (1990), equity-based compensation gives managers the correct incentive to maximize firm value, rather than cash compensation does. This is confirmed by the study of Murphy, (1999), who finds that firm performance is positively related to the percentage of executive compensation that is equity-based, and, firm performance is positively related to the percentage of equity held by managers, suggesting that the form of compensation is what motivates managers to increase firm value. This results in the maximization of the shareholders' value (Murphy and Jensen, 1990). Thus, equity-based compensation is a useful tool to align the actions of management with shareholders' interests, which can result in reducing the agency problem. This stimulates the board of directors to make decisions that are more aligned with the interests of the shareholders (Morck, Shleifer and Vishny, 1990).

Equity corporate governance in M&A deals: Ownership structure

Lastly, the ownership structure is also of great importance to resolve the agency problem. In accordance with Dalton et al., (1998), board monitoring results in improved firm financial performance. Additionally, Chen et al., (2007) highlight the importance of the monitoring role of ownership, as they find that independent institutions with a long-term purpose have positive and significant effect, suggesting that institutions perform a monitoring role in critical corporate strategic decision-making. According to Berle and Means, (1932), in widely held corporations where ownership of capital is dispersed among small shareholders and control is concentrated in the hands of managers, those corporations tend to under-perform. This suggests that the larger the institutional investors' stake, the better the expected firm performance.

Debt corporate governance in M&A deals

According to John and Senbet, (1998), the way in which debt links to equity corporate governance is derived from two sources. First, the extent of alignment of the board – also known as board independence – with shareholders is expected to have an impact on debt agency, and hence on endogenization of board structure in efficient debt contracting (John and Senbet, 1998). Second, debtholders have a direct role through board membership and perform functions separate from large shareholders, since their pay-off structure is differentiating from shareholders (John and Senbet, 1998).

In accordance with Triantis and Daniels, (1995), the manner in which debt relates to corporate governance in general is originated from two sources. Firstly, through independent screening and monitoring activities by creditors in order to reduce managerial slack (Triantis, 1992, Triantis and Daniels, 1995, Levmore, 1982, Adler, 1993 and Stiglitz, 1985). Secondly, through effective monitoring and detecting of slack by commercial banks (Triantis and Daniels, 1995, Gilson and Kraakman, 1993, Black and Coffee, 1994 and Williamson, 1988). Screening and monitoring activities of a lender can be beneficial to other creditors and stakeholders for several reasons (Picker, 1992 and Triantis, 1992). Firstly, the other stakeholders and potential stakeholders know the quality of the borrower if he decides to lend (Fama, 1990). Secondly, as management decide to engage in a loan agreement, managers are forced to disgorge free cash rather than on

managerial slack (Jensen, 1986 and Buckley, 1992). Thirdly, as a lender is given security interests in asset of the borrower or other form of priority rights, the ability of managers to liquidate non-cash assets or to raise new funds by selling debt in the future is expected to be constrained, resulting in the reduction of managerial slack (Triantis, 1994). Lastly, as many loan covenants and lender's monitoring forbid specific types of behavior by management, managerial slack is further constrained (Triantis and Daniels, 1995).

Debt corporate governance in M&A deals: Monitoring and reducing managerial slack

Bank lenders provide the bulk of financing for small- and medium-sized firms, which ensures banks to enjoy significant monitoring advantages over other stakeholders (Scott, 1986). As a result of that, they can take the lead in governance to play the principal role in controlling managerial slack.

Banks are seen as effective governance players for three reasons (Triantis and Daniels, 1995, James, 1987 and Lummer and McConnel, 1989). Firstly, other stakeholders can benefit from the ability of banks to deter and detect managerial slack by monitoring (Triantis and Daniels, 1995). Secondly, other stakeholders can benefit from the actions taken by banks following the detection of slack, as a bank can respond by scaling down (voice), terminating its relations with the borrower (exit) or by sending out a clear message to other stakeholders (Triantis and Daniels, 1995, James, 1987 and Lummer and McConnel, 1989). Lastly, actions that a commercial bank can take are for instance to limit provided investments by refusing to provide additional financing, to accelerate the maturity of outstanding debt, to refuse renew existing debt or to enforce its matured claim against the borrower's assets (Triantis and Daniels, 1995).

Monitoring and reducing managerial slack by commercial banks: Loan Facility

As for banks, one way to effectively monitor and reduce managerial slack is through (arranged) loan facility agreements. In respect to Holstrom and Tirole, (1997, 1998), and Shockley and Thakor (1997), loan facility agreements approve firms to access pre-committed debt capacity. In this study, two types of credit facilities are discussed: the *term loan* and the *revolver loan* credit facility.

A *term loan* credit facility is a line of credit agreement that is committed (Besley and Brigham, 2013), illustrating the maximum credit that the bank approves the borrower to utilize upfront (within one amount) (Bradley and Roberts, 2004). With the term loan, the company is forced to pay back the money at the end of the term (Bradley and Roberts, 2004).

A *revolving loan* credit facility is a committed line of credit arrangement, illustrating the maximum credit that the bank approves the borrower to have outstanding at any point in time (Besley and Brigham, 2013).

As facility loan agreements try to insulate the corporation from negative shocks that may hinder access to capital markets, it cannot fully control for the illiquidity-seeking behavior of firms guaranteed by credit lines, especially when funds are fully and irrevocably supplied (Sufi, 2009 and Acharya et al., 2014). As term loans

are utilized in one time, firms may be more triggered to engage in more riskier investments that increase the probability of liquidity shocks, resulting in illiquidity transformations that cause contractual covenant violations (Acharya et al., 2014). However, firms with serious liquidity risks are more likely to engage in corporate cash holdings due to the higher direct and indirect monitoring costs (Acharya et al., 2014).

Because of the fact that the revolver loans approve the borrower to attract funds at any point in time and the fact that the loans are not utilized in one amount, banks can eliminate the trigger for firms to engage in illiquidity transformations, as banks keep the right to cancel access to already promised funds if they obtain a signal that firms may have engaged in illiquidity transformation that cause contractual covenant violations (Acharya et al., 2014). This gives the borrowing company the incentive to avoid illiquidity transformation, as they might also lose their promised funds. Additionally, the banks are also incentivized by paying monitoring costs in order to control for the possible illiquidity-seeking behavior of firms guaranteed by credit lines.

Which of these two options is most desirable to a company depends on the purpose of the loan facility (Van Deventer et al., 2013, Bradley and Roberts, 2004 and Asquith et al., 2005). Where the term loan is mostly used to finance the longer-term needs of a company such as the purchase of plant or machinery, the revolver loan is frequently used where the funding requirements of the company are more variable (Asquith et al., 2005). The main difference between a term loan and revolver loan is that the bank can better monitor the borrower company if the funds are supplied in the form of a revolver loan. In case of a revolver loan, banks keep the right to cancel access to already promised funds to the borrower company if banks obtain a signal that the borrower company may have engaged in illiquidity transformation that cause contractual covenant violations. In case of a term loan, due to the fact that funds are upfront fully and irrevocably supplied, the bank can less monitor the borrower corporate.

Monitoring and reducing managerial slack by commercial banks: Terms of credit facility agreement

Another method to adequately monitor, control and discover slack is through adopting determinants of financial covenant thresholds in bank loans (Jensen and Meckling, 1976, Myers, 1977, Smith and Warner, 1979, Kalay, 1982, Leftwich, 1983 and Demiroglu and James, 2010). Restrictions in debt contracts are designed to reduce potential conflicts of interest between bondholders and shareholders (Healy and Palepu, 1989). Covenants, such as those restricting additional issuance of debt, asset sales, or dividends, can stimulate wealth transfer actions and protect lender's interest (Hong et al., 2016). Additionally, restrictions on credit loans can assign control rights between debtholders and shareholders, as these terms can trigger debtholders a timely option to protect their interests (Hong et al., 2015 and Hart, 1995). In this research, *asset sales sweep, debt issuance sweep, equity issuance sweep, excess cashflow sweep*, *dividend restriction* and *facility amount* are taken into account.

First, as for *asset sales sweep*, lenders can influence the borrower's sale of assets, depending on two conditions being *1)* the strength of the borrower's credit and *2)* if the sale is material (Hong et al., 2016). Second, with the restriction of the *debt issuance sweep*, issuance of debt for the borrowing company is limited by the lender(s), as any cash coming in should go to repay the loans (Ivashina and Vallee, 2017 and Hong et al., 2016). Third, with the restriction of *equity issuance sweep*, issuance of equity for the borrowing company – issues of (new) shares - is limited by the lender(s), as any cash coming in should go to repay the loans (Ivashina and Vallee, 2017 and Hong et al., 2016). Fourth, as for *excess cash flow sweep*, the excess cash flows are used to maximize interest earnings or to pay off outstanding debt and/or prepay outstanding term loans, instead of distributing it to shareholders (Hong et al., 2016). Furthermore, with the *restriction* on *dividends*, the lender(s) put a cap on the maximum amount of dividend that can be paid out to shareholders and is usually as a percentage of net income or retained earnings (Hong et al., 2016). Dividend restrictions are seen as the most common covenants in debt contracts, as they are designed to resolve potential conflicts of interest between bondholder and stockholders (Healy and Palepu, 1989). In respect to Healy and Palepu, (1989), the high inclusion of dividend restriction into debt contracts assumes that bondholders believe that firms' managers do not self-intentionally cut dividends in order to protect bondholders' interest without including this covenant. Lastly, the *amount of the facility* (either term or revolver loan) also effects the M&A performance, as larger borrowers receive smaller announcement returns.

Link debt corporate governance and equity corporate governance

According to Triantis and Daniels, (1995), debt and equity corporate governance mechanisms are linked to each other, as shareholders can use their power through voting for directors, engaging in proxy contests, presenting shareholder proposal and suing enforce fiduciary duties owed to the firm (Triantis and Daniels, 1995), whereas debtholders can use their power through monitoring, screening and detecting managerial slack by expediting a crisis in the board room and exercising voice, by sending out a clear message to other stakeholders, to cut off loans or to put restrictions in the form of covenants (James, 1987, Lummer and McConnel, 1989, Triantis and Daniels, 1995, Gilson and Kraakman, 1993, Black and Coffee, 1994 and Williamson, 1988).

HYPOTHESES DEVELOPMENT

In this chapter, the research question and the hypotheses are developed and discussed. The research question and hypotheses are based on prior literature and theoretical background.

Research Question

As stated before, the purpose of this thesis is to investigate what the effects of equity and debt corporate governance - individually and/or jointly – are on merger and acquisition performance. The research question is formulated as follows:

‘’Do equity and debt corporate governance influence the performance of M&A deals?’’

In order to investigate the possible existing relationship between corporate governance and financial performance of M&A deals, the following hypotheses are constructed. Furthermore, the control variables included in the governance models are discussed afterwards.

Formulation of H1: Equity corporate governance on M&A performance

In this section, the possible effect of equity corporate governance on M&A performance is explained.

Corporate governance in M&A deals

Equity corporate governance can be divided into three different mechanisms, consisting of the board of directors, executive compensation and ownership structure (e.g. Rechner and Dalton, 1991, Donaldson and Davis, 1991 and Hermalin and Weisbach, 2001). Debt corporate governance can be broken down into two mechanisms, consisting of screening and monitoring by lenders and monitoring and detecting managerial slack by commercial banks (e.g. Triantis and Daniels, 1995, Williamson, 1988 and Black and Coffee, 1994). First, the equity corporate governance variables are discussed.

Table 1. Overview of the effect of variables Equity corporate governance

Variable	Literature	Expected effect
BoardIndependence	The higher the percentage of independent directors to some extent, the higher the quality of board monitoring and therefore the higher the firm performance (Faleye et al., 2011).	+
BoardSize	The higher the number of directors above a certain limit, the lower the expected firm value (Jensen, 1993). Additionally, the higher the board size after 10 members, the lower the M&A performance (Masulis et al., 2007).	-
BoardDuality	Board duality leads to better guaranteed shareholders’ interests and a more ensured long-term focus (Rechner and Dalton, 1991).	+
ExecutiveCompensation	The larger the equity compensation for directors to some extent, the higher the firm performance. (Murphy, 1999, Jensen and Murphy, 1990, and Morck, Shleifer and Visny, 1990).	+
InstitutionalOwnership	The larger the shareholders’ stake, the better the expected firm performance (Jensen and Meckling, 1976). Furthermore, managerial share-ownership helps to align the interests of managers and shareholders, resulting in increasing firm value.	+
Blockholder	Firms with dispersed small shareholders tend to underperform (Berle and Means, 1932).	+

Taking into account the foregoing about the effect of equity corporate governance on M&A performance by deals, hypothesis H1 can be formulated as follows:

H1: Equity corporate governance does not influence the performance of M&A deals.

H1$_A$: Equity corporate governance influences the performance of M&A deals.

Formulation of H2: Debt corporate governance on the performance of M&A deals

In this section, the link between debt corporate governance and performance of M&A deals is discussed.

Debt corporate governance

With respect to Triantis and Daniels, (1995), debt is linked to corporate governance in two ways. First, through independent screening and monitoring activities by creditors. Second, through effective monitoring and detecting managerial slack by commercial banks (Gilson and Kraakman, 1993, Black and Coffee 1994 and Williamson, 1988). In this study, the effect of the types and the terms of loans are discussed.

Table 2. Overview of the effect of variables Debt corporate governance

Variable	Literature	Expected effect
TermLoan	With the term loan agreement, a corporate liquidity management tool is established, as this mechanism helps to protect the corporation from negative shocks that may hinder access to capital markets (Acharya et al., 2014).	+
RevolverLoan	With the revolver loan agreement, a corporate liquidity management tool is established, as this mechanism helps to protect the corporation from negative shocks that may hinder access to capital markets (Acharya et al., 2014). Furthermore, risk-seeking behavior in revolver loan agreements are reduced by the incentives of firms to maintain their contractual loan agreement and their promised funds (Acharya et al., 2014). Additionally, revolver loans are more suitable for M&A purposes, as they are a more flexible mechanism towards the variation in funding requirements over time of M&A.	+
DebtIssuanceSweep	With this restriction, issuance of debt for the borrowing company is limited, resulting in the alignment of the different interests of the shareholders, creditholders, management and banks involved (Ivashina and Vallee, 2017 and Hong et al., 2016).	+
EquityIssuanceSweep	With this restriction, the issuance of equity for the borrowing company is limited, resulting in the alignment of the different interests of the shareholders, creditholders, management and banks involved (Ivashina and Vallee, 2017 and Hong et al., 2016).	+
ExcessCFSweep	Excess cash flows are used to maximize interest pay or to pay off outstanding debt, instead of distributing it to shareholders. This results in the alignment of the different interest of shareholders, creditholders, management and banks involved (Hong et al., 2016).	+
DividendRestriction	With this restriction, the lender(s) put a cap on the maximum amount of dividend that can be paid out to shareholders and is usually as a percentage of net income or retained earnings. This results in the alignment of the different interests of shareholders, creditholders, management and banks involved (Hong et al., 2016).	+
AssetSalesSweep	With this restriction, lenders can influence the borrower's sale of assets, depending on 1) the strength of the borrower and 2) whether the sale is material. Commonly, the credit agreement gives a timeframe for the borrower to reinvest the funds. This results in the alignment of the different interests of shareholders, creditholders, management and banks involved (Hong et al., 2016).	+
FacilityAmount	Larger borrowers receive smaller announcement returns (Slovin, Johnson and Glascock, 1992). Additionally, firms with negative earnings receive larger bank loan announcement returns (Best and Zhang, 1993).	-

Taking into account the foregoing, the hypothesis, H2 can be formulated:

H2: Debt corporate governance does not influence M&A performance by deals.

