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THE IMPACT OF CEO PAY ON M&A DECISION-MAKING

A (Dodd-) Frank Assessment of Executive Compensation Practices

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Abstract

The severe and market-wide downturn experienced in the Financial Crisis of 2007-2009 led regulators and investors alike to question whether executive interests were properly aligned with those of shareholders. This study explores whether the regulatory response in the U.S., Subtitle E on executive compensation in the Dodd-Frank Act of 2010, had the desired effect on executive interest alignment as proxied by merger and acquisition (M&A) decision-making quality. The study adds to the extant literature by evaluating whether already established relationships between executive compensation and M&A held up specifically under the partial implementation of the Dodd-Frank Act's Subtitle E. Short-term cumulative abnormal returns following M&A announcements and the premiums paid for said deals are used to identify changes in interest alignment across a pre-crisis period and two post-Dodd-Frank Act periods. Employing OLS regression analysis, correlations between individual compensation components and merger and acquisition behavior are investigated and compared across the three periods to establish whether changes in residual losses from M&A are indeed attributable to changes in compensation. Although mean difference tests (one-way ANOVA F-tests and Student's t-tests) show material changes in compensation components were seen after the implementation of the Dodd-Frank Act, our results show that improvements in M&A behavior are generally not attributable thereto as otherwise held by parts of the literature. It is suggested that the improvements in M&A decision-making are instead a result of temporary changes in executive sentiment and levels of overconfidence. These results have interesting implications for compensation-setting and governance regulations on an international scale. Several other countries are implementing similar provisions to those included in the Dodd-Frank Act. Say on Pay, for example, is currently garnering remarkable international popularity in different formats. Yet our results do not indicate that the studied provisions commanded clear improvements in interest alignment after their implementation.

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1 Introduction

Dramatic increases in executive compensation packages have sparked outrage among the public over the past decades. The issue was exacerbated after the Financial Crisis of 2007-2009, when the public perception was exposed to the observation that these same executives continued to receive lavish remuneration even after disastrous performance market-wide. After adjusting for inflation, CEO compensation packages saw a 937 percent increase in the 35-year period from 1978 to 2013 (Davis & Mishel, 2014). In that same period, the pay ratio, i.e. the ratio of CEO pay to median pay of all other employees in the company, increased from approximately 30:1 to 296:1. Negative publicity surrounding these hefty compensation packages burgeoned as many even believed that pay arrangements had been instrumental in inducing excessive risk-taking by executives, which in turn played a part in fueling the financial crisis (Bebchuk, 2012).

The controversy of CEO remuneration is by no means exclusive to the U.S, as its reach is expanding on a global scale. Increasing CEO compensation has garnered political interest for quite some time. In the U.K., Prime Minister Theresa May addressed the issue, calling excessive CEO wages the 'unacceptable face of capitalism' (Lynam, 2017), and Australian Prime Minister Malcolm Turnbull identified what he deemed 'a cult of excessive executive CEO remuneration' (Karp, 2017). The increase in pay ratios has, of course, been a particularly heated topic of discussion in the U.S., where an exceedingly dramatic increase has been observed. Hillary Clinton proclaimed that 'there's something wrong when the CEOs make 300 times more than the American worker' (Kessler, 2015).

In an effort to curb the level of executive compensation and ensure an alignment of executive and shareholder interests, Subtitle E on executive compensation and accountability was added to the Dodd-Frank Act of 2010. Among several other provisions, this fragment of the Act includes Say on Pay votes, which require that a non-binding vote on executive compensation routinely take place at shareholder meetings (Thomas & Van der Elst, 2015). Countries around the world have followed suit after the enactment of the Dodd-Frank Act and adopted similar Say on Pay requirements. Some countries have even taken the provision a step further and introduced binding votes in place of the usual advisory votes (ibid.).

Yet the continued implementation of the Dodd-Frank Act has come to a halt, as President Donald Trump announced his intentions to abolish the Act at the very inception of his presidency. The Republican-led Financial CHOICE Act of 2017 – where CHOICE is the abbreviation of 'Creating Hope and Opportunity for Investors, Consumers and Entrepreneurs' – seeks to roll back large parts of the Dodd-Frank Act. The CHOICE Act has the full support of the President, and it

successfully passed the House of Representatives, but it has been deemed unlikely to pass the Senate due to difficulties garnering support among the Democrats (Bennett, 2017). Some parts of the Dodd-Frank Act have also experienced more resistance than others. Although the pay ratio disclosure requirement was finalized in 2017, the current administration has expressed clear beliefs that the regulation should be scrapped (Stewart, 2018). Through an examination of the ultimate effects of the Dodd-Frank Act on executive compensation and any potential consequent changes in decision-making quality, our study may also circuitously shed light on the consequences the Act's potential abolishment may have on the future alignment of shareholder and executive interests.

Given the Dodd-Frank Act's apparent controversial nature and the rigid partial political resistance to its provisions in the U.S., the simultaneous international popularity and dispersal of some of the Act's most prominent provisions seems curious. This paper seeks to study the merits of each side of this dichotomy specifically in relation to Subtitle E of the Dodd-Frank Act. More specifically, we explore whether an improvement in the alignment of shareholder interests and executive interests has been observed after the enactment of the Dodd-Frank Act. We have chosen merger and acquisition (M&A) behavior as the lens through which we observe changes in alignment, where short-term shareholder reception of M&A announcements (in the form of abnormal stock market returns) and premiums paid are used as two proxies to indicate the degree to which interests are aligned.

M&A is a particularly relevant way to investigate executive decision-making in relation to interest alignment for several reasons. Firstly, different components of executive compensation have been found to affect M&A performance, with equity-based compensation gaining particular attention in light of the immense increase in the proportion of this component which has been observed in recent decades. Secondly, executives have a number of private incentives to engage in M&A behavior which may not necessarily be in line with shareholder interests (Haleblian et al., 2009), and we therefore also explore, compare, and contrast the private benefits available to executives through M&A with those of shareholders. It is also valuable to observe merger behavior in this context because an acquisition is highly likely to affect both the overall size of the firm and the stock price of the acquirer: two variables, which have well-established, material effects on CEO compensation (Bliss & Rosen, 2001). The topic is remarkably pertinent as its outcomes can have an effect on overall economic stability: systemic, excessive value-destroying risk-taking can have dire consequences, as the world observed in 2007 (Bratton & Wachter, 2010).

1.1 Problem Statement

We wish to evaluate whether provisions in the Dodd-Frank Act of 2010 related to executive compensation have ensured a better alignment of shareholder and executive interests through changes in executive remuneration practices. We make our evaluations based on changes in the quality of M&A decisions in listed U.S. firms, as M&A is one area where the economic interests of shareholders and management can conflict substantially. We arrive at the following research question:

How did executive compensation and its impact on the quality of M&A decisions change in listed U.S. firms following the enactment of the Dodd-Frank Act of 2010, and what are the implications for relevant stakeholders?

- Which components of executive compensation packages have seen a change after the enactment of the Dodd-Frank Act?
- Have M&A premiums and/or short-term M&A performance changed in the period after the enactment of the Dodd-Frank Act relative to the period before?
- Does executive compensation affect M&A premiums and/or short-term M&A performance?
- Has the relationship between executive compensation and M&A premiums and/or short-term M&A performance changed after the enactment of the Dodd-Frank Act?
- What are the implications of the changes seen in the period for shareholders, managers, and lawmakers?

1.2 Delimitation

This study is exclusively based on transactions where the acquirer is listed in the U.S. Therefore the results cannot necessarily infer a relationship between executive compensation and M&A decisions and performance in other countries. Due to considerations of data availability, we only look at large public companies, and our results will not necessarily be transferable to smaller public companies or to private companies.

We confine our area of study to short-term shareholder reactions to M&A announcements and do not attempt to reach meaningful conclusions about long-term success, the success of the cultural fusion of the two firms, or the actual realized synergies. In a similar fashion, our mapping of compensation practices is limited to an ex-ante assessment of CEO pay in acquiring firms. Our area of interest only includes the incentives that were present when the decision to merge or acquire was made, and we do not account for e.g. ex-post bonuses granted with a direct relation to the transaction; compensation gains (losses) from a value creating (destroying) merger; or ex-post changes to

compensation made by the compensation committee based on their assessment of ultimate deal quality and/or success.

1.3 Methodology

We employ a critical rationalist approach to our research question, basing our research process around hypothetical-deductive methodology and the principle of falsification. Critical rationalism was pioneered by Karl Popper who asserted that the most important task of science is to test and reject erroneous hypotheses in order to gradually inch closer to reality (Gilje, 2012). Hypotheses are accepted only if they are testable, if they withstand pressure tests, and only as long as they have not been disproven. By extension, we are entirely open to the possibility that any knowledge we manage to establish may be falsified at a later date. Importantly, a hypothesis that has not been disproven is never assumed to reflect reality 1:1. Ontologically, critical rationalism works under a realist perspective and the consequent assumption that certain, universal knowledge does not exist. Epistemologically, the approach is a relativist one, as it is assumed that a definite reality does exist, but that it is impossible to prove it. We can only try to approach reality by falsifying inaccurate notions and theories (Koch, 2014).

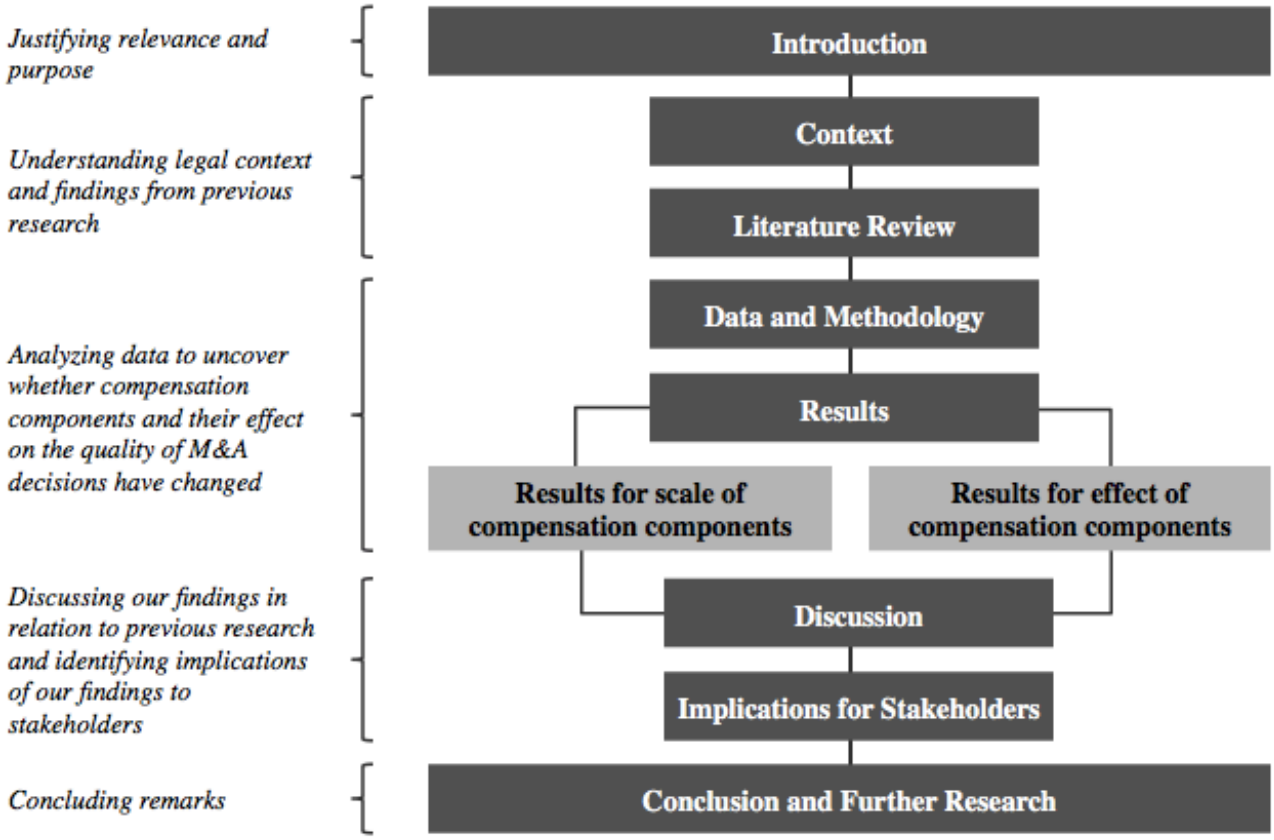
We base our hypotheses on dominant ideas in the extant literature. Through regression analysis, we explore whether existing hypotheses must survive or should in fact be rejected. Our adoption of critical rationalism has important implications for our results since all of the repeated tests, sweat, and determination in the world will never merit a conclusive confirmation of any of our hypotheses. That being said, repeated tests of varying nature would strengthen the validity of any hypothesis as a qualified approximation of reality when we cannot reject it based on our research design.

1.4 Structure

The paper is structured as shown in Figure 1. First, the context of our research is defined through a brief overview of the Financial Crisis of 2007-2009 and the Dodd-Frank Act of 2010. In the section that follows, previous findings in relation to potential executive motivations for M&A, effects of executive compensation on M&A performance and premiums, and other factors effecting M&A behavior are examined in the literature review, which forms the basis for the development of our hypotheses. Subsequently, the data and methodology of our selected way to test the hypotheses is introduced, followed by the results of the statistical analyses. Then the results will be discussed in

relation to previous findings and limitations will be reviewed, which will lead into a mapping of potential implications of our findings for a number of relevant stakeholders. Finally, we conclude on our findings and suggestions for further research on the topic will be presented.

Figure 1 – Structure of the paper



2 Context

2.1 The Financial Crisis of 2007-2009

The Financial Crisis of 2007-2009 showed the importance of financial institutions and markets for the entire economy, since complications in the financial system trickled down into the economy and ultimately caused the global crisis (Hull, 2015). The crisis also highlighted concerns related to executive compensation and incentives created through it, as the wider public increasingly adopted a perception that managers were aware of the excessive risk-taking which took place prior to the crisis, but that they kept this knowledge to themselves in order to gain economic benefits in the form of bonuses and increases in stock option values (Brealey, Myers & Marcus, 2012; Hull, 2015). Some

perceive the financial crisis as a clear manifestation of agency problems, as such managerial actions would amount to a clear problem of moral hazard stemming from a lack of alignment between shareholder interests and executive interests (Brealey et al., 2012).

This particular agency problem is not believed to be isolated to executives of financial institutions, as evidenced by the fact that governance requirements introduced by Congress through the Dodd-Frank Act apply to all firms by default (Conyon, 2015). The economic crisis led to situations of distress in many companies, which in some instances induced executives to act in their own interest and against the interests of the shareholders, in an effort to safeguard their own income in the short term (Smith, 2010). For example, Smith (2010) suggested that even in the face of a possible government bailout of the U.S. automotive industry following the financial crisis, CEOs in the industry maintained extraordinarily lavish remuneration packages.

However, the Financial Crisis of 2007-2009 was by no means the first event that sparked heated discussions on executive interests and compensation. Several examples of corporate scandals such as Enron and WorldCom caused the confidence in American capitalism to suffer in the early 2000s (The Economist, 2007). In order to rebuild confidence, the Sarbanes-Oxley Act of 2002 (SOX) was enacted to curb corporate fraud. Among other provisions, SOX required executives to verify the accuracy of financial results, making them accountable for potential violations. Furthermore, the Act required boards of directors to set up independent audit committees and generally made executives more accountable for the firm's collective actions in order to align executive and shareholder interests. The Sarbanes-Oxley Act has been found to significantly and negatively affect risk-taking in companies (ibid.).

2.2 The Dodd-Frank Act of 2010

The Dodd-Frank Act of 2010 was drafted in response to the Financial Crisis of 2007-2009 with an aim to improve resilience and reestablish public trust in the U.S. financial system, while preventing similar instability in the future (Sweet, 2010). Implementation of the Dodd-Frank Act has been slow. The Act provided a framework on the basis of which the Securities and Exchange Commission (the SEC) was required to draft final rules and regulations (House of Representatives, 2010). While the SEC has proposed nearly all mandatory rulemaking provisions, quite a few have yet to take effect, particularly in the area of executive compensation (U.S. Securities and Exchange Commission, 2016). Following the inauguration of President Donald Trump, most provisions in the proposal stage appear unlikely to see the light of day in the near future as the President has been adamant about his intentions

to repeal the Act (Ellerman, 2017). A Republican initiative, the Financial CHOICE Act of 2017, sought to amend, curtail, and repeal parts of the Dodd-Frank Act, including the sections on executive compensation (House Committee on Financial Services, 2017). The bill narrowly passed the House without support from the Democratic Party. The Dodd-Frank Act was passed under Democratic President Barack Obama, and Democrats have remained clear in their unyielding support for the bill. The Financial CHOICE Act of 2017 is therefore deemed very unlikely to pass the Senate as-is (Cox, 2017; Ellerman, 2017).

While the majority of the Dodd-Frank Act encompasses increases or changes in regulations within the financial services industry, one section, Subtitle E 'Accountability and Executive Compensation', focuses on adjusting executive compensation practices directly or indirectly. Subtitle E contains six sections in total, of which four carry relevance to our subject of inquiry. Sections 951, 952, 953(a-b), and 954 are elaborated upon in detail below. A brief mention is made of Section 955 on disclosure of employee and director hedging, but as it remains in a particularly early phase of the proposal process, the section will not feature in our analysis.

2.2.1 Section 951: Shareholder Vote on Executive Compensation Disclosures ("Say on Pay")

The Dodd-Frank Act was not the first piece of legislation to introduce the U.S. to Say on Pay. The Emergency Economic Stabilization Act of 2008 (EESA) obligated all financial firms receiving assistance from the Troubled Asset Relief Program (TARP) to adopt advisory shareholder votes on executive pay until all TARP debts were repaid in full (Thomas & Van der Elst, 2015). Section 951 of the Dodd-Frank Act was finalized on the 21st of January 2011. After this date, the requirement obligates all listed companies with a public float of $75 million or more to take non-binding votes from shareholders on the compensation and potential golden parachutes of the CEO, CFO, and the three other executives with the largest compensation packages (Thomas & Van der Elst, 2015). A company must facilitate a vote every six years to determine whether Say on Pay votes should be conducted every one, two, or three years (Bainbridge, 2012). Investors are only allowed an 'up' or 'down' vote on the total compensation packages, and not on individual components of them (Thomas & Van der Elst, 2015). In the U.S., the SEC has mandate to exempt certain firms from the requirements (House of Representatives, 2010). A common critique of the Say on Pay-model includes a perceived consequent increase in power yielded to institutional voting advisors, such as RiskMetrics Group and Institutional Shareholder Services (ISS) (Bainbridge, 2012).

Say on Pay is particularly relevant in countries where shareholdings are dispersed, including the U.S., the U.K., and Australia. Large block holders have strong incentives to monitor management, making incentive compensation comparatively less critical (Hartzell & Starks, 2003). Say on Pay grants a common platform on the basis of which numerous small investors can voice their concerns. The model has been in effect in the U.K. since 2002, where shareholders are found to approve executive compensation packages most of the time despite the continued rise in general levels of pay (Thomas & Van der Elst, 2015). Several countries in Continental Europe are experiencing increasingly dispersed and international ownership structures in listed firms, and Say on Pay is becoming increasingly common. Switzerland has approved binding Say on Pay votes, and Germany is experiencing pressure to do the same (ibid.).

According to Thomas and Van der Elst (2015), Say on Pay has had the strongest effect in poorly performing companies with comparatively high levels of compensation. They also find that down-votes typically result in directors seeking a dialogue with the relevant shareholders to elaborate on their methodology. Only 1.6 percent of all relevant compensation proposals were voted down in 2011. Ferri and Maber (2013) find that board responsiveness to Say on Pay has made executive compensation packages more sensitive to poor performance in cases where investor dissent has resulted in changed compensation contract provisions. Brunarski, Campbell and Harman (2015) find evidence that managers react to low Say on Pay support by window dressing, e.g. through decreasing leverage, increasing R&D spending, or increasing dividends. Following low support, boards of directors only ordain a partial reduction in the year-to-year increase in compensation. The authors find no evidence to suggest that shareholders react positively to these actions, neither through higher consequent Say on Pay support, nor through an increase in market capitalization.

2.2.2 Section 952: Compensation Committee Independence

Section 952 was finalized on the 20th of June 2012, and requires all national stock exchanges to disallow the listing of any firm which does not have a compensation committee made up entirely of independent board members (Seitzinger, 2010). Significant features when determining whether a director qualifies as independent include compensation arrangements or other affiliations with the firm itself, a subsidiary of the firm, or an affiliate of a subsidiary of the firm (House of Representatives, 2010). The requirement exempts a number of establishments, including controlled companies, companies in bankruptcy, and foreign private issuers. The independent compensation

committee has the sole mandate to select an independent compensation advisor whose independence is determined on the same grounds as above (Seitzinger, 2010).

In a sample of U.K. firms, Conyon and Peck (1998) find that firms with a higher proportion of independent directors and/or compensation committees containing only independent directors formulate compensation packages with better alignment between performance and CEO compensation. They do not, however, find that having an independent compensation committee has a curbing effect on the overall level of pay. In a later study of a sample of U.S. firms, Conyon (2014) did not establish a similar relationship between pay-for-performance alignment and board or compensation committee independence.

2.2.3 Section 953(a): Executive Compensation Disclosures: Pay v. Performance

Suggestions for the final regulations of Section 953(a) of the Act were proposed by the SEC on the 29th of April 2015 and the provision remains in the proposal stage as of today. The section calls for disclosure in annual proxy materials of the relationship between compensation paid to the CEO, including changes in stock price, dividends, and distributions, and the company's financial performance (Seitzinger, 2010; U.S. Securities and Exchange Commission, 2015). Although the disinclination towards the Dodd-Frank Act in the current administration makes the finalization of Section 953(a) unlikely in the near future, ISS has introduced the Relative Pay and Financial Performance Assessment (FPA) test, which compares the company to its peers in terms of total CEO compensation and the company's financial performance (Bauer, Williamson & Kestenbaum, 2018). If shareholders have access to such third-party assessments, it could impact Say on Pay votes even in the case that Section 953(a) never sees the light of day.

2.2.4 Section 953(b): Executive Compensation Disclosures: Pay Ratio Rules

The Pay Ratio Rule took effect on January 1st 2017, and requires all listed companies to disclose the median compensation of all employees in the company, including part-time, temporary, seasonal, and non-U.S. workers (when the latter make up more than 5 percent of the company's total workforce), while excluding the CEO. The company must also show the ratio between this median and the CEO's total compensation. The rule excludes emerging growth companies, smaller reporting companies, and foreign private issuers (House of Representatives, 2010).

The response to the rule has not been exclusively positive. Bainbridge (2012, p.131) describes the rule as 'hugely burdensome', owing to the time-consuming process of collecting compensation

information on every single company employee, particularly within global companies. This view was seconded by the Financial CHOICE Act of 2017. The rule has also received criticism as comparing 'apple, pears and bananas', as companies with high levels of activity in low-wage countries will see ratios that are very different from those obtained in purely domestic firms (Financial Times, 2018).

2.2.5 Section 954: Recovery of Erroneously Awarded Compensation (Clawback Rules)

Section 954 of the Act set out new requirements for publicly listed companies to recover incentive compensation given to executives when the financials said compensation is based on are restated at a later time. The circumstances under which this should occur were to be established by the SEC (House of Representatives, 2010). In 2015, the SEC proposed that national securities exchanges should include in listing standards a requirement that all listed companies develop written recovery policies for compensation for all executive officers in the event that financial statements are restated. The final rule has yet to take effect (Bauer et al., 2018).

Section 304 of the Sarbanes-Oxley Act of 2002 introduced similar clawback rules. The main differences between the SOX rules and those proposed by the SEC based on the Dodd-Frank Act include the increase of the clawback period from 12 months in SOX to three years under Dodd-Frank. The rules are also applied to a wider group of executives. Whereas SOX only involved the CEO and the CFO, no executive officers can be indemnified under the new rules. Furthermore, executive delinquency is no longer a prerequisite for the claim to apply (Huntington, 2010). The latter change has met resistance as negligence further down in the organization over which top management may have had no control could still result in retroactive punishment of top management, which could ultimately lead to excessive risk-aversion in the C-suite (Bainbridge, 2012). Yet congress argues that failure of top management to properly monitor subordinate transgression is at the heart of the very problem which section 945 attempts to resolve. Others also argue that an executive's participation or absence thereof in any wrongdoings of the company should be irrelevant to his or her ability to benefit financially from such misconduct (ibid.). Bainbridge (2012) argues that the provision may bring potential unintended consequences, including resistance from senior management when financial restatements are called for.

2.2.6 Section 955: Disclosure Regarding Employee & Director Hedging

Section 955 seeks to require listed companies to disclose whether or not board members and/or employees are allowed to hedge the value of compensation granted in the form of equity securities

through the purchase of relevant financial instruments (House of Representatives, 2010). The provision remains in the early proposal stage (U.S. Securities and Exchange Commission, 2016).