H2$_A$: Debt corporate governance influences M&A performance by deals.

Formulation of H3: The effect of debt and equity corporate governance on M&A performance

In this section, the potential link between equity and debt corporate governance on M&A performance by deals is explained.

Link equity and debt corporate governance

In accordance with Sepe (2010), Williamson (1998) and Triantis and Daniels (1995), equity and debt corporate governance mechanisms are positively linked to each other, as all stakeholders focus on value-maximizing delegations of governance responsibility and take the advantage of specialization in monitoring and reaction by assigning monitoring functions to the lowest-cost actors, and, additionally, through sharing information and expertise from different stakeholders. The positive link between equity and debt corporate governance is through effectively monitoring and screening by creditors, shareholders and commercial banks, but also through the jointly reduction of the corporate agency problems (e.g. Sepe, 2010, Williamson, 1988, Triantis and Daniels, 1995 and Williamson, 1998). In conclusion, I expect that debt and equity corporate governance are positively linked to each other and have both influence on M&A performance by deals.

Considering the foregoing, hypothesis H3 can be formulated as follows:

H3: Equity and debt corporate governance do not have an interaction effect on M&A performance by deals.

$H3_A$: Equity and debt corporate governance have an interaction effect on M&A performance by deals.

Control variables Equity Corporate Governance and Debt Corporate Governance

Additionally, some control variables are also included in the models in order to control for the relationship between the dependent variable and independent variables over time.

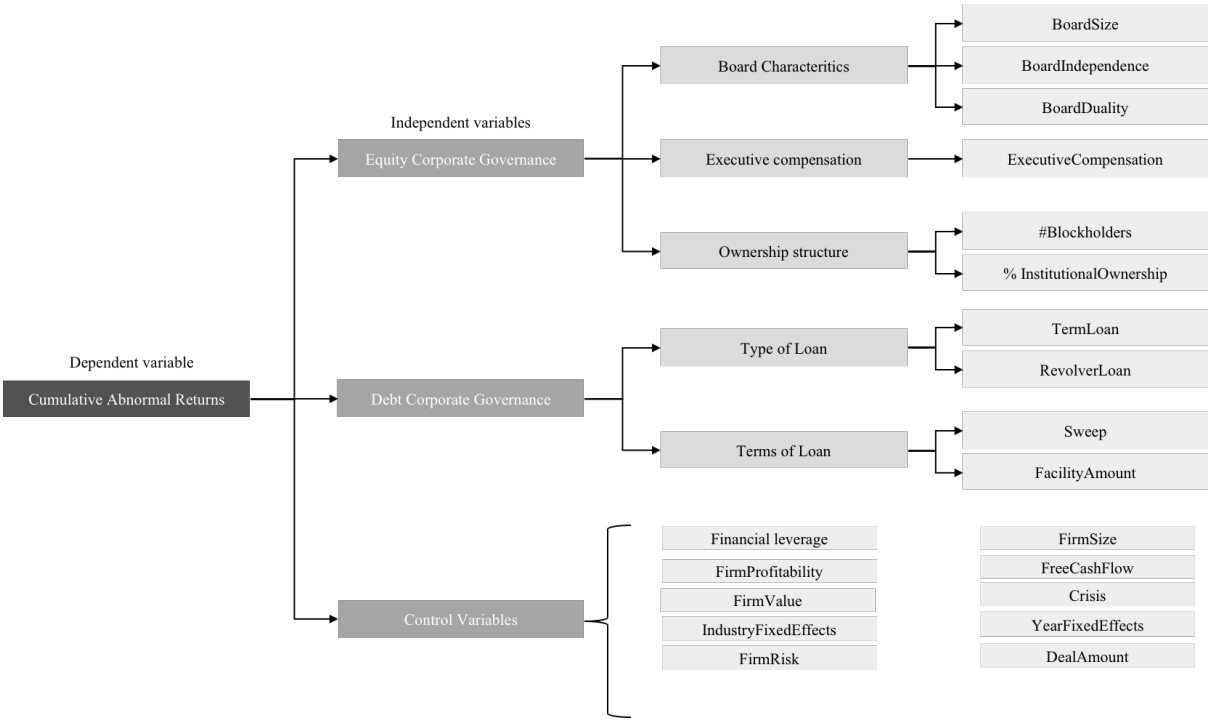
Table 3. Overview of the effect of control variables

Variable	Literature	Expected effect
FinancialLeverage	The presence of debt declines the free cash flow of the company, which results in a lower probability of management to spend excess money. The higher the debt level, the better the short-term performance of merger and acquisition activity (Masulis et al., 2007).	+
FreeCashFlow	Firms with large free cash flow have a higher probability to engage in less profitable or even destructive merger and acquisition activity (Masulis et al., 2007).	-
FirmProfitability	The market judges the likelihood of a merger and acquisition being a success or not based on past performance. This implies that the higher the firm profitability in the past, the higher the expectations regarding whether a merger and acquisition is going to be a success (Lang et al., 1989 and Morck et al., 2004).	+
FirmSize	The size of the acquirer firm can impact the gain of merger and acquisition activity, as smaller firms receive higher mergers and acquisition performance, as their fee is less large than what large firms have to pay (Datta et al., 2001 and Moeller et al., 2004).	-
FirmValue	Firms with higher Tobin's Q have better merger and acquisition performance compared to firms with lower Tobin's Q value.	+
FirmRisk	The higher the risk to some extent, the higher the expected cumulative abnormal returns (Mandelker, 1974).	+
DealAmount	The higher the deal amount, the more gains accruing to bidding firms shareholders, thus the higher the cumulative abnormal returns (Moeller et al., 2004 and Asquith et al., 1983).	+

METHODOLOGY

This chapter aims to explain the methodology and the relevant theoretical and mathematical aspects. Firstly, the dependent variable is explained. Secondly, the independent variables are discussed. Thirdly, the control variables are elaborated. Thereafter, the sample used for this research is discussed. After that, the methodology of constructing hypothesis 3 is explained. Lastly, the research method to conduct this study is explained.

Figure 1. Overview of the variables included in this study



Dependent Variable

The dependent variable in this study is the merger and acquisition performance, measured as the cumulative abnormal return of the acquirer share during the announcement date of merger and acquisition activity. The cumulative abnormal return represents a positive response of the market if the cumulative abnormal return is positively valued and represents a negative reaction of the market if the cumulative abnormal return turns out to be negatively valued (Hayward and Hambrick, 1997). The proxy on determining M&A performance by using the cumulative abnormal return is also used by the study of Hayward and Hambrick, (1997).The abnormal return is equal to the difference between the realized return and the expected benchmark return (Fama et al., 1969).

The event of interest is formulated as follows:

$$AR_{it} = R_{it} - E(R_{it}) \qquad (1)$$

According to Bodie et al., (2009), the abnormal return on the announcement date is an insufficient indicator of the total impact of the information released. Thus, in this research, the cumulative abnormal return is applied. In respect to Bodie et al, (2009), the market responses to the takeover announcement date, rather than to the effective date. Thus, in this thesis, the empathy lies on M&A deals during the announcement date, instead of the effective date.

The first step in order to calculate the cumulative abnormal return, is to decide which estimation and event window to use in order to calculate the expected average return. The estimation window is a starting point to compare the market reaction during announcement date of merger and acquisition date with normal expected market return. The specific event window is the period from the announcement date of merger and acquisition activity until the specific window ends. The length of the event window does matter, as when the event window is broader, many other circumstances might be influencing the impact of merger and acquisition activity (Campa and Hernando, 2004). This must be taking into account when determining the event window. In this research, the 3-day event window is computed, likewise the research of Andrade et al., (2001).

The second step in order to calculate the cumulative abnormal return is to estimate the benchmark return. In this study, the market model of Mackinlay, (1997) is used. The market model is given by:

$$E(R_{it}) = \alpha_{it} + \beta_i * Rm_t + \varepsilon_{it} \qquad (2)$$

Whereas i is the return on security, α_i is the security's average return, $\beta_i * Rm$ is the market movement and ε_{it} is the error term. The cumulative abnormal return is measured by using the Event Study by WRDS. In this research, the estimation window contains 100 days, likewise Andrade et al., (2001). The Event Study uses data from WRDS, and the software measures cumulative abnormal return based on CUSIPS of acquirer company and target company and date of announcement merger and acquisition activity from the Thomson One database. The database contains of 18,804 deals. The average market reaction relating to the announcement of a M&A deal is visualized in appendix F.

As for the Dependent Variable conducted by this research, the overview is presented below.

Table 4. Description of the dependent variable CAR

Variable	Measurement	Source
CAR (-3,3)	Cumulative Abnormal Return calculated from 3 days prior and after announcement date of merger and acquisition	Thomson One Event Study WRDS

Independent Variable

The independent variables used in this thesis are different corporate governance mechanisms. As elaborated in the hypothesis development, the corporate governance mechanism is divided into two

different categories, which consists of equity corporate governance and debt corporate governance. First, the equity corporate governance is discussed. After that, the debt corporate governance is explained.

Equity corporate governance

The equity corporate governance mechanism is divided into three elements, consisting of *board characteristics*, *executive compensation* and *ownership structure*. An overview of the measurements of the independent equity variables is presented below.

Table 5. Description of variables Equity corporate governance

Variable	Measurement	Source
BoardIndependence	Proportion of number of independent directors to total board number	ISS
BoardSize	Total directors who serve the company	ISS
BoardDuality	Equals one if CEO is the chairman of the board	ISS
ExecutiveCompensation	Proportion of total equity compensation to overall total compensation	Compustat Execucomp
InstitutionalOwnership	Shares owned by institutional investors divided by total share outstanding of a firm	Compustat, Thomson Reuters (Stock Ownership)
Blockholder	Number of investors who have more than 5% stock ownership	Compustat, Thomson Reuters

Debt corporate governance

The Debt corporate governance mechanism consists of two parts, (i) type of loan and (ii) terms of loans. An overview of the measurements of the independent debt variables is presented below.

Table 6. Description of variables Debt corporate governance

Variable	Measurement	Source
TermLoan	A committed loan facility allowing the borrower to borrow only up to a relatively short period after signing the facility agreement	Thomson Reuters (Facility)
RevolverLoan	A committed loan facility allowing borrower to borrow (up to a limit), repay, and re-borrow loans	Thomson Reuters (Facility)
DebtIssuanceSweep	The percentage amount of net proceeds a company receives from the issuance of debt that must be used to pay down any outstanding balance	Thomson Reuters (Package)
EquityIssuanceSweep	The percentage amount of net proceeds a company receives from the issuance of equity that must be used to pay down any outstanding loan balance	Thomson Reuters (Package)
ExcessCFSweep	The percentage amount of net proceeds a borrower receives from excess CF that must be used to reduce any loan balance outstanding	Thomson Reuters (Package)
DividendRestriction	A y/n flag indicating whether or the borrower is restricted from paying dividends to its shareholders	Thomson Reuters (Package)
AssetsSalesSweep	The percentage amount of net proceeds a company receives from an asset sale that must be used to pay down any outstanding loan balance	Thomson Reuters (Package)
FacilityAmount	The actual amount of the facility commited by the facility's lender pool	Thomson Reuters (Facility)

Control Variable

This study includes control variables for acquirer firm characteristics and deal characteristics. Acquirer firm characteristics conducted in this research consists of firm profitability, firm risk, firm value and firm size. As for deal characteristics, free cashflow, financial leverage and deal amount are taken into account. Lastly, year fixed effects, crisis and industry fixed effects are also included in this model. An overview of the control variables included in this study is presented below.

Table 7. Description of control variables

Variable	Measurement	Source
FinancialLeverage	Proportion of the total liabilities of the firm to the overall total assets	Compustat
FirmProfitability	Proportion of earnings before interest and tax (EBIT) to overall total assets	Compustat
FirmRisk	Ratio of retained earnings to total assets	Compustat
FirmValue	Tobin's Q = proportion of acquirer's market value of assets to the acquirer book value of assets	Compustat
FirmSize	Calculated as the total shares outstanding multiplied by the share price of a firm	Compustat
FreeCashFlow	Operating income before depreciation minus interest expense minus income taxes minus capital expenditures divided by the book value of total assets	Masulis et al., (2007)
DealAmount	Total amount that a deal has received commitments for	Thomson Reuters (Package)
Crisis	Indicator equals one if the event is during the crisis period	
YearFixedEffects	Any variation in the outcome that happen over time and that is not attributed to other explanatory variables included in this model	
IndustryFixedEffects	Indicator that presents the first two digits of SIC code of acquirer company	Thomson One

Sample

The sample used in this research is related to data on merger and acquisition and corporate governance data. The data on corporate governance consists of two parts, being the data on equity corporate governance and the data on debt corporate governance. The financial performance of M&A deals is based on the financial performance during the announcement date of the merger and acquisition. In order to select the data on financial performance, it is first necessary to consider the criteria regarding the merger and acquisition activity.

In order to get a clearer vision of what a merger and acquisition activity is all about, the database Thomson One is used. According to the Thomson One database, the following criteria for mergers and acquisitions are:

1. **Acquirer Nation**: located in the United States of America.
2. **Deal Status M&A**: completed as of 31 December 2017.
3. **Announced dates**: between the 1st of January 2007 until the 31th of December 2017.
4. At least **51% of target firm share** must be acquired by the acquirer firm in order to classify as acquiring control of the firm.
5. **Public/Private Companies**: acquirer need to be a public company in order to collect the cumulative abnormal return and corporate governance data that is necessary for conducting this research.

6. **The financial service and utilities companies (SIC code 6000-6900 and 4900-4999)** are out of scope, due to the fact that that these industries are very strictly regulated and where M&A activity most of the times is used to save distressed firms (Bris and Cabolis, 2002, Bris, Brisley and Cabolis, 2008 and Vafeas and Theodorou, 1998).

Taking all this into account, leaves us with a sample of **18,804** observations. However, merging the other datasets with the M&A activity resulted in a smaller amount of observations as stated in the table below.

Table 8. Overview of sample selection

Total number of M&A deals in Thomson One	28.806
Total number of CAR in WRDS event study	-10.002
Total number of observations relating to M&A performance	18.804
Merging the M&A performance with Debt Corporate Governance	-9,021
Total number of observations with Debt Corporate Governance	9,783
Merging the M&A performance with Equity Corporate Governance	-354
Total number of observations with Equity Corporate Governance variables	9,429

Constructing hypothesis H3

As for hypothesis 3, this study examines the possible interaction effect of (good and bad) equity corporate governance on debt corporate governance. More specific, this study investigates if the equity corporate governance variables (board characteristics, ownership structure and executive compensation) are substitutes or complements of debt corporate governance variables (loan, sweeps and facility amount). Additionally, this study also examines the effect of debt corporate governance and equity corporate governance jointly on cumulative abnormal returns.