2.3 Merger Waves

M&A tends to occur in periods of intense activity, in so-called merger waves. These merger waves are characterized by a period of a rapid increase in the number of transactions, followed by a several-year period of high M&A activity, which is finally followed by a significant drop in transactions towards the initial level (Kolev, Haleblian & McNamara, 2012). We have seen six merger waves in the past 125 years, and some findings suggest that we are currently experiencing the seventh merger wave. The first merger wave occurred in 1897-1903 in the U.S. and mainly involved horizontal mergers in a pursuit to obtain monopolies (ibid.). The second wave was also a result of companies trying to increase their size through horizontal mergers. But instead of large firms pursuing monopoly status, it mainly entailed smaller firms forming oligopolies. This wave took place in 1920-1929. The 1960s formed another merger wave, which was characterized by conglomerate mergers since the prevailing M&A strategy involved unrelated diversification. The fourth wave was more global than the previous waves and was driven by companies wishing to specialize, ultimately amounting to a reversal of the conglomerate merger wave. The fifth wave was a response to the spreading of globalization and was thus dominated by cross-border acquisitions (ibid.). The sixth wave is believed to have resulted from high cash holdings of acquirers and that acquirers were less overvalued than targets (Alexandridis, Mavrovitis & Travlos, 2012). This wave was dominated by private equity and institutional ownership, but also increasing globalization (The Economist, 2008). The potentially ongoing seventh merger wave appears to be dominated by mega-deals, fueled by intense competition in the health care, technology, and retail industries (Lam, 2016).

3 Literature Review

We proceed to introduce the extant literature on M&A, executive compensation, and the intersection thereof. Section 3.1 introduces potential motivations firms may have for entertaining M&A in the first place. Section 3.2 maps relevant executive compensation literature, on the basis of which we construct a literary assessment of executive financial incentives for and against M&A. Finally, Section 3.3 presents known drivers of M&A performance metrics.

3.1 Motivations for M&A

There are numerous potential drivers behind M&A transactions. While some are based on the objective of creating value for shareholders, other drivers are based on managerial self-interest and may in some cases be value-destroying due to a mismatch between executive and shareholder interests. A number of additional external and internal factors may also affect managerial M&A decision-making.

3.1.1 Value Creation as a Driver of M&A

One potential value creating motivation behind M&A involves increasing market concentration through horizontal mergers in order to increase the market power of the company (Prager, 1992; Blonigen & Pierce, 2016). Studies have found that horizontal mergers allow firms to raise prices (Farrell & Shapiro, 1990; Prager, 1992). In addition to increasing revenue, M&A transactions can increase value through reducing costs. Companies can increase cost efficiency after mergers through increases in scale, scope and learning economies (Sudarsanam, 2012). McGuckin and Nguyen (1995) find that company plants become more efficient after acquisitions in some instances. Yet Blonigen and Pierce (2016) find little evidence of such increases in efficiency following mergers.

Transactions can also create value when used to discipline poorly performing managers. Agrawal and Walkling (1994) find that takeovers occur more often in industries where managers are overcompensated, and that acquisitions in this case often result in the manager being replaced. Poor managerial decision-making specifically related to M&A may also be disciplined through takeovers. For example, Scholten (2005) finds that companies that have made poor acquisitions are more likely to be targets of a hostile takeover in the five-year post-acquisition period. The market for corporate control is also effective in disciplining managers and directors in target firms with sustained poor performance as their turnover is significantly higher compared to the turnover of managers and directors in target companies with good performance (Walsh & Kosnik, 1993).

A group of potentially value-creating motivations relate to the target's resources. Acquirers may experience resource deepening as well as resource extension following acquisitions (Karim & Mitchell, 2000). Acquirers as well as the targets they acquire experience a greater renewal in their resources compared to their non-acquiring counterparts because new product lines are added and old product lines are dropped (ibid.). Furthermore, it has been found that managers of firms with strategically valuable capabilities may seek valuable synergistic cash flows through acquiring targets that likewise have strategically valuable capabilities (Grill & Bresser, 2013). However, if such firms

acquire targets that have commodity resources it will destroy value for shareholders instead (ibid.). From a resource-based point of view, managers may seek to create value through acquisitions in two ways: economies of scale and/or economies of scope. Economies of scale can be achieved through expanding the production of a specific product, or through realizing cost synergies in administration and manufacturing (Singh & Montgomery, 1987). Economies of scope may be achieved through acquisitions when the target adds new complementary resources which allow the acquirer to add more products or services to its existing portfolio (ibid.).

Lastly, it should be noted that while the literature agrees that M&A is profitable for the seller, no clear consensus exists regarding its profitability for the buyer (Bruner, 2002). Consequently, most transactions are profitable overall, i.e. it pays more than the opportunity cost of capital of the two companies combined, but in 60-70 percent of transactions, this is not the case for the buyer (Bruner, 2002).

3.1.2 Managerial Self-Interest as a Driver of M&A

Of the drivers for M&A relating to managerial self-interest, empire building is the most recognized explanation (Trautwein, 1990). Empire building occurs when managers maximize their own utility at the cost of shareholder utility by growing the company beyond its optimal size (Hope & Thomas, 2008). Empire building theory suggests that opportunistic managers make acquisitions in order to gain more power (Trautwein, 1990). Other explanations for empire building include managerial pursuit of status, prestige, and higher compensation (Hope & Thomas, 2008). We elaborate on the relationship between empire building and compensation in section 3.2.4.2.

Managerial hubris has also been found to lead to value destroying M&A. Managerial hubris, i.e. CEO overconfidence, increases the likelihood of mergers by 65 percent (Malmendier & Tate, 2008). Managerial hubris is also found to decrease acquisition returns because overconfident managers overestimate the value they can create, which in turn causes them to overpay for the target (ibid.).

Behavioral finance identifies managerial herding as another driver of M&A. While merger waves are often explained by overvaluation of firms and factors in the macro-environment (Kolev et al., 2012), merger waves can also be explained by managerial herding (Duchin & Schmidt, 2013). This theory suggests that managers make transactions because they want to imitate the actions of their peers (ibid.). Thus, when some firms are merging others will follow, which may create a merger wave. Duchin and Schmidt (2013) find that the performance of mergers that commenced during

merger waves is significantly worse, implying that managerial herding leads to comparatively poor M&A decisions.

Lastly, managers may undertake acquisitions to prevent their own company from being taken over (Kolev et al., 2012). Top management may fear that their company will be acquired because executive turnover rates in target firms are higher than average in the five-year post-acquisition period (Walsh, 1988). Acquiring other companies can function as a takeover defense because larger firms are more difficult to take over (Kolev et al., 2012; Homroy, 2015). Thus, takeover likelihood decreases with an increase in firm size (Ambrose & Megginson, 1992). However, while this defense mechanism is in the interest of the manager, it will rarely be consistent with shareholder interests (Haleblian et al., 2009).

3.1.3 Internal Factors That Affect M&A Activity

Acquisition experience is a well-document driver of M&A (Haleblian et al., 2009). Firms that have made acquisitions in the past are more likely to engage in further M&A compared to firms with no prior experience (Haleblian, Kim & Rajagopalan, 2006). The likelihood of additional acquisitions is even higher when the acquirer's past deals performed well (ibid). Additionally, companies are more likely to acquire targets that are similar to targets they have previously acquired in terms of for example organizational form (Ismail & Ahdallah, 2013). There has also been found a repetitive momentum in acquisition behavior, meaning that companies that have experience with a certain type of acquisition are more likely to make acquisitions of the same type (Amburgey & Miner, 1992). Thus, a company's experience with for example market extension acquisitions will increase the likelihood that the company will make subsequent market extension acquisitions.

Organizational structure has also been found to affect M&A behavior. Amburgey and Miner (1992) found that decentralized organizations are more likely to make diversifying acquisitions than their centralized counterparts as they find that product-extension and conglomerate mergers happen more frequently in decentralized companies. This contextual momentum have various possible explanations, such as the training of the individual managers of the units, which might make them better able to acquire new companies as well as the freed up time that senior management has to look into opportunities in new areas (Amburgey & Miner, 1992).

The literature also suggests that there is a link between firm strategy and M&A behavior. Firms with a multi-domestic strategy are more likely to make acquisitions when entering new markets as opposed to firms with global strategies, which are more likely to enter through greenfield

investments (Harzing, 2002). This difference in entry mode can be explained by the fact that acquired firms tend to operate more independently than greenfield investments, which enables local responsiveness (ibid.).

3.1.4 External Factors That Affect M&A Activity

Environmental uncertainty is one key external factor which can affect M&A behavior. The higher the uncertainty the lower the probability of companies making acquisitions (Folta, 1998). When environmental uncertainty is higher, managers prefer to collaborate with other firms, for example through joint ventures and minority investments, instead of acquiring a target firm (ibid.).

M&A activity in a company's network also serves as a driver of M&A. An example is the fact that interlocking directorates affect M&A activity because managers are likely to make acquisitions similar to those made by companies that they have direct interlocks with (Haunschild, 1993). Historical interlocks have been found to affect acquisition behavior as well since Rousseau and Stroup (2015) find that a company is 4.5 times more likely to acquire a company when their directors have previously served on the board of the target firm. They ascribe this relationship to the transfer of non-public information involved in the historical interlock. Another way in which a company's network affects their M&A activity is the fact that a company is more likely to acquire a company they have previously been in an alliance with (Vanhaverbeke, Duyster & Noorderhaven, 2002). Also, Baum, Li and Usher (2000) found that managers are more likely to make acquisitions similar to acquisitions made by firms that are comparable to their own company.

Many studies have found that dependency on other companies is an external driver of M&A (Hillman, Withers & Collins, 2009). Managers make transactions because they seek to become less dependent on companies in their environment (Walter & Barney, 1990). This is especially pertinent for vertical M&A when managers want to decrease dependencies on buyers and suppliers (ibid.). Pfeffer (1972) identifies three drivers for M&A as a means to reduce environmental interdependence: i) to reduce symbiotic interdependence, for example through forward and backward integration, ii) to reduce commensalistic and competitive interdependence, for example by acquiring a competitor, and iii) to avoid being too dependent on a buyer or supplier through diversification. Also, Casciaro and Piskorski (2005) find that mutual dependency between two companies is a key driver of M&A. They describe a situation in which two companies in an exchange can easily find alternative partners for the exchange as a lower-mutual-dependence situation. Conversely, when the two companies have very few alternatives, the relationship is described as higher-mutual-dependence. Since higher-

mutual-dependence creates a situation in which the parties can make excessive demands, the probability of M&A is higher (Casciaro & Piskorski, 2005).

3.2 Executive Compensation and M&A

In the following section, we begin by evaluating the current executive compensation landscape along with the role remuneration has come to play as a governance mechanism. We then consider the extant literature on the relationships between executive compensation and M&A behavior with a focus on performance and premiums, respectively.

3.2.1 Agency Theory & Incentive Compensation

Agency theory is relevant under the existence of a separation of control and ownership of the residual claim, where the owner (the principal) allows the manager (the agent) to control the former's assets on his or her behalf, resulting in a split of risk-bearing and management (Clarke & dela Rama, 2008). The principal-agent problem arises when the interests of the two actors are not aligned. These problems exist within two broad categories: hidden information (adverse selection) and hidden action (moral hazard). Adverse selection is a problem of ex-ante information asymmetry in existence before the point of contracting. Moral hazard involves information asymmetry exploitable by a party ex-post of the time of contracting. Examples include withheld effort (shirking), knowledge, or skills, or general rent extraction without the principal's knowledge (Thomsen & Conyon, 2012). The principal has a clear interest in taking steps to ensure that his or her assets are being managed in accordance with their interests despite the presence of information asymmetries. Agency costs designate the sum of any expenditures arising from such actions within the agency relationship. These expenditures may include monitoring or interest alignment costs on the principal's side, bonding costs on the agent's side, and residual losses to the principal where the parties are unable to reach optimal interest alignment (Jensen & Meckling, 1976).

Compensation is one of several control mechanisms typically used to mitigate these diverging interests and ensure that the agent acts on the principal's behalf. The board of directors will target optimal contracting and seek to minimize opportunities for rent extraction by using relevant compensation structures and levels as an outcome-based control strategy (Eisenhardt, 1985). As an example, boards of directors use equity-based compensation as a means to incentivize agents through transferring partial ownership of the assets to them, granting the agents partial rights to residual firm

value. According to Dicks (2012), governance and incentive pay are substitutes: he finds that increases in governance regulation leads firms to decrease incentive compensation.

Clarke (2008) points out that the finance model of the firm, where the agent's sole purpose is to maximize value for the principal, does not provide an exhaustive picture of what a manager's role is or should be. The model creates a more nuanced picture when appended by e.g. stewardship or stakeholder theory. We proceed using the finance model of the firm as the backbone of our analysis, but return to its potential limitations in the section on implications.

3.2.2 Level of Pay

Executive compensation has been a hot topic over the past decade. CEOs have seen their pay packages change in composition and swell in size. The overall level of CEO compensation packages clocked in at 40 times that of the average worker in 1980. A six-fold surge has since resulted in a proportional relationship of 350:1 (Edmans & Gabaix, 2016). Potential explanations for the development are abundant in existing literature, and a dichotomy dominates the discussion: the market-based explanation is one prevailing perspective. A group of authors consider the steep increase in executive compensation to be a simple equilibrium adjustment based on a number of developments in the executive role. The managerial power explanation is the second dominant perspective. This group of authors assesses that the hike in CEO compensation is grounded in a certain amount of power held by the CEOs over the boards of directors, which allows them to influence the latter and legitimize rent extraction through their pay packages.

3.2.2.1 The Market-Based Explanation

Based on the argument that 'the marginal impact of a CEO's talent [increases] with the value of the firm under his control', Gabaix and Landier (2008, p.49) suggest that this six-fold surge in executive compensation is fully justified as a new equilibrium reached (under constant returns to scale) as a result of the corresponding six-fold rise in firm size as measured by market capitalization between 1980 and 2003. The authors also suggest that minor differences in talent justify large compensation increases when dealing with very large firms, as the effect of the CEO's talent is accessed throughout the entire firm.

In the same vein, Agarwal (1981, p.38) proposes that executive compensation should, at least in theory, be driven by three factors: complexity of the job, the company's ability to pay, and 'executive human capital'. Job complexity is understood ex ante of performance, and encompasses

organizational structure and differentiation, and the complexity of relations and exchanges the CEO must navigate. The author categorizes four types of job complexities: span of control in terms of direct reports, number of managerial levels, number of functional divisions, and geographical diversity (ibid.). Following a merger or an organic growth spurt, some or all of these complexities are likely to expand, potentially justifying higher compensation if the presented model holds. Henderson and Fredrickson (1996) show that compensation may in fact be set in accordance with the information-processing demands of the CEO's position in the given company.

Most large firms set executive compensation based on compensation in peer group firms. Size tends to be a key determinant when defining the peer group (Bliss & Rosen, 2001), and there is a well-established, lasting positive relationship between firm size and executive compensation (Agarwal, 1981; Roberts, 1956). Dicks (2012) proposes that successful CEO rent extraction in a few poorly governed firms could resonate into peer firms through the benchmarking process and the competitive market for executives. Shue and Townsend (2017) add that the number of options each company grants each year tends to be sticky. When markets are on the rise, option values see a corresponding escalation, resulting in increasingly generous compensation packages.

Hermalin (2005) contends that the increase could be a risk premium required by executives because of stricter governance practices, which materially increase both CEO effort requirements and their general risk of termination. The author describes the hiring and firing process as a real option: because of the board's ability to fire an unsuccessful CEO, the downside potential is relatively limited, while the upside potential is high. The more diligently the board monitors a CEO, the higher his or her risk of termination is, which in turn should either heighten his or her required effort or *ceteris paribus* reduce their overall utility. To reach the executive's 'equilibrium utility', one would expect them to require higher compensation as a result (Hermalin, 2005, p.2353). This view contrasts the view of Bebchuk and Fried (2003) who show that boards with weak monitoring tend to award CEOs higher compensation.

Frydman and Jenter (2010) and Murphy and Zábojník (2004) suggest that an increased focus on transferable managerial skill increases executive compensation as it expands managerial options outside of a given firm. Marin and Verdier (2012) add that globalization has had a similar effect in terms of expanding the executive job market beyond the borders of an executive's home country.

Jensen and Murphy (1990) posit that the discussion on the overall level of executive compensation is flawed and counterproductive, as effective pay-for-performance compensation would likely require even higher compensation for top-performers. Because of this general aversity

towards high compensation, they argue, firms forgo the opportunity to provide optimal incentives, including the option to offer poorly performing executives proper penalties. Rather than being an issue of the general level of executive compensation, Bainbridge (2012) articulates the issue as a failure to contain extraordinary compensation to top performers only.

3.2.2.2 Managerial Rent Extraction

Grinstein & Hribar (2004) present a dichotomy between the 'moral hazard' and the 'managerial power' views of executive compensation. The 'moral hazard' view is in line with classical agency theory, and suggests that executives may be remunerated efficiently by aligning compensation with tangible performance-based measures. The 'managerial power' view alleges that compensation contracts are not always negotiated at arm's length, as powerful CEOs are able to influence their own pay packages, as well as other board decisions (ibid.). Managers may thus be able to extract rents from shareholders through suboptimal compensation packages.

Edmans and Gabaix (2016) refer to bounded rationality of the board as an inhibiting factor to the creation of efficient pay packages based on optimal performance measures. Bebchuk and Fried (2003) and Clarke and dela Rama (2008) view executive compensation as part of the agency problem in addition to it being part of a possible solution. They contend that there are several limiting factors to the board's ability to contract at arm's length, resulting in opportunities for executives to extract rents from the company. The existence of an agency problem between directors and shareholders limit the former's ability to effectively address agency problems between managers and shareholders. Directorships are attractive as they tend to yield both compensation and prestige, and CEOs often have significant influence in the re-nomination of directors (Bebchuk & Fried, 2003).

Yermack (1997) delves into the timing of executive stock option awards to identify whether CEOs can guide contingencies of their own pay packages. He finds that option grants do indeed tend to occur conveniently around positive company news announcements.

Within a small sample of firms, Blanchard, Lopez-de-Silanes and Shleifer (1994) identify a tendency for firms to redistribute a median of 16 percent of sudden cash windfalls to upper management through awarding the top three executives additional cash compensation in the three years that follow. Under an assumption of perfect capital markets, excess funds should be distributed to shareholders in the absence of attractive investment opportunities within the firm, e.g. through dividends or share buybacks (Blanchard et al., 1994).

3.2.3 Constructing Compensation Packages

Executive compensation packages typically consist of three compensation categories: i) compensation which is not dependent on performance, including the base salary, pension payments, and other benefits; ii) bonuses or similar incentive compensation components which are dependent on firm performance in accordance with certain pre-determined measures (typically accounting measures); and iii) incentive compensation based on stock price performance, such as options and restricted stock (Bainbridge, 2012).

According to Agarwal (1981), a company's ability to pay (as measured by EBITDA and/or ROA) will be positively related to the overall level of executive pay. Due to scarcity in executive labor markets, companies that are able to pay competitive wages will do so in order to increase the potential quality of the attracted talent pool while curtailing wage-driven turnover. The author also finds that an executive's human capital as expressed by his or her educational level, field of study, and work experience positively influences compensation levels. Importantly, the effect of executive human capital is significantly less pronounced than those resulting from job complexity and the company's ability to pay (ibid.). In summary, Agarwal (1981) finds the ex-ante job description and the executive's employer to have larger explanatory power over compensation packages than the human capital factors of the individual executive.

Porac, Wade and Pollock (1999) show that U.S. boards tend to use benchmarking in a manner which is favorable to the executives when justifying long-term incentive compensation ex-post. This may be done by stretching beyond industry borders when convenient, or by altering the peer group to selectively include poorly performing firms.

Firms within which monitoring is high, either through the presence of large shareholders on the board of directors or large institutional block holders, tend to award smaller total compensation packages that are more closely aligned with performance relative to their counterparts with more dispersed ownership (Bertrand & Mullainathan, 2001; Hartzell & Starks, 2003).

3.2.3.1 Current Compensation

We define current compensation as a CEO's base salary and bonuses. The base salary is typically divided into 12 equal payments, and the bonus often depends on pre-determined performance goals. Unlike options and restricted stock units, the executive's bonus is always disclosed in its ex-post realized value (Murphy, 2013). In response to public outcry regarding towering total executive compensation packages in the early 1990s, President Bill Clinton and the U.S. Congress introduced

a $1 million cap on the tax deductibility of compensation that is not performance dependent. The lasting result has been an anchoring of executive base salaries around the $1 million mark and an explosion in the use of stock options, which launched in the midst of a bull market (Bainbridge, 2012). On a side note, performance-based pay is no longer exempt from the cap following the enactment of H.R.1 the Tax Cuts and Jobs Act of 2017 (Arora, Seelig & Kalten, 2017).

Dittman and Maug (2007) conclude that to reach optimal incentive alignment while minimizing cost, most CEOs should have their base salaries reduced and be awarded (or required to obtain) supplementary restricted stock rather than receive option grants. Yet Dybvig and Zender (1991) find that such compensation packages (consisting only of fixed cash compensation and shares) are unable to prevent sub-optimal CEO investment decisions. Bainbridge (2012) highlights that incentivization through bonus payments can carry with it unintended consequences, such as the favoring of accounting techniques which shift income to the current fiscal year. Another perceived weakness includes the amount of discretion placed in the hands of the compensation committee to define and continuously reassess performance targets (ibid.).

To their surprise, Jensen and Murphy (1990) found that boards did not take executive equity ownership and the risks tied thereto into account when determining cash bonuses, and suggest that the latter could be used to offset systemic risk during industry-wide or economy-wide downturns.

3.2.3.2 Equity Compensation

Equity compensation is granted through a variety of instruments. The most common categories include stock options and restricted stock units (RSUs). Stock options grant the executive the right but not the obligation to buy one share of the company's stock at a prespecified price in the future. Vesting dates can be adjusted to encourage decision-making based on longer temporal horizons, and the executive's ability to exercise the options is often conditional upon a continuation of his or her tenure at the firm until the vesting date (Murphy, 2013). The options only have value if the stock price is higher than the strike price at the date of vesting. RSUs may be granted conditional upon or in the absence of pre-specified performance targets. RSUs where vesting is conditional upon certain objectives will vary in risk in accordance with these objectives. If the objective is based on the future share price, their degree of risk will mimic that of stock options from the executive’s perspective (ibid.).

Companies must disclose an ex-ante fair value of stock options and RSUs granted in the relevant year in the annual proxy statement. The academic literature is fragmented within the matter of ex-ante and

ex-post valuation. Some researchers believe that the grant-date fair value determined by the Black-Scholes formula for a European option or a variation thereof is the correct measure as consequent executive incentives are also based on an ex-ante value of the options (ibid.). Others believe that the ex-post realized value should be documented and used as the basis for research instead. Hopkins and Lazonick (2016) are among the latter group, as they find fair values to understate average realized pay quite remarkably. Murphy (2013) adds that fair value measures did indeed understate average total compensation in 2011, yet the measures overstated median total compensation considerably. Ultimately, the answer lies in the individual research question: when considering executive incentives, fair values are most relevant, while research on pay-for-performance relationships may be done on actual realized compensation (ibid.).

From an executive's perspective, stock options, restricted stock, and other variable compensation are riskier than fixed compensation. Depending on the overall difficulty of the attached objectives, risk-averse executives will demand significant risk and liquidity premiums for the increased uncertainty, requiring higher overall levels of pay (Thomas & Van der Elst, 2015). Because managers are risk-averse, there is a gap between the cost of option compensation to firms and its value to the executives on the receiving end. Hall and Murphy (2002) argue that the extreme rise in executive compensation should in fact be perceived as an escalation of compensation costs. When adjusting Black-Scholes values for perceived risk, they find that compensation increases have been much less remarkable. Risk-adjusted option values also help explain industry differences. The authors recommend that option compensation granted at-the-money should function as an appendage to existing compensation to ensure maximization of incentives. Restricted stock, they argue, can be complemented by reductions in cash compensation (ibid.).

According to Jensen and Murphy (1990), direct CEO share ownership drives the closest relation between shareholder wealth and CEO wealth, suggesting that one way to optimize executive compensation would be through requiring executives to take on considerable ownership of company stock. They also suggest that stock options should be designed in a manner that leads to large gains for superior performance (regardless of the potential upwards pressure on total compensation) while penalizing poor performance comprehensively.

Delta may be used to express the sensitivity of a CEO's wealth to stock price performance. Bliss and Rosen (2001) and Core and Guay (2002) find that high-delta compensation may lead to overexposure to firm risk, which can leave executives comparatively cautious and risk-averse, ultimately forgoing risky but potentially profitable investments. Vega, on the other hand, expresses

the sensitivity of the value of an option to changes in option volatility. The principle can, in turn, be used to express the sensitivity of a CEO's wealth to changes in stock price volatility of their employer. Part of the extant literature confirms that high-vega compensation induces CEOs to engage in riskier activities and investments (Hagendorff & Vallascas, 2011; Coles, Daniel & Naveen, 2006; Rajgopal & Shevlin, 2002). Fahlenbrach and Stulz (2011), on the other hand, did not establish a relationship between compensation vega and risk tastes in the period leading up to the Financial Crisis of 2007-2009.

Indexation of options may be used to ensure that CEOs are not "paid for luck", i.e. compensated for general market movements over which they have had no control or influence. Indexation involves varying the option strike price in accordance with a relevant index (typically the market index, an industry index, or a custom index of peers). Yet hardly any compensation committees utilize the practice. Bebchuk and Fried (2003) conclude that the absence of indexation is a sign of inefficiency in prevailing compensation practices. Dittmann, Maug and Spalt (2013) analyze stock option compensation empirically, and find that any benefits related to improved incentives are more often than not outweighed by an overall increase in compensation costs. Only 15 percent of firms in the given sample would benefit from full indexation of CEO options, and these were high-beta firms with highly risk averse CEOs (ibid.).

Following changes in U.S. accounting regulations under FAS 123R in 2006, the use of stock options in compensation packages decreased materially (Thomsen & Conyon, 2012). The reduction in their use has moved a corresponding increase in the use of restricted stock grants, which were not subject to the same favorable accounting treatment as options were before FAS 123R (Bodolica & Spraggon, 2015).

3.2.3.3 Other Compensation Components

According to Murphy (2013) compensation disclosed specifically in the category "other compensation" may involve one-off sign-on bonuses, termination payments, interest on postponed compensation, and any changes in pension benefit values. Along with general pension benefits, we include this category in our *Total Compensation* figure. Due to the diverse forms "other compensation" may take, the category would have to be evaluated on a case-by-case basis for us to reach meaningful conclusions based thereon. Therefore, the measure will not be featured in our model on its own. Termination payments can be relevant to M&A behavior, but mainly so from the perspective of the target CEO.

3.2.4 Compensation & Acquisition Behavior

Bliss and Rosen (2001, p.114) point out that 'the cost to shareholders of CEO compensation is small relative to the potential losses from a bad acquisition decision'. Accordingly, Grinstein and Hribar (2004) note that the problem does not lie in the direct costs of compensation increases, but with the potential indirect costs if executives perceive M&A as a potential vehicle through which they can maximize their own wealth. From the executive's perspective, the cost-benefit analysis of an acquisition is a weighting of the potential change in firm market value and related benefits versus the potential change in personal benefits (perhaps job security, compensation benefits, and/or the size of the assets under his or her power). If a negative change in the former is offset by a positive change in the latter, and in the absence of adequate monitoring, the CEO may choose to move forward with a deal that leaves shareholders with a residual loss (Morck, Shleifer & Vishny, 1990).

3.2.4.1 Risk Mitigation and the Managerial Risk-Aversion Hypothesis

The managerial risk-aversion hypothesis suggests that risk-averse executives will engage in behavior that shields their personal capital from exogenous uncertainty when possible (Bodolica & Spraggon, 2015). One example of such behavior is risk-reducing unrelated diversification through M&A, even in the absence of synergies. Conglomerate acquisitions can reduce the executive's personal financial risk, as well as otherwise undiversifiable employment risk (Yakov & Baruch, 1981). Executives may attempt to move a firm from a decomposing industry into new lines of business to ensure its survival and, by extension, his or her job, even if a liquidation or contraction were preferable from a shareholder value perspective (Morck et al., 1990). Diversifying acquisitions tend to generate significantly lower announcement period returns than same-industry acquisitions (Jensen, 1986; Morck et al., 1990), and shareholders can unilaterally diversify their portfolios to match their desired level of risk without managerial interference.

According to Kim, Kwok and Young (2005) a CEO's propensity to engage in risk mitigation through diversification increases with managerial stock ownership and unvested option holdings. Cai and Vijh (2007) suggest that CEOs of overvalued firms may acquire undervalued targets using equity payment to level the imbalance and increase the value of the executive's personal equity holdings in the long term. Yet Lane, Cannella and Lubatkin (1998) and Lewellen, Loderer and Rosenfeld (1989) found no evidence that large managerial stock holdings should result in the pursuit of acquisitions intended to mitigate personal risk. In a study of 167 U.S. deals made by dual class firms, Hanson and Song (1996) find that managers of firms with dual share classes who favor control over residual cash

flow rights are more likely to enter into value-destroying, diversifying acquisitions as managerial ownership fails to align the interests of shareholders and executives when voting power and financial interests are not 1:1.

Bliss and Rosen (2001) identify a significantly higher tendency to engage in M&A behavior among CEOs with high proportions of cash compensation and suggest that high proportions of equity compensation comparatively speaking can serve as a disincentive to acquire. By extension, one would expect fewer acquisitions from executives with high-delta compensation. Wright et al. (2002) establish a non-linear relationship between executive ownership and the tendency to engage in M&A which is risk-enhancing. They show that very low and very high levels of ownership leads executives to take on less risk, while option compensation can enhance risk-taking regardless of existing ownerships stakes. With a consistent assessment of risk, but a different observation on shareholder value-creation, Fung, Jo and Tsai (2009) find that high option-based compensation drives value-destroying acquisitions, while share ownership leads to high-CAR acquisitions.

3.2.4.2 Does Empire Building Pay?

We return to the issue of managerial empire building and its link to executive compensation. Based on the well-established connection between managerial compensation and firm size, and since the need for external capital often comes with increased monitoring, managers have an incentive to retain earnings within the firm in the absence of positive-NPV projects or synergistic acquisitions, and to cultivate the total value of the assets over which they have control beyond the firm's optimal size (Jensen, 1986).

Seo et al. (2015) show that CEOs who are underpaid relative to executives in peer firms with similar performance engage in more frequent M&A, likely in an attempt to eliminate remuneration-based inequity. And the strategy appears to work. CEO compensation increases more through acquisitions than it would have through firm growth alone (Seo et al., 2015; Chen et al., 2017). A large proportion of the increase in compensation is comprised of long-term incentive plans granted by the board following acquisitive behavior in order to improve the alignment between CEO incentives and shareholder interests (Seo et al., 2015; Chen et al., 2017). Combs and Skill (2003) add that increasing firm size through acquisitive behavior may be an effective way for a risk-averse CEO to decrease variability in his or her compensation, as executive compensation is closely tied to firm size and firm size is more constant than firm performance.

Several studies have established a positive effect from both mergers and organic growth on the overall size of executive compensation (Bliss & Rosen, 2001; Grinstein & Hribar, 2004; Harford & Li, 2007; Chen et al., 2017). In the case of M&A behavior, Bliss and Rosen (2001) show that the effect is present regardless of the merger's consequent effect on acquirer stock price, and when the stock price does fall, the positive effect of the merger outweighs the negative effect of a fall in acquirer stock price on compensation. Even a value-destroying deal may thus be in the private interest of the CEO. Furthermore, the authors find that compensation packages made up of a higher proportion of stock-based compensation results in fewer value-reducing mergers as well as fewer mergers overall (ibid.). In the same vein, Khorana and Zenner (1997) show that CEOs with larger stockholdings in their companies act in a manner more aligned with the interests of shareholders than their counterparts.

Harford and Li (2007) show that M&A leads to a decoupling between negative stock performance and incentive pay, while CEOs continue to benefit from positive stock performance. They do not find the same relationship between large capital expenditures and compensation, and suggest that the difference indicates the presence of managerial rent extraction. They suggest that the relationship is related to the executive's relative bargaining power, where an increase in compensation following M&A is easier to justify to the board of directors than one following large internal investments. Ultimately, they argue, post-acquisition compensation distorts the effectiveness of pre-acquisition incentive compensation.

Grinstein and Hribar (2004) find that the size of bonuses given specifically because of M&A transactions is positively correlated with the size of the given transaction. They also find that deal size increases with managerial power, as does the size of any consequent M&A bonus. Overall, the authors find that managerial power has more explanatory power over M&A bonuses than effort or performance.

3.2.4.3 Timing

Edmans, Fang and Lewellen (2017) identify a link between CEO equity vesting and firm investment during the relevant period. Specifically, they find that investment in R&D and capital expenditures are reduced to temporarily improve earnings in the period leading up to the vesting date. The authors present two potential outcomes, both of which imply a direct effect from compensation on real investment: the myopia hypothesis, which suggests that CEOs decline positive-NPV investments to extricate immediate personal gain. And the efficiency hypothesis, in which it is implied that CEOs

tend to overinvest when vesting dates are further away and invest efficiently when they approach. If either one of these hypotheses hold, one may suggest that vesting dates should be a key consideration when constructing compensation packages in order to optimize investment behavior and temporal horizons.

According to Bens, Goodman and Neamtiu (2012), executives are more likely to manipulate earnings following unsuccessful acquisitions. As previously mentioned, the provision on mandatory clawbacks in the Dodd-Frank Act would require firms to recuperate any compensation paid out on the basis of earnings which are restated materially downwards ex-post of the grant date. Brown et al. (2015) show that clawback provisions in executive compensation improve investor perceptions of M&A decisions and are more likely to be adopted within firms with a history of negative merger announcement returns. They also find that the adoption of clawback provisions improves M&A decisions and accounting quality relative to the pre-clawback period. Whether this is a result of voluntary clawback provisions only or if one could expect similar results from mandatory clawback requirements remains unclear.

3.2.4.4 Market Reception

Some aspects of executive compensation and dominance appear to color shareholder receptions of M&A deals. Grinstein and Hribar (2004) find that managerial power has significant explanatory power over short-term deal reception by the market. At -3.8 percent, CEOs who measure high on managerial power deliver abnormal two-day announcement period returns that are three times lower than their less powerful counterparts. They also find that powerful managers conduct larger acquisitions relative to the sizes of their firms.

Datta, Iskander-Datta and Raman (2001) and Minnick, Unal and Yang (2011) separate acquisitions into those executed by CEOs with low and high equity-based compensation, respectively. They found that the market reacted negatively to acquisition announcements made by the former group, leading to significant losses, and positively to those made by the latter. Lewellen, Loderer and Rosenfeld (1985) also show that abnormal returns following large investments are higher for firms with high managerial stock ownership relative to total compensation.

According to Bebchuk and Fried (2003), negative publicity surrounding executive compensation in specific firms has a curbing effect on compensation in those firms in the years that follow. CEOs thus have an incentive to mask or justify compensation packages, which may seem excessive to the public. While not a direct, proven effect on markets, Bebchuk, Fried and Walker

(2002) argue that CEOs with material power and consequent influence over their compensation packages may use mergers and their related efforts to implicitly justify increases in their own compensation to shareholders.

3.2.4.5 Compensation & Premiums

A group of scholars has studied the existence of relationships between executive compensation practices and/or executive sentiment and the premiums paid for target firms. Malmendier and Tate (2008) find that the tendencies of overconfident CEOs to overestimate their capability to manage target firms lead them to overpay in acquisitions relative to the realizable value. They also pay significantly higher premiums than average. Hayward and Hambrich (1997) show that the effect of CEO hubris on disproportionate premiums is particularly strong where board monitoring is weak and CEO entrenchment is high. They identify CEO hubris on the basis of good recent performance, recent positive media attention specifically directed towards the CEO, and CEO pay relative to the average pay of other officers.

In a sample of mergers, which occurred between 1985 and 1991, Hubbard and Palia (1995) found the relationship between executive ownership and M&A premiums to be two-directional; at lower levels of executive equity holdings the relationship is negative, but at very high levels it turns positive. They found an incentive alignment effect up until a certain fraction of ownership, after which private benefits of control begin to dominate the decision-making process. Given the negative correlation between premium and deal value creation, deals conducted by managers with very low and very high ownership stakes, respectively, should have lower abnormal returns than those conducted by managers in the area in-between. Yet Slusky and Caves (1991), Fung et al. (2009), and Datta et al. (2001) identified the relationship as consistently negative. Datta et al. (2001) also found that firms which remunerated managers with a high proportion of equity-based compensation on average paid significantly lower acquisition premiums (a difference of 8.78 percentage points) and were less likely to accommodate acquisitions in the first place. Slusky and Caves (1991) show that the effect can be counteracted by the existence of large outside shareholders and greater monitoring in general. Fung et al. (2009, cited in Bodolica & Spraggon, 2015) found that the negative relationship between equity compensation and deal performance in public acquirers was strongest when executive ownership was low, the CEO served on the board of directors, the proportion of option compensation was high, option compensation was oriented towards the short term, and the CEO held more exercisable in-the-money options. In addition to paying higher premiums, the authors identified a

tendency for such CEOs to undertake value-destroying acquisitions during bull markets when valuations are high, while financing them with firm stock.

Cai and Vijh (2007) took all unvested options and restricted stock into account, including those granted before the fiscal year in which the M&A decision was made. Contrary to the results of Datta et al. (2001), they found that managers who were highly exposed were more likely to overpay for acquisitions, more likely to make diversifying acquisitions, more likely to pay in stock, and more likely to rush the acquisition process. They hypothesize that high exposure to firm performance makes the CEO overly devoted to "winning the deal".

In summary, the extant literature suggests that the payment of excessive premiums is more likely when boards are weak; ownership is dispersed and CEO entrenchment and overconfidence is high; when executive ownership is low; when equity compensation relative to total compensation is low, mainly option-based, and oriented towards the short term; and when CEO exposure to firm performance is particularly high.

3.3 Other Factors Affecting M&A Performance

3.3.1 Deal Factors

3.3.1.1 Payment Method

The consideration, i.e. the type of payment, is a widely researched factor affecting the performance of M&A. Whether an acquirer pays in cash or stock is an indicator of post-acquisition performance, since it implies how managers perceive the valuation of their company (King et al., 2004). Since managers seek to maximize the value extracted from M&A, they pay the target in cash when they perceive their firm's stock as undervalued and in stock when they perceive it as overvalued (ibid.). Thus, given managerial expectations in the two scenarios, one can expect cash acquisitions to outperform stock acquisitions due to the signal sent to investors regarding undervaluation or overvaluation. This is confirmed by Sudarsanam and Mahate (2003) who find that cash acquisitions generate higher returns than stock acquisitions no matter the acquirer type.

Heron and Lie (2002) present three possible explanations for the inferior announcement returns of stock acquisitions compared to cash acquisitions: i) investors are disappointed with the quarterly earnings presented after the acquisition, ii) investors are too optimistic about long-term growth opportunities prior to the acquisition, and iii) change in capital structure since companies increase their debt ratios more following cash acquisitions compared to stock acquisitions. Linn and Switzer (2001) also find that cash acquisitions perform better than stock acquisitions and explain the

superior performance of cash acquisitions with the fact that acquirers use cash to hinder other bidders when they have favorable private information, for example about synergies.

There are a few exceptions to findings of better performance of cash acquisitions compared to stock acquisitions. Fuller, Netter and Stegemoller (2002) find that for private firms and subsidiary acquisitions acquirers benefit from paying in stock due to tax considerations and monitoring benefits. Additionally, Heron and Lie (2002) find that while the type of consideration has been found to have an effect on market returns, it does not have an effect on the acquirer's operating performance following an acquisition.

3.3.1.2 Deal Type

Rau and Vermaelen (1998) find that deal type affects the performance of transactions since mergers underperform while companies that make tender offers gain a small positive abnormal return. However, the deal type, i.e. whether it was a merger or a tender offer, has not been found to affect post-acquisition operating performance of the firm (Heron & Lie, 2002).

The performance of M&A may also be affected by deal type in terms of whether the acquisition is horizontal, vertical, or conglomerate. Gubbi and Elango (2016) find that acquisitions that are resource deepening produce higher abnormal returns than resource extending acquisitions. Since horizontal mergers will likely more often be associated with resource deepening, while vertical and conglomerate acquisitions will likely more often be associated with resource extension, one may expect that horizontal mergers will be more profitable for the bidder.

3.3.1.3 Target Firm Size

Several studies have found deal size to positively affect the performance of M&A activity (Linn & Switzer, 2001; Switzer, 1996). The size of the target has also been found to positively affect post-acquisition performance in cross-border mergers (Narayan & Thenmozhi, 2014). The reason behind the fact that the relative size of the target to the bidder affects performance may be economies of scale (Linn & Switzer, 2001; Switzer, 1996) and the fact that a small target can only contribute a small amount to the performance change (Linn & Switzer, 2001). However, other studies find that acquirers of large target firms are worse off than acquirers of small firms since they generate lower returns and have a higher risk of negative abnormal returns as well as suffering extreme losses (Alexandridis et al., 2013). Lastly, Heron and Lie (2002) find that the relative size of the target firm relative to the

acquirer does not affect operating performance following an acquisition. Thus, the literature has not reached a shared conclusion as to the effect of target size on M&A performance.

3.3.1.4 Cross-Border vs. Domestic

Whether an acquisition is cross-border or domestic has been found to affect M&A performance as well. Cross-border acquisitions provide positive abnormal returns to the acquirer on average, while domestic acquisitions generally provide either neutral or negative abnormal returns to the acquirer (Markides & Ittner, 1994). However, a study on intra-European acquisitions finds that domestic acquisitions perform better than cross-border acquisitions (Goergen & Renneboog, 2004). Dos Santos, Errunza and Miller (2008) find that corporate international diversification, i.e. cross-border M&A, does not destroy value. Thus, the effect of cross-border acquisitions versus domestic acquisitions on M&A performance is also ambiguous.

Anand, Capron and Mitchell (2005) find that acquiring targets that have a presence in several countries has a positive effect on M&A performance. This is due to the fact that these targets enhance the capabilities of the acquirer due to their 'access to heterogeneous markets and resource environments' (Anand et al., 2005, p.212).

3.3.1.5 Diversification

As mentioned above, resource deepening acquisitions are more profitable than resource extending acquisitions (Gubbi & Elango, 2016). This suggests that diversification may negatively affect performance of M&A since diversifying acquisitions will more often be resource extending compared to non-diversifying acquisitions. Additionally, Healy, Palepu and Ruback (1992) finds that acquisitions of overlapping businesses perform better in terms of post-acquisition improvements in operating cash flow returns and announcement market returns, again suggesting that diversification negatively affects M&A performance. This is in line with Dos Santos et al.'s (2008) results as they suggest that industrial diversification destroys value.

Other studies on related versus unrelated acquisitions find similar conclusions. Singh and Montgomery (1987) find that related acquisitions, i.e. same product/market and technologies, create more value than unrelated acquisitions. They ascribe the superior performance to the synergies that can be realized in related acquisitions as they have supplementary and complementary resources. Additionally, acquiring related businesses allows buyers to incur cost savings and make asset reductions (Bruner, 2004). Markides and Ittner (1994) find that not only is the performance of related

acquisitions better than unrelated acquisitions, but that unrelated acquisitions produce negative returns. However, diversification may be beneficial when capital markets are not efficient, when there is instability in the market (ibid.), or when target and acquirer are in the information-intensive industries (Morck & Yeung, 1997).

3.3.2 Firm Factors

3.3.2.1 Historical Performance

Firms with superior operating performance have been found to continue to outperform on operating results compared to other firms in the industry following an acquisition (Heron & Lie, 2002). When comparing well-performing firms from the same industry, firms engaging in acquisitions ultimately outperform those which do not (ibid.).

3.3.2.2 Book-to-Market

Rau and Vermaelen (1998) find that value firms outperform glamour firms on tender offers, which they suggest demonstrates that a low book-to-market ratio is a predictor of poor M&A performance. They ascribe the higher return of value firms to lack of CEO hubris and higher scrutiny by the board when making acquisitions. Andriosopoulos, Yang and Li (2016) also find that glamour firms underperform compared to value firms in the announcement period and the short-term post-announcement period. However, they find that this underperformance can be mitigated through domestic institutional ownership since glamour firms owned by domestic institutions outperform other glamour firms.

3.3.2.3 Type of Target

The acquirer gets higher returns following acquisitions of private firms and subsidiaries compared to public firm acquisitions since the former are illiquid and thus tend to have a liquidity discount attached (Fuller et al., 2002).

3.3.2.4 Cash Holdings

Several studies find that large cash holdings negatively affect the performance of acquirers following M&A transactions. Since acquisitions are one vehicle through which managers can retain earnings within the firm rather than granting dividends to shareholders, theory predicts that managers in firms with large free cash flows are more likely to make value-destroying M&A transactions (Jensen,

1986). Oler (2008) finds that companies with high cash balances underperform following acquisitions compared to their peers. He finds that the market does not recognize this negative relationship around the announcement date, but that it is inherent in the post-announcement performance. However, a study on U.S. firms concludes that firms with large amounts of cash are in fact 23 percent less likely than other firms to use cash as the payment type in acquisitions (Pinkowitz, Sturgess & Williamson, 2013). This suggests that firms with large amounts of cash on their balance sheets do not merely make acquisitions to avoid granting dividends. This contradicts the findings of the aforementioned studies as well as Von Beschwitz's (2018) study, which found that firms that experience a sudden cash influx are 14 percent more likely to make acquisitions. Additionally, the study determines that acquisitions, which happen as a result of a cash influx perform poorer than their peers and that the performance is increasingly bad with the size of the cash influx.

3.3.2.5 Debt

Due to the fact that highly levered companies must make interest payments periodically, the managers of these firms must be extra careful in decision-making processes because these payments must be honored continuously for the firm to stay solvent (Harrison, Hart & Oler, 2014). This suggests that managers of highly levered firms tend to make carefully analyzed deals that perform well (ibid.). Also, managers of firms with high levels of debt have been found to make less risky acquisitions due to higher concern with not violating debt covenants (Kravet, 2014). However, while these managers are less likely to make acquisitions with great potential losses, they are also less likely to make risky acquisitions even though the transactions have positive NPVs (ibid.). Nevertheless, Maloney, McCormick and Mitchell (1993) found that debt improves managerial decision-making and highly levered acquirers make deals that have higher announcement-period returns as a result.

3.3.2.6 Acquirer Experience

The acquirer's past acquisition experience has been found to affect the performance of subsequent transactions (Haleblian & Finkelstein, 1999; Hutzchenreuter, Kleindienst & Schmitt, 2014). Haleblian and Finkelstein (1999) find that acquisition experience can have negative as well as positive effects on subsequent transaction performance, and that the effect is increasingly positive with the similarity of the prior and subsequent target. While Hayward (2002) agrees that acquisition experience is not beneficial when the subsequent target is very dissimilar from the previous target, he also finds that the same is the case when the target is extraordinarily similar to the previous target.

Frequent acquirers are able to obtain acquisition routines and acquisition capabilities, in particular in relation to integration of two companies (Hutzchenreuter et al., 2014). Furthermore, poor performance of previous M&A transactions constitute a better learning experience, and subsequent transactions will perform better. This results from the fact that managers tend to rely on their experience from successful transactions for subsequent transactions and assume similarities that may not be there (ibid.). In contrast, Haleblian and Finkelstein (1999) make a distinction between experienced and inexperienced acquirers instead. They argue that following a company's first acquisition, managers tend to generalize their experiences and apply them to subsequent acquisitions, while experienced acquirers are able to make more nuanced distinctions between acquisitions. Lastly, Ismail & Abdallah (2013) found that while experienced acquirers typically make value-creating acquisitions, the performance of their acquisitions decreases over time.

3.3.2.6 Acquirer Firm Size

The studies on acquirer firm size find different conclusions as to the ultimate effect on M&A performance. Moeller, Schlingemann and Stulz (2004) find that small firms have higher announcement returns than large firms, and ascribe the difference in performance to managerial hubris since large firms pay larger acquisition premiums. In fact, they find that large firms experience shareholder wealth losses following acquisitions. Additionally, when a company makes announcements, the market reactions have been found to be larger for small firms due to smaller amounts of information being available about these firms prior to the announcements (Bajaj & Vijh, 1995). This suggests that market reactions to the announcement of M&A deals will be larger for small firms. However, Cornett and Tehranian (1992) find positive abnormal stock market performance as well as improvements in cash flow performance and accounting measures of large mergers in the post-merger period.

3.3.3. Governance Factors

3.3.3.1 CEO Duality

Several studies have found CEO duality to negatively affect the performance of acquisitions (Desai, Kroll & Wright, 2003; Teti et al., 2017; Masulis, Wang & Xie, 2007). Desai et al. (2003) attribute this negative effect to the fact that a CEO who is also chairman has more power over the board than other CEOs. Teti et al. (2017) makes similar conclusions and attribute the poor performance to managerial entrenchment and the possibility that these managers are more able to pursue personal

interests. Additionally, Masulis et al. (2007) find that CEO duality negatively affects transaction performance due to higher tendencies towards empire building, and suggest that a separation of the two roles would warrant more selective acquisition decision-making.

3.3.3.2 CEO Tenure

Similar to the effects of CEO duality, CEO tenure may also negatively affect M&A performance. However, the relationship between CEO tenure and M&A performance is u-shaped (Walters, Kroll & Wright, 2007). Thus, in the beginning the performance increases with CEO tenure as the CEO's knowledge about the firm and experience increases. However, at a certain point CEO entrenchment becomes too high and the CEO's power increases too much (ibid.). Walters et al. (2007) found the optimal CEO tenure in relation to achieving the best M&A performance to be approximately eight years.

3.3.3.3 External Directors

The presence of external directors may also affect the performance of transactions. Board independence has been found to positively affect M&A transaction performance because independent directors ensure better decision-making through more effective board monitoring (Teti, 2017). Additionally, when CEO duality is present outside directors more effectively protect shareholder interest, and M&A transactions perform better as a result (Desai et al., 2003). However, when CEO duality does not prevail the extensive knowledge about the company that the inside directors possess can positively affect transaction performance (ibid.). Independent outside directors also offset the negative effect that too lengthy CEO tenures have on M&A performance (Walters et al., 2007).