The first step in order to examine the interaction effect of (good and bad) equity corporate governance and debt corporate governance is to create dummies for each equity corporate governance variable. As what already has been mentioned, the variable *BoardDuality* is not included, as it does not contribute to *CAR*. As for the other equity corporate governance variables, the criteria regarding the formulation of good equity corporate governance are the following:

Table 9. Overview of criteria for good equity corporate governance

Variable	Good Equity Corporate Governance	Bad Equity Corporate Governance	Based on
BoardSize	between 7 and 10 members	lower than 7 and higher than 10 members	(Lipton & Lorsch, 1992)
BoardIndependence	higher than 40% of total board directors	lower than 40% of total board directors	(Yermack 1996, Faleye et al., 2011)
ExecutiveCompensation	higher or equal to 30% of total compensation	lower than 30% of total compensation	(Tehranian et al., 1987)
InstitutionalOwnership	higher or equal to 50% of shares outstanding	lower than 50% of shares outstanding	(Cornett et al., 2007)
Blockholder	higher or equal to 2 investors	less than 2 investors	(Black, 2000)

After that, the scores regarding Good Equity Corporate Governance (1 if Good, 0 if Bad) *BoardSize, BoardIndependence*, *ExecutiveCompensation, InstitutionalOwnership* and *Blockholder* together are split into two subsamples: Good and Bad Equity Corporate Governance. The sample is split based on the mean which is equal to 2.745 (2.745/5 score). The overall equity corporate governance variable equals 1 if it's good equity corporate governance and equals zero if it is bad equity corporate governance.

The second step in order to test for the possible effect of (good and bad) equity corporate governance and debt corporate governance is to create the research design models. In order to be able to give an answer to hypothesis 3, eight models are constructed that captures all equity variables and debt variables included in this study. The models with regards to hypothesis 3 are discussed in the chapter Empirical Results and Analysis.

Research Method Hypothesis H1, H2 and H3

In this section, the research method for H1, H2 and H3 are discussed. During the statistical analysis in STATA, it was made clear that the control variable *DealAmount* was missing for a significant amount of observations and is therefore omitted in this study. The OLS assumptions are tested with fixed effects in order to check for robustness errors and to check for correlated omitted variables. The Libby boxes relating to this study are presented in appendix F.

Research Method Hypothesis H1: Equity Corporate Governance

Firstly, the ordinary least square (OLS) regression model for H1 is:

$$\mathbf{CAR_{-3,+3}} = \alpha + \beta_1 BoardIndependence_{it-1} + \beta_2 BoardSize_{it-1} + \beta_3 BoardDuality_{it-1} + \beta_4 ExecutiveCompensation_{it-1} + \beta_5 Blockholder_{it-1} + \beta_6 InstitutionalOwnership_{it-1} + \beta_7 Financialleverage_{it-1} + \beta_8 FirmProfitability_{it-1} + \beta_9 FirmRisk_{it-1} + \beta_{10} FirmValue_{it-1} + \beta_{11} FirmSize_{it-1} + \beta_{12} FCF_{it-1} + \beta_{13} DealAmount_{-it-1} + \beta_{14} Crisis_{nit} + \beta_{15} YearFixedEffects_{nit} + \beta_{16} IndustryFixedEffects + \varepsilon_{ijt}$$

And:

i = Acquirer firm

n = Merger and Acquisition transaction

t = Year of merger and acquisition activity

Research Method Hypothesis H2: Debt Corporate Governance

Secondly, the ordinary least square (OLS) regression model for H2 is:

$$\mathbf{CAR_{-3+3}} = \alpha + \beta_1 TermLoan_{nit} + \beta_2 RevolverLoan_{nit} + \beta_3 DebtIssuanceSweep_{nit} + \beta_4 EquityIssuanceSweep_{nit} + \beta_5 ExcessCFSweep_{nit} + \beta_6 DividendRestriction_{nit} + \beta_7 AssetSalesSweep_{nit} \beta_8 FacilityAmount_{-it-1} + \beta_9 Financialleverage_{it-1} + \beta_{10} FirmProfitability_{it-1} + \beta_{11} FirmRisk_{it-1} + \beta_{12} FirmValue_{it-1} + \beta_{13} FirmSize_{it-1} + \beta_{14} FCF_{it-1} + \beta_{15} Crisis_{nit} + \beta_{16} YearFixedEffects + \beta_{17} IndustryFixedEffects + \varepsilon_{ijt}$$

And:

i = Acquirer firm

n = Merger and Acquisition transaction

t = Year of merger and acquisition activity

Research Method Hypothesis H3: Interaction equity and debt corporate governance

The research method of hypothesis H3 investigates the possible interaction effect of good (and bad) equity corporate governance and debt corporate governance.

Last, the ordinary least square (OLS) regression model for H3 is:

$$\mathbf{CAR_{-3,+3}} = \alpha + \beta_1 ECG_{ni} + \beta_2 ECG*DebtCG_{nit} + \beta_3 DebtCG_{nit} + \beta_4 Financialleverage_{it-1} + \beta_5 FirmProfitability_{it-1} + \beta_6 FirmRisk_{it-1} + \beta_7 FirmValue_{it-1} + \beta_8 FirmSize_{it-1} + \beta_9 FCF_{it-1} + \beta_{10} Crisis_{nit} + \beta_{11} DealAmount_{-it-1} + \beta_{12} YearFixedEffects + \beta_{13} IndustryFixedEffects + \varepsilon_{ijt}$$

And:

i = Acquirer firm

n = Merger and Acquisition transaction

t = Year of merger and acquisition activity

EMPIRICAL RESULTS AND ANALYSES

This section elaborates on the empirical findings obtained based on the methodology section. The first part concisely overviews the descriptive statistics, after which the section briefly discusses the required assumptions for Ordinary Least Squares (OLS). Following the methodology, the second part of the section deep dives in the interpretation and further implications of the regression models. The section concludes with a brief overview of the results and ultimately links them to the aforementioned hypotheses.

Descriptive statistics

Table 10 shows the descriptive statistics of the variables implemented in this study. In this table, the observation, mean, median and standard deviation for the variables conducted in this research are presented.

The dependent variable of interest in this research are the Cumulative Abnormal Returns (CAR). The average value of *CAR* is 0.0591, indicating that acquiror firms perceive positive reactions when a deal is announced. The list of possible regressors consists of two corporate governance mechanisms, being debt corporate governance and equity corporate governance.

The first of the aforementioned mechanisms debt corporate governance is decomposed in three parts, namely loan type, financial covenant threshold and facility amount. Loan type comprises both revolver loan and term loan. The mean of *RevolverLoan* is 0.0223, suggesting that probability of the revolver loan in the corresponding loan agreement equals 2.23%. Similarly, the average of *TermLoan* is 0.0051, resulting in a 0.51% probability of term loan inclusion in the loan agreement. The higher presence of the revolver loan compared to term loan is in line with prior literature as stated by Asquith et al., (2005), Van Deventer et al., (2013) and Bradley and Roberts, (2004), as the revolver loan is more suitable for M&A purposes.

Financial covenants threshold consists of five underlying mechanism being excess cash flow sweep, asset sales sweep, debt issuances sweep, equity issuance sweep and dividend restriction. The averages of these variables correspond to the proportional presence of each mechanism in the final loan agreements. For example, the mean of *ExcessCFSweep* suggests that 0.55% of the loan agreements feature excess CF sweep. The average *FacilityAmount* is $269 816 within this evaluated sample.

Equity corporate governance consists of three underlying mechanisms as board characteristics, ownership structure and executive compensation. Board characteristics comprises board size, board independence and board duality. The average *BoardSize* within this sample comprises nine members,

which is line with Lipton and Lorsch (1992), who state that the optimal amount of board members is nine. The mean of *BoardIndependence* is 0.4235, stating that the majority of firms have a lower proportion of independent directors, relative to inside directors. The average of *BoardDuality* equals 0.5315, stating that 53.15% of the acquirer firms within the sample have a CEO who is also active as a chairman on the board of the firm. Jensen (1993) further elaborates on this finding, stating that higher board duality results in better firm performance.

Ownership structure comprise the amount of blockholders and institutional ownership. Within this sample, the average of *Blockholder* roughly equals two, such that the average firm has two investors who both own at least a 5% share in the firm. Berle and Means (1932) finds that corporations with dispersed ownership of capital among small shareholders tend to underperform. As for *InstitutionalOwnership*, the average is equal to 0.6698, which indicates that an institutional investor has around 66.98% stock in the acquirer firm compared to the total stock of the acquirer firm. This is supported by Jensen and Meckling, (1976), who claim that managerial share-ownership helps to align the interests of managers and shareholders, resulting in lowering agency costs and increasing firm value.

The last equity corporate governance mechanism is executive compensation. The mean number of *ExecutiveCompensation* is 0.3070, which indicates that 30,70% of the total compensation which the executive receives, is equity-based compensation. This result is supported by Murphy, (1999) as he found that firm performance is positively related to the percentage of executive compensation that is equity-based. Additionally, Morck, Shleifer and Visny, (1990) claim that equity-based compensation and firm performance are positively related.

Ultimately, some control variables fit in the list of possible regressors. The set of control variables consist of two categories, being acquirer characteristics and deal characteristics. The set of acquirer characteristics comprises firm size, firm value, firm profitability and firm risk. The mean of *FirmProfitability* is 0.6253, suggesting that the average firm has internal assets resources of 62.53%. The average *FirmRisk* is 0.0128, indicating that the retained earnings are smaller than the total assets. The other descriptive statistics on each variable are provided in table 5.

Deal characteristics include the deal amount, financial leverage and free cash flow. If the average financial leverage falls above 0.50, it indicates that firms are using a higher proportion of debt compared to equity to finance the M&A deal and vice versa. The average *FreeCashFlow* is $41,361,83, which may be utilized to fund an acquisition.

Furthermore, the control variable *Crisis* is also included in this model. *Crisis* is a binary variable, which is equal to one in the event of a crisis and zero otherwise. Its mean corresponds to the fraction of the

whole sample that the global economy was in a recession. The average percentage of crisis years within the sample is 41.73%, indicating that 41.73% of the observations within this sample are from crisis years. The last control variable included in this set of possible regressors is *IndustryFixedEffects*. The *IndustryFixedEffect* is a two-digit SIC code indicator of the industry of the acquiror company indicating that most of the firms are from the 50-industry.

Table 10. Descriptive statistics

Variable	Number	Mean	Median	Minimum Value	Maximum Value	Standard Deviation
CAR	10398	0.0591	0.064	0	0.52484	0.0915
FacilityAmount	10398	269816	0	0	4.50e+08	2.38e+07
RevolverLoan	10398	0.0223	1	0	1	0.1480
TermLoan	10398	0.0051	0	0	1	0.0712
DealAmount	588	1.07e+09	4.50e+08	1.45e+07	1.14e+10	1.72e+09
ExcessCFSweep	10398	0.5511	0	0	50	5.1917
AssetSalesSweep	10398	4.0979	0	0	100	21.6794
DebtIssuanceSweep	10398	4.0969	0	0	100	19.6248
EquityIssuanceSweep	10398	1.1690	0	0	100	9.4403
DividendRestriction	10398	0.0436	0	0	1	0.2041
Blockholder	10398	2.4818	2	0	7	1.7018
InstitutionalOwnership	10398	0.6698	0.7553	0	1	0.2995
BoardSize	5534	9.3632	9	5	16	2.1568
BoardIndependence	10398	0.4235	0.6	0	0.9167	0.4044
BoardDuality	10398	0.5315	1	0	1	0.4990
ExecutiveCompensation	10398	0.3070	0.3482	0	0.8968	0.3013
FirmSize	9776	7860.963	1522.319	12.3308	195001.1	20144.59
FirmValue	9743	1.4836	1.2103	0.1636	6.5841	1.0590
FirmProfitability	9758	0.6253	0.0671	-0.3521	0.2799	0.0866
FirmRisk	9463	0.0128	0.0803	-4.1929	0.9502	0.6024
FinancialLeverage	10398	0.5217	0.5369	0	1.1922	0.2586
Freecashflow	10398	413.6183	38.8274	-769.3899	12613.72	1239.434
Crisis	10398	0.4173	0	0	1	0.4931
IndustryFixedEffects	10398	50.3995	50	1	96	19.9549

Table 11 provides an overview of the correlation among this set of possible regressors. In squared brackets the Table reports the Student's T-value with the number of stars representing the significance level compared with a null hypothesis where the correlation is assumed to be zero.

BoardDuality is excluded from the model as it adds no further information in helping to explain *CAR*. As the variables within facility type are highly correlated, the three different threshold covenants merged into a new dummy variable named Sweep.

In this study, the independent variables - being board characteristics, executive compensation, ownership structure, loan type and financial covenant thresholds - are included to try to explain the effect of the dependent variable *CAR*. I highlight the most remarkable correlations amongst variables.

With respect to the *Correlation Matrix*, presented in table 11, it is shown that the independent equity and debt variables and the dependent variable are not significantly correlated. Furthermore, the most remarkable correlations amongst the variables are highlighted.

For instance, the correlation between the independent debt variable *RevolverLoan* and independent debt variable *FacilityAmount* is positive and strong (0.887) at significance 1% level. This means that, if both variables would be implemented within the model, the aforementioned variables do not possess significant contribution, as they are explaining more or less the same to the effect dependent variable *CAR*. This is the same for each pair of independent variables that are significantly correlated.