3.3.3.4 Board Diversity

In addition to the statutory diversity measures of the board mentioned above, i.e. CEO tenure, independence, and CEO duality, M&A success can also be affected by demographic diversity, which refers to diversity in terms of gender, nationality, culture, and experience (Ben-Amar et al., 2013). At low levels demographic diversity negatively affects M&A performance, while it improves performance at high levels (ibid.). Gender diversity has been studied individually as well, and women on the board have been found to positively affect acquisition decisions and thus create shareholder value (Levi, Li & Zhang, 2014). The authors suggest that the relationship can be explained by women

being less motivated by empire building and being less overconfident and thus less likely to overestimate merger gains (ibid.).

3.3.4 Environmental Factors

3.3.4.1 Merger Waves

As mentioned in the section on merger waves, M&A transactions have tended to take place in waves of higher activity. While Duchin and Schmidt (2013) find that mergers taking place during waves generally perform worse in the long term, other studies find that the performance of these transactions greatly depends on whether they take place in the beginning or later in the wave. Carow, Heron and Saxton (2004) finds that acquirers who make transactions in the beginning of the wave perform better than those whose transactions take place later in the wave. They ascribe these early mover advantages to information asymmetries, which allow the early movers to buy targets at a cheaper price compared to the late acquirers who will choose from a smaller amount of possible targets at a higher demand. McNamara, Haleblian and Dykes (2008) also concludes that there is an early mover advantage in terms of M&A performance. However, they find that acquirers making transactions at the height of the wave are worst off, while the highly negative performance subsides when transaction activity decreases following the wave's peak.

3.3.4.2 Regulations

In the past, some regulatory changes have affected M&A decision-making and performance (Haleblian et al., 2009). For example, bidder gains from M&A where higher in the period before 1969 compared to the period after due to government regulation in 1969 when the Williams Act of 1968 was implemented (Asquith, Bruner & Mullins, 1983). The Williams Act introduced requirements of public disclosure, which caused premiums to increase in deals due to the fact that it allowed other firms to make competitive bids, thus driving up the price (Malatesta & Thompson, 1993). Even in the case that there were no other bidders, the price turned out higher due to the possibility of other bidders (ibid.).

3.4 Premium Determinants

M&A transactions generally involve premiums that acquirers pay for the rights to control the target company and for the economic benefits they expect to gain from the deal, for example through synergies that may become realizable when the two companies merge (Petitt & Ferris, 2013). While

studies find various ranges of premiums, the average premium generally falls between 20 and 30 percent (ibid.). Premiums also have an impact on M&A performance (Hitt et al., 2012). Since the size of the premium determines the synergies that need to be realized to break even or increase value following the acquisition, the size of the premium is clearly an important determinant of how profitable the transaction will be (Sirower, 1997). Thus, the aforementioned factors might also affect the premium paid in M&A transactions. For example, as previously noted managers might make acquisitions out of self-interest, rather than to increase shareholder value. Therefore, they might be willing to pay higher acquisition premiums to increase the size of their firm and their own power as a result (Hitt et al., 2012).

However, many studies have also looked into the impact that different factors have on premiums specifically. For example, whether or not the acquisition is across borders or domestic may affect the premium. When M&A activity reaches across borders, the premium is dependent on cultural distance (Lim, Makhija & Shenkar, 2016). Lim et al. (2016) find that the relationship is not symmetric in terms of cultural distance. They find that the premium is affected more by cultural distance when a U.S. firm is acquiring a foreign firm compared to when a foreign firms acquires a U.S. firm. Thus, the premiums will generally be higher for U.S. targets acquired by foreign firms than for foreign targets acquired by U.S. firms. They ascribe this difference in the effect of cultural distance on premiums to the degree of familiarity with the foreign culture. Also, Goergen and Renneboog (2004) find that the size of the acquisition premium depends on the location of the target. They suggest that the maturity of the market for corporate control in both target and bidder countries explains this difference. Goergen and Renneboog (2004) also find that premiums are higher when targets have high market-to-book ratios.

The size of the deal also affects the premium. Alexandridis et al. (2013) find that offer premiums are negatively correlated with transaction value, which means that acquirers are less likely to overpay in large deals. However, they also find that large deals destroy more value than small deals due to higher complexity, and the performance of M&A transactions and premiums are thus not necessarily related.

Additionally, findings show that diversity of the board will decrease the risk of shareholder value-destruction resulting from overpayment for acquisitions. For example, Levi et al. (2014) find that when there are women on the board, the premium is significantly lower, which they suggest may be due to the fact that women are less overconfident (Levi et al., 2014). In fact, they find that premiums drop by 15.4 percent for each woman added to the acquirer board.

Thus, there are a lot of factors affecting whether M&A transactions are successful or not. However, it is clear from the literature that the decision making of managers is a vital factor in M&A profitability (Bruner, 2002).

4 Development of Hypotheses

Underlying the executive compensation provisions of the Dodd-Frank Act is a focus on shareholder empowerment and a restriction of any potential for managerial entrenchment. We wish to establish whether changes in executive compensation practices after partial implementation of the Dodd-Frank Act have indeed had an effect on the shareholder value orientation of executive decision-making. Based on the literary merits of the relationship between executive compensation and M&A decisions and performance, we use CAR and premiums to identify whether any systematic changes in residual losses can be traced back to relevant changes in compensation practices.

As sections 953(a), 954, and 955 of the Act have yet to see the light of day and 953(b) was first enforced in the 2018 proxy season (Davis Polk & Wardwell LLP, 2017), we focus on the two sections enacted during our sample period: Section 951, known as "Say on Pay", and Section 952 which sets out requirements for compensation committee independence. Our research design does not lend itself to any separation of the effects of the two, and we therefore construct our hypotheses around considerations relevant to both provisions.

New requirements for the independence of compensation committees should result in improved monitoring and challenge the scope of managerial entrenchment. Governance regulation and compensation are substitutable mechanisms in the reduction of agency problems (Dicks, 2012). In accordance with the managerial power hypothesis, total compensation levels should decrease as a result, as should moral hazard and executive opportunism in M&A decisions due to enhanced and independent monitoring (Bebchuk & Fried, 2003). Say on Pay provides shareholders with a new formal communication channel through which they can voice their concerns over executive compensation directly to the board of directors. Shareholders may use this opportunity to express their discontent with the highly controversial and extreme increases in executive compensation seen over a number of decades.

> ***H1a**: Due to improved monitoring, total compensation has reached a level at which shareholder and executive interests are more aligned as evidenced by an improved effect on CAR.*

***H1b**: Due to improved monitoring, total compensation has reached a level at which shareholder and executive interests are more aligned as evidenced by an improved effect on M&A premiums.*

Relationships H1a and/or H1b may only be present in one of the two periods. Their presence in the early post-Dodd-Frank Act period only could suggest that the development was a result of a change in sentiment after the crisis, rather than a lasting consequence of the Dodd-Frank Act. The absence of lasting effects would certainly merit a critical discussion of the utility of the two provisions to shareholders.

***H1aa**: The improved relationship between total compensation and CAR is present only in the early post-Dodd-Frank Act period.*

***H1ba**: The improved relationship between total compensation and premiums is present only in the early post-Dodd-Frank Act period.*

The relationships could also be visible in the late post-Dodd-Frank Act period only. This result could suggest a lag between implementation and the ultimate effect of the Dodd-Frank Act. Section 952 did not take effect until mid-2012, and some firms will inevitably have complied sooner than others.

***H1ab**: The improved relationship between total compensation and CAR is present only in the late post-Dodd-Frank Act period.*

***H1bb**: The improved relationship between total compensation and premiums is present only in the late post-Dodd-Frank Act period.*

According to the market-based explanation of executive pay, the compensation increases seen within the past decades have been fully mandated by a number of factors, including a general growth in market capitalizations. Newly independent compensation committees may find that executives are in fact remunerated at reasonable levels already. Conyon and Peck (1998) found that independent compensation committees did not award lower compensation than non-independent committees.

***H1a(0)**: There will be no material change in the relationship between total compensation and CAR.*

***H1b(0)**: There will be no material change in the relationship between total compensation and premiums.*

Conyon and Peck (1998) did find that independent compensation committees remunerated executives with greater alignment between pay and performance. Through Say on Pay, shareholders may also seek to narrow the agency conflict by voting for compensation packages which closely link pay and performance and the interests of shareholders and executives, while voting against those that do not. By extension, the managerial discrepancy between the utility of deals that maximize market value and deals that lead to personal benefits should be narrowed. Datta et al. (2001) showed that firms in which managers were remunerated with larger proportions of equity-based compensation paid significantly lower acquisition premiums than their peers, while Bliss and Rosen (2001) found that they engaged in fewer value-reducing mergers. The market has also been shown to react more positively to acquisitions made by managers who receive high equity-based compensation (Datta et al., 2001; Minnick et al., 2011).

***H2a**: Due to improved monitoring, proportions of equity compensation have reached a level at which shareholder and executive interests are more aligned as evidenced by an improved effect on CAR.*

***H2b**: Due to improved monitoring, proportions of equity compensation have reached a level at which shareholder and executive interests are more aligned as evidenced by an improved effect on M&A premiums.*

Relationships H2a and/or H2b may only be present in one of the two periods.

***H2aa**: The improved relationship between proportions of equity compensation and CAR is present only in the early post-Dodd-Frank Act period.*

***H2ba**: The improved relationship between proportions of equity compensation and premiums is present only in the early post-Dodd-Frank Act period.*

***H2ab**: The improved relationship between proportions of equity compensation and CAR is present only in the late post-Dodd-Frank Act period.*

***H2bb**: The improved relationship between proportions of equity compensation and premiums is present only in the late post-Dodd-Frank Act period.*

Yet shareholders are known to vote for the vast majority of compensation packages (Thomas & Van der Elst, 2015). Shareholders may assess that managerial interests are well-aligned with their own interests already, and Say on Pay may turn out to be irrelevant to the compensation setting process in the vast majority of firms. As previously mentioned, Conyon (2014) did not establish any relationships between level of compensation or the proportions of equity-based compensation granted and the independence of the compensation committee in U.S. firms.

***H2a(0):** There will be no material change in the relationship between proportions of equity compensation and CAR.*

***H1b(0)**: There will be no material change in the relationship between proportions of equity compensation and premiums.*

In addition to the above hypotheses, we test for a number of relationships, which are unrelated to the Dodd-Frank Act, but relevant to the question of aligning shareholder and executive interests through CEO compensation.

Fung et al. (2009) show that the type of executive equity exposure matters: while they find that high option-based compensation drives value-destroying acquisitions, higher executive equity ownership drives better deal performance. Jensen and Murphy (1990) agree that executive equity ownership drives the closest possible alignment between the interests of shareholders and top management.

H3a: *Across all periods, we see a positive relationship between CEO equity ownership and CAR.*

H3b: *Across all periods, we see an inverse relationship between CEO equity ownership and M&A premiums.*

By extension, having large amounts of unvested stock tied up in the firm relative to the CEO's total compensation may drive similar incentives and consequent behavioral patterns to equity-based compensation and equity ownership. Due to the CEO's exposure to firm performance we expect increases in the CEO's unvested stock to ensure better alignment of shareholder and executive interests.

H4a: *Across all periods, we see a positive relationship between CEO holdings of unvested stock relative to total compensation and CAR.*

H4b: *Across all periods, we see an inverse relationship between CEO holdings of unvested stock relative to total compensation and M&A premiums.*

5 Data & Methodology

5.1 Sample & Data

The data consists of acquisitions made by U.S. acquirers in the period 2005-2017. We only include companies in the S&P 500, S&P MidCap 400, and S&P SmallCap 600 indices due to data availability. Data on executive compensation is obtained from S&P Capital IQ's database ExecuComp, while all other data, such as data on M&A transactions and share prices, is obtained from Bloomberg. The data that cannot be obtained from either database is found in Form DEF 14A proxy statements and 10-Ks, i.e. annual reports. However, no target data can be obtained for a large number of deals, which results in an elimination of 4398 deals. Additionally, deals are excluded when there is more than one acquirer. Finally, a deal is included in the sample when it satisfies the following conditions:

- The announced transaction value relative to the acquirer market capitalization is higher than 2.5 percent since the smaller relative size of the deal, the smaller the impact of the acquisition (Linn & Switzer, 2001), and we thus expect that most very small deals will not have an effect on acquirer share price.
- The acquirer did not own more than 50 percent of the target company prior to the acquisition.
- The acquirer has majority ownership in the target company after the acquisitions.
- The acquirer does not have a SIC-code starting with 6, i.e. is not in the finance, insurance, or real estate industries.
- The deal takes place in the period between 2005 and 2017, but does not take place in the period from the beginning of the financial crisis until the Dodd-Frank-Act was passed, i.e. from December 2007 until the 21st of July 2010.

Finally, 12 deals are eliminated as they are extreme outliers, and we end up with a sample of 507 deals. The analysis compares three time periods: i) Pre-crisis, i.e. from 2005 through November 2007, ii) Early post-Dodd-Frank Act, i.e. from the 21st of July 2010 through June 2014, and iii) Late post-Dodd-Frank Act, i.e. from July 2014 through 2017. We find this division between the early and late post-Dodd-Frank Act periods to be relevant and important as it inevitably takes some time from the enactment of a section until it becomes effective and for companies and shareholders to adjust to the new legislation. The compensation committee independence requirements were officially finalized by the SEC in June 2012, where NASDAQ chose to introduce rules which were even more stringent than required by the SEC. The exchange experienced strong negative responses from listed firms, and implemented a final requirement more in line with the rule set out by the SEC and adopted by other stock exchanges in December 2013. Compliance was required from the 2014 proxy season, which occurs in the spring for most U.S. firms (Lung & Sirignano, 2014). The temporal separation should thus ensure that any observations obtained after June 2014 are not strongly affected by i) observations attained before the provision's implementation in 2012, or ii) the particularly stringent requirements initially employed by NASDAQ. Additionally, the division may help indicate whether changes are lasting effects or rather short-term effects caused by a change in sentiment after the financial crisis. In our sample, 166 deals were announced in the pre-crisis period, 178 deals were announced in the early post-Dodd-Frank Act period, and 163 deals were announced in the late post-Dodd-Frank Act period. Not surprisingly, due to expectations regarding availability of data and M&A activity, there is a slight overweight of S&P 500 in the sample. As shown in Appendix 1, the index makes up

approximately 50% of the sample in the respective years on average, while the distribution of the two other indices almost make up equal parts of the remaining observations. Table 1 provides an overview of the deals taking place in the respective years and as well as for the three periods defined above.

Table 1: Overview of M&A Transactions

An overview of deals announced in respective years as well as the three time periods: the pre-crisis period, early post-Dodd-Frank Act period, and late post-Dodd-Frank Act.

	No. of Deals	Avg. Premium	Avg. Transaction Value ($mm)	% of Total Transaction Value
2005	59	28.05%	4477.99	12.88%
2006	56	26.88%	4328.68	11.81%
2007*	51	29.81%	2050.44	5.10%
2010**	25	38.54%	1836.00	2.24%
2011	54	42.56%	4251.45	11.19%
2012	39	52.63%	2063.41	3.92%
2013	35	29.88%	2347.74	4.00%
2014	51	35.02%	6866.22	17.07%
2015	58	31.86%	4506.10	12.74%
2016	46	43.41%	5427.55	12.17%
2017	33	24.41%	4287.54	6.90%
Total	507	34.47%	4047.32	100.00%
Pre-Crisis	166	28.20%	3681.80	30.69%
Early Post	178	40.99%	3538.36	29.78%
Late Post	163	33.75%	4975.35	39.52%

* Includes only pre-crisis months (January-November)

** Includes only post-Dodd-Frank-Act months (August-December)

The number of deals is distributed relatively equally across the years in the period with the exception of 2013 and 2017 where a bit fewer deals where announced. As evident in table 1 the average premium across time periods is 34.47 percent, and it is thus slightly above the typical range of average premiums from previous studies, which is between 20 and 30 percent as stated previously. Only the average premium of 28.20 percent for the pre-crisis period falls within this range, while the average premium of 40.99 percent in the early post-Dodd-Frank Act is much higher than the norm. Looking further into the average premiums in specific years, it is evident that large fluctuations prevail, as the highest figure (52.63 percent) is almost twice as high as the lowest (26.88 percent).

The average deal size for the whole period is $4047.32 million, and the averages across periods and years also differ a great deal. In fact, the lowest average deal size, which is reported in 2010, is $1836 million, while the average deal size in 2014 is almost four times higher ($6866.22 million). When reviewing the periods it is evident that the highest average deal size in found in the late post-Dodd-Frank Act period, while the lowest is found in the early post-Dodd-Frank Act period.

Thus, the period directly following the Act can be described as the period with the highest premiums and the smallest deal sizes. The late post-Dodd-Frank Act period has the highest percentage of total transaction value due to the highest average deal size.

5.2 Dependent Variables: M&A Transaction Performance

5.2.1 M&A Transaction Performance (CAR)

In order to measure how M&A transactions perform we use cumulative abnormal stock market returns in the nine-day period starting one week before the announcement date and ending two days after the announcement date. Cumulative abnormal stock market returns are commonly used to measure deal performance (Hutzchenreuter et al., 2014), but the literature does not agree on what period most correctly measures the impact of deals (Goergen & Renneboog, 2004). The use of one week prior to the announcement date as the unaffected share price eliminates at least part of the effect of insider trading (King, 2009) and information leakage (Jayaraman, Mandelker & Shastri, 1991), which have been found to affect the abnormal returns in the period before announcement. Looking into cumulative abnormal returns until two days after the acquisition is in line with for example Asquith et al. (1983) and Fuller et al.'s (2002) approach. Other studies have investigated the long-term effect of M&A transactions, but the further away from the announcement date one investigates abnormal returns, the more difficult it becomes to distinguish between effects of the transaction and other factors or events affecting the stock price (Goergen & Renneboog, 2004). For example, when measuring six months prior to the announcement date one may include the increase in acquirer share price, which is often observed before a bid (ibid.). Consequently, this study will investigate only the short-term effects. The cumulative abnormal stock market return is the difference between actual return and expected return. We calculate the expected return of the different stocks using the CAPM formula:

$$r_a = r_f + \beta_a(r_m - r_f)$$

This approach to calculating the expected return is the dominant approach for event studies on M&A performance (Bruner, 2002). The S&P 500 index is used for market returns, the risk-free rate is the 10-year U.S. Treasury bond yield, and the adjusted beta is retrieved from Bloomberg.

5.2.2 Acquisition Premium

Similar to the CAR calculation, the calculation of the premium will also use the target share price seven days prior to announcement date as the unaffected share price. Thus, the acquisition equity premium is calculated using the following formula:

$$premium = \frac{announced\ equity\ value}{target\ market\ cap_{-7\ days}} - 1 = \frac{price\ paid\ per\ share}{target\ share\ price_{-7\ days}} - 1$$

5.3 Explanatory Variables

All compensation data is retrieved in U.S. dollar values. Compensation data has been retrieved from the fiscal year before that of the acquisition announcement date to ensure that i) our analysis is based on the compensation in place during the decision-making process, and ii) any bonuses triggered directly by the acquisition process will not skew our results.

5.3.1 Total Compensation

The *LN_TOTAL_COMP* variable is the natural logarithm of the sum of the CEO's salary, cash bonus, pension, option grants, restricted stock grants, and other compensation. As previously mentioned, the first $1 million of annual non-incentive compensation is tax deductible. The annual bonus and its related targets are determined at the discretion of the compensation committee, as are pension payments and other compensation. We take the natural logarithm of the total compensation in order for the variable to become approximately normally distributed, and reduce the impact of outliers.

5.3.2 Equity-Based Compensation (EBC)

The *EQT_BASED_PCT* variable identifies all compensation awarded in the form of options and RSUs as a percentage of the total compensation given to the executive. While the number of units awarded and the strike price and/or vesting date are determined by the compensation committee, the ultimate payout is beyond the committee's control as it is entirely dependent on the firm's future stock price.

We have chosen to combine stock options and RSUs into one common variable, because their relative usage have changed substantially as a result of changes in accounting standards during our sample period. The result of the 2006 FAS 123R change was a relative move away from options and towards RSUs, suggesting a degree of substitutability between the two (Thomsen & Conyon, 2012;

Bodolica & Spraggon, 2015). Following FAS 123R, all firms have been required to disclose the fair value of any options awarded to the CEO in annual proxy statements. To ensure that all data on option compensation in the 1992 format and the 2006 format is comparable, we use ExecuComp's Black-Scholes calculations of fair value for all data points stated in the old format.

5.3.3 Executive Equity Ownership

The *SHROWN_PCT* variable identifies executive equity ownership as the market value of all shares owned by the CEO as a percentage of the firm's total market capitalization. Our area of interest is limited to the executive's financial interests, and we do not take dual share structures into account. As a result, the variable is only defined on the basis of the executive's residual cash flow rights and voting power is not taken into consideration.

5.3.4 Unvested Stock

The *STOCK_UNV_PCT* variable expresses the total value of the CEO's unvested stock holdings as a percentage of his or her total annual compensation. The variable is included to indicate the degree to which the executive has material financial incentives tied up in the firm beyond those granted in the relevant fiscal year. The variable grants a modest indication of the CEO's temporal horizon. Data on the specific vesting horizons of the unvested stock units was not readily accessible for our purposes, but information thereof would have created nuance and improved the quality of potential related insights.

5.4 Control Variables

Given the findings from the literature review regarding the factors that affect performance of M&A transactions, we include the control variables listed in this section. Some factors from the literature review have been excluded due to general irrelevance in the context of our study or inability to obtain the data. This includes: i) deal type, since meaningful data could not be obtained, ii) type of target, also due to lack of meaningful data, iii) historical operational performance, as this thesis investigates the effect through CAR and not operational performance following an acquisition, iv) CEO tenure due to lack of data, and v) merger waves, since it would not be possible to separate the effect of the Dodd-Frank Act and the effects of the individual stages of the merger waves, especially given the fact that we do not include data from the period immediately following the sixth wave, i.e. the financial crisis.

The following control variables are included, and are also presented in table 2 along with our dependent and explanatory variables:

- DUALITY: CEO duality is measured using a dummy variable that assigns a value of 1 when CEO duality is present and 0 when it is not.
- INDEP_PCT: The percentage of independent directors on the acquirer's board of directors.
- WOMEN_PCT: Diversity of the board is measured through the percentage of women on the acquirer's board of directors.
- TARGET_REL_SIZE: The size of the target relative to that of the acquirer is measured as target market capitalization divided by acquirer market capitalization. The target market capitalization was retrieved from Bloomberg in local currency and historical exchanges rates were used to calculate the U.S. dollar value.
- CASH_PYMT: A dummy variable that measures the payment method and ascribes a value of 1 when the consideration is cash and 0 otherwise. A value of 0 thus indicates that the payment method is either stock, a mix of cash and stock, or undisclosed.
- STOCK_PYMT: Contrary to the above variable, this dummy variable ascribes a value of 1 when the payment method is stock and 0 otherwise. A value of 0 thus indicates that the payment method is either cash, a mix of cash and stock, or undisclosed.
- DIVERSIFICATION: In order to decide whether the transaction represents diversification for the acquirer, we compare the SIC-codes of the target and the acquirer. When the first two digits of the SIC-code are the same for the target and the acquirer, we do not consider the transaction to involve diversification and assign a value of 0 and when the first two digits are not the same we assign a value of 1.
- CROSS-BORDER: The identifier of cross-border transactions is represented as a dummy variable assigning a value to 1 when the target is a non-U.S. company and a value of 0 when the target is a U.S. company.
- BOOK_TO_MARKET: The book-to-market ratio of the acquirer.
- LEVERAGE: The acquirer's leverage is measured as short-term and long-term debt divided by total assets (Kravet, 2014; Harrison et al., 2014).
- CASH_BCE_PCT: Cash and cash equivalents on the balance sheet are also represented as a ratio to total assets (Oler, 2008).
- EXPERIENCE: In the literature review, it was generally concluded that acquisition experience positively affects acquisition performance. Due to the fact that Haleblian and

Finkelstein (1999) find that having made only one acquisition may in fact negatively affect the acquisition performance we will only consider an acquirer experienced when the company has made two or more acquisitions prior to the observation. Due to the likelihood of CEO changes and the notion that only frequent acquirers reap the benefits of experience (Hutzchenreuter et al., 2014), we only include the acquisitions made in the five-year period prior to the acquisition when defining M&A experience. Thus, the dummy variables assigns a value of 1 when the acquirer has made two or more acquisitions within the five-year period prior to the deal in question and 0 otherwise.

- LN_ACQ_MKT_CAP: The size of the acquirer is represented as the company's market capitalization. Similar to LN_TOTAL_COMP we take the natural logarithm of the acquirer's market capitalization in order to the variable to become more compliant with normal distribution.

Table 2: Regression Variables

	Variable	Variable Name in Regression
Dependent Variables	Cumulative abnormal return	CAR
	Transaction premium	PREMIUM
Independent Variables	EBC as % of total compensation	EQT_BASED_PCT
	Total compensation (natural logarithm)	LN_TOTAL_COMP
	% of common shares owned by CEO	SHROWN_PCT
	CEO's unvested stock as % of total compensation	STOCK_UNV_PCT
Control Variables	CEO duality dummy	DUALITY
	% of independent directors on acquirer BoD	INDEP_PCT
	% of female directors on acquirer BoD	WOMEN_PCT
	Target market cap divided by acquirer market cap	TARGET_REL_SIZE
	Cash consideration dummy	CASH_PYMT
	Stock consideration dummy	STOCK_PYMT
	Diversification dummy	DIVERSIFICATION
	Cross-border transaction dummy	CROSS_BORDER
	Acquirer book-to-market ratio	BOOK_TO_MARKET
	Acquirer leverage	LEVERAGE
	Cash on balance sheet divided by total assets	CASH_BCE_PCT
	Acquirer M&A experience	EXPERIENCE
	Acquirer market capitalization (natural logarithm)	LN_ACQ_MKT_CAP

5.5 Biases & Issues

As evident in table 3 cross-border acquisitions may hold biases caused by the overrepresentation and underrepresentation of certain target countries. Countries such as Britain and Canada are clearly overrepresented, relative to e.g. African countries of which none are represented. As reviewed previously, a company is for example more likely to acquire a company that it has been in an alliance with. Thus, due to the fact that U.S. companies are exposed (e.g. through trade and investments) more to companies in some countries than to companies in other countries (Office of the United States Trade Representative, 2018), the data becomes biased towards these countries. Consequently, findings regarding the effect of the cross-border dummy variable may not be directly transferable to and consistent across all potential target locations.

Table 3: Target Country, excl. USA

	No. of deals		No. of deals
Europe	**48**	**Asia**	**18**
Britain	20	Taiwan	7
Germany	4	India	4
Ireland	4	Israel	4
Finland	3	China	2
Sweden	3	Indonesia	1
Switzerland	3		
Denmark	2	**North America**	**34**
Netherlands	2	Canada	34
Poland	2		
Croatia	1	**South America**	**2**
France	1	Chile	1
Italy	1	Brazil	1
Jersey	1		
Russia	1	**Oceania**	**10**
		Australia	10
Africa	**0**		

Similarly, as presented in table 4, some industries are heavily represented, while others are not represented in the data at all. Thus, the results may be more reflective of the heavily represented industries, which may limit the degree to which generalizations can be made across all industries. This bias may be caused by the fact that only public firms are investigated, as some industries will have a higher representation of public firms than others (Frésard, Hege & Phillips, 2016).

Additionally, some industries generally experience more M&A activity than other industries, in general or at certain points in time (Kumar, 2012). When further pooled into categories, such as manufacturing and retail trade, the data is more evenly distributed, which to some extent justifies overall generalizability.

Table 4: Acquirer Two-Digit SIC-Code

SIC-Code	No. of Deals	SIC-Code	No. of Deals	SIC-Code	No. of Deals	SIC-Code	No. of Deals
10	7	**27**	9	**39**	3	**55**	1
13	15	**28**	64	**40**	1	**56**	6
14	3	**29**	7	**44**	4	**57**	2
15	3	**30**	2	**45**	4	**58**	1
16	1	**31**	2	**47**	4	**59**	11
17	1	**32**	1	**48**	20	**70**	2
20	14	**33**	8	**49**	20	**72**	1
21	2	**34**	4	**50**	12	**73**	60
22	1	**35**	34	**51**	8	**79**	1
23	3	**36**	61	**52**	3	**80**	9
25	2	**37**	14	**53**	1	**87**	5
26	9	**38**	61	**54**	3		

Additionally, the data may have a biases caused by the elimination process, where we exclude a number of deals because the relevant data cannot be obtained. Since data regarding market capitalization of the targets is used to calculate the relative size of the target firm compared to the acquirer, all private targets are excluded. As a result, inferences based on this study can only be made in relation to public firms acquiring other public firms.

The results may also be exposed to omitted variable bias. Omitted variable bias occurs when important variables that correlate with the dependent as well as one or more of the independent variables are left out of a regression model (Beccarini, 2010). In order to reduce the risk of omitted variable bias, we ran the statistical tests with other variables included in the model, for example by incorporating several other compensation variables such as salary and bonus, and found that their exclusion did not cause omitted variable bias. Yet we may still have unintentionally left out independent variables that correlate with the dependent variables.

The reliance on share prices due to the fact that CAR is used as a measure of success may also cause some issues. Firstly, we cannot know if other events took place during the nine-day period in

which we measure CAR, which also affected the company's share price. Secondly, our study relies on the assumption that markets are efficient. However, it may not be the case that all investors are attentive to signals of how acquisitions will perform (Oler, 2008). Hirshleifer and Teoh (2003) find that market prices depend on beliefs of both attentive and inattentive investors with limited processing power, which indicates that market efficiency may not prevail. Additionally, as demonstrated in the literature review, research on different variables sometimes reaches contradicting conclusions. Even if investors had perfect information and were attentive and able to process all research being made on acquisitions, it may thus not be clear to them how acquisitions will perform based on the signals that each variable gives. However, Franks, Harris and Titman (1991) do not find mispricing at the time of announcement to prevail, thus indicating that the assumption of market efficiency may be acceptable.

In order to minimize issues in relation to validity of the data, we conducted sanity checks on the data obtained from Bloomberg and ExecuComp. These sanity checks were conducted by cross-checking data in 10-Ks, proxy statements, press releases regarding transaction values etc.

Using Black-Scholes calculations of fair value to indicate the value of option compensation leads to a downward bias on both the proportion of equity to total compensation and total compensation overall relative to the actual realized gains during our sample period (Hopkins & Lazonick, 2016). Despite this bias, we maintain that fair value calculations are relevant for our purposes, as the board of directors and the executive have no better indication of the ultimate actual realized gains when compensation is set and granted. With executive risk-aversion in mind, fair value calculations may even entail a perceived upward valuation bias ex-ante of the option vesting window from an executive's perspective (Hall & Murphy, 2002).

5.6 Methodology

5.6.1 ANOVA F-test and Student's t-test

Following a review of the descriptive statistics, we will check whether the Dodd-Frank Act has significantly changed any of the compensation variables. We also check whether we observe any significant changes in the control variables across the periods. In order to check for changes, we compare the means in the three periods for all independent variables. Thus, the mean differences will be tested for three groups, i.e. a pre-crisis group, an early post-Dodd-Frank Act group, and a late post-Dodd-Frank Act group. We conduct one-way ANOVA F-tests as these tests allow us to control for Type I errors, i.e. that the null hypothesis is rejected when it is in fact true. However, the ANOVA F-

test only allows us to test whether there is a difference between at least one pair of means, but not what pairs differ and by how much (Agresti & Franklin, 2014). The Student's t-test allows us to identify what pairs differ significantly and by how much. The t-test is an Independent Samples t-test as it compares the means of different groups. Since the ANOVA F-test will test whether any of the sample means differ, the following null hypothesis is tested for all variables:

$$\mathbf{H(0)}: \mu_1 = \mu_2 = \mu_3$$

where μ_1, μ_2, and μ_3 are the means for the pre-crisis group, the early post-Dodd-Frank Act group, and the late post-Dodd-Frank Act group, respectively. The alternative hypothesis is as follows:

H(a): at least two of the means differ

The Student's t-test investigates similar hypotheses, but tests for all pairs of means. Thus, the null hypotheses are as follows:

$$\boldsymbol{H(0)_{12}}: \mu_1 = \mu_2$$
$$\boldsymbol{H(0)_{13}}: \mu_1 = \mu_3$$
$$\boldsymbol{H(0)_{23}}: \mu_2 = \mu_3$$

And the following alternative hypothesis is tested for each pair of means:

H(a): the means differ

The F-test statistics for the ANOVA F-test compares the variability within each group to the variability between the groups. An increase in the variability within each group affects the probability of the null hypothesis being rejected negatively, i.e. evidence against the null hypothesis is stronger for smaller within-group variances. However, not surprisingly an increase in the variability between samples affects the probability of the null hypothesis being rejected positively, as a larger distance between sample means makes it more likely that they are significantly different (Agresti & Franklin, 2014). The F-test statistic is calculated as:

$$F = \frac{between\ group\ variability}{within\ group\ variability}$$

As noted above, the Student's t-test allows us to compare each pair and assess the differences between them and the significance of the differences. Similar to the F-test statistic, the t-test statistic also compares the variability of the means of the different groups. In order to compare the within-group variability, the variability is pooled. Thus, the formula for calculating the t-test statistics is:

$$t = \frac{\overline{y_1} - \overline{y_2}}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

The F-test statistic is actually the square of the t-test statistic when it is applied to only two groups, and the two tests provide the same p-value (Agresti & Franklin, 2014).

The F-test and the t-test both assume normal distribution and equal variance. As evident in table 5 and appendix 2 most of the groups have almost the same standard deviation, indicating equal variance, and they mostly follow normal distribution. There are, however, a few exceptions to this assumption. Additionally, while some extreme outliers have been removed to ensure normal distribution, some of the variables are not normally distributed. However, these violations from the assumptions are not as problematic for our sample due to the large sample size (Agresti & Franklin, 2014). In fact, when the sample size is larger than 30 for each group, the assumption of normal distribution becomes less important due to the central limit theorem, and the risk of Type I error remains almost unchanged by the violation of the assumption (ibid.).

5.6.2 Multivariable Regression

Following the ANOVA F-test and Student's t-test regarding the impact of the Dodd-Frank Act on compensation practices, we test whether we have experienced a change in the effect of executive compensation on CAR and premium in M&A transactions. In order to test whether the four compensation variables identified above have an impact on CAR and premium and whether these impacts have changed over time, we conduct multivariable regressions for the three time periods. Since the identified control variables may also have affected CAR and premiums, we include these in the multivariable regressions as well.

The same sample prediction equation will be applied for the pre-crisis, early post-Dodd-Frank Act and late post-Dodd-Frank Act samples. The CAR of a transaction is estimated by the following equation:

$$\begin{aligned}\text{CAR} = {} & \beta_0 + \beta_1 \text{EQT\_BASED\_PCT} + \beta_2 \text{TOTAL\_COMP} + \beta_3 \text{SHROWN\_PCT} \\ & + \beta_4 \text{STOCK\_UNV\_PCT} + \beta_5 \text{DUALITY} + \beta_6 \text{INDEP\_PCT} + \beta_7 \text{WOMEN\_PCT} \\ & + \beta_8 \text{TARGET\_REL\_SIZE} + \beta_9 \text{CASH\_PYMT} + \beta_{10} \text{STOCK\_PYMT} \\ & + \beta_{11} \text{DIVERSIFICATION} + \beta_{12} \text{CROSS\_BORDER} + \beta_{13} \text{BOOK\_TO\_MARKET} \\ & + \beta_{14} \text{LEVERAGE} + \beta_{15} \text{CASH\_BCE\_PCT} + \beta_{16} \text{EXPERIENCE} + \beta_{17} \text{ACQ\_MKT\_CAP} \\ & + \epsilon\end{aligned}$$

The premium of a transaction is estimated by the following equation, which will also be applied in all three time periods:

$$\begin{aligned}\text{Premium} = {} & \beta_0 + \beta_1 \text{EQT\_BASED\_PCT} + \beta_2 \text{TOTAL\_COMP} + \beta_3 \text{SHROWN\_PCT} \\ & + \beta_4 \text{STOCK\_UNV\_PCT} + \beta_5 \text{DUALITY} + \beta_6 \text{INDEP\_PCT} + \beta_7 \text{WOMEN\_PCT} \\ & + \beta_8 \text{TARGET\_REL\_SIZE} + \beta_9 \text{CASH\_PYMT} + \beta_{10} \text{STOCK\_PYMT} \\ & + \beta_{11} \text{DIVERSIFICATION} + \beta_{12} \text{CROSS\_BORDER} + \beta_{13} \text{BOOK\_TO\_MARKET} \\ & + \beta_{14} \text{LEVERAGE} + \beta_{15} \text{CASH\_BCE\_PCT} + \beta_{16} \text{EXPERIENCE} \\ & + \beta_{17} \text{ACQ\_MKT\_CAP} + \epsilon\end{aligned}$$

In order to estimate the models, an ordinary least squares (OLS) regression is used. The interpretation of the intercept, i.e. β_0, is the value of the dependent variable in the case that all independent variables are equal to 0. However, this is nonsensical for the multivariable models in this study as some of the independent variables cannot have a value of 0. For example, is it not reasonable that a company would have a market capitalization of 0.

The assumptions for the random error component, ϵ, are as follows: i) it has a mean of zero, ii) it is normally distributed, iii) it is homoscedastic, i.e. it has constant variance at all predicted values of the dependent variables, and iv) the error terms of different observations are independent (Mendelhall & Sincich, 2012).

We check for normal distribution of ϵ. Since this is the least vital assumption, moderate deviations can be accepted (Mendelhall & Sincich, 2012). To determine whether the assumption is

violated, we represent the distribution of residuals in histograms. There are some pitfalls to the approach since two skewed independent variables may produce a symmetric distribution, but given the problems associated with other methods, the graphical check is still preferred (ibid.). Appendix 3 shows the histograms for residuals for CAR and premium for all three time periods. As the deviations from the normal distribution appear to be moderate, we conclude that this assumption is not violated. Additionally, appendix 3 shows that the means of the residuals are virtually 0 for all time periods and for both the premium and CAR, which means that the assumption of a mean of 0 is not violated either.

We test for homoscedasticity by plotting the residuals of the dependent variables to the estimated means of the dependent variables. These plots are shown in appendix 4 and suggest that the assumption mostly holds. While the assumption of homoscedasticity seems to hold almost perfectly for the pre-crisis period premium, the early post-Dodd-Frank Act period CAR, and the late post-Dodd-Frank Act period CAR, there are slight violations in the other three. For the early and late post-Dodd-Frank Act period premiums, the variance is slightly higher for larger premiums. Also, we observe somewhat higher variance for negative CARs in the pre-crisis period. However, common to all three plots is that the difference is not large, and we therefore do not expect it to have a large impact on our results.

In order to ensure that multicollinearity is not at problematic levels, we calculate the correlation between the different independent variables. Severe multicollinearity causes some problems in regression analyses, such as rounding errors as well as confusing and misleading results (Mendelhall & Sincich, 2012). Therefore, the variable with the lowest explanatory power is removed if two variables have a correlation coefficient of more than 0.7 or less than -0.7 to eliminate severe multicollinearity. However, as shown in appendix 5 the lowest observed coefficient correlation is -0.682 and the highest is 0.567, and thus none of the independent variables are removed.

6 Results

6.1 Descriptive Statistics

This section reviews descriptive statistics for the three time periods investigated in this paper. The descriptive statistics for the three respective periods are provided in table 6, 7, and 8. To better illustrate the changes in variables, a brief overview of means and standard deviations across all three periods is also provided in table 5.

Table 5: Overview of Means and Standard Deviations For All Periods

Means and standard deviations for the three time periods. 1 is the pre-crisis period, 2 is the early post-Dodd-Frank Act period, and 3 is the late post-Dodd-Frank Act period.

	Mean			Standard Deviation		
	1	2	3	1	2	3
CAR	-0.009	0.018	0.0003	0.061	0.078	0.071
PREMIUM	0.282	0.410	0.338	0.205	0.315	0.292
EQT_BASED_PCT	0.318	0.513	0.578	0.288	0.208	0.189
LN_TOTAL_COMP	8.894	8.752	8.989	0.91	0.793	0.679
SHROWN_PCT	0.005	0.010	0.010	0.027	0.018	0.022
STOCK_UNV_PCT	0.610	0.685	0.796	1.490	0.692	0.800
DUALITY	0.741	0.478	0.436	0.439	0.501	0.497
INDEP_PCT	0.789	0.844	0.835	0.098	0.075	0.097
WOMEN_PCT	0.123	0.141	0.173	0.086	0.103	0.101
TARGET_REL_SIZE	0.229	0.226	0.242	0.293	0.247	0.280
CASH_PYMT	0.681	0.7303	0.626	0.468	0.4450	0.485
STOCK_PYMT	0.108	0.0843	0.067	0.312	0.2786	0.252
DIVERSIFICATION	0.367	0.3034	0.325	0.484	0.4610	0.470
CROSS_BORDER	0.205	0.2303	0.227	0.405	0.4222	0.420
BOOK_TO_MARKET	0.376	0.453	0.375	0.174	0.284	0.274
LEVERAGE	0.203	0.216	0.283	0.148	0.155	0.150
CASH_BCE_PCT	0.094	0.112	0.110	0.087	0.091	0.087
EXPERIENCE	0.524	0.5	0.460	0.501	0.50141	0.500
LN_ACQ_MKT_CAP	8.897	8.679	9.111	1.436	1.460	1.513

As evident in tables 5, 6, 7, and 8 the mean CARs for the three time periods vary somewhat. In the pre-crisis period the mean CAR is negative with a figure of -0.9 percent, while the early and late post-Dodd-Frank Act periods have positive mean CARs with values of 1.8 percent and 0.03 percent, respectively. Thus, the descriptive statistics seem to indicate that CARs have improved following the Dodd-Frank Act, although the positive trend has nearly neutralized in the late post-Dodd-Frank Act period. Additionally, it is evident from the standard deviations of 6.1 percent, 7.8 percent, and 7.1 percent that the data is highly dispersed, with minimum and maximum values varying by 41.6 percentage points, 48.7 percentage points, and 45.4 percentage points.

As reviewed in the sample overview section the mean premiums vary over the different time periods, with values of 28.2 percent, 41.0 percent, and 33.8 percent in the pre-crisis, early, and late post-Dodd-Frank Act period, respectively. As the coefficient of variation is less than 1 in all periods, the data is not as dispersed as the observations for CAR. However, there are still relatively large

variations in the sample premiums with observations ranging from -51.6 to 138.6 percent in the pre-crisis period, from -23.1 to 154.9 percent in the early post-Dodd-Frank Act period, and from -8.1 to 164.4 percent in the late post-Dodd-Frank Act period.

Table 6: Pre-Crisis Descriptive Statistics

	Mean	Std. Dev.	Min	25%	Median	75%	Max
CAR	-0.009	0.061	-0.232	-0.040	-0.005	0.019	0.184
PREMIUM	0.282	0.205	-0.516	0.150	0.258	0.394	1.386
EQT_BASED_PCT	0.318	0.288	0.000	0.042	0.265	0.569	1.000
LN_TOTAL_COMP	8.894	0.91	5.089	8.298	8.940	9.530	11.022
SHROWN_PCT	0.005	0.027	0.000	0.000	0.000	0.000	0.246
STOCK_UNV_PCT	0.610	1.490	0.000	0.000	0.194	0.693	15.324
DUALITY	0.741	0.439	0	0	1	1	1
INDEP_PCT	0.789	0.098	0.444	0.714	0.800	0.875	0.923
WOMEN_PCT	0.123	0.086	0.000	0.077	0.111	0.182	0.400
TARGET_REL_SIZE	0.229	0.293	0.009	0.047	0.120	0.292	1.703
CASH_PYMT	0.681	0.468	0	0	1	1	1
STOCK_PYMT	0.108	0.312	0	0	0	0	1
DIVERSIFICATION	0.367	0.484	0	0	0	1	1
CROSS_BORDER	0.205	0.405	0	0	0	0	1
BOOK_TO_MARKET	0.376	0.174	0.014	0.232	0.371	0.503	0.840
LEVERAGE	0.203	0.148	0.000	0.102	0.198	0.284	0.858
CASH_BCE_PCT	0.094	0.087	0.000	0.027	0.069	0.126	0.455
EXPERIENCE	0.524	0.501	0	0	1	1	1
LN_ACQ_MKT_CAP	8.897	1.436	6.044	7.701	8.854	9.913	11.959
N = 166							

Table 7: Early post-Dodd-Frank Act Descriptive Statistics

	Mean	Std. Dev.	Min	25%	Median	75%	Max
CAR	0.018	0.078	-0.200	-0.021	0.009	0.049	0.287
PREMIUM	0.410	0.315	-0.231	0.231	0.360	0.534	1.549
EQT_BASED_PCT	0.513	0.208	0.000	0.383	0.530	0.670	0.912
LN_TOTAL_COMP	8.752	0.793	5.747	8.246	8.736	9.284	10.854
SHROWN_PCT	0.010	0.018	0.000	0.001	0.004	0.010	0.117
STOCK_UNV_PCT	0.685	0.692	0.000	0.140	0.546	0.992	3.518
DUALITY	0.478	0.501	0	0	0	1	1
INDEP_PCT	0.844	0.075	0.571	0.800	0.875	0.900	0.938
WOMEN_PCT	0.141	0.103	0.000	0.082	0.143	0.200	0.444
TARGET_REL_SIZE	0.226	0.247	0.007	0.057	0.131	0.313	1.251
CASH_PYMT	0.7303	0.4450	0	0	1	1	1
STOCK_PYMT	0.0843	0.2786	0	0	0	0	1
DIVERSIFICATION	0.3034	0.4610	0	0	0	1	1
CROSS_BORDER	0.2303	0.4222	0	0	0	0	1
BOOK_TO_MARKET	0.453	0.284	-0.007	0.277	0.400	0.554	1.982
LEVERAGE	0.216	0.155	0.000	0.101	0.192	0.308	0.787
CASH_BCE_PCT	0.112	0.091	0.002	0.041	0.094	0.163	0.403
EXPERIENCE	0.5	0.50141	0	0	0.5	1	1
LN_ACQ_MKT_CAP	8.679	1.460	5.063	7.677	8.457	9.827	12.150
N = 178							

Table 8: Late Post-Dodd-Frank Act Descriptive Statistics

	Mean	Std. Dev.	Min	25%	Median	75%	Max
CAR	0.0003	0.071	-0.214	-0.036	-0.004	0.033	0.240
PREMIUM	0.338	0.292	-0.081	0.142	0.273	0.422	1.644
EQT_BASED_PCT	0.578	0.189	0.000	0.492	0.620	0.697	0.972
LN_TOTAL_COMP	8.989	0.679	7.038	8.519	9.025	9.433	10.624
SHROWN_PCT	0.010	0.022	0.000	0.001	0.004	0.009	0.170
STOCK_UNV_PCT	0.796	0.800	0.000	0.287	0.553	1.079	4.146
DUALITY	0.436	0.497	0	0	0	1	1
INDEP_PCT	0.835	0.097	0.462	0.800	0.875	0.900	1.000
WOMEN_PCT	0.173	0.101	0.000	0.111	0.182	0.222	0.500
TARGET_REL_SIZE	0.242	0.280	0.012	0.056	0.118	0.320	1.750
CASH_PYMT	0.626	0.485	0	0	1	1	1
STOCK_PYMT	0.067	0.252	0	0	0	0	1
DIVERSIFICATION	0.325	0.470	0	0	0	1	1
CROSS_BORDER	0.227	0.420	0	0	0	0	1
BOOK_TO_MARKET	0.375	0.274	-0.184	0.200	0.321	0.473	1.676
LEVERAGE	0.283	0.150	0.000	0.189	0.273	0.374	0.713
CASH_BCE_PCT	0.110	0.087	0.000	0.038	0.092	0.149	0.418
EXPERIENCE	0.460	0.500	0	0	0	1	1
LN_ACQ_MKT_CAP	9.111	1.513	5.918	7.937	9.172	9.994	13.055
N = 163							

Tables 5, 6, 7, and 8 also shows the descriptive statistics for the explanatory variables. In terms of equity-based compensation it is evident that this form of compensation becomes increasingly popular. In the pre-crisis period the mean equity-based compensation was 31.8 percent, with observations ranging from 0 to 100 percent. However, following the Dodd-Frank Act (i.e. during the early period) the mean equity-based compensation was 51.3 percent, while it further increased to 57.8 percent in the late post-Dodd-Frank Act period. The latter two periods had observations ranging from 0 to 91.2 percent and from 0 to 97.2 percent, respectively.

However, the mean natural logarithm of the total compensation has remained at almost the same level from the pre-crisis to the late post-Dodd-Frank Act period, although a slight increase is observed. The mean natural logarithm of the total compensation was 8.894 in the pre-crisis period, 8.752 in the early post-Dodd-Frank period, and 8.989 in the late post-Dodd-Frank Act period. All periods have a coefficient of variation far below 1.

The mean of managerial equity ownership increases throughout the period. In the first period, the mean share ownership is 0.5 percent, with values ranging from 0 to 24.6 percent. The mean for the second period is 1 percent share ownership, with values ranging from 0 to 11.7 percent. Finally, the share ownership mean is also 1 percent the third period, but with values ranging from 0 to 17 percent. It is evident from tables 5, 6, 7, and 8 that most observations remain relatively low with a few high observations for all periods. This is especially the case for the pre-crisis period where the 75^{th} percentile is 0 percent.

Unvested stock as a percentage of total compensation differs across the three periods and is highly dispersed. In the pre-crisis period the mean is 61.0 percent, with observations ranging from 0 to 1532.4 percent. The figure is higher for the early post-Dodd-Frank Act period with a mean of 68.5 percent. In this period the lowest observation is 0 percent and the highest observation is 351.8 percent. Finally, in the late post-Dodd-Frank Act period the figure increases further to a mean of 79.6 percent, and a range of observations from 0 to 414.6 percent. Thus, the early and late post-Dodd-Frank Act periods have much less extreme values than the pre-crisis period.