Table 11. Correlation Matrix

	CAR	FacilityAmount	RevolverLoan	TermLoan	DealAmount	Blockholder	InstitutionalOwnership	BoardSize	BoardIndependence	BoardDuality	ExecutiveCompensation	FirmSize	FirmValue	FirmProfitability	FirmRisk	FinancialLeverage	Freecashflow	Sweep
CAR	1																	
	.																	
FacilityAmount	(-0.0943)	1																
	[0.1478]	.																
RevolverLoan	(-0.0259)	0.8857	1															
	[0.6917]	*[0.000]****	.															
TermLoan	0.0604	0.1288	0.3730	1														
	[0.3548]	*[0.0477]***	*[0.000]****	.														
DealAmount	(-0.0354)	0.0733	0.0497	0.0240	1													
	[0.5877]	*[0.208]*	*[0.4463]*	*[0.7132]*	.													
Blockholder	0.0510	(-0.0736)	(-0.1019)	(-0.0900)	(-0.2156)	1												
	[0.4346]	*[0.2589]*	*[0.1177]*	*[0.1675]*	*[0.0008]****	.												
InstitutionalOwnership	0.0241	(-0.1102)	(-0.1025)	0.0044	(-0.2534)	0.6221	1											
	[0.4346]	*[0.2589]*	*[0.1155]*	*[0.9461]*	*[0.0001]****	*[0.0000]****	.											
BoardSize	0.0577	0.1232	0.1365	0.0039	0.03913	(-0.3172)	(-0.2582)	1										
	[0.3768]	*[0.0583]**	*[0.0358]***	*[0.9522]*	*[0.0000]****	*[0.0000]****	*[0.0001]****	.										
BoardIndependence	(-0.0747)	0.1475	0.0849	(-0.0160)	(-0.0030)	(-0.0221)	0.1216	0.1500	1									
	[0.2522]	*[0.0231]***	*[0.1929]*	*[0.8060]*	*[0.9630]*	*[0.7353]*	*[0.0617]**	*[0.0209]***	.									
BoardDuality	.	.	.	.	.	.	.	.	.	1								
	.	.	.	.	.	.	.	.	.	.								
ExecutiveCompensation	0.0911	(-0.1056)	(-0.1021)	(-0.0199)	(-0.0551)	0.1511	0.2344	(-0.1407)	0.0752	.	1							
	[0.1622]	*[0.1049]*	*[0.1171]*	*[0.7610]*	*[0.3982]*	*[0.0200]***	*[0.0003]***	*[0.0304]***	*[0.2491]*	.	.							
FirmSize	(-0.1124)	0.0955	0.0450	0.0182	0.6881	(-0.3357)	(-0.2425)	0.4068	0.1475	.	0.0203	1						
	*[0.0841]**	*[0.1428]*	*[0.4902]*	*[0.7804]*	*[0.0000]****	*[0.0000]****	*[0.0002]***	*[0.0000]****	*[0.0231]***	.	*[0.7555]*	.						
FirmValue	(-0.1078)	0.0968	0.0637	(-0.0298)	(-0.0475)	(-0.0223)	0.0829	(-0.1437)	(-0.0458)	.	0.0971	0.2243	1					
	*[0.0977]**	*[0.1375]*	*[0.3290]*	*[0.6482]*	*[0.4665]*	*[0.7328]*	*[0.2035]*	*[0.0270]***	*[0.4825]*	.	*[0.1363]*	*[0.0005]****	.					
FirmProfitability	(-0.1806)	0.1629	0.1535	0.0177	(-0.0799)	(-0.1119)	0.0186	(-0.0449)	(-0.0361)	.	(-0.0128)	0.1685	0.5108	1				
	*[0.0053]****	*[0.0120]***	*[0.0180]***	*[0.7869]*	*[0.2206]*	*[0.0856]**	*[0.7753]*	*[0.4913]*	*[0.5802]*	.	*[0.8443]*	*[0.0094]***	*[0.0000]****	.				
FirmRisk	(-0.0381)	(-0.0398)	(-0.0390)	(-0.0188)	(-0.0689)	0.0543	0.1189	(-0.0183)	(-0.1323)	.	(-0.0146)	0.1112	0.1763	0.4306	1			
	[0.5592]	*[0.5422]*	*[0.5497]*	*[0.7739]*	*[0.2905]*	*[0.4056]*	*[0.0677]**	*[0.7792]*	*[0.0418]***	.	*[0.8229]*	*[0.0876]**	*[0.0065]****	*[0.0000]****	.			
FinancialLeverage	(-0.1137)	0.0714	0.0551	(-0.535)	0.2832	(-0.0615)	(-0.1812)	(0.1423)	(0.1566)	.	(-0.1184)	(0.0879)	(-0.1951)	(-0.0842)	(-0.3544)	1		
	*[0.0808]**	*[0.2733]*	*[0.3981]*	*[0.4122]*	*[0.0000]****	*[0.3458]*	*[0.0052]****	*[0.0285]***	*[0.0158]***	.	*[0.0688]**	*[0.1774]*	*[0.0026]***	*[0.1963]*	*[0.0000]****	.		
Freecashflow	(-0.600)	0.0049	(-0.0062)	0.0276	0.5511	(-0.2369)	(-0.1937)	0.3858	0.1313	.	(-0.1184)	0.0879	(-0.1951)	(-0.0842)	(-0.3544)	0.1821	1	
	[0.3580]	*[0.9405]*	*[0.9242]*	*[0.6727]*	*[0.0000]****	*[0.0002]****	*[0.0028]***	*[0.0000]****	*[0.0434]***	.	*[0.0688]**	*[0.1774]*	*[0.0026]***	*[0.1963]*	*[0.0000]****	*[0.0049]****	.	
Sweep	(-0.0398)	0.034	0.0344	0.0128	0.0695	0.0017	(-0.0359)	0.0481	0.0174	.	(-0.0337)	0.0237	(-0.0480)	(-0.0281)	0.0055	(-0.0965)	(-0.0132)	1
	[0.5423]	*[0.6410]*	*[0.5985]*	*[0.8443]*	*[0.2865]*	*[0.9795]*	*[0.5828]*	*[0.4610]*	*[0.7896]*	.	*[0.6062]*	*[0.7164]*	*[0.4621]*	*[0.6665]*	*[0.9327]*	*[0.5796]*	*[0.8393]*	.

This correlation matrix presents the associations between the variables used in the regressions in this study. *,** and *** indicate significance level at 10%, 5% and 1% respectively.

Ordinary Least Squares (OLS) Assumptions

As for the OLS regression, multicollinearity, homoscedasticity, normal distribution of errors and serial correlation of the errors are taken into account in order to ensure the credibility of the findings of this research.

Multicollinearity appears when two or more independent variables are linear associated with each other (Farrar and Glauber, 1967). To better estimate possible effects within the OLS, multicollinearity should not exist within a regression analysis. Therefore, multicollinearity is tested with the variance inflation factor, also known as vif. According to Mansfield and Helms, (1982) the rule of thumb is that the vif should be below 10. If the vif is not below 10, variables need to be excluded from the model in order to correct for multicollinearity. The vif output for different regression models is presented in appendix B. As there are multiple regressions in this thesis, not every vif output is shown in the appendix. Board Model 3 (H1), EC Model 2 (H1), IO Model 2 (H1), Loan Model 2 (H2), Sweep Model 2 (H2), ECG TermLoan Model 2 (H3) and ECG Sweep Model 2 (H3) are included in appendix B.

Overall, for the equity corporate governance, debt corporate governance and combined equity corporate governance and debt corporate governance models, all models include no high level of multicollinearity, as no variable exceed the value of 10. Thus, all models are ensured of a decent level of multicollinearity.

Heteroscedasticity occurs when the residuals of the independent variables have the same variance (Long and Ervin, 2000). In this research, the Breusch-Pagan test is used in order to test for heteroscedasticity. The results of this test are displayed in appendix C. In order to correct for the violation of heteroscedasticity, robust standard errors are used. Consequently, as for all models included in this thesis, the robust standard errors are used.

Normal distribution of errors occurs when residuals of the regression models are randomly distributed and have as mean zero (Joanes and Gill, 1998). The distribution of errors can be tested by the Skewness/Kurtosis test. The results are presented in appendix D. Variables within this study are winsorized to normalize the error terms in the regressions.

Lastly, in this research, the assumption of serial correlation in the errors is tested. Serial correlation in the errors can bias OLS estimators, resulting in the tendency of rejecting H0 when it should not be rejected. The Durbin-Watson test is used to test for the possible presence of serial correlation in the regression models. The output regarding the Durbin-Watson tests are presented in appendix E.

Regression analyses

In this section, the results from the regression models are discussed in order to give an answer to the following research question: Do debt and equity corporate governance influence the performance of M&A deals?

All the variables used in this study are discussed in appendix A with their corresponding measurement. The regression tables are presented below. The independent significant variables and significant control variables are discussed.

Regression models analysis hypothesis 1

Table 12 presents the results of the regression models that explain the relationship between equity corporate governance and merger and acquisition performance. In order to be able to answer hypothesis 1, seven regression models are constructed. Board Model 1 includes the board characteristics variables and control variables. Board Model 2 contains the board characteristics variables and control variables. Board Model 3 consists of the board characteristics variables, control variables and fixed effects. EC Model 1 includes the executive compensation variable and control variables. EC Model 2 contains the executive compensation variable, control variables and fixed effects. IO Model 1 consists of institutional ownership variables and control variables. Last, IO Model 2 includes the institutional ownership variables, control variables and fixed effects. Last, EC stands for Executive Compensation and IO stands for Institutional Ownership.

As for the first model included for hypothesis 1, the sample contains 237 observations. Therefore, the variable *DealAmount* is excluded from the estimated regression models. For instance, for model EC Model 2, the F-value is 22.69, whereas the Prob>F value is 0.000 (significant). Besides that, for example, Board Model 1 has a R-squared of 6.87%. This means that the variables used in this model explains for 6.87% the dependent variable CAR.

Firstly, in Board Model 1, the control variable *FirmProfitability* shows a significant negative (at 5% level) effect on the dependent variable *CAR*, which is not consistent with prior literature (Lang et al., 1989 and Morck et al., 2004), as the market judges the likelihood of a merger and acquisition being a success or not based on past performance. This suggests that the higher the firm profitability in the past, the higher the expectations regarding whether a merger and acquisition activity is going to be a success. One possible explanation is given by Panayides and Gong, (2002), who stated that announcement of mergers and acquisitions directly impacts a target company's stock price, as induced reaction in the stock market cause investor to revise expectations about the company's future profitability.

Secondly, in Board Model 2, the independent equity variable *BoardSize* shows a negative significant (at 10% level) effect on the dependent variable *CAR*. This is in line with prior literature, as, according Yermack, (1996), Jensen (1993) and Masulis et al., (2007), the higher the number of directors, the lower the expected M&A performance, and, the smaller the number of board of directors to some extent, the higher expected firm performance. Next to that, the control variable *FirmSize* shows a negative significant (5% level) effect on the dependent variable *CAR*. This is supported by Moeller et al., (2004), as larger firms pay higher acquisition premiums, eventually resulting in negative cumulative abnormal returns. Additionally, Masulis et al., (2007) find that managers in large firms are more likely to engage in value-reducing acquisitions or mergers. Furthermore, the control variable *FirmProfitability* shows a negative significant (at 10% level) effect on CAR, which is not in line with Lang et al., (1989) and Morck et al., (2004). The possible explanation is given by Panayides and Gong, (2002). Last, the control variable *Crisis* shows a positive significant effect on CAR. This effect can be explained by the fact that the regression shows that the market reaction significantly differs between the samples in the pre-crisis and post-crisis conducted for this research.

Thirdly, in Board Model 3, the independent equity variable *BoardSize* indicates a negative significant (at 5% level) effect on the dependent variable *CAR*, which is in line with Lipton and Lorsch, (1992). Additionally, the fixed effect control variable *FiscalYear* show a negative significant (1% level) effect on CAR. This effect can be explained by the fact that the regression shows that the market reaction significantly differs between the years within the sample included in this study. In addition, the fixed effect control variable *IndustryFixedEffect* shows a negative significant (at 1% level) on CAR. This means that the regression shows that the market reaction significantly differs between different industries within the included sample. The effects of *BoardSize* and *FirmProfitability* in Board Model 3 are remarkable, as the effects are more significant in this model, compared to Board Model 2 without the year- and industry fixed effects.

Fourthly, in EC Model 1, the independent equity variable *ExecutiveCompensation* shows a negative significant (5% level) effect on the dependent variable *CAR*. This is not consistent with Murphy, (1999), who finds that firm performance is positively linked to the percentage of executive compensation that is equity-based. One possible explanation for the negative effect of *ExecutiveCompensation* on the dependent variable *CAR* is given by Tufano, (1996), Kahneman and Tversky (1979), Sitkin and Weingart, (1995) and Sanders, (2001), who state that the negative effect on *CAR* is determined by the characteristics of the equity-based compensation. If an executive is rewarded with options (or higher amount of options compared to stock), there is no possibility that they can lose wealth at stake, resulting in the higher likelihood that they engage in more riskier alternatives in order to improve the stock prices (Sitkin and Weingart, 1995). If an executive is rewarded with stock (or higher amount of stock compared to options), the executives are expected to be more risk averse, as there is a possibility that

they can lose wealth at stake (Kahneman and Tversky, 1979). Thus, according to Tufano (1996), Kahneman and Tversky (1979), Sitkin and Weingart, (1995) and Sanders, (2001), it is expected from executives who are rewarded with equity-based compensation to be more risk-taking, resulting in a negative effect on the dependent variable *CAR*. Furthermore, the control variable *FreeCashFlow* indicates a negative significant (at 10% level) effect on the dependent variable *CAR*. This is consistent with prior literature (Masulis et al., 2007), as firms with large free cash flow have a higher probability to engage in less profitable or even destructive merger and acquisition activity.

Fifthly, in EC Model 2, the independent equity variable *ExecutiveCompensation* indicates a negative significant (5% level) effect on the dependent variable CAR. This is not in line with Murphy (1999), but the possible explanation is given by Tufano, (1996), Kahneman and Tversky (1979), Sitkin and Weingart, (1995) and Sanders, (2001). Furthermore, the effects of *FirmSize* and *FirmProfitability* in EC Model 2 are remarkable, as the effects are more significant in this model, compared to EC Model 1 without the year- and industry fixed effects.

Sixthly, in IO Model 1, the independent equity variable *InstitutionalOwnership* shows a negative significant (at 5% level) effect on the dependent variable CAR. This is not in line with Jensen and Meckling, (1976), who find that managerial share-ownership helps to align the interests of managers and shareholders, resulting in lowering agency costs and better M&A performance. One possible explanation for the negative effect of *InstitutionalOwnership* on *CAR* is given by Yaacob and Alias, (2017), who claim that higher substantial institutional ownership levels have a negative effect on *CAR*, as the market reaction may differ between high dispersed small investors compared to large institutional investors. Additionally, the independent equity variable *Blockholder* indicates a positive significant (at 1% level) on *CAR*. This effect is supported by Jensen and Meckling, (1976) and Berle and Means, (1932), who state that firms tend to underperform when ownership of capital is dispersed among small shareholders within the corporation.

Lastly, in IO Model 2, the independent equity variable *InstitutionalOwnership* shows a negative significant (at 5% level) effect on the dependent variable *CAR*, which is not supported by Jensen and Meckling, (1976), but the possible explanation is given by Yaacob and Alias, (2017). Furthermore, the independent equity variable *Blockholder* indicates a positive significant (at 1% level) on *CAR*, which is in line with Jensen and Meckling, (1976). Furthermore, only the effect of *FirmProfitability* in IO Model 2 is stronger compared to IO Model 1, without the year- and industry fixed effects.
To conclude, the effect of *BoardSize* on *CAR* is negative and significant (5% level). Furthermore, the effect *ExecutiveCompensation* on *CAR* is negative and significant (at 5% level). Additionally, the effect of *InstitutionalOwnership* on *CAR* is negative and significant (5% level). Last, the effect of *Blockholder* on *CAR* is positive and significant (at 5% level). This indicates that a bigger board, equity-based

compensation for executives and high amounts of stock controlled by investors have a negative impact on the M&A performance. Furthermore, the presence of institutional owners has a positive effect on the M&A performance.