The descriptive statistics for the control variables will not be reviewed, but it is evident from tables 5, 6, 7, and 8 that the variables are relatively equally dispersed across periods.

6.2 Mean Differences

The former section reviewed the characteristics of the different variables, including the means. This section investigates whether the differences in the means in the three time periods are significant by conducting one-way ANOVA F-tests as well as Student's t-tests as explained in the methodology section. The results of the one-way ANOVA F-tests and the Student's t-tests are presented in table 9.

Table 9: Mean Difference Tests

One-way ANOVA F-tests and Student's t-tests for the three time periods. μ1 is the mean for pre-crisis, μ2 is the mean for the early post-Dodd-Frank Act, and μ3 is the mean for the late post-Dodd-Frank Act. ***, **, * indicate that the coefficient is significant at the one, five, and ten percent level, respectively, for a two-sided t-test.

	One-way ANOVA		Student's t-test		
	F-ratio	P-value	Difference (μ2-μ1)	Difference (μ3-μ1)	Difference (μ3-μ2)
CAR	6.8552	0.0012	0.02749***	0.00945	-0.01803**
PREMIUM	9.3238	0.0001	0.12793***	0.05556*	-0.072368***
EQT_BASED_PCT	56.6930	<0.0001	0.19523***	0.26086***	0.06562***
LN_TOTAL_COMP	3.7688	0.0237	-0.14127	0.09479	0.23606***
SHROWN_PCT	3.3564	0.0356	0.00518**	0.00581**	0.00062
STOCK_UNV_PCT	1.3079	0.2713	0.07490	0.18604	0.11114
DUALITY	19.7586	<0.0001	-0.26344***	-0.30538***	-0.04195
INDEP_PCT	17.7684	<0.0001	0.05483***	0.04529***	-0.00954
WOMEN_PCT	11.1265	<0.0001	0.01785*	0.049781***	0.031935***
TARGET_REL_SIZE	0.1563	0.8553	-0.00259	0.01302	0.01561
CASH_PYMT	2.1450	0.1181	0.04961	-0.05496	-0.10457**
STOCK_PYMT	0.8788	0.4159	-0.02416	-0.04095	-0.01679
DIVERSIFICATION	0.8151	0.4432	-0.06410	-0.04232	0.02178
CROSS_BORDER	0.1874	0.8292	0.02552	0.02217	-0.00334
BOOK_TO_MARKET	5.5574	0.0041	0.07704***	0.00076	-0.07780***
LEVERAGE	13.5865	<0.0001	0.01316	0.08083***	0.06767***
CASH_BCE_PCT	2.2084	0.1109	0.01842*	0.01656*	-0.00186
EXPERIENCE	0.6844	0.5049	-0.02410	-0.06397	-0.03988
LN_ACQ_MKT_CAP	3.6765	0.0260	-0.2176	0.21412	0.43174***

As evident in table 9, the null hypothesis for the ANOVA F-tests can be rejected for all variables where we observe a significant difference in means for at least one pair of means in the Student's t-test, except for CASH_PYMT and CASH_BCE_PCT. Thus, we can rule out Type I error for all the significant mean differences for all the other variables, but not for CASH_PYMT and CASH_BCE_PCT.

As reviewed in the descriptive statistics section, the dependent variables both increased from the pre-crisis to the early post-Dodd-Frank Act period and decreased again to the late post-Dodd-

Frank Act period. Both the initial increases and decreases are significant at 1 percent or 5 percent significance levels, but due to the stabilization from the second to the last period the mean difference between the pre-crisis and late post-Dodd-Frank Act periods are not significant for CAR and only significant at the 10 percent level for the premium, though they represent improvements in both variables.

The mean of the proportion of equity-based compensation increases a lot over the three periods. The mean difference of 19.523 percentage points between the pre-crisis and the early post-Dodd-Frank Act period is significant, as is the increase in the mean of 6.562 percentage points from the early to the late post-Dodd-Frank Act periods, both at the 1 percent significance level. This constitutes an overall difference for the whole period of 26.086 percentage points, which is significant at the 1 percent significance level as well.

The mean difference for the natural logarithm of the total compensation in the three periods is only significant when comparing the early and the late post-Dodd-Frank Act groups with an increase of 0.23606 from the former to the latter.

Although the mean of equity ownership has increased between all periods, the increase from the early to the late post-Dodd-Frank Act is not significant. However, the increase of 0.518 percentage points from the first to the second period and the overall increase throughout the periods of 0.581 percentage points are both significant at the 5 percent significance level.

However, the increase observed in the means for the unvested stock as a percentage of total compensation from both the pre-crisis group to the early post-Dodd-Frank Act group as well as the decrease observed from the early to the late post-Dodd-Frank Act period are insignificant. The same is the case of the overall increase of 18.60 percentage points from the first to the third period.

The means for the governance factors are also significantly different when comparing the three time periods. The means of the duality dummy, i.e. the percentage of companies in the sample in which the CEO held a dual role at the time of the acquisition, decreases significantly with 26.34 percentage points from the pre-crisis to the early post-Dodd-Frank Act period. The small difference between the early and the late post-Dodd-Frank Act group is not significant, however the overall decrease of 30.538 percentage points between the first and the last time period groups is significant at the 1 percent level.

The same pattern of significance is true for differences in the means of the percentage of independent directors for the three groups. The difference in the means of 5.48 percentage points between the first and the second period is significant at the 1 percent level. However, the small

decrease in the mean from the second to the third period is not significant. Finally, the overall increase in the mean of 4.529 percentage points from the first to the third period is significant at the 1 percent significance level.

The increase in the mean of the percentage of women on the board of directors from the pre-crisis to the early post-Dodd Frank Act group is significant at the 10 percent significance level. However, the increase from the early to the late post-Dodd-Frank Act period and the overall increase from the first to the third period of 3.19 and 4.98 percentage points, respectively, are significant at the 1 percent level.

In terms of cash as the payment method only the decrease in the mean observed from the early to the late post-Dodd-Frank Act group of 0.10457 is significant. The differences in the means of the book-to-market ratios are significant when comparing the pre-crisis period and the early post-Dodd-Frank Act period as well as the early and the late Dodd-Frank Act period with an increase of 0.07704 and a decrease of 0.0780, respectively. However, the mean of the first period and the third period remains almost unchanged and the difference is not significant. As mentioned above, we cannot reject the null hypothesis for the ANOVA F-test for this variable and thus cannot rule out Type I error in the Student's t-test. However, given the relatively low p-value, which is almost significant at the 10 percent level, the probability of Type I error may not be very high.

The difference in the means of leverage for the early and the late post-Dodd-Frank Act groups as well as the pre-crisis and the late post-Dodd-Frank Act group are significant and constitute increases of 6.767 and 8.083 percentage points, respectively. The mean differences of the acquirer's cash on balance sheet as a percentage of total assets is only significant between the pre-crisis and the early post-Dodd Frank Act period as well as the pre-crisis and the late post-Dodd-Frank Act periods at the 10 percent significance level. We observe increases of 1.842 and 1.656 percentage points, respectively, for the two groups. However, similar to the variable regarding cash as the payment method these mean differences are not significant for the ANOVA f-test and thus we cannot rule out Type I error for the Student's t-test, even though the p-value of the F-test almost indicates significance at the 10 percent level. Lastly, the increase in the mean natural logarithm of the acquirer market capitalization of 0.43174 from the early to the late post-Dodd-Frank Act period is significant at the 1 percent level.

There are no significant differences in the means for any of the group for the variables TARGET_REL_SIZE, STOCK_PYMT, DIVERSIFICATION, CROSS_BORDER, and EXPERIENCE.

6.3 Multivariable Regression

As shown above the means and the range of observations for CAR and premium have varied across periods. This section provides the results from the OLS regression, which are provided in table 10, and comments on whether they indicate that the hypotheses should be rejected or not.

6.3.1 Total Compensation

This section reports the results relating to hypotheses H1a, H1b, H1aa, H1ba, H1ab, H1bb, H1a(0), and H1b(0). Total compensation and CAR are negatively related in the pre-crisis period and the late post-Dodd-Frank Act period and positively related in the early post-Dodd-Frank Act period. The coefficients for the variable are -0.001361, 0.0002645, and -0.00385 for the pre-crisis, early post-Dodd-Frank Act, and late post-Dodd-Frank Act, respectively. As an example, this means that when the natural logarithm of the CEO's total compensation increases by 1, CAR decreases by 0.00385 percentage points in the late post-Dodd-Frank Act period. Thus, the effect of total compensation on CAR changes from negative to positive from the pre-crisis period to the early post-Dodd-Frank Act period. The effect becomes negative in the late post-Dodd-Frank Act period – in fact even more negative than in the pre-crisis period. These results point to the fact that we should reject hypotheses H1a and H1ab, and accept hypothesis H1aa. However, since the coefficients are not significant, these hypotheses should be rejected. Additionally, since the results are not significant we cannot conclude that a material change has happened to the relationship between total compensation and CAR and thus we cannot reject the null hypothesis H1a(0).

In relation to premiums, the increased monitoring seems to have changed the total compensation to a level at which shareholder and executive interests are more aligned. In the pre-crisis period the natural logarithm of the total compensation significantly affects the premium with a coefficient of 0.04094 at a 5 percent significance level. This means that an increase in the natural logarithm of the total compensation by 1 causes the premium to increase by 4.094 percentage points. The coefficients for the early post-Dodd-Frank Act period and the late post-Dodd-Frank Act period are -0.04811 and 0.01865, respectively. Thus, it seems that the relationship between total compensation and premium has improved in both periods compared to the pre-crisis period, however a decline is observed from the early to the late post-Dodd-Frank Act period. The fact that an improvement in the relationship is present in both the early post-Dodd-Frank Act period and the late post-Dodd-Frank Act period indicates that we cannot reject hypotheses H1ba and H1bb, and

Table 10: Regression Results For All Periods

***, **, * indicate that the coefficient is significant at the one, five, and ten percent level, respectively, for a two-sided t-test

	Pre-crisis		Early post-Dodd-Frank		Late post-Dodd-Frank	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
CAR						
Intercept	0,006443	0,9194	0,0121089	0,9062	0,055089	0,6185
EQT_BASED_PCT	0,019991	0,2515	-0,043066	0,1703	0,0055495	0,8796
LN_TOTAL_COMP	-0,001361	0,8298	0,0002645	0,9799	-0,00385	0,7828
SHROWN_PCT	0,0141326	0,9413	0,1339328	0,7140	0,0682833	0,8017
STOCK_UNV_PCT	0,0004323	0,8966	0,0221942***	0,0090	0,0013645	0,8523
DUALITY	-0,001032	0,9267	-0,02607**	0,0396	-0,004804	0,7046
INDEP_PCT	-0,005956	0,9093	0,122407	0,1462	0,014589	0,8226
WOMEN_PCT	-0,02495	0,6758	0,1679811***	0,0055	-0,013364	0,8315
TARGET_REL_SIZE	-0,036951*	0,0513	-0,003511	0,9031	0,0341235	0,1974
CASH_PYMT	0,0234131*	0,0752	0,0028572	0,8637	0,026847*	0,0906
STOCK_PYMT	-0,007352	0,6901	-0,033158	0,1575	0,0039853	0,8765
DIVERSIFICATION	0,0016369	0,8751	-0,023155*	0,0624	0,0217638*	0,0798
CROSS_BORDER	-0,001832	0,8838	-0,011765	0,3972	0,0035684	0,7995
BOOK_TO_MARKET	0,0047537	0,8776	-0,006028	0,7796	-0,056883**	0,0207
LEVERAGE	0,0086573	0,7964	0,049438	0,2375	-0,014349	0,7369
CASH_BCE_PCT	0,013015	0,8350	-0,125275*	0,0789	0,0200286	0,7772
EXPERIENCE	-0,001813	0,8636	-0,000715	0,9533	0,00596	0,6282
LN_ACQ_MKT_CAP	-0,001384	0,7710	-0,010066*	0,0872	-0,005012	0,4281
R-Squared	0.11	0.11	0.22	0.22	0.10	0.10
Adjusted R-Squared	0.005	0.005	0.13	0.13	-0.005	-0.005
Premium						
Intercept	0,4597995**	0,0268	0,6832822	0,1063	0,5597806	0,1833
EQT_BASED_PCT	-0,109688*	0,0526	0,0936588	0,4659	-0,153117	0,2714
LN_TOTAL_COMP	0,0409449**	0,0469	-0,048113	0,2637	0,0186523	0,7248
SHROWN_PCT	0,2772559	0,6553	0,8805384	0,5568	-0,647073	0,5307
STOCK_UNV_PCT	-0,007435	0,4898	0,0078203	0,8205	-0,050829*	0,0691
DUALITY	0,0161115	0,6568	-0,039555	0,4436	-0,045506	0,3443
INDEP_PCT	-0,011326	0,9466	0,113045	0,7426	0,3495792	0,1581
WOMEN_PCT	0,2349732	0,2241	-0,102701	0,6753	0,5677581**	0,0182
TARGET_REL_SIZE	-0,167924***	0,0065	-0,31522***	0,0084	-0,389491***	0,0001
CASH_PYMT	-0,044024	0,2991	0,0331997	0,6266	-0,043714	0,4658
STOCK_PYMT	-0,095492	0,1106	-0,20247**	0,0359	-0,064597	0,5069
DIVERSIFICATION	0,0068556	0,8386	-0,043962	0,3860	-0,009066	0,8466
CROSS_BORDER	-0,002545	0,9499	0,0329936	0,5622	-0,063967	0,2311
BOOK_TO_MARKET	-0,252942**	0,0122	0,1981767**	0,0260	-0,011934	0,8972
LEVERAGE	-0,130999	0,2283	-0,070823	0,6791	-0,268166*	0,0994
CASH_BCE_PCT	-0,025167	0,9009	-0,03205	0,9123	0,0660509	0,8057
EXPERIENCE	0,0531848	0,1206	-0,019865	0,6911	-0,023128	0,6203
LN_ACQ_MKT_CAP	-0,040795***	0,0087	0,0037494	0,8759	-0,043589*	0,0705
R-Squared	0.19	0.19	0.20	0.20	0.24	0.24
Adjusted R-Squared	0.09	0.09	0.12	0.12	0.15	0.15

consequently H1b. However, the results are only significant in the pre-crisis period, and thus we cannot accept the hypotheses. Similarly, since the results are not significant across time periods we cannot reject the null hypothesis H1b(0).

6.3.2 Equity-Based Compensation

This section reports the results regarding equity-based compensation, and thus comments on hypotheses H2a, H2b, H2aa, H2ba, H2ab, H2bb, H2a(0), and H2b(0). The effect of the proportion of equity-based compensation on CAR has varied in the three time periods. In the pre-crisis period the coefficient is 0.01999, which means that an increase of 1 percentage point in the proportion of equity-based compensation increases CAR with 0.01999 percentage points. However, in the early post-Dodd-Frank Act period the relationship becomes negative with a coefficient of -0.04307. This indicates that hypothesis H2aa should be rejected. Furthermore, the results are not significant for any of the three periods, which also means that the hypothesis must be rejected. The same is true for the late post-Dodd-Frank Act period as the coefficient for the proportion of equity-based compensation of 0.005550 is also insignificant. Although the coefficient indicates that the relationship may have improved since the early post-Dodd-Frank Act period, the positive relationship remains worse than in the pre-crisis period. This indicates that we should reject hypothesis H2ab as well, and consequently hypothesis H2a. However, due to insignificance we reject the hypotheses. Finally, we cannot reject the null hypothesis H2a(0) as the results are insignificant.

The impact of the proportion of equity-based compensation on premiums has developed similarly throughout the periods. In the pre-crisis period the variable is negatively correlated with the premium with a coefficient of -0.10969, which is significant at a 10 percent significance level. The interpretation of this coefficient is that when the proportion of equity-based compensation increases by 1 percentage point the premium decreases by -0.10969 percentage points. The relationship becomes positive in the early post-Dodd-Frank Act period with a coefficient of 0.09366, although it is not significant. A change from a negative to a positive relationship between the proportion of equity-based compensation and the premium indicates a worsening of the relationship and thus implies that hypothesis H2ba should be rejected. The fact that the results are insignificant also leads us to reject the hypothesis. In the late post-Dodd-Frank Act period the coefficient is -0.15312, thus indicating an improvement in the relationship compared to the pre-crisis period. However, due to insignificance in the late post-Dodd-Frank Act period we must reject hypothesis H2bb. As a result, we also reject hypothesis H2b. Similarly, the null hypothesis H2b(0) cannot be rejected.

6.3.3 Equity Ownership

The results relating to equity ownership and hypotheses H3a and H3b are provided in this section. The coefficients for how equity ownership affects CAR are 0.01413, 0.13393, and 0.06828 in the pre-crisis period, the early post-Dodd-Frank Act period, and the late post-Dodd-Frank Act period, respectively. The coefficients should be interpreted as for example a 0.01413 percentage point increase in CAR when equity ownership increases by 1 percentage point in the pre-crisis period. Thus, it seems that the relationship between equity ownership and CAR is positive, in line with hypothesis H3a. However, due to the fact that all results are insignificant we must reject the hypothesis.

The results regarding premiums vary from the homogeneity across periods of the CAR effects. An increase in equity ownership in the first two periods, i.e. pre-crisis and early post-Dodd-Frank Act, both affect the premium positively with coefficients of 0.27726 and 0.88054, respectively. Thus, when equity ownership increases by 1 percentage point in the early post-Dodd-Frank Act period, the premium increases by 0.88054 percentage points. However, in the late post-Dodd-Frank Act period the relationship becomes negative with a coefficient of -0.64707. Yet since the relationship is not negative in all periods, but only in the last period, we cannot accept hypothesis H3b. Additionally, the results are insignificant, which also means that the hypothesis should be rejected.

6.3.4 Unvested Stock

Finally, the hypotheses regarding unvested stock as a percentage of total compensation, i.e. hypotheses H4a and H4b, are reviewed. In terms of CAR, the results are similar across time periods. In the pre-crisis period, the early, and the late post-Dodd-Frank Act periods the relationship between unvested stock as a percentage of total compensation and CAR is positive with coefficients of 0.00043, 0.02219, and 0.00136, respectively. Thus, when unvested stock as a percentage of total compensation increases by 1 percentage point in the early Dodd-Frank Act period, CAR increases by 0.02219 percentage points. This indicates that hypothesis H4a should be accepted due to the fact that the positive relationship is observed in all periods. However, since the results are only significant at a 1 percent significance level in the early post-Dodd-Frank Act period, the hypothesis can only be partially accepted.

The effect of unvested stock as a percentage of total compensation on the premium varies across time periods. In the pre-crisis period the result indicates a negative relationship between the variable and premiums by a coefficient of -0.007435. This means that an increase in the unvested

stock as a percentage of total compensation of 1 percentage point causes the premium to decrease by -0.007435 percentage points. In the early post-Dodd-Frank Act period the relationship becomes positive with a coefficient of 0.00782. However, in the late post-Dodd-Frank Act the relationship improves to a coefficient of -0.05083 implying even better alignment of shareholder and executive interests compared to the pre-crisis period. The results are only significant at the 10 percent significance level in the late post-Dodd-Frank Act period, and given the negative relationship between unvested stock as a percentage of total compensation and the premium in this period, hypothesis H4b can be partially accepted.

6.3.5 Other Significant Results

Some of the control factors seem to explain the level of CAR and premiums quite well given their high level of significance across periods. The relative size of the target is the control factor that gives the most significant results. The variable is negatively and significantly correlated with premiums in all three time periods. The coefficients range from -0.16792 to -0.38949 in the three periods, all significant at a 1 percent significance level. The coefficients should be interpreted as for example a decrease in the premium of -0.38949 percentage point per 1 percent increase in the ratio of target size to acquirer size in the late post-Dodd-Frank Act period. Additionally, the relative size of the target negatively and significantly affects CAR by a factor of -0.03695 pre-crisis. This means that acquisitions of larger targets underperform compared to smaller targets as the coefficient is interpreted as a 0.03695 percentage point decrease in CAR per 1 percent increase in the relative size of the target.

Additionally, some of the governance factors generate significant results. Firstly, CEO duality negatively and significantly affects CAR with a coefficient of -0.02607 in the early post-Dodd-Frank Act period. This means that the model predicts companies with a CEO that is also the chairman of the board of directors to have a 2.607 percent lower CAR when acquiring a company in this period. Similarly, the coefficients are negative in the other periods, yet not significant. In terms of women on the board of directors, the effect on CAR is significant and positive with a coefficient of 0.16798 in the early post-Dodd-Frank Act period. Thus, when the percentage of women on the board increases by 10 percent the CAR increases by 1.6798 percentage points. The coefficient is negative in the other periods, however not significant. Conversely, having a larger percentage of women on the board in the late post-Dodd-Frank Act period positively affects the premium by 0.56776. Thus, when the

percentage of women on the board increases by 10 percent, the premium increases by 5.6776 percentage points.

The payment method significantly affects the CAR and premium in some of the periods as well. For example, when cash is used to pay for the target company in the pre-crisis period and the late post-Dodd-Frank Act period the CAR is 2.3413 and 2.6847 percentage points higher, respectively. The coefficient is also positive for the early post-Dodd-Frank Act period, however not significant. Stock as a payment type does not significantly affect CAR, but affects the premium in the early post-Dodd-Frank Act period. The coefficient for this period is -0.20247. Thus, it seems that premiums are smaller when stocks are used as payment method since the coefficient is interpreted as a 20.247 lower premium when stock is used as payment method compared to other payment methods.

Furthermore, CAR is significantly and positively affected by diversification by a factor of 0.02316 in the early post-Dodd-Frank Act period and by a factor of 0.021764 in the late post-Dodd-Frank Act period. Thus, when the target company operates in a different industry from the acquirer in the late post-Dodd-Frank Act period the CAR is 2.176 percent higher.

The effect of the acquirer's book-to-market ratio on the premium changes across periods. In the pre-crisis period the effect is negative with a coefficient of -0.25294 and in the early post-Dodd-Frank Act an increase in the book-to-market ratio will instead have a positive impact on the premium by a factor of 0.19818. Both of the results are significant at the 5 percent level. The results are interpreted as a 0.25294 percent decrease and 0.19818 percent increase, respectively, per 1 percent increase in the book-to-market ratio.

The acquirer's market capitalization also affects the premium in the pre-crisis period negatively at a 1 percent significance level. An increase in the natural logarithm of the market capitalization of 1 decreases the premium by 0.040795 percentage points. The premium is also lower for higher market capitalizations in the late post-Dodd-Frank Act period since the significant coefficient is -0.04359. In the early post-Dodd-Frank Act period the premium is not significantly affected by the acquirer's market capitalization, but CAR is significantly and negatively affected with a coefficient of -0.01007.

Furthermore, the leverage of the acquirer, i.e. the company's ratio of short-term debt and long-term debt to total assets, affects premiums negatively in the late post-Dodd-Frank Act period by a factor of -0.26817. Thus, when leverage increases by 1 percent the premium decreases by 0.26918 percentage points.

Lastly, the coefficient for effect of the acquirer's cash on balance sheet on CAR is -0.12528 in the early post-Dodd-Frank Act period, which means that an increase in the cash on balance sheet by 1 percentage point causes a decrease in CAR by 12.528 percentage points.

6.4 Robustness Checks

Robustness checks were conducted to ensure validity of the results. For all three time periods the 5 percent most extreme observations were removed for three independent variables. The three variables were picked based on significance and whether they are explanatory, i.e. compensation-related, variables. All significant explanatory variables were included in the robustness checks as were the most significant control variables. Thus, in the pre-crisis period extremes were removed from the EQT_BASED_PCT, LN_TOTAL_COMP, and TARGET_REL_SIZE variables. In the early as well as the late post-Dodd-Frank Act period extremes were removed from the variables STOCK_UNV_PCT, TARGET_REL_SIZE, and WOMEN_PCT. This resulted in sample sizes of 148, 157, and 143 for the first, second and third time period, respectively. We did not remove extremes from all variables since the sample size would have been too small to produce any viable results due the large amount of independent variables in the model.

As evident in appendix 6 the results did not change much when removing extremes, indicating that the regressions are relatively robust. Generally, the same variables are significant and the coefficients change by less than 40 percent when extremes are removed. However, there are some exceptions. The only change in significant variables observed for the explanatory variables (i.e. compensation variables) is observed in the pre-crisis period where equity ownership becomes significant instead of the natural logarithm of total compensation. Also a few of the other significant variables change by more than 40 percent, but none of them change by more than 60 percent. While no changes in significant variables are observed in the early post-Dodd-Frank Act period, a couple of changes are observed in the other periods. Target relative size is no longer a significant predictor of CAR in the pre-crisis period and cash as payment method and book-to-market ratio are no longer significant predictors of CAR in the late post-Dodd-Frank Act period.

As mentioned in the biases section we added and removed several variables to see if they would affect the results. This includes the variables salary, bonus, and current compensation. Since neither of the variables affected the results considerably, they were removed from the model for simplicity. This constitutes another way of checking the robustness of the coefficients (White & Lu, 2014).