Table 12. Regression models hypothesis 1

CAR	**(1) Board: Model 1**	**(2) Board: Model 2**	**(3) Board: Model 3**	**(4) EC: Model 1**	**(5) EC: Model 2**	**(6) IO: Model 1**	**(7) IO: Model 2**
BoardSize	0.0014	-0.0012	-0.0013	.	.	.	.
	[0.629]	*[0.060]**	*[0.039]***	.	.	.	.
Board Independence	-0.0810	0.0071	0.0048	.	.	.	.
	[0.180]	*[0.526]*	*[0.669]*	.	.	.	.
Executive Compensation	.	.	.	-0.0080	-0.0091	.	.
	.	.	.	*[0.025]***	*[0.011]***	.	.
Institutional Ownership	.	.	.	.	.	-0.0153	-0.0152
	.	.	.	.	.	*[0.004]***	*[0.004]***
Block-holder	.	.	.	.	.	0.0029	0.0027
	.	.	.	.	.	*[0.001]****	*[0.001]****
Deal Amount	-5.58e-12	.	.	.	.	.	.
	[0.115]	.	.	.	.	.	.
FirmSize	3.37e-07	-1.33e-07	-1.42e-07	-1.83e-07	-2.06e-07	-1.75e-07	-2.00e-07
	[0.551]	*[0.049]***	*[0.035]***	*[0.004]***	*[0.001]****	*[0.006]****	*[0.002]****
FirmValue	0.0080	-0.0008	0.0001	0.0004	0.0008	0.0005	0.0008
	[0.586]	*[0.652]*	*[0.974]*	*[0.715]*	*[0.478]*	*[0.654]*	*[0.451]*
Firm Profitability	-0.4415	-0.0553	-0.0694	-0.0316	-0.0355	-0.0314	-0.0359
	*[0.004]***	*[0.085]**	*[0.0032]****	*[0.076]**	*[0.046]***	*[0.078]**	*[0.044]***
FirmRisk	0.0026	0.0002	-0.0005	-0.0031	-0.0031	-0.0031	-0.0032
	[0.902]	*[0.961]*	*[0.904]*	*[0.207]*	*[0.204]*	*[0.208]*	*[0.190]*
Financial Leverage	-0.0223	-0.0022	0.0031	-0.0027	6.43e-06	-0.0009	0.0018
	[0.608]	*[0.974]*	*[0.645]*	*[0.576]*	*[0.999]*	*[0.857]*	*[0.703]*
FreeCash Flow	2.38e-06	-1.36e-06	-1.13e-06	-1.77e-06	-1.52e-06	-1.74e-06	-1.51e-06
	[0.823]	*[0.214]*	*[0.298]*	*[0.093]**	*[0.147]*	*[0.097]**	*[0.148]*
Crisis	0.0022	0.0092	-0.0002	0.0155	0.0102	0.0164	0.0119
	[0.877]	*[0.000]****	*[0.963]*	*[0.000]****	*[0.003]**	*[0.000]****	*[0.001]****
FiscalYear	.	.	(-0.0017)	.	-0.0009	.	-0.0075
	.	.	*[0.007]****	.	*[0.080]**	.	*[0.141]*
Industry Type	.	.	-0.0002	.	-0.0003	.	-0.0003
	.	.	*[0.000]****	.	*[0.000]****	.	*[0.000]****
Observations	237	5022	5022	9429	9429	9429	9429
R-squared	0.0687	0.0145	0.0191	0.0163	0.0196	0.0170	0.0201
YearFixed Effects	No	No	Yes	No	Yes	No	Yes
Industry Fixed Effects	No	No	Yes	No	Yes	No	Yes
F-value	1.67	11.19	10.52	25.97	22.69	23.59	20.99

Regression is executed with CAR as dependent variable, Blockholder, InstitutionalOwnership, BoardSize, BoardIndependence, ExecutiveCompensation as variable of interest, DealAmount, FirmSize, FirmValue, FirmProfitability, FirmRisk, FinancialLeverage, FreeCashFlow, Crisis, FiscalYear and Industry as control variables. *,**,*** indicate significance level of the coefficients at 10%, 5% and 1%, respectively.

Regression models analysis hypothesis 2

The results of the second regression models that explain the relationship between debt corporate and merger and acquisition performance are shown in table 13. In order to be able to answer hypothesis 2, five regression models are constructed. Loan Model 1 includes the loan variables and control variables. Loan Model 2 contains the loan variables, control variables and fixed effects. Loan Model 3 consists of the loan variables, independent variable *FacilityAmount*, control variables and fixed effects. Sweep Model 1 includes the sweep variable and control variables. Last, Sweep Model 2 contains the sweep variable, control variables and fixed effects.

As for the first model included for hypothesis 2, the sample contains of 9249 observations. For instance, for Loan Model 3, the F-value is 20.48, whereas the Prob>F value is 0.000 (significant). Besides that, for example, Sweep Model 2 has a R-squared of 2.00%.

Firstly, in Loan Model 1, the control variable *FirmSize* shows a negative significant (1% level) on the dependent variable *CAR*, which is in line with Moeller et al., (2004). Additionally, the control variable *FirmProfitability* shows a significant negative (at 5% level) effect on *CAR*, which is not consistent with Lang et al., (1989) and Morck et al., (2004), but the possible explanation is given by Panayides and Gong, (2002). Furthermore, the control variable *FreeCashFlow* indicates a negative significant (10% level) effect on *CAR*, consistent with Masulis et al., (2007). Last, the control variable *Crisis* shows a positive significant effect on *CAR*. This effect can be explained by the fact that the regression indicates that the market reaction significantly differs between the samples in the pre- and post-crisis included in this research.

Secondly, in Loan Model 2, the fixed effect control variable *IndustryFixedEffect* indicates a negative significant (at 1% level) on *CAR.* This implies that the regression shows that the market reaction significantly differs between different industries within the included sample. Furthermore, including the year- and industry fixed effects results in the control variable *FreeCashFlow* to have an insignificant impact on *CAR* in Loan Model 2.

Thirdly, with the addition of the variable *FacilityAmount* in Loan Model 3, the coefficients and their corresponding significance levels are slightly likewise. Thus, there are no further additional inferences regarding Loan Model 3.

Fourthly, in Sweep Model 1, the effect of the independent debt variable *Sweep* is positive and significant (1% level) on the dependent variable *CAR*. This is in line with Hong et al., (2016) and Healy and Palepu, (1989), as sweep and dividend restriction are designed to reduce potential conflicts of interest between bondholders and stockholders, thus improving firm performance.

Lastly, in Sweep Model 2, including the year- and industry fixed effects, results in the control variable *FreeCashFlow* to have an insignificant effect on *CAR*.

In conclusion, only the effect of *Sweep* on *CAR* is positive and significant (at 1% level). This indicates that the presence of sweeps and restrictions has a positive impact on the M&A performance. Furthermore, no evidence regarding the effects of *TermLoan* and *RevolverLoan* on *CAR* has been found.

Table 13. Regression models hypothesis 2

CAR	(1)Loan: Model 1	(2) Loan: Model 2	(3) Loan: Model 3	(4) Sweep: Model 1	(5) Sweep: Model 2
Term Loan	0.0186	0.0193	0.0190	.	.
	[0.219]	*[0.199]*	*[0.217]*	.	.
Revolver Loan	-0.0021	-0.0027	-0.0040	.	.
	[0.738]	*[0.649]*	*[0.631]*	.	.
Sweep	.	.	.	0.0165	0.0155
	.	.	.	*[0.003]***	*[0.005]***
Facility Amount	.	.	1.15e-11	.	.
	.	.	*[0.842]*	.	.
FirmSize	-1.94e-07	-2.19e-07	-2.19e-07	-1.90e-07	-2.16e-07
	*[0.002]***	*[0.001]***	*[0.001]***	*[0.003]***	*[0.001]***
FirmValue	0.00024	0.0006	0.0006	0.0003	0.0062
	[0.827]	*[0.595]*	*[0.594]*	*[0.786]*	*[0.572]*
Firm Profitability	-0.0372	-0.0418	-0.0418	-0.0395	-0.0437
	*[0.033]***	*[0.017]***	*[0.017]***	*[0.023]***	*[0.012]***
FirmRisk	-0.00371	-0.0038	-0.0038	-0.0036	-0.0037
	[0.132]	*[0.121]*	*[0.121]*	*[0.143]*	*[0.130]*
Financial Leverage	-0.0019	0.0008	0.0008	-0.0027	-0.0001
	[0.685]	*[0.872]*	*[0.874]*	*[0.568]*	*[0.985]*
FreeCashFlow	-1.87e-06	-1.64e-06	-1.64e-06	-1.81e-06	-1.59e-06
	*[0.075]**	*[0.116]*	*[0.116]*	*[0.083]**	*[0.126]*
Crisis	0.0153	0.0106	0.1052	0.0151	0.0111
	*[0.000]****	*[0.002]****	*[0.003]****	[0.000]***	*[0.001]****
FiscalYear	.	-0.0008	-0.0008	.	-0.0007
	.	*[0.126]*	*[0.123]*	.	*[0.189]*
IndustryType	.	-0.0003	-0.0003	.	-0.0002
	.	*[0.000]****	*[0.000]****	.	*[0.000]****
Observations	9249	9429	9429	9429	9429
R-squared	0.0159	0.0190	0.0190	0.0171	0.0200
YearFixed Effects	No	Yes	Yes	Yes	Yes
Industry FixedEffects	No	Yes	Yes	Yes	Yes
F-value	22.94	20.48	20.48	26.54	22.93

Regression is executed with CAR as dependent variable, TermLoan, RevolverLoan, Sweep and FacilityAmount as variable of interest, FirmSize, FirmValue, FirmProfitability, FirmRisk, FinancialLeverage, FreeCashFlow, Crisis, FiscalYear and Industry as control variables. *,**,*** indicate significance level of the coefficients at 10%, 5% and 1%, respectively.

Regression models analysis hypothesis 3

Table 14 presents the results of the third hypothesis that investigates the possible interaction effect of (good and bad) equity corporate governance and debt corporate governance on merger and acquisition performance. In order to be able to answer hypothesis 3, eight regression models are constructed regarding good and bad equity corporate governance. The first model includes the interaction effect of *good equity corporate governance* (*ECG*) with *TermLoan* and control variables. The second model contains the interaction effect of *ECG* with *TermLoan*, control variables and fixed effects. The third model consists of the interaction effect of *ECG* with *RevolverLoan* and control variables. The fourth model includes the interaction effect of *ECG* with *RevolverLoan*, control variables and fixed effects. The fifth model contains the interaction effect of *ECG* with *Sweep* and control variables. The sixth model consists of the interaction effect of *ECG* with *Sweep*, control variables and fixed effects. The seventh model includes the interaction effect of *ECG* with *FacilityAmount* and control variables. The last model consists of the interaction effect of *FacilityAmount*, control variables and fixed effects. The interaction effects, variable *ECG* and debt corporate governance variables are discussed.

The sample included for the first model contains of 9429 observations. For example, for ECG Sweep Model 1, the F-value is 21.85, whereas Prob>F value is 0.000 (significant). Besides, for instance, ECG TermLoan Model 2 has a R-squared of 0.020.

Firstly, in the ECG TermLoan Model 1, the interaction term of *ECG* and *TermLoan* has a positive but insignificant effect on *CAR*. This means when a term loan is used to fund a M&A transaction, the market perceives this as a positive sign. This is supported by prior literature (Van Deventer et al., 2013, Bradley and Roberts, 2004, Asquith et al., 2005 and Acharya et al., (2014). However, the coefficient of *ECG* indicates a negative significant effect on M&A performance. This negative coefficient of ECG is compensated for the situations that a firm has good ECG, and a term loan is used to fund a M&A transaction. This can be derived from the fact that the positive coefficient of the interaction variable is bigger than the negative coefficient of the *TermLoan* variable. The results of this regression indicate that good *ECG* and *TermLoan* are complementary governance mechanisms. Thus, according to TermLoan Model 1, good *ECG* and *TermLoan* are complementary governance mechanisms.

Secondly, in the ECG TermLoan Model 2, the year- and industry fixed effects are included. The interaction effect of *ECG* and *TermLoan* Model 2 is likewise the interaction effect of *ECG TermLoan* Model 1, which is complementary.

Thirdly, the second variable of interest taken into consideration for hypothesis 3 is in RevolverLoan Model 1. The results show that revolver loan has a negative insignificant effect on *CAR*. Furthermore, the application of good equity corporate governance results in significantly lower M&A performance,

indicated by variable *ECG*. This variable shows a significant negative association between good equity corporate and M&A performance. However, the results show a positive impact on *CAR* when companies have good equity corporate governance in place and use a revolver loan to fund a M&A transaction. These results indicate that when both equity corporate governance and debt corporate governance are in place, better M&A performance is achieved. This is in line with literature (Van Deventer et al., 2013, Bradley and Roberts, 2004, Asquith et al., 2005 and Acharya et al., (2014). Therefore, results are indicating that both mechanisms are complements to each other to realize better M&A performance.

Fourthly, in the ECG RevolverLoan Model 2, the year- and industry fixed effects are included. The interaction effect of *ECG* and *RevolverLoan* Model 2 is likewise the interaction effect of *ECG RevolverLoan* Model 1, which is complementary.

Fifthly, the following model used to answer hypothesis 3 is the Sweep Model 1. The coefficient sweep indicates a significant positive association with *CAR* when sweeps are included in a M&A transaction. This is supported by literature (Ivashina and Vallee, 2017 and Hong et al., 2016). In this model, good corporate governance shows a significant negative relationship with M&A performance. However, the application of sweeps and good equity corporate governance results in lower M&A performance. This variable (*ECG_Sweep*) is far from being significant, therefore it's hard to state conclusions based on this model. However, the coefficient is negative and therefore the model is suggesting that sweeps and good equity corporate governance are substitutes for each other.

Sixthly, in the ECG Sweep Model 2, the year- and industry fixed effects are included. In this model, good equity corporate governance and sweeps are also substituting each other.

Seventhly, the fourth variable of interest taken into consideration for hypothesis 3 is in Facility Model 1. The results show evidence for the fact that when higher facility amounts are used, this positively effects the M&A performance. This is not supported by literature (Slovin, Johnson and Glascock, 1992). One possible explanation is given by Maskara et al., (2007), Peterson and Rajan (2002), Thomas and Wang, (2004) and Billet, Flannery and Garfinkel (2006) who find that the larger the facility amount, the higher probability that the loan is announced. As a consequence, firms that announce they have borrowed funds from a bank have higher cumulative abnormal return compared to firms who do not announce (Peterson and Rajan, 2002, Thomas and Wang, 2004 and Billett, Flannery and Garfinkel, 2006). In literature, this is viewed as positive bank loan announcement effect, as the market responses positively on the reduction of information asymmetry, as the outsiders get the certification role of the lending banks who act as quasi-insiders (Peterson and Rajan, 2002, Thomas and Wang, 2004 and Billett, Flannery and Garfinkel, 2006). Furthermore, the variable for good equity corporate governance

indicates that the firms in the sample that have better equity corporate governance in place perceive a lower M&A performance. The combination of both a higher facility amount and good equity corporate governance results into lower M&A performance. This indicates that the equity and debt corporate governance are substitutes from each other. A higher facility amount results in better M&A performance if good equity corporate governance is not applied. However, not all coefficients in this model are significant. Therefore, cautious conclusions should be stated.

Last, in the Facility Model 2, the year- and industry fixed effects are included. In this model, good equity corporate governance and the amount of facilities are also substituting each other.

In conclusion, in this model, good equity corporate governance and debt corporate governance have a mixed effect on the cumulative abnormal returns. Good equity corporate governance is complementing to the presence of term loans and revolver. Furthermore, good equity corporate governance is substituting the presence of sweeps and the facility amount. Yet, the effect of good equity corporate governance individually is weakening the M&A performance. Therefore, by only applying good equity corporate governance, the M&A performance is expected to be lower. However, if term loans and/or revolver loans are implemented with good equity corporate governance, the M&A performance is expected to be higher.

Last, one sensitivity test regarding the kitchen sink regression is provided in appendix G. The final conclusion regarding the results follows in the next section.

Table 14. Regression models hypothesis 3 (1)

CAR	(1) ECG: TermLoan Model 1	(2) ECG: TermLoan Model 2	(3) ECG: RevolverLoan Model 1	(4) ECG: RevolverLoan Model 2	(5) ECG: Sweep Model 1	(6) ECG: Sweep Model 2	(7) ECG: Facility Model 1	(8) ECG: Facility Model 2
ECG_TermLoan	0.0172	0.0192	.	.	.	.	.	.
	[0.567]	*[0.520]*	.	.	.	.	.	.
ECG_ RevolverLoan	.	.	0.0118	0.0118	.	.	.	.
	.	.	*[0.374]*	*[0.371]*	.	.	.	.
ECG_Sweep	.	.	.	.	-0.0021	-0.0017	.	.
	.	.	.	.	*[0.861]*	*[0.890]*	.	.
ECG_Facility	.	.	.	.	.	.	-7.82e-11	-8.11e-11
	.	.	.	.	.	.	*[0.559]*	*[0.535]*
ECG	-0.0062	-0.0071	-0.0064	-0.0074	-0.0064	-0.0072	-0.0060	-0.0069
	*[0.005]***	*[0.001]***	*[0.004]***	*[0.001]***	*[0.004]***	*[0.001]***	*[0.006]***	*[0.002]***
Term Loan	0.0093	0.0087	.	.	.	.	.	.
	[0.633]	*[0.652]*	.	.	.	.	.	.
Revolver Loan	.	.	-0.0074	-0.0008	.	.	.	.
	.	.	*[0.510]*	*[0.471]*	.	.	.	.
Sweep	.	.	.	.	0.0183	0.0171	.	.
	.	.	.	.	*[0.075]**	*[0.096]**	.	.
FacilityAmount	.	.	.	.	.	.	6.94e-11	7.31e-11
	.	.	.	.	.	.	*[0.593]*	*[0.565]*
FirmSize	-1.80e-07	-2.04e-07	-1.81e-07	-2.05e-07	-1.76e-07	-2.00e-07	-1.81e-07	-2.05e-07
	*[0.005]***	*[0.001]***	*[0.004]***	*[0.001]***	*[0.006]***	*[0.002]***	*[0.004]***	*[0.001]***
FirmValue	0.0003	0.0006	0.0003	0.0006	0.0003	0.0007	0.0003	0.0007
	[0.797]	*[0.557]*	*[0.805]*	*[0.564]*	*[0.756]*	*[0.534]*	*[0.790]*	*[0.551]*
Firm Profitability	-0.0302	-0.0339	-0.0300	-0.0338	-0.0322	-0.0356	-0.030	-0.034
	*[0.090]**	*[0.057]**	*[0.091]**	*[0.058]**	*[0.070]**	*[0.045]**	*[0.088]**	*[0.056]**

Table 14. Regression models hypothesis 3 (2)

CAR	(1) ECG: TermLoan Model 1	(2) ECG: TermLoan Model 2	(3) ECG: RevolverLoan Model 1	(4) ECG: RevolverLoan Model 2	(5) ECG: Sweep Model 1	(6) ECG: Sweep Model 2	(7) ECG: Facility Model 1	(8) ECG: Facility Model 2
FirmRisk	-0.0027	-0.0027§	-0.0027	-0.0026	-0.0025	-0.0025	-0.0027	-0.0003
	[0.279]	*[0.284]*	*[0.284]*	*[0.289]*	*[0.307]*	*[0.308]*	*[0.278]*	*[0.283]*
FinancialLeverage	-0.0025	0.0002	-0.0025	0.0002	-0.0034	-0.0007	-0.0025	0.0003
	[0.598]	*[0.966]*	*[0.600]*	*[0.963]*	*[0.485]*	*[0.889]*	*[0.605]*	*[0.958]*
FreeCashFlow	-1.74e-06	-1.49e-06	-1.74e-06	-1.48e-06	-1.68e-06	-1.44e-06	-1.74e-06	-1.48e-06
	[0.598]	*[0.152]*	*[0.097]*	*[0.154]*	*[0.108]*	*[0.167]*	*[0.096]**	*[0.154]*
Crisis	0.0152	0.0105	0.0152	0.0104	0.0151	0.0110	0.0152	0.0105
	*[0.000]****	*[0.003]****	*[0.000]****	*[0.003]***	*[0.000]****	*[0.002]****	*[0.000]****	*[0.003]****
FiscalYear	.	-0.0008	.	-0.0008	.	-0.0007	.	-0.0008
	.	*[0.120]*	.	*[0.118]*	.	*[0.184]*	.	*[0.120]*
IndustryType	.	(-0.0003)	.	-0.0003	.	-0.0003	.	-0.0003
	.	*[0.000]****	.	*[0.000]****	.	*[0.000]****	.	*[0.000]****
Observations	9249	9429	9429	9429	9429	9429	9429	9429
R-squared	0.0168	0.020	0.0168	0.0201	0.0181	0.0213	0.0167	0.0201
YearFixedEffects	No	Yes	No	Yes	No	Yes	No	Yes
IndustryFixedEffects	No	Yes	No	Yes	No	Yes	No	Yes
F-value	21.23	19.39	21.10	19.26	21.85	19.75	16.04	16.92

Regression is executed with CAR as dependent variable, ECG_TermLoan ECG_RevolverLoan ECG_Sweep ECG_FacilityAmount TermLoan, RevolverLoan, Sweep and FacilityAmount as variable of interest, FirmSize, FirmValue, FirmProfitability, FirmRisk, FinancialLeverage, FreeCashFlow, Crisis, FiscalYear and Industry as control variables. *,**,*** indicate significance level of the coefficients at 10%, 5% and 1%, respectively.

Summary results

This study attempts to provide insights into the possible effect(s) of equity and debt corporate governance on cumulative abnormal returns around the announcement date of a merger and acquisition activity in the period from 2007 until 2018. More specific, this thesis tests the correlation between board characteristics, executive compensation, institutional ownership structure, loan type and terms of loans and M&A performance. The research question is stated the following: ‘’Do equity and debt corporate governance influence the performance of M&A deals?’’. In this section, the descriptive statistics, OLS assumptions and regression models were discussed. In this empirical chapter, the OLS assumptions multicollinearity, heteroscedasticity, normality and the autocorrelations of the errors were tested. Consequently, the main findings of the nine regression models are discussed. The main results of these analyses are presented below.

In order to state specific conclusions regarding the different analyses, the main models are presented below. Table 15 gives a complete overview of all the treatment variables used in this study.

Based on table 15, there are four equity corporate governance variables that have most likely an effect on M&A performance. These variables are *BoardSize*, E*xecutiveCompensation, InstitutionalOwnership* and *Blockholder*. The results indicate that *BoardSize, ExecutiveCompensation* and *InstitutionalOwnership* have a negative significant impact on M&A performance. *Blockholder* has a positive significant impact on *CAR*. There is no relation found between *BoardIndependence* and the dependent variable *CAR*.

When it comes to the debt corporate governance variables, the results indicate that *Sweep* has a positive significant impact on M&A performance. There is no relation found between *RevolverLoan, TermLoan, FacilityAmount* and *CAR*.

Last, the interaction effects of the equity corporate governance and debt corporate governance indicates that good equity corporate governance has a mixed effect on the cumulative abnormal returns. Good equity corporate governance is complementing the presence of term loans and revolver loans. Additionally, good equity corporate governance is substituting the presence of sweeps and the facility amount. Nonetheless, the effect of good equity corporate governance solely is weakening the M&A performance. Thus, by only implementing good equity corporate governance, the M&A performance is expected to be lower. However, if term loans and/or revolver loans are applied with good equity corporate governance, the M&A performance is expected to be higher.

The findings stated in this chapter form the basis for answering the research question in the next chapter.

Table 15. Overview of main results of this study

CAR	(1) Board: Model 3	(2) EC: Model 2	(3) IO: Model 2	(4) Loan: Model 2	(5) Sweep: Model 2	(6) ECG: TermLoan Model 2	(7) ECG: RevolverLoan Model 2	(8) ECG: Sweep Model 2	(9) ECG: Facility Model 2
ECG_TermLoan	.	.	.	.	.	0.0192	.	.	.
	.	.	.	.	.	*[0.520]*	.	.	.
ECG_RevolverLoan	.	.	.	.	.	.	0.0118	.	.
	.	.	.	.	.	.	*[0.371]*	.	.
ECG_Sweep	.	.	.	.	.	.	.	(-0.0017)	.
	.	.	.	.	.	.	.	*[0.890]*	.
ECG_Facility	.	.	.	.	.	.	.	.	(-8.11e-11)
	.	.	.	.	.	.	.	.	*[0.535]*
ECG	.	.	.	.	.	(-0.0071)	(-0.0074)	(-0.0072)	(-0.0069)
	.	.	.	.	.	*[0.001]***	*[0.001]***	*[0.001]***	*[0.002]***
Term Loan	.	.	.	0.0193	.	0.0087	.	.	.
	.	.	.	*[0.199]*	.	*[0.652]*	.	.	.
Revolver Loan	.	.	.	(-0.0027)	.	.	(-0.0008)	.	.
	.	.	.	*[0.649]*	.	.	*[0.471]*	.	.
Sweep	.	.	.	.	0.0155	.	.	0.0171	.
	.	.	.	.	*[0.005]***	.	.	*[0.096]**	.
FacilityAmount	.	.	.	.	.	.	.	.	7.31e-11
	.	.	.	.	.	.	.	.	*[0.565]*
BoardSize	(-0.0012)	.	.	.	.	.	.	.	.
	*[0.060]**	.	.	.	.	.	.	.	.
BoardIndependence	0.0071	.	.	.	.	.	.	.	.
	[0.526]	.	.	.	.	.	.	.	.
ExecutiveCompensation	.	(-0.0091)	.	.	.	.	.	.	.
	.	*[0.011]***	.	.	.	.	.	.	.
InstitutionalOwnership	.	.	(-0.0152)	.	.	.	.	.	.
	.	.	*[0.002]***	.	.	.	.	.	.
Blockholder	.	.	0.0027	.	.	.	.	.	.
	.	.	*[0.001]****	.	.	.	.	.	.
FirmSize	(-1.42e-07)	(-2.06e-07)	(-2.00e-07)	(-2.19e-07)	(-2.16e-07)	(-2.04e-07)	(-2.05e-07)	(-2.00e-07)	(-2.05e-07)
	*[0.035]***	*[0.001]****	*[0.023]***	*[0.001]****	*[0.001]****	*[0.001]****	*[0.001]****	*[0.002]****	*[0.001]****
FirmValue	0.0001	0.0008	0.0008	0.0006	0.0062	0.0006	0.0006	0.0007	0.0007
	[0.974]	*[0.478]*	*[0.0420]*	*[0.595]*	*[0.572]*	*[0.557]*	*[0.564]*	*[0.534]*	*[0.551]*
FirmProfitability	(-0.0694)	(-0.0355)	(-0.0359)	(-0.0418)	(-0.0437)	(-0.0339)	(-0.0338)	(-0.0356)	(-0.034)
	*[0.0032]****	*[0.046]***	*[0.013]***	*[0.017]***	*[0.012]***	*[0.057]**	*[0.058]**	*[0.045]***	*[0.056]**
FirmRisk	(-0.0005)	(-0.0031)	(-0.0032)	(-0.0038)	(-0.0037)	(-0.0027)	(-0.0026)	(-0.0025)	(-0.0003)
	[0.904]	*[0.204]*	*[0.114]*	*[0.121]*	*[0.130]*	*[0.284]*	*[0.289]*	*[0.308]*	*[0.283]*
FinancialLeverage	0.0031	6.43e-06	0.0018	0.0008	(-0.0001)	0.0002	0.0002	(-0.0007)	0.0003
	[0.645]	*[0.999]*	*[0.0684]*	*[0.872]*	*[0.985]*	*[0.966]*	*[0.963]*	*[0.889]*	*[0.958]*
FreeCashFlow	(-1.13e-06)	(-1.52e-06)	(-1.51e-06)	(-1.64e-06)	(-1.59e-06)	(-1.49e-06)	(-1.48e-06)	(-1.44e-06)	(-1.48e-06)
	[0.298]	*[0.147]*	*[0.271]*	*[0.116]*	*[0.126]*	*[0.152]*	*[0.154]*	*[0.167]*	*[0.154]*
Crisis	(-0.0002)	0.0102	0.0119	0.0106	0.0111	0.0105	0.0104	0.0110	0.0105
	[0.963]	*[0.003]**	*[0.002]***	*[0.002]****	*[0.001]****	*[0.003]****	*[0.003]***	*[0.002]****	*[0.003]****
FiscalYear	(-0.0017)	(-0.0009)	(-0.0075)	(-0.0008)	(-0.0007)	(-0.0008)	(-0.0008)	(-0.0007)	(-0.0008)
	*[0.007]****	*[0.080]**	*[0.171]*	*[0.126]*	*[0.189]*	*[0.120]*	*[0.118]*	*[0.184]*	*[0.120]*
IndustryType	(-0.0002)	(-0.0003)	(-0.0003)	(-0.0003)	(-0.0002)	(-0.0003)	(-0.0003)	(-0.0003)	(-0.0003)
	*[0.000]****	*[0.000]****	*[0.000]****	*[0.000]****	*[0.000]****	*[0.000]****	*[0.000]****	*[0.000]****	*[0.000]****
Observations	5022	9429	9429	9429	9429	9429	9429	9429	9429
R-squared	0.0191	0.0196	0.0201	0.0190	0.0200	0.020	0.0201	0.0213	0.0201
YearFixedEffects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IndustryFixedEffects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-value	10.52	22.69	17.54	20.48	22.93	19.39	19.26	19.75	16.92

Regression is executed with CAR as dependent variable, ECG_TermLoan ECG_RevolverLoan ECG_Sweep ECG_FacilityAmount TermLoan, RevolverLoan, Sweep, FacilityAmount, BoardSize, BoardIndependence, ExecutiveCompensation, InstitutionalOwnership and Blockholder as variable of interest, FirmSize, FirmValue, FirmProfitability, FirmRisk, FinancialLeverage, FreeCashFlow, Crisis, FiscalYear and Industry as control variables. *,**,*** indicate significance level of the coefficients at 10%, 5% and 1%, respectively.

CONCLUSIONS AND LIMITATIONS

In this final chapter, the summary, contribution, limitations and extensions for future research are discussed.

Summary, implications and contributions

Over the years, the M&A activity has become one of the key strategies for many corporations, as the activity increased substantially over years (DePhampilis, 2009). This is because many parties assume that M&A activities provide benefits for all parties involved in the transaction. However, this is not the case, as the acquirer company tends to receive the negative gain or zero gain in the period around the announcement date of M&A (Jensen and Ruback, 1983). As a consequence, literature has tried to find possible explanations and solutions for the existence of bad acquisitions. One of the explanations for bad acquisitions is the misalignment of interests of the different parties involved, also known as the agency problem. Corporate governance is seen as one solution to reduce the agency problem, as they are created to align the interests of managers, shareholders, credit holders and banks (John and Senbet, 1998). Corporate governance can be divided into two mechanisms, being equity corporate governance and debt corporate governance. Combining those two different corporate governance mechanisms together, this study tries to investigate whether equity corporate governance and debt corporate governance mechanisms do have an impact on M&A performance. More specific, this research investigates whether board structure, executive compensation, institutional ownership structure, type of loans and terms of loans have impact on the cumulative abnormal returns on merger and acquisition activity for the period from 2007 until 2018. The main research question is formulated the following:

"Do equity and debt corporate governance influence the performance of M&A deals?"

In this study, a sample of 18,804 observations of M&A deals by US firms is used over the period of 2007 until 2018. The independent equity variables *BoardSize, BoardDuality, BoardIndependence, ExecutiveCompensation, InstitutionalOwnership* and *Blockholder* are included in this research. As for the independent debt variables, *RevolverLoan, TermLoan, Sweep* and *FacilityAmount* are included. Last, some control variables are also included in this study, in order to control for the relationship between the independent variables and the dependent variables. In this summary, I highlight the most remarkable findings of my main regression models.