7 Discussion & Limitations

This section will discuss our results in relation to findings from previous studies and identify potential explanations for deviations from existing research as well as discuss limitations to this study.

Overall, the M&A transactions in our sample have performed better than the samples of other studies. The literature review showed that transactions are on average profitable when combining impact on target and acquirer, but 60 to 70 percent of transactions are value destroying to acquirers (Bruner, 2002). However, as evident in appendix 7 in our sample almost half of the acquirers (47.6 percent) experienced a positive CAR in the period starting seven days prior to and ending two days after the announcement date. However, even though only 30 to 40 percent of acquirers normally experience positive CAR, other studies have found values similar to ours (Bruner, 2002).

Given the fact that our sample is made up of relatively large companies, one might have expected to find more deals with a negative CAR compared to previous findings as CEOs of large firms tend to be more overconfident (Moeller et al., 2004), and thus more likely to overpay. However, our study does confirm that CEOs of large firms may be more overconfident as the premiums are higher for our sample compared to the overall average from previous studies.

However, for our sample it does not seem to be the case that premiums and CAR are negatively correlated as suggested by the literature. The Student's t-tests indicate that the two may actually be positively correlated as they both increase from the pre-crisis to the early post-Dodd-Frank Act period and the late post-Dodd-Frank Act period, though the change is not significant for CAR to the latter. Additionally, they both significantly decrease from the early to the late post-Dodd-Frank Act period. While we do not know the cause of this seemingly positive relationship between the two, we may simply have observed a period with more synergistic transactions. This could have been caused by a managerial change in sentiment or increased scrutiny surrounding managerial decision-making. This proposition and its potential implications are discussed in section 8.

7.1 Total Compensation

As explained in the literature review, stricter governance practices may increase risk premiums required by executives, and consequently the total level of compensation, due to higher CEO effort requirements and higher risk of termination. While the Dodd-Frank Act does not appear to increase the risk of termination directly, it increases the CEO effort requirements through increased disclosure requirements and the consequent general increase in scrutiny. The ANOVA F-test and Student's t-test showed that the only significant change in mean total compensation can be observed from the

early post-Dodd-Frank Act period to the late post-Dodd-Frank Act period, constituting an increase of 23.6 percent. Our results thus suggest that the Dodd-Frank Act may have been successful in increasing the strictness of internal governance as an increase in total compensation is observed.

However, according to the market-based explanation an increase in total compensation can also be caused by expansions of the CEO role, i.e. if the role has become more complex it is natural that the level of total compensation increases. Since increased complexity often happens following a merger, we check to see whether the increase in total compensation was more evident for the firms that were ascribed a score of one in the experience dummy, i.e. firms that have made two or more transactions within the five year period prior to the acquisition in question. Table 11 shows that the natural logarithm of total compensation decreases for both experienced and inexperienced acquirers from the pre-crisis to the early post-Dodd-Frank Act period, but a larger decrease is observed for the inexperienced group. From the early to the late post-Dodd-Frank Act period we observe a decrease in the natural logarithm of total compensation for the inexperienced acquirers and an increase for the experienced acquirers, resulting in an overall increase from the first to the third period. Thus, one can argue that the increase in complexity caused by previous acquisitions, and not the Dodd-Frank Act, may be the driver of the increase in total compensation.

Table 11: Changes in Means of Total Compensation for Experienced and Inexperienced Acquirers

μ1 is the mean for the pre-crisis period, μ2 is the mean for the early post-Dodd-Frank Act period, and μ3 is the mean for the late post-Dodd-Frank Act period.

	μ2-μ1	μ3-μ2	μ3-μ1
Inexperienced	-2.91%	-1.78%	-4.63%
Experienced	-0.16%	1.40%	1.24%

Furthermore, as explained in the literature review we may observe a decrease in managerial power following the Dodd-Frank Act as compensation committees are now required to be entirely independent. However, since a decrease in managerial power would have resulted in a decrease in the total level of compensation we do not observe this decrease in managerial power on total compensation. Yet, we see signs of decreased managerial power through the decrease in CEO duality over the three periods. This suggests that we in fact experienced a decrease in managerial power and that the explanation for the absence of the otherwise expected reduction in total compensation must be found elsewhere.

An alternative explanation for the increase in total compensation may instead be that directors did not find the level of total compensation to be too high. It could also be traced back to the overall increase in market capitalization, which would increase the value of executive holdings of stock options and RSUs. Furthermore, an alignment of performance and total compensation levels may have happened, thus decreasing the level of compensation of some, while increasing it for CEOs with high performance, leading to an overall increase. We investigate this notion through the change in the effect of the total level of compensation on CAR and premium.

The effect on CAR of the total level of compensation generated insignificant and ambiguous results. Thus, our results suggest that shareholder and executive interests may not have been more closely aligned as a result of the Say on Pay section of the Dodd-Frank Act. A potential reason could be that only 1.6 percent of compensation proposals were voted down in 2011, and the ones that did receive down-votes often resulted in dialogues between shareholders and directors regarding the methodology used (Thomas & Van der Elst, 2015).

Say on Pay has been found to have the highest effect in poorly performing companies (ibid.). As a result, one would expect to observe an improvement in the effect of total compensation on CAR following the Dodd-Frank Act. Yet we did not observe a significant positive development of the coefficient in either of the post-Dodd-Frank Act periods.

More importantly, our methodology may have affected our results as well. As reviewed in the section regarding biases, the market reaction is based on attentive as well as inattentive investors. Thus, when using stock prices to evaluate performance, the reaction of the inattentive investors is included as well. This means that the lack of alignment in terms of total compensation may be a result of the absence of an ability among such investors to assess how successful the transaction will be, and our results may have given other results had we used for example long-term performance or operating measures as the indicator of success.

The effect of total compensation levels on premiums was significant and positive in the pre-crisis period, but it seems to become negative in the early post-Dodd-Frank Act period with a p-value of 0.26. Although premiums and CAR are not negatively related in our sample, the general idea is that the lower the premium, the lower the synergies needed for the transaction to be NPV positive. Thus, the Dodd-Frank Act may have had a positive impact on the alignment of shareholder and executive interest in terms of the premium paid, especially given the fact that the positive impact on the premium is no longer significant.

7.2 Equity-Based Compensation

In the literature review, it was suggested that high proportions of equity-based compensation can serve as a disincentive to acquire. Our results from the mean difference tests showed that the equity-based compensation component increased between all three periods resulting in an overall increase of 26.1 percent, which means that the proportion of equity-based compensation is almost twice as high in the post-Dodd-Frank Act period compared to the pre-crisis period. The largest increase was observed from the pre-crisis to the early post-Dodd-Frank Act period. We compare the levels of equity-based compensation of our sample to the overall levels in the S&P 500 companies to investigate whether we see such a deterring effect in our sample. Equilar's (2016) publication regarding CEO compensation trends show that the median of the equity-based compensation for these companies was 31.5 percent in 2011 and 51.6 percent in 2015. We found the medians for the early and the late post-Dodd-Frank Act period to be 53.0 and 62.0 percent, respectively, suggesting that our sample of companies have a higher proportion of equity-based compensation than the overall population of firms. Thus, the large increases in equity-based compensation seems to conflict with the fact that equity-based compensation serves as a disincentive.

One reason for this conflict between previous findings and our results may be the nature of the transactions made by managers with higher proportions of equity-based compensation. Though only significant in the pre-crisis period, the results show that the higher the equity-based compensation, the lower the premium. Thus, it may be the case that managers with high proportions of equity-based compensation have been able to get "better deals" than other managers, and the disincentive may not have been strong enough to make them reject a possible transaction.

However, the Dodd-Frank Act is also a possible explanation for the increase in the proportion of equity-based compensation. Dittman and Maug (2007) found that awarding restricted stock instead of base salary and option grants enables better alignment of executive and shareholder interests. Since the Dodd-Frank Act includes Say on Pay, shareholders can seek to align executive interests with their own by voting for compensation packages with more restricted stock and against those with high base salaries and high option grants. As evident in table 12 we observe a decrease in the proportion of option-based to total compensation and an increase in the proportion of restricted stock to total compensation from the pre-crisis period to the early post-Dodd-Frank-Act period as well as from the early to the late post-Dodd-Frank Act period. Thus, the large increase in equity-based compensation is caused by a very large increase in the use of restricted stock. Given the above-mentioned findings

of Dittman and Maug (2007), the increase in equity-based compensation can be interpreted as an attempt to better align shareholder and executive interests.

Table 12: Mean Values of Equity-Based Compensation, Options, and Restricted Stock

Mean values of equity-based compensation, options, and restricted stock as a percentage of total compensation for the three periods provides an overview of changes in the three variables.

	Equity-Based	Options	Restricted Stock
Pre-Crisis	31.76%	20.02%	11.74%
Early Post-Dodd Frank Act	51.28%	16.85%	34.43%
Late Post-Dodd-Frank Act	56.80%	14.65%	42.15%

Our results show no clear indication that the Dodd-Frank Act should have improved the alignment of executive and shareholder interests in terms of CAR. Though results for the effect of the proportion of equity-based compensation on CAR seem to have worsened over the three time periods, the effect is not significant. While research has mostly found equity-based compensation to positively affect CAR (Datta et al., 2001; Minnick et al., 2011), there are some other examples of studies that have found a negative relation between the two. The literature has found that option-based compensation negatively affects announcement returns (Fung et al., 2009). However, since our data shows a large increase in restricted stock and a decrease in options, the use of options does not seem to be the cause of the seemingly negative effect of equity-based compensation on CAR, which gets worse throughout the time periods.

Additionally, as mentioned in the literature review Fung et al. (2009, cited in Bodolica & Spraggon, 2015) found equity-based compensation to have a particularly negative effect on M&A performance when equity ownerhsip is low and the CEO serves on the board. However, our results conflict with these findings. The effect of equity-based compensation on CAR seems to worsen over the three time periods, yet CEO duality decreases and equity ownership increases as shown in the Student's t-tests.

The effect of the proportion of equity-based compensation on premiums is negative and significant in the pre-crisis period. Though not significant, the effect becomes positive in the early post-Dodd-Frank Act period and more negative in the late post-Dodd-Frank Act period relative to the pre-crisis period. However, since it is insignificant the negative relation between equity-based compensation and premiums is not as strong following the Dodd-Frank Act as it was in the pre-crisis period. Thus, our results do not confirm the findings of a number of previous studies that excessive

premiums are more likely when equity-based compensation is low. In fact, our results seem to suggest that an opposite relationship might exist. Another conflict between our results and previous studies is the fact that previous findings show that option-based equity compensation causes excessive premiums, and thus that restricted stock is superior in this relation. However, as shown in appendix 12 the equity-based compensation of the CEOs in the study was decreasingly option-based, which would suggest that we should have observed a more negative relationship between equity-based compensation and premiums in later periods compared to the pre-crisis period.

However, the cause of the conflict in our results versus previous findings in relation to CAR and premiums may be found in the fact that the proportion of equity-based compensation was generally much higher for our sample. For example, Datta et al. (2001) found that the proportion of equity-based compensation was negatively related to the premium that acquirers paid in M&A transactions. However, the median proportion of equity-based compensation was 23.73 percent in their sample, while the median for the pre-crisis, the early, and the late post-Dodd-Frank Act period is 26.5, 53.0, and 62.0 percent, respectively, in our sample. Consequently, our study contributes to the research on this topic as it suggests that at more extreme proportions of equity-based compensation, the component may not be negatively related to premiums.

7.3 Equity Share Ownership

We observed significant increases in equity ownership when comparing the pre-crisis period to the early post-Dodd-Frank Act period as well as the late post-Dodd-Frank Act period, although the increase is not significant between the last two periods. As mentioned in the hypotheses section, the Dodd-Frank Act was not expected to affect equity ownership and thus explanations for increases in this variable may have to be found elsewhere.

Previous findings have agreed that equity ownership has a positive effect on performance in relation to M&A. While the coefficients for the effect of equity ownership on CAR in our study mirror these previous findings, the results are insignificant. Previous studies that have found a positive relation between stock ownership and CAR have generally looked into sample of firms where the CEO had much larger equity ownership. For example, the mean equity ownership study conducted by Fung et al. (2009) 6.34 percent, which is more than 6 times higher than the highest observed mean for the three periods in our study. Thus, our study contributes to the field by indicating that equity ownership at very low levels may not ensure better alignment of shareholder and executive interests as evidenced by higher CAR, but that higher levels of equity ownership are needed. Yet the difference

between our results and those of Fung et al. (2009) may be grounded in the fact that our sample companies have larger average market capitalizations.

Additionally, most extant literature suggests that premiums are lower when executive equity ownership is high. The coefficients relating to premiums are in conflict with previous findings in the first two periods as these are positive, but the negative coefficient in the last period mirrors previous findings. We did not expect the Dodd-Frank Act to impact these coefficients, and given the insignificance of the coefficients, we did not see a material change in this period. The reason why our results are insignificant, while other studies find significant results may be again be due to the fact that our sample had a notably smaller mean for equity ownership.

7.4 Unvested Stock

There are no significant changes in the means of unvested stock between the three time periods. Similarly to equity ownership, the Dodd-Frank Act did not include any sections relating to unvested stock and thus we did not expect any changes in this variable in relation to the Dodd-Frank Act either.

In line with the expectation that unvested stock holdings positively affect the performance of M&A due to the CEO's exposure to firm performance, our results suggest that unvested stock holdings positively affect CAR as the coefficients are positive in all periods, although only significant in the early post-Dodd-Frank Act period. Additionally, the findings regarding the impact on premiums also seem to be in line with the expectations. While negative in the pre-crisis period, the only significant result, which is observed in the late post-Dodd-Frank Act period, is positive.

Thus, our results regarding unvested stock have overall been in line with previous findings, and thus our study confirms the importance of unvested stocks in terms of alignment of shareholder and executive interests.

7.5 Insignificance of Results & Limitations

It is evident in the data that premiums and CAR have changed between the three period investigated in the study, but our results does not seem to imply that compensation and a better alignment of shareholder and executive interests through the Dodd-Frank Act are the main causes of these developments. One of the reasons for these results may be that we did not investigate compensation packages for the entire management team. In most companies, and perhaps particularly in very large ones, it is unlikely that the CEO made all decisions regarding a transaction in isolation, and

consequently we could possibly have found more significant results had we looked into the compensation variables for e.g. the top three executives.

Additionally, while the efficient capital market hypothesis (ECMH) posits that all relevant information is reflected in a stock price, it may not be the case that all relevant information in relation to M&A transactions is incorporated in the stock price immediately. In relation to some events in a business, such as announcement of operational results, it may be relatively easy for shareholders to assess the impact that such results will have on the future expectations for the company. However, M&A may be harder for especially inattentive investors to grasp than other indicators due to the complexity of transactions as well as inconsistency in the existing literature as to how variables researched in this study will affect the success. Thus, the reason behind the insignificance of the compensation variables and some of the unexpected results may be the fact that such considerations cannot be taken into account by shareholders at time of the announcement, but are instead reflected in the operational results and long-term abnormal stock returns following the transaction. Short-term stock prices may thus not be an accurate measure of deal quality in all instances.

The Dodd-Frank Act was by no means implemented in a vacuum, and we cannot attribute any changes in compensation to its enactment with complete certainty. Because the Act's implementation has been incremental following its announcement, noise is inevitable. A key consideration here is the fact that our sample period is defined by exceptional instability. It directly follows a severe financial crisis which is likely to have caused broad changes in sentiment among managers, investors and stakeholders, which could affect decision-making and compensation over the short, medium, or even the long term. Our three-period design attempts to identify and separate potential short-term interference. The transferability of our results and insights to other environments will be deficient to some degree because of the research design's inherent inability to identify medium- and long-term noise from the rather unusual setting.

In addition to them possibly being affected by change in sentiment following the Financial Crisis of 2007-2009, our results may be affected by the fact that the pre-crisis period took place during a merger wave and that a merger wave may currently be underway. As explained in the literature review, merger waves may affect performance positively and negatively depending on whether the transaction takes place early or late in the wave. Since our study was not conducted in a vacuum and because we did not control for merger waves, we cannot know whether the presence of such waves may have affected our results.

8 Implications for Stakeholders

On the basis of our statistical findings, we proceed to evaluate what potential implications the executive compensation sections of the Dodd-Frank Act may have for a number of relevant stakeholders, including existing and potential shareholders, the board of directors, management, U.S. and foreign regulators, and the wider market economy.

8.1 Implications for Regulators

Say on Pay has gained popularity in several corners of the world, as many shareholders find executives to be overpaid, along with an absence of appropriate ties between compensation and performance (Thomas & Van der Elst, 2015). In fact, when the Dodd-Frank Act was being discussed in the U.S., 80 percent of Americans found executives to be overpaid, while the figure for institutional investors was 90 percent (Mason, Medinets & Palmon, 2016). Even more noteworthy is the fact that 61 percent of directors believed the practices in regards to executive compensation to be problematic (ibid.).

This section will discuss the implications of our findings in relation to experiences with Say on Pay in other countries to make inferences about potential courses of action in the search for alignment of shareholder and executive interests through regulation. While some find that pay must be regulated in order to prevent managers from taking undesirable actions, others find that the government should regulate the actions instead, and that decisions regarding executive compensation should be left in the hands of shareholders (Edmans, 2016).

8.1.1 Should the Say on Pay Vote be Modified?

Using M&A returns and premiums as the determinant, our results suggest that the Dodd-Frank Act has not been effective in aligning executive and shareholder interests. However, as noted in the literature review, previous legislation such as the Williams Act of 1968 has had significant effects on M&A performance and premiums. This suggests that disclosure-based regulation can be effective in altering M&A behavior. However, the fact that our results do not imply changes in the alignment of shareholder and executive interests may suggest that more direct regulation would be more effective. For example, the loosening of anti-trust legislation has been a catalyst for merger waves in the past (Kolev et al., 2012), thus suggesting that direct regulation and/or a roll-back thereof can have strong effects on M&A behavior.

It may thus be necessary to modify the Dodd-Frank Act or introduce new legislation on executive compensation to improve the alignment of shareholder and executive interest. For example, Say on Pay votes could be made binding rather than advisory. Looking into studies on Say on Pay in other countries where the vote is binding shows that this may not be the most beneficial solution. The closest we get to tried-and-tested binding Say on Pay votes are the systems in the U.K. and France. The French system includes an ex ante as well as an ex post vote on executive remuneration, both of which are binding. If the ex post vote is negative the executive in question will not get the variable and exceptional part of his/her remuneration in the previous year (Pietrancosta, 2017). The ex post vote in France has especially been accused of causing problems in regards to international competitiveness for executives (Pietrancosta, 2017). However, due to the fact that the binding ex ante vote was introduced in 2017 and the ex post vote was introduced in 2018, we have not been able to find data regarding its effect on firms (ibid.).

After having had a non-binding Say on Pay vote for more than ten years, a binding Say on Pay vote was introduced in the U.K. in 2013. The voting systems is split into two parts, an advisory vote on the remuneration in the year just closed and a binding vote for proposed remuneration for the next year. Studies have found the total compensation to be sensitive to firm performance in the U.K. However, when investigating the differences between non-binding and binding votes on Say on Pay in the U.K. there does not seem to be a difference in the effect of votes on pay-for-performance (Gregory-Smith & Main, 2014).

There are some features of the U.S. regulatory system that suggests that a binding vote is not a likely outcome. The governance code rests on a foundation of a disclosure-based regulatory system, which is a hands-off approach (Wong, 2010). Thus, regulators in the U.S. have historically introduced governance regulation by changing the listing standards on the large exchanges with the threat that lack of compliance will lead to a company's consequent delisting (U.S. Securities and Exchange Commission, 2012). Countries that rely on disclosure-based governance codes are unlikely to adopt binding Say on Pay votes, whereas some European economies, such as Germany and France, bring a tradition of participatory decision-making in firms (Woolridge, 2002). Such existing institutions may make binding Say on Pay votes easier to digest. However, the U.K. also rely on disclosure-based governance codes (Solaiman, 2005), so given their adoption of a binding vote, it is not impossible that the same regulatory change could be made in the U.S. in the future. A possible consequence of introducing binding Say on Pay votes is the fact that directors will be relieved of some of their

responsibility to the shareholders since shareholders will now be able to decide on remunerations themselves (Thomas & Van der Elst, 2015).

An alternative to the binding vote is the two-strike system in Australia, which is a compromise between binding and non-binding. The first strike happens when 25 percent of shareholders vote against the remuneration plan at the annual general meeting. If the same thing occurs at the next annual general meeting, the shareholders will immediately vote on whether the directors must stand for re-election (Thomas & Van der Elst, 2015). A study showed that 53.2 percent were more likely to vote against a remuneration plan if the first vote was negative, and that 68.4 percent of shareholders were more likely to vote against re-election of directors if the company had received two negative votes (ibid.). However, given Jensen and Murphy's (1990) suggestion that there is already an aversion towards increasing the total level of compensation even for top-performers, a tougher system than the current Say on Pay votes enforced by the Dodd-Frank Act may not be beneficial, as it could also lead to unfavorable reductions in total compensation and consequent incentivization for top-performers. For example, even though the votes are not binding in Australia, executives have been observed to get lower incentive pay and bonuses even when operational performance is improving due to the fear of negative votes (Thomas & Van der Elst, 2015).

Thus, an implication of our results relative to previous findings from other countries include the observation that decisions of possible modifications of the Dodd-Frank Act must be made considering the trade-off between the effect on remuneration packages/shareholder participation in votes and possible negative effects on the market for managerial talent. Given that the adoption of binding votes in the U.K. has not strengthened the influence of shareholder votes on pay-for-performance, this system does not appear to be superior to the one employed in the Dodd-Frank Act given our findings that the Dodd-Frank Act has not had an impact either. However, given the improved voting structures in Australia following the introduction of the two-strike system, the U.S. could consider modifying the provision implemented in the Dodd-Frank Act to a similar system in order to promote improved alignment of shareholder and executive interests.

8.1.2 Alternative Regulations for Executive Compensation

Since our results do not suggest that the Dodd-Frank Act has been effective in aligning shareholder and executive interests, while previous more direct regulations of compensation and M&A has had great impact, the U.S. may need to introduce a different kind of regulation. As reviewed previously, Clinton introduced a $1 million cap on tax deductibility of non-performance dependent

compensation, which caused a massive increase in incentive pay and anchored base salaries around the cap (Bainbridge, 2012). Given the ability of this regulation to change remuneration packages quite fundamentally compared to the effect of the Dodd-Frank Act, where we observe unexpected changes for certain components, a more direct regulation of compensation may be needed in order to drive relevant changes.

The current administration has also taken steps towards changing executive compensation more directly. The Tax Cuts and Jobs Act of 2017 changed the cap initially introduced by the Clinton administration so that it now includes performance-based compensation as well (Grant Thornton, 2017). Given the great impact of the regulation enacted by Clinton, one could expect the new Act to have a similar effect. Since performance-based compensation will no longer be treated favorably in terms of tax deductibility it is likely that we will experience a rebalancing of the different components, i.e. an increase in base salary and a possible decrease in performance-based compensation. If the reform brings equity-based compensation back to a moderate level, where it is likely to positively affect M&A performance as found in previous studies, shareholder and executive interests may become more aligned. However, given that the possible rebalancing of component weights may result in much higher fixed cash compensation now that equity compensation is no longer preferable from a tax perspective, we may see a development which is not favorable to shareholders. As highlighted by Bliss and Rosen (2001), very high proportions of fixed cash compensation and the consequent detachment of pay and performance can result in behavior which is not in line with the interests of shareholders.

It may be necessary to introduce other regulations to target the increasingly high equity-based compensation that we have seen in the three time periods to bring it back to moderate levels. Although it is too early to tell, the Pay Ratio Rule may result in a decrease in total compensation of executives (Lacmanović, 2013), and the reduction could occur in equity-based compensation considering that it is no longer preferable for tax purposes. Introduction of pay ratio disclosure has had a positive effect on firm performance in other countries, indicating a better alignment of shareholder and executive interests (ibid.).

Another potential way to regulate equity-based compensation would be to put a cap on the ratio of equity-based to total compensation. Such a regulation was introduced in Germany in 2009, which meant that the supervisory board would become liable if they did not set the appropriate amount of different components of the compensation packages for executives (Hitz & Müller-Bloch, 2015). However, the regulation turned out to be undesirable from a shareholder point-of-view since

companies in which the executives had abnormally high compensation witnessed larger stock price discounts following the introduction of the regulation (ibid.).

Additionally, our results suggest that the combination of equity-based compensation may be an important aspect as well. It is evident from the results that unvested stock could be key to aligning shareholder and executive interests. Thus, regulators should introduce regulations in regard to unvested stock to encourage that executives always has a relatively large ratio of unvested stock to total compensation.

One of the ways in which a decrease in equity-based compensation may positively affect the alignment of shareholder and executive interests is in relation to managerial risk-taking. When the short-term equity-based compensation component is very high, managers have an incentive to increase the share price as much as possible in the short term, and may therefore make very risky decisions in an effort to increase their compensation. Executives may be more likely to engage in risky behavior to harvest short-term gains if potential consequences of risky endeavors are not perceived as immediately threatening. If this is indeed the case, it is necessary to optimize temporal horizons of equity-based compensation accordingly or ensure other channels through which managers gain incentives to ensure good performance in the long term as well. Therefore, introducing regulations forcing executives to have a portion of their performance-based compensation deferred, as is the case with bonuses in the U.K., could ensure longer-term performance foci.