Based on the findings stated before, this study indicates that there are four equity corporate governance variables that have most likely an effect on M&A performance. These variables are *BoardSize, ExecutiveCompensation, InstitutionalOwnership and Blockholder.* The results indicate that *BoardSize, ExecutiveCompensation* and *InstitutionalOwnership* have a negative effect on M&A performance. Furthermore, the effect of *Blockholder* on CAR is positive. The findings related to *BoardSize* are in line

with previous literature which indicates that the higher the number of directors, the lower the M&A performance (Yermack, 1996 and Jensen, 1993). The findings relating to *ExecutiveCompensation* are not in line with previous literature (Murphy, 1999), as firm performance is positively linked to the percentage of executive compensation that is equity-based. The possible explanation is given by Sanders, (2001), who claims that executives who are rewarded with equity-based compensation are more risk-taking compared to executives who are not equity-based compensated, resulting in a negative effect on cumulative abnormal returns. The results relating to *InstitutionalOwnership* are not consistent with prior literature, as managerial share-ownership helps to align the interests of managers and shareholders, resulting in lowering agency costs and better M&A performance (Jensen and Meckling, 1976). However, the possible explanation is given by Yaacob and Alias (2017), who claim that higher substantial institutional ownership level has a negative effect on CAR, as the market reaction may differ between high dispersed small investors compared to large institutional investors. Furthermore, the effect of *Blockholder* on M&A performance is in line with prior literature, as firms tends to underperform when ownership of capital is dispersed among small shareholders within the corporation (Jensen and Meckling, 1976 and Berle and Means, 1932). There is no relation found between *BoardIndependence* and the dependent variable *CAR*.

When it comes to the debt corporate governance variables, the results indicate that *Sweep* has a positive impact on M&A performance. Existing literature has discussed that the presence of sweep forces the borrower to act in the interests of the different parties involved by putting restrictions on i.e. excess cash flow, the issuance of equity, the issuance of debt, sales of assets and payments of dividends. There is no relation found between *TermLoan, RevolverLoan* or *FacilityAmount* and *CAR*.

Last, the interaction effects of the equity corporate governance and debt corporate governance indicates that good equity corporate governance has a mixed effect on the cumulative abnormal returns. Good equity corporate governance is complementing the presence of term loans and revolver loans. Furthermore, good equity corporate governance is substituting the presence of sweeps and the facility amount. Yet, the effect of good equity corporate governance individually is weakening the M&A performance. Therefore, by only applying good equity corporate governance, the M&A performance is expected to be lower. However, if term loans and/or revolver loans are implemented with good equity corporate governance, the M&A performance is expected to be higher.

Overall, the findings suggest that equity corporate governance and debt corporate governance have a mixed effect on cumulative abnormal returns. The results indicate that *BoardSize, ExecutiveCompensation* and *InstitutionalOwnership* have a negative effect on M&A performance, whereas *Blockholder* has a positive impact on *CAR*. When it comes to the debt corporate governance variables, the results indicate that *Sweep* has a positive impact on M&A performance. Last, the

interaction effects of equity corporate governance and debt corporate governance indicates that good equity corporate governance is complementing to the presence of term loans and revolver loans, whereas good equity corporate governance is substituting the presence of sweeps and facility amount. Additionally, the effect of good equity corporate governance individually is weakening the M&A performance. However, if term loans and/or revolver loans are applied with good equity corporate governance, the M&A performance is expected to be higher. Thus, in this study, the formulated hypotheses H1a, H2a and H3a are accepted.

To conclude, this study shows evidence that equity and debt corporate governance influence the performance of M&A deals. This indicates that equity and debt corporate governance are a solution to reduce the agency costs relating to M&A deals. Additionally, this research also shows evidence that equity corporate governance and debt corporate governance are interacting with each other.

This research contributes to the current literature regarding the relationship between corporate governance and M&A performance by deals. This thesis adds value to existing literature by examining not only equity corporate governance as a mechanism, but this thesis tries also to examine a new perspective on corporate governance by investigating the possible impact of the debt corporate governance on M&A performance. Next to that, this study has a long sample period from 2007 until 2018 with relevant recent data, as merger and acquisition activity has increased over the past few years. Additionally, this research checks for the differences and the impact that a crisis will have on corporate governance and M&A performance by dividing the M&A deals into pre-crisis and post-crisis deals.

Limitations

Although this thesis contributes to existing literature, there are also some limitations connected to this research. The first limitation concerns the data availability and the sample size. The initial acquisition sample from Thomson One database contains 18,804 observations of M&A deals. However, merging this dataset with the Eventus Study WRDS database, Institutional Shareholder Services (ISS) database, Compustat database and Thomson Reuters database resulted in a final sample of 9,429 M&A deals in the original model used for hypothesis 3. Nonetheless, the smaller sample size results in a lower credibility of the obtained results and therefore more difficult to find statistically significant relations.

Furthermore, the second limitation concerns possible endogeneity and omitted variable bias. This study tried to mitigate it as good as possible by including year- and industry fixed effects. This problem can be solved by implementing a two-stage least square analysis, which could be a possible extension for future research.

Lastly, even though this study tries to explain the cumulative abnormal returns by examining equity corporate governance and debt corporate governance mechanisms, the cumulative abnormal returns

could be influenced by other external factors. Thus, the effect of the included variables might be over- or underestimated.

Extensions for future research

With regards to extensions for future research, it might be very valuable to establish a different research design to examine the effect of debt corporate governance - and equity corporate governance - on M&A performance by deals. Due to data unavailability, it was impossible to look into different types of covenants as indicators for debt corporate governance, and, particularly, to look into the mechanisms of capital covenants and performance covenants. According to Christensen et al., (2011), Jensen and Meckling, (1976), Aghion and Balton, (1992) and Smith and Warner, (1979), different types of financial covenants control the conflicts of interest between lenders and borrowers via two mechanisms. *Capital covenants* control agency problems by aligning debt holder-shareholder interest, whereas *performance covenants* serve as trip wires that limit agency problems via the transfer of control to lenders in modes of being where the value of their claim is at risk (Christensen et al., 2011). Thus, where capital covenants represent restrictions on the capital structure, the performance covenants make sure accounting information is widely available. In respect to Christensen et al., 2011), they found that the adoption of capital and performance covenants is positively related to (1) the magnitude to which accounting information reflects credit risk, (2) financial restrictions of the borrower, (3) the possibility of contract renegotiation, (4) the presence of contractual constrains on managerial actions. However, they did not delve into the possible link with equity corporate governance and/or its impact on M&A performance by deals. Thus, doing investigation into the presence of the mechanisms of *capital* and *performance covenants* and its impact on cumulative abnormal returns and/or equity corporate governance might be very interesting and valuable for existing literature.

Furthermore, an extension of the firms in scope could increase the validity of the obtained results by comparing for example M&A activity within the United States with M&A activity in other parts of the world. This study only focuses on M&A deals within the United States due to the unavailability of data regarding M&A deals in other continents.

Lastly, another extension for future research would be the assessment of the impact of corporate governance on M&A performance for the target firms. The target firm is not taken into consideration in this study due the unavailability of data on WRDS and Thomson Reuters.

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APPENDIX

Appendix A. Variable description – Complete Model

Variable	Measurement	Source
CAR (-3,3)	Cumulative Abnormal Return calculated from 3 days prior and after announcement date of merger and acquisition	Thomson One Event Study WRDS
Board Independence	Proportion of number of independent directors to total board number	Institutional Shareholder Services (ISS)
Board Size	Total directors who serve the company	Institutional Shareholder Services (ISS)
Board Duality	Equals one if CEO is the chairman of the board	Institutional Shareholder Services (ISS)
Executive Compensation	Proportion of total equity compensation to overall total compensation	Compustat Execucomp
Institutional Ownership	Shares owned by institutional investors divided by total share outstanding of a firm	Compustat, Thomson Reuters (Stock Ownership)
Block-holder	Number of investors who have more than 5% stock ownership	Compustat, Thomson Reuters (Stock Ownership)
Term Loan	A committed loan facility allowing the borrower to borrow only up to a relatively short period after signing the facility agreement	Thomson Reuters (Facility)
Revolver Loan	A committed loan facility allowing borrower to borrow (up to a limit), repay, and re-borrow loans	Thomson Reuters (Facility)
Debt Issuance Sweep	The percentage amount of net proceeds a company receives from the issuance of debt that must be used to pay down any outstanding balance	Thomson Reuters (Package)
Equity Issuance Sweep	The percentage amount of net proceeds a company receives from the issuance of equity that must be used to pay down any outstanding loan balance	Thomson Reuters (Package)
Excess CF Sweep	The percentage amount of net proceeds a borrower receives from excess CF that must be used to reduce any loan balance outstanding	Thomson Reuters (Package)
Dividend Restriction	A y/n flag indicating whether or the borrower is restricted from paying dividends to its shareholders	Thomson Reuters (Package)
Assets Sales Sweep	The percentage amount of net proceeds a company receives from an asset sale that must be used to pay down any outstanding loan balance	Thomson Reuters (Package)
Facility Amount	The actual amount of the facility committed by the facility's lender pool	Thomson Reuters (Facility)
Financial leverage	Proportion of the total liabilities of the firm to the overall total assets	Compustat
Firm Profitability	Proportion of earnings before interest and tax (EBIT) to overall total assets	Compustat
Firm Risk	Ratio of retained earnings to total assets	Compustat
Firm Value	Tobin's Q = proportion of acquirer's market value of assets to the acquirer book value of assets	Compustat
Firm Size	Calculated as the total shares outstanding multiplied by the share price of a firm	Compustat
Free Cash Flow	Operating income before depreciation minus interest expense minus income taxes minus capital expenditures divided by the book value of total assets	Masulis et al., (2007)
Deal amount	Total amount that a deal has received commitments for	Thomson Reuters (Package)
Crisis	Indicator equals one if the event is during the crisis period	
Year Fixed Effects	Any variation in the outcome that happen over time and that is not attributed to other explanatory variables included in this model	
Industry Fixed Effects	Indicator that presents the first two digits of SIC code of acquirer company	Thomson ONe
ECG	Indicator that presents the overall equity corporate governance score and equals 1 if good equity corporate governance and equals zero if bad equity corporate governance	

Appendix B. Tests for Multicollinearity (VIF tests)

VIF test hypothesis 1: Board Model 2

Variable	VIF	1/VIF
FirmSize	3.83	0.2613
FiscalYear	3.64	0.2746
Crisis	3.55	0.2814
FreeCashFlow	3.52	0.2842
FirmProfitability	1.97	0.5080
FirmValue	1.92	0.5211
BoardSize	1.41	0.7077
FinancialLeverage	1.38	0.7260
FirmRisk	1.33	0.7547
BoardIndependence	1.07	0.9335
IndustryFixedEffects	1.04	0.9613
Mean VIF	2.24	

The VIF is used as a measurement to detect multicollinearity. None of the variables exceed 10, thus sufficient level of multicollinearity.

VIF test hypothesis 1: EC Model 2

Variable	VIF	1/VIF
FiscalYear	3.85	0.2598
Crisis	3.80	0.2633
FirmSize	3.62	0.2763
FreeCashFlow	3.51	0.2846
FirmProfitability	1.79	0.5591
FirmRisk	1.68	0.5960
FirmValue	1.31	0.7623
ExecutiveCompensation	1.21	0.8277
FinancialLeverage	1.18	0.8443
IndustryFixedEffects	1.02	0.9767
Mean VIF	2.30	

The VIF is used as a measurement to detect multicollinearity. None of the variables exceed 10, thus sufficient level of multicollinearity.

VIF test hypothesis 1: IO Model 2

Variable	VIF	1/VIF
Crisis	3.84	0.2602
FiscalYear	3.82	0.2615
FirmSize	3.63	0.2753
FreeCashFlow	3.51	0.2847
InstitutionalOwnership	2.30	0.4354
Blockholder	2.18	0.4591
FirmProfitability	1.78	0.5627
FirmRisk	1.71	0.5854
FirmValue	1.32	0.7581
FinancialLeverage	1.19	0.8427
IndustryFixedEffects	1.02	0.9779
Mean VIF	2.39	

The VIF is used as a measurement to detect multicollinearity. None of the variables exceed 10, thus sufficient level of multicollinearity.

VIF test hypothesis 2: Loan Model 2

Variable	VIF	1/VIF
FiscalYear	3.82	0.2615
Crisis	3.79	0.2636
FirmSize	3.61	0.2772
FreeCashFlow	3.51	0.2848
FirmProfitability	1.74	0.5742
FirmRisk	1.65	0.6056
FirmValue	1.30	0.7665
FinancialLeverage	1.18	0.8472
RevolverLoan	1.06	0.9432
TermLoan	1.02	0.9449
IndustryFixedEffects	1.02	0.9777
Mean VIF	2.16	

The VIF is used as a measurement to detect multicollinearity. None of the variables exceed 10, thus sufficient level of multicollinearity.

VIF test hypothesis 2: Sweep Model 2

Variable	VIF	1/VIF
FiscalYear	3.84	0.2607
Crisis	3.80	0.2632
FirmSize	3.61	0.2772
FreeCashFlow	3.51	0.2849
FirmProfitability	1.74	0.5735
FirmRisk	1.65	0.6056
FirmValue	1.30	0.7665
FinancialLeverage	1.18	0.8451
IndustryFixedEffects	1.02	0.9773
Sweep	1.01	0.9888
Mean VIF	2.27	

The VIF is used as a measurement to detect multicollinearity. None of the variables exceed 10, thus sufficient level of multicollinearity.

VIF test hypothesis 3: ECG TermLoan Model 2

Variable	VIF	1/VIF
FiscalYear	3.82	0.2615
Crisis	3.79	0.2636
FirmSize	3.61	0.2772
FreeCashFlow	3.51	0.2848
FirmProfitability	1.74	0.5742
FirmRisk	1.65	0.6056
FirmValue	1.30	0.7665
FinancialLeverage	1.18	0.8472
RevolverLoan	1.06	0.9432
TermLoan	1.06	0.9449
IndustryFixedEffects	1.02	0.9777
Mean VIF	2.16	

The VIF is used as a measurement to detect multicollinearity. None of the variables exceed 10, thus sufficient level of multicollinearity.

VIF test hypothesis 3: ECG Sweep Model 2

Variable	VIF	1/VIF
FiscalYear	3.84	0.2607
Crisis	3.80	0.2632
FirmSize	3.61	0.2772
FreeCashFlow	3.51	0.2849
FirmProfitability	1.74	0.5735
FirmRisk	1.65	0.6056
FirmValue	1.30	0.7664
FinancialLeverage	1.18	0.8451
IndustryFixedEffects	1.02	0.9773
Sweep	1.01	0.9889
Mean VIF	2.27	

The VIF is used as a measurement to detect multicollinearity. None of the variables exceed 10, thus sufficient level of multicollinearity.

Appendix C. Tests for Heteroskedasticity (Breusch-Pagan/Cook Weisberg tests)

Board Model 2

Breusch-Pagan/Cook Weisberg test for heteroskedasticity
H0: Constant variance
Variables: fitted values of CAR

Chi2(1)	351.92
Prob>chi2	0.0000

The table with regards to regression 1 indicates that the null hypothesis of homoscedasticity is rejected. From this can be concluded that the variance of the residuals is heteroscedastic. Robust standard errors are used in the regression.

EC Model 2

Breusch-Pagan/Cook Weisberg test for heteroskedasticity
H0: Constant variance
Variables: fitted values of CAR

Chi2(1)	855.91
Prob>chi2	0.0000

The table regarding regression 2 indicates that the null hypothesis of homoscedasticity is rejected. From this can be concluded that the variance of the residuals is heteroscedastic. Robust standard errors are used in the regression.

IO Model 2

Breusch-Pagan/Cook Weisberg test for heteroskedasticity
H0: Constant variance
Variables: fitted values of CAR

Chi2(1)	825.76
Prob>chi2	0.0000

The table with regards to regression 3 indicates that the null hypothesis of homoscedasticity is rejected. From this can be concluded that the variance of the residuals is heteroscedastic. Robust standard errors are used in the regression.

Loan Model 2

Breusch-Pagan/Cook Weisberg test for heteroskedasticity
H0: Constant variance
Variables: fitted values of CAR

Chi2(1)	787.88
Prob>chi2	0.0000

The table with regards to regression 4 indicates that the null hypothesis of homoscedasticity is rejected. From this can be concluded that the variance of the residuals is heteroscedastic. Robust standard errors are used in the regression.

Sweep Model 2

Breusch-Pagan/Cook Weisberg test for heteroskedasticity
H0: Constant variance
Variables: fitted values of CAR

Chi2(1)	822.30
Prob>chi2	0.0000

The table with regards to regression 5 indicates that the null hypothesis of homoscedasticity is rejected. From this can be concluded that the variance of the residuals is heteroscedastic. Robust standard errors are used in the regression.

ECG TermLoan Model 2

Breusch-Pagan/Cook Weisberg test for heteroskedasticity
H0: Constant variance
Variables: fitted values of CAR

Chi2(1)	787.88
Prob>chi2	0.0000

The table with regards to regression 6 indicates that the null hypothesis of homoscedasticity is rejected. From this can be concluded that the variance of the residuals is heteroscedastic. Robust standard errors are used in the regression.

ECG Sweep Model 2

Breusch-Pagan/Cook Weisberg test for heteroskedasticity
H0: Constant variance
Variables: fitted values of CAR

Chi2(1)	822.30
Prob>chi2	0.0000

The table with regards to regression 7 indicates that the null hypothesis of homoscedasticity is rejected. From this can be concluded that the variance of the residuals is heteroscedastic. Robust standard errors are used in the regression.

Appendix D. Tests for Normality of Errors (Skewness/Kurtosis tests)

Board Model 2

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj. Chi2(2)	Prob>chi2
e	237	0.0000	0.0001	53.63	0.000

The table with regards to hypothesis 1 shows the results of the Skewness/Kurtosis Test. From this can be concluded that the residuals of the regression are not normally distributed since H0 is rejected.

EC Model 2

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj. Chi2(2)	Prob>chi2
e	9,429	0.0000	0.0000	.	.

The table with regards to hypothesis 1 shows the results of the Skewness/Kurtosis Test. From this can be concluded that the residuals of the regression are not normally distributed since H0 is rejected.

IO Model 2

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj. Chi2(2)	Prob>chi2
e	9,429	0.0000	0.0000	.	.

The table with regards to hypothesis 1 shows the results of the Skewness/Kurtosis Test. From this can be concluded that the residuals of the regression are not normally distributed since H0 is rejected.

Loan Model 2

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj. Chi2(2)	Prob>chi2
e	9,429	0.0000	0.0000	.	.

The table with regards to hypothesis 2 shows the results of the Skewness/Kurtosis Test. From this can be concluded that the residuals of the regression are not normally distributed since H0 is rejected.

Sweep Model 2

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj. Chi2(2)	Prob>chi2
e	9,429	0.0000	0.0000	.	.

The table with regards to hypothesis 2 shows the results of the Skewness/Kurtosis Test. From this can be concluded that the residuals of the regression are not normally distributed since H0 is rejected.

ECG TermLoan Model 2

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj. Chi2(2)	Prob>chi2
e	9,429	0.0000	0.0000	.	.

The table with regards to hypothesis 3 shows the results of the Skewness/Kurtosis Test. From this can be concluded that the residuals of the regression are not normally distributed since H0 is rejected.

ECG Sweep Model 2

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj. Chi2(2)	Prob>chi2
e	9,429	0.0000	0.0000	.	.

The table with regards to hypothesis 3 shows the results of the Skewness/Kurtosis Test. From this can be concluded that the residuals of the regression are not normally distributed since H0 is rejected.

Appendix E. Durbin-Watson tests

Board Model 2

Durbin-Watson test

Number of gaps in sample: 396

Durbin-Watson d-statistic (13,9429)	1.7371

EC Model 2

Durbin-Watson test

Number of gaps in sample: 396

Durbin-Watson d-statistic (11,9429)	1.7375

IO Model 2

Durbin-Watson test

Number of gaps in sample: 396

Durbin-Watson d-statistic (13,9429)	1.7404

Loan Model 2

Durbin-Watson test

Number of gaps in sample: 396

Durbin-Watson d-statistic (12,9429)	1.7362

Sweep Model 2

Durbin-Watson test

Number of gaps in sample: 396

Durbin-Watson d-statistic (11,9429)	1.7386

ECG TermLoan Model 2

Durbin-Watson test

Number of gaps in sample: 396

Durbin-Watson d-statistic (13,9429)	1.7376

ECG Sweep Model 2

Durbin-Watson test

Number of gaps in sample: 396

Durbin-Watson d-statistic (13,9429)	1.7402

According to (Joanes & Gill, 1998), d-statistics between 0 and 2 indicate positive autocorrelation, which is common in time series data. From the output of the Durbin-Watson test can be concluded that there is a positive autocorrelation in the error terms.

Appendix F. Figures

Figure 2. Libby boxes for Hypothesis H0 and H3

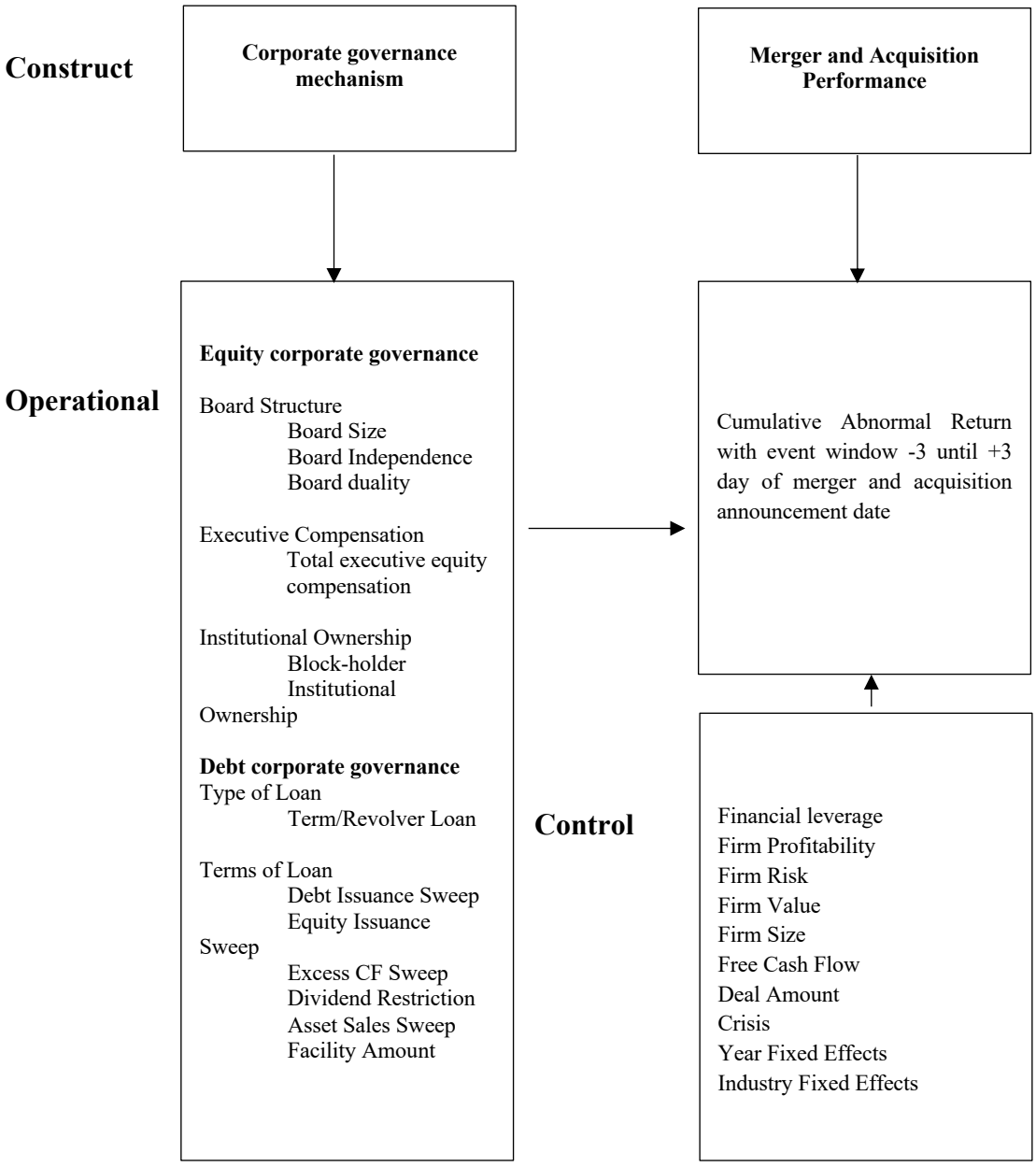
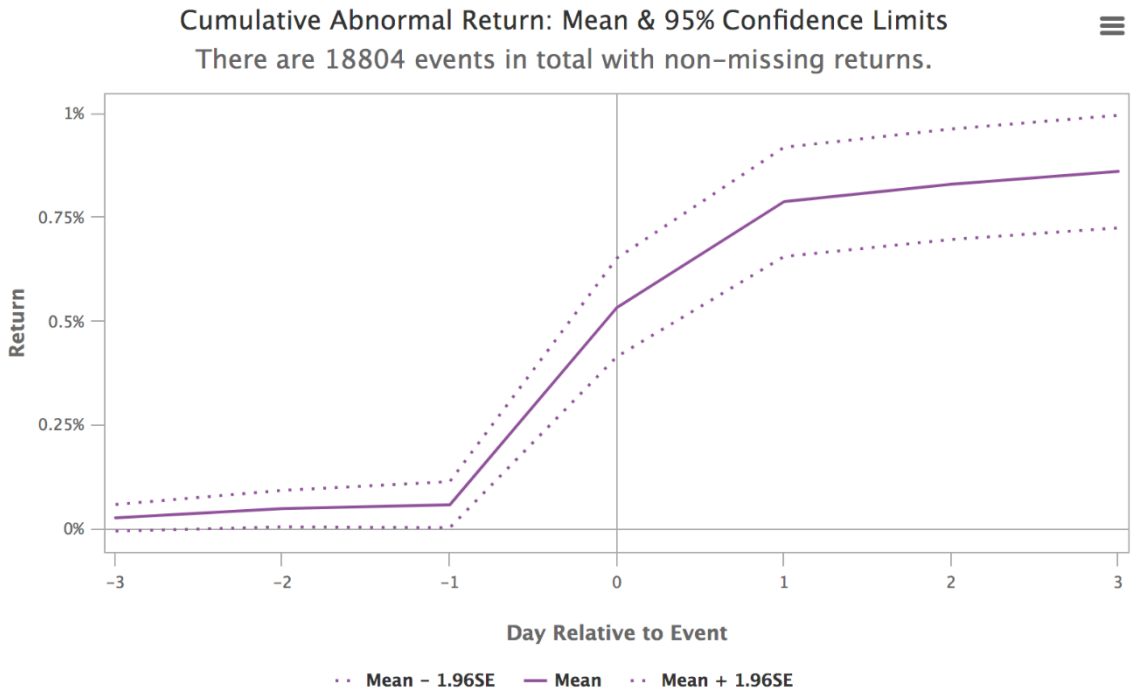


Figure 3. Cumulative Abnormal Return for Acquiror Company



Appendix G. Sensitivity tests kitchen sink regression

Sensitivity test: Correct for possible kitchen sink regression

In this section, another sensitivity test is performed. The regressions estimated in this study can possibly be classified as kitchen sink regressions, which are defined as statistical regressions with a relatively long list of independent variables in order to explain the variance of the dependent variable, in this case CAR (Rodriguez, 2006). A kitchen sink regression is classified as data dredging, which is the misuse of data analysis to find patterns in the data while in fact there is no relation between certain variables. This type of regressions can lead to overfitting, indicating misleading relationships between independent and dependent variables. Overfitting is due to the fact that when more independent variables are included in a regression, the probability that statistically significant relations are found between the independent and dependent variables decreases (Rodriquez, 2006). The stepwise function within Stata is used to correct for the possible kitchen sink regressions used in this research (Thompson, 1995).

The first stepwise regression model that is estimated is based on the model used to give an answer for the possible effect of equity corporate governance and debt corporate governance on CAR. This model investigates the relationship between equity and debt (RevolverLoan and TermLoan model) corporate governance and M&A performance. The stepwise regression model is estimated using the removal from the model approach. Variables with limited contribution to the explanation of the dependent variable are deleted form the regression. The stepwise function resulted in the regression stated in table 16. The final model includes the variables *BoardSize, FirmSize, FirmProfitability, FiscalYear* and *IndustryType* and has a F-value of 19.30 and R-squared of 1.89%.

In the Loan & Equity Model, *BoardSize* shows a significant negative (at 5% level) association with CAR, which is in line with the models tested before. In the models tested before, the coefficient of *BoardSize* was also significant. This sensitivity test indicates a significant negative impact of *BoardSize* on M&A performance.

The second stepwise regression model that is estimated is based on the model used to give an answer for the possible effect of equity corporate governance and debt corporate governance. This model investigates the impact of equity and debt (Sweep model) corporate governance on M&A performance. The stepwise function resulted in the regression stated in table 16. The final model includes the variables *BoardSize, Sweep, FirmSize, FirmProfitability, FiscalYear* and *IndustryType* and has a F-value of 16.93 and R-squared of 1.99%.

In the Sweeps & Equity Model, *BoardSize* shows a significant negative (5% level) impact on CAR. This is supported by other models tested before. Furthermore, *Sweeps* shows a significant positive (5% level) effect on CAR. This is in line with previous literature.

Table 16a. Sensitivity tests complete models

CAR	**(1) Loan & Equity**	**(2) Sweeps & Equity**
BoardSize	-0.0012	-0.0012
	*[0.032]***	*[0.038]***
Sweep	.	0.0119
	.	*[0.025]***
FirmSize	-1.99e-07	-1.96e-07
	*[0.000]****	*[0.000]****
FirmProfitability	-0.0718	-0.0713
	*[0.000]****	*[0.000]****
FiscalYear	-0.0016	-0.0016
	*[0.000]****	*[0.000]****
IndustryType	-0.0002	-0.0002
	*[0.000]****	*[0.000]****
Observations	5022	5022
R-squared	0.0189	0.0199
YearFixedEffects	Yes	Yes
IndustryFixedEffects	Yes	Yes
F-value	19.30	16.93

Regression is executed with CAR as dependent variable, BoardSize and Sweep as variable of interest, FirmSize, FirmProfitability, FiscalYear and Industry as control variables. *,**,*** indicate significance level of the coefficients at 10%, 5% and 1%, respectively.

To conclude, the sensitivity tests show limited evidence that there exists an association between equity and debt corporate governance and M&A performance. The regressions show a significant impact of *BoardSize* and *Sweep* on M&A performance.