Other possible ways in which alignment of shareholder and executive interests could be improved through direct regulations include introducing the clawback provision of the Dodd-Frank Act, which has not yet been implemented. The clawback provision would make top executives liable for any financial restatements, even in the case that the activity causing the financial restatement does not have anything to do with the executive. The provision could decrease risk-taking by executives, but it remains difficult to determine whether such a decrease in risk-taking would be beneficial. While extreme risk tolerance can drive systemic risk, some executives may become too risk averse, ultimately rejecting risky but positive-NPV projects. However, as noted in the literature review the adoption of clawback provisions has been shown to improve M&A performance (Brown et al., 2015), thus indicating that its implementation could lead to better alignment of shareholder and executive interests.

It is important to note that causing specific changes to executive remuneration packages is not the main goal, as the important aspect is to reduce agency costs by furthering the alignment of shareholder and executive interests. A downside of more direct compensation regulations is the fact

that a one-size-fits-all regulation will not align shareholder and executive interests in all companies as the needs are different depending on size of the company, industry etc. For example, it may be beneficial to have a base salary higher than $1 million in some companies, while the regulation introduced by Clinton may not have been beneficial in other companies.

8.1.3 Decreasing Marginal Benefits of Equity Compensation

As previously mentioned, equity compensation in the U.S. may have reached a saturation point where increasing its proportion of total compensation may no longer return notable benefits in the form of reductions in agency costs. Due to this possibility, we cannot know if the absence of benefits from increasing equity pay proportions is generalizable to other countries or different samples in general (e.g. in a sample of smaller firms). But we can generalize the apparent decreasing returns to scale on the matter. Our results suggest a clear development towards more equity compensation relatively speaking, beyond the level where its maximum efficiency is reached. When focusing purely on the optimum current-to-equity compensation mix through the lens of the finance model of the firm, Say on Pay is only relevant in countries and to firms where equity proportions are currently low to moderate. But beyond the finance model of the firm, there are a number of factors which may make Say on Pay a valuable addition to corporate governance regulations or codes, including weak existing corporate governance institutions on the firm or country level in terms of monitoring, managerial entrenchment, fraudulent dealings, or prevalent nepotism. As previously discussed, Say on Pay may also have a role to play in firms where shareholdings are highly dispersed, as the option to vote provides an outlet through which shareholders can express unified dissatisfaction, without going through laborious and expensive processes to assemble and reach common ground in the absence of any guarantee that their discontent will be heard or accounted for. While voting outcomes may not yield any results for the majority of firms, the existence of the option itself may hold value.

8.2 Implications for Shareholders & the Board of Directors

Firstly, this section will discuss the differences in our results and previous findings in relation to implications for executive compensation packages in the future. Additionally, the implications of our results in relation to lack of participation in votes by small shareholders will be discussed as well as possible solutions to the problem it poses for such investors. Lastly, we consider the potential impact of recommendations made by proxy advisory firms on institutional shareholders' investment choices.

8.2.1 Modifying Compensation Packages

The ambiguity in our results for the relationship between equity compensation proportions and M&A quality suggest that equity compensation is not a one-size-fits-all, and that more is not necessarily better. As expected, we do see a notable increase in the reliance on equity-based compensation, as indirectly encouraged through increasing shareholder empowerment in the Dodd-Frank Act. Compensation packages may have reached a saturation point where equity compensation no longer has a significant, positive effect on interest alignment as identified in our area of interest under current schemes. Thus, one implication of our study is the fact that boards of directors may see a benefit to shareholder returns from decreasing equity-based compensation back to moderate levels, where previous studies have found the component to have a positive effect on M&A performance. Given the Tax Cuts and Jobs Act introduced by the Trump administration, such rebalancing of the compensation components seems increasingly realistic.

We see an indication, however, that large holdings of unvested stock relative to the executive's total compensation package has a positive effect on CAR. In the late post-Dodd-Frank period we also see that holdings of unvested stock have a significant curbing effect on premiums. These results suggest that high holdings of unvested stock can encourage executive behavior in line with shareholder interests in the short term. The increase in unvested stock holdings does not appear to have been contributory to the increases in average CAR, but the drastic increase seen between the early and the late post-Dodd-Frank period may have influenced the notable decrease in premiums in the same period. Long-term incentive pay may thus prevent executives from overpaying in transactions. Compensation committees could leverage this by constructing compensation policies accordingly by regularly granting RSUs with vesting dates further out into the future, ensuring that the CEO has an interest in committing him- or herself to the company and its performance for an extended period of time. Because we simply define unvested stock as all outstanding holdings that were not vested in the current period, we cannot conclude anything meaningful about what temporal horizons result in optimal incentives. If vesting dates are too far out into the future, the motivational effect may be reduced as today's actions are not as directly traceable to future results compared to more current RSUs. At the same time, an overt reliance on short-term RSUs could provide executives with incentives to maximize value and stock prices in the short term (e.g. by cutting R&D or choosing accounting practices which further their interests). These considerations are beyond the scope of our study and datasets, but Gao (2010) showed that executive short-term orientation as expressed by unvested stock holdings did lead to higher post-acquisition CAR relative to acquisitions performed

by executives whose RSUs were to vest later. Compensation committees should thus consider the timing of RSU and option vesting dates to reach the desired temporal mindsets for executives, be it a short-, medium- or long-term view. The preferred time horizon will likely differ from case to case, based on the state and situation of the given firm, the given industry, and the wider economy.

The steep general increase in equity compensation after a severe financial crisis appears both rational and contradictory at once. Following the crisis, shareholders, regulators, and society as a whole were quick to point towards excessive risk-taking on the part of executives as a key driver of the ultimate downturn. Increased shareholder power appears to be a natural stepping stone following what was perceived as a severe case of systemic managerial failure, and ensuring as close an alignment between shareholder and executive interests as possible seems like reasonable means to that end. Yet perhaps equity compensation in and of itself could be a driver of this risk-seeking behavior. Stock options are vehicles through which one can make the risk profiles of underdiversified, risk-averse managers mirror the risk profiles of diversified shareholders as downside risk is eliminated.

However, if the original problem was excessive managerial risk-taking, maybe compensation should be constructed in a manner, which ensures risk sharing so that managers also carry some downside risk. As noted by Jensen and Murphy (1990), exposing CEOs to downside risk to a degree where poorly performing executives are disciplined pertinently is likely to also require significantly higher compensation to properly reward managers who outperform. For a manager to be willing to take on substantial increases in downside risk, he or she is likely to demand even higher upside returns to be willing to accept the deal. When casting their advisory Say on Pay votes, shareholders are faced with a difficult tradeoff, and the task of reaching a balanced sweet spot at which managers are exposed enough to downside risk to shy away from overly risky projects and acquisitions, without becoming so risk-averse that a lack of diversification leads them to turn away risky, positive-NPV projects.

As Section 954 on clawback provisions has yet to be implemented as of today, we are unable to conclude anything about the effectiveness of the provision. Yet Brown et al. (2015) did find that voluntary clawback provisions were effective in ensuring more optimal alignment between shareholder and executive interests, as proxied by the quality of M&A decisions and consequent accounting quality. While the fate of the Dodd-Frank Act's clawback provision remains uncertain, companies that wish to minimize agency costs are free to voluntarily and unilaterally adopt stricter clawback rules than those mandated under the Sarbanes-Oxley Act.

Our results do not suggest that shareholders can look to compensation practices to determine whether or not a company will be a good investment, or whether management will act in accordance with their interests. As the existence of any consistent relationships in such a form would imply an arbitrage opportunity, it makes sense that such advantages would have been traded away.

8.2.2 Impact of Proxy Advisory Firms on Investment Choices

As previously noted, a highly controversial aspect of Say on Pay legislation has been the increasing amounts of power put in the hands of institutional voting advisors with the increase in the weight placed on their recommendations. The power and influence of institutional advisory firms is likely to increase further with increasing shareholder influence. An important implication is that institutional advisory firms' ideas of best practice within executive compensation are very likely to come to dominate the managerial remuneration landscape. If such firms favor e.g. option compensation, top management in firms that do not currently comply with these ideas, will experience a high level of pressure to redirect their practices.

In addition, one could imagine that some institutional shareholders may base their investment decisions on the recommendations of institutional advisory firms in relation to the perceived quality of a given firm's corporate governance practices. If the consensus recommendation within the institutional advisory firm is that a certain proportion of an executive's compensation should be granted in the form of stock options, a pension firm relying on their Say on Pay recommendations may choose not to invest in the firm in the first place, until it satisfies dominant ideas of best-practice. Such a development could also encourage companies to mirror advised governance practices even in the absence of a formal vote on relevant matters to stay within the grace of existing and potential institutional investors. Institutional advisory firms could thus inadvertently be granted a role as informal corporate governance legislators.

In summary, it will become increasingly important to be cognizant of the interpretations of best-practice in the area of corporate governance within institutional advisory firms. The issue does not lie within how these firms evaluate corporate governance quality, hereunder executive compensation, on the basis of which they publish their recommendations. The potentially problematic aspect rests in the conceivable dominance granted to these recommendations, irrespective of the methodology behind them. This quandary is of course exacerbated even further in countries that choose to adopt binding Say on Pay votes.

Of course, one could conceive of positive consequences resulting from such a development. If firms look to satisfy best-practice within corporate governance as interpreted by these advisory firms, one could imagine that improvements in governance practices could spread quicker without the same envelopment in political disparity, in which implementation of the Dodd-Frank Act is currently immersed.

Proxy advisory firms such as Institutional Shareholder Services (ISS) analyze equity plans by awarding points to firms based on elements of the compensation plans. For example, in ISS's equity plan scorecard system firms get full points when the CEO has equity awards that vest in three years or more, thus ensuring a long-term focus. Additionally, they analyze and report pay-for-performance measures, which enables their clients to selectively invest in companies that employ an ideal pay-for-performance structure in accordance with the advisory firm's methodology. This puts pressure on boards to compose executive compensation packages focused on performance, including long-term performance. The recommendations of proxy advisory firms thus appear to be in line with our results on unvested stock, which we found to drive value-creating M&A decisions to a degree.

8.2.3 Engaging Shareholders with Small Ownership Stakes

Our results have made it evident that while the Dodd-Frank Act may have been instrumental in the changes seen to compensation structures, the Act does not seem to have caused significant changes to the effect of the different compensation components. As discussed in section 7, there are several possible explanations for this absence of effects. Previous studies have found that shareholders who have voted in Say on Pay ballots are mostly institutional shareholders (Bachelder, 2011). This is likely due to the fact that the costs of thorough monitoring are too high when ownership is dispersed and small shareholders may therefore choose not to vote or vote on an uninformed basis. Since our results showed that the Dodd-Frank Act did not prove successful in aligning shareholder and executive interests, the implications for smaller shareholders may be that they need to get invested in the Say on Pay votes, both by participating and staying informed, if they want such improvements to happen.

For institutional investors, the average holding period is approximated to be 1.5 years (ibid.). The resulting short-term focus makes us doubt whether they will seek to affect executive compensation packages in manner that aligns shareholder and executive interests in the long term. As mentioned it may be difficult to move shareholders with very small ownership stakes to get

involved due to the related costs, but the above-mentioned proxy advisory firms may be part of a solution to the problem.

As reviewed above, proxy advisory firms such as ISS make recommendation to institutional shareholders in relation to management and shareholder proposals, for example in relation to executive compensation. As stated on ISS's website, they do actually promote 'long-term shareholder value creation and risk mitigation at their portfolio firms' (ISS, 2017). Given this focus on long-term shareholder value creation, and working under the assumption that institutional shareholders rely on and take the advice of institutional advisory firms in their Say on Pay votes, a short-term focus on the part of institutional investors may not necessarily bleed into executive compensation packages. Institutional investor short-termism may thus not be the reason behind the ineffectiveness of the Dodd-Frank Act within the area of CEO compensation.

Given the potential increase in the power of these voting advisory firms, and the historical focus on disclosure-based regulation in the U.S. we may see a requirement that such firms partially disclose their recommendations publicly at some point in the future in order to ensure that their recommendations do provide some investors (e.g. very large institutional investors with ample funds) with an inequitable advantage relative to others (e.g. small private investors). If such disclosure requirements were realized, smaller shareholders who have not bought the services of proxy advisory firms so far would also be able to benefit from their recommendations, thus leveling the playing field.

8.3 Implications for Managers

In the following section, we evaluate the potential implications our results, as well as the Dodd-Frank Act on a general level, could have for managers going forward. We also elaborate on the results of our control variables separately from executive compensation considerations to examine whether developments in these variables may contain valuable lessons for managers in the context of M&A decision-making.

8.2.1 Independent Determination of Executive Compensation

Board independence shows an ambiguous effect on both CAR and M&A premiums. As entirely independent compensation committees became the law, we cannot identify links between compensation committee independence and M&A performance, but our data on general board independence suggests that board independence beyond the already high mean levels generate no material influence on the quality of M&A decisions. Similarly, CEO duality is moving in a direction

of increased independence and decreased managerial power as its incidence fell significantly between the pre-crisis period and the early post-Dodd-Frank Act period, as well as between the pre-crisis period and the late post-Dodd-Frank period. Under the managerial power view, increasingly independent monitoring could function as a substitute for incentive compensation, as suggested by Dicks (2012). The consequent implication would be lower compensation levels overall. On the other hand, such alterations in the variety of scrutiny managers face may lead executives to require higher compensation in response to alterations to the existing governance structure, which could make the relationship with the board of directors more complex to navigate while potentially increasing effort requirements and employment risk. The latter development would be in line with the market-based view and the results of Hermalin (2005). It is thus difficult to determine whether continued increases in mean board independence would have a positive, neutral, or negative effect on total compensation levels.

For our sample period, mean total compensation decreased significantly between the pre-crisis and the early post-Dodd-Frank periods, after which it increased to a higher level than where it began. As previously mentioned, much of the change may be attributable to changes in market capitalizations during the sample period. Before the crisis, we saw a significant positive relationship between higher total compensation and higher premiums. The relationship continues to be positive in the post-Dodd-Frank periods, and it could suggest that higher total compensation may indeed in some circumstances be indicative of a lacking alignment between managerial and shareholder interests. Yet we do not identify a meaningful link between deal quality and total compensation. Higher total compensation levels thus do not appear to be justified by related improvements in M&A performance, and they may instead be a sign of managerial entrenchment.

8.2.2 Greed Metrics

The discussion on excessive executive remuneration has been quite general in nature for most of its lifespan. While some towering packages have been singled out in the media, the main focus appears to have been on concerns about increases and changes in the average CEO's compensation. With the arrival of Say on Pay and the recently implemented Pay Ratio Rule, CEOs will likely experience increased scrutiny directed specifically towards their specific compensation package, moving the discussion in a more personalized direction. While Say on Pay votes are aimed at the CEO, the CFO and the three highest paid executives thereafter, the Pay Ratio Rule points the spotlight directly at the compensation package of the CEO only, relative to the company's median employee. Despite

increased independence in the setting of pay as mentioned above, high metrics could attract substantial media attention, and CEOs may increasingly be perceived as greedy on their own accord by the general public. Final implementation of the Pay Ratio Rule occurred after our sample period, and we are thus unable to evaluate whether negative publicity does indeed have a curbing effect on total compensation as seen in the results presented by Bebchuk and Fried (2003).

8.2.3 Managerial Lessons from M&A Behavior

On an entirely different note, and while not directly related to executive compensation, results from our control variables do provide some interesting insights with potential implications for boards of directors and managers. Pre-crisis, we saw that the target's size relative to the acquirer was significantly negatively related to both CAR and the premium paid. Recall that the literature on the effect of target size on M&A performance was ambiguous. While the significant effect on CAR disappears following the crisis, the negative relation between relative target size and the premium paid persists. The effect on premium could suggest a tendency for firms to be more cognizant and careful with their larger investments. The negative pre-crisis correlation with CAR and its consequent disappearance could be indicative of hubris-laced behavior. It may also simply indicate that large investments are more difficult to integrate, and that the risk of failed integration has larger potential consequences and are thus more concerning to shareholders than in the case of small acquisitions. The fact that the effect disappears, although it remains negative, in the post-Dodd-Frank Act periods could be indicative of managers becoming somewhat more careful when conducting large transactions, perhaps because of a change in sentiment following the crisis. This sentiment change could involve a reduction of executive hubris and general overconfidence when even past top-performers found themselves vulnerable to the market-wide setting of distress. There could be value in observing the coefficient in the future to identify whether the sentiment change appears persistent or if managers return previous patterns. If the relationship between relative target size and CAR returns to being significantly negative, it could be an indicator of a new injection of managerial overconfidence, of which markets and executives themselves should be mindful.

Payment in cash is also positively associated with CAR. The effect is only significant in the pre-crisis period and the late post-Dodd-Frank Act period, where CARs have been significantly lower than in the early post-Dodd-Frank Act period. The effect is consistent with what is generally found in the literature (Linn & Switzer, 2001; Sudarsanam & Mahate, 2003), and its temporary disappearance after the financial crisis could, again, be indicative of management teams exercising

added caution regardless of payment type during a change in sentiment following the shock of the downturn. The effect's return could indicate a gradual return to the more confident pre-crisis mentality. Such a return may have implications for the economy as a whole, and attempts to combat systemic risk in other areas of market regulation than executive compensation may be put to the test in the future if pre-crisis overconfidence returns to previous levels. In accordance with the literature, we would expect more companies to pay in stock following the financial crisis, as this is the payment method most often used when executives perceive the acquirer as undervalued. Instead, we see an increase in the proportion of deals where cash is the consideration of choice. Undervaluation is a relative matter, and the explanation could thus rest in the fact that market capitalizations fell simultaneously and market-wide.

Rather surprisingly, diversification has a significant and positive effect on CAR in the late post-Dodd-Frank Act period, which is at odds with the literature. Diversification fell from the pre-crisis period to the early and late post-Dodd-Frank Act periods, and the positive correlation with CAR may signal that those diversifying deals that are conducted despite this tendency were thought through more thoroughly and are consequently of significantly higher quality. Executives appear to be more mindful of their decisions when they move in opposite directions of the majority, and being attentive of one's own behavior relative to broader tendencies in the market may allow executives to be attentive to such heuristics.

In the pre-crisis period, acquirer market capitalization is significantly negatively related to the premium. The effect remains positive but is no longer significant in the early post-Dodd-Frank Act, yet the significant effect returns in the late post-Dodd-Frank Act period. This could signal that larger acquirers have higher bargaining power relative to their targets. Rather puzzlingly, acquirer market capitalization has a consistently negative effect on CAR, which is only significant in the early post-Dodd-Frank Act period. It thus appears that large firms are in a stronger position to negotiate once the target firm has been decided upon, but the quality of their target choices appears to be poorer than for small firms. This could be a result of managerial hubris; overconfidence, with lacking due diligence processes as the result; or decreasingly valuable acquisitions in accordance with Ismail & Abdallah (2013), as larger firms have likely conducted a higher number of prior deals than the average firm. Additionally, the process of integrating two relatively large firms is comparatively more complex than when acquiring a small firm, often resulting in fewer synergies being realized and lower economic benefits in general (Alexandridis et al., 2013). Again, the value of being aware of the negative relationship between market capitalization and CAR lies in the opportunity for executives

to be critical towards personal heuristics. In line with previous argumentation, the reduction seen in the severity of this effect in the early post-Dodd-Frank Act period could be indicative of a temporary managerial change in sentiment resulting from the sobering financial crisis.

8.4 Short-Termism, Systemic Risk Concerns & Shareholder Empowerment

The very motivation behind the Dodd-Frank Act was to prevent or at the very least alleviate the severity of similar recessions in the future. The vehicle of choice was an amplification of the move away from managerial power and towards shareholder power. Some scholars suggest that increased shareholder influence is an ineffective solution to the problem. Others even submit that shareholder empowerment is a potential partial cause of the excessive systemic market risk experienced in 2007.

8.4.1 Managing to the Market

Clarke (2008) advises that the finance model of the firm alone does not provide a comprehensive picture of an executive's job description and the related requirements. Stakeholder theory adds an additional perspective by suggesting that the managerial duty is to manage towards an alignment of the interests of all relevant stakeholders in addition to shareholder value maximization. It is argued that the executive's role is to find the path which optimally combines stakeholder welfare without substantially compromising the interests of one party in favor of another (Freeman, Wicks & Parmar, 2004). If the common critique that managers took on too much risk leading up to the crisis does indeed hold, one would from a stakeholder theory perspective consider it managerial failure to not take potential consequences for society and the wider economy into account when conducting business. Of course, the problem was by definition systemic, and as a result it is difficult to point to the individual manager and define their partial area of the wider responsibility.

The systemic nature of the problem also suggests that valuable information may be found in the incentives executives were presented with leading up to the crisis. Murphy (2013) highlights the plethora of ways in which CEO compensation is tied directly and indirectly to share prices. Stock options, RSUs, and existing holdings of company stock make up the direct connection. The indirect connections lie in bonuses based on accounting measure performance, which tends to correlate strongly with stock prices; general modifications of salary levels based on overall firm size and performance; and the implicit threat of being fired following poor share price performance (ibid.). While glaringly obvious, we must of course point out that the entire premise of this paper is based on the finance model of the firm and shareholder value maximization sought through interest alignment,

and it may therefore not articulate a comprehensive look at the effects of the Dodd-Frank Act. Yet our results do show that the relationship between executive compensation and share price performance has gotten even closer after partial implementation of the Act through the immense increase in the equity compensation component.

From an extremely simplified perspective on risk, compensation which seeks to align executive and shareholder interests can go one of two ways: First, one may attempt to align interests by encouraging (or requiring) direct personal stock ownership, in accordance with Jensen and Murphy (1990), where the CEO carries both upside and downside risk jointly with shareholders, limiting his or her inclination to entertain overly risky projects. The downside of this option is, of course, that shareholders are diversified and materially less risk-averse than the CEO who will tend to be underdiversified, as large stockholdings in the company that is also their source of employment combined with general employment risk is a cocktail laced with uncertainty. From a systemic risk perspective such restraint may be preferable, but with the risk-return relationship in mind, a C-suite which is overly cautious can make the company a comparatively unattractive investment. Second, one may attempt to reduce this asymmetry in risk tastes between managers and shareholders by compensating management in stock options or RSUs where vesting is tied to the stock price. The consequence may be that executives invest in overly risky projects, as their downside risk is partially eliminated. The remaining downside risk includes the risk of termination and the downside risk to any existing stockholdings remains.

While our results suggest that the increase in the use of equity-based compensation has an ambiguous effect on short-term shareholder reception of M&A, part of the academic literature maintains a critical stance towards shareholder empowerment and the constant determination to more optimally align the interests of executives with those of shareholders. The knee-jerk regulatory reaction to the crisis has largely been based on increasing shareholder empowerment, grounded on the premise that managers took on excessive risk on behalf of shareholders without being sufficiently exposed themselves to the sharp financial collapse that followed (Bratton & Wachter, 2010). In response, some academics have suggested that the financial crisis did not occur because of a lack of alignment between shareholder and managerial interests, but partially because of an excessive alignment thereof. Much of the extant literature is based around assumptions of short-term managerial interests versus long-term shareholder interests, while average holding periods for shareholders have in fact decreased dramatically over time (Rieg, 2015). Bratton and Wachter (2010) suggest that the single-minded managerial march towards maximizing earnings and market prices led to a shared

obliviousness to simultaneous increases in risk. They add that shareholders rewarded managers who were willing to take on extraordinary gambles leading up to the crisis, while firms with managers who acted in a more restrained, conservative manner financially were penalized.

Bratton and Wachter (2010) cite two central aspects which make share prices inadequate guideposts for business strategy: the fact that share prices are set in the midst of the existence of asymmetric information between managers and shareholders, and the direct influence of speculation on share prices, which results in higher volatility within markets than within the economy. The authors note that encouraging managers to strive unequivocally towards maximizing stock prices 'could inject that higher degree of financial market volatility into the real economy' (Bratton & Wachter, 2010, p.661). If the semi-strong form of the ECMH holds, prices should not include private information. According to Bratton and Wachter (2010), the very existence of private information disqualifies stock prices as guideposts for business strategy and the quality of corporate governance in a given firm. Under the strong-form ECMH, the case for shareholder empowerment would be strong, yet the literature does not support its existence (ibid.). The authors suggest that executive compensation should mimic the interests of a controlling stockholder, to whom the position of control is more valuable than swing trades, so as to filter out the relevance of speculative share price movements to executive decision-making. Long-term incentive pay is one way to move in this direction.

8.4.2 Incongruent Interests

Bratton and Wachter (2010) propose that the blame-game towards executive officers and the consequent public outcry regarding hefty executive compensation packages directed towards the designated black sheep of the crisis could be utterly displaced. They point out that the notion that shareholder centrality would improve sensibility towards risk is faulty. Managers are risk-averse, in that they wish to protect their own job and stream of income through ensuring the continued existence of the firm, and they have access to significantly more information about the company and its pertinent issues than shareholders do. Even if managers were responsible for causing the crisis through excessive risk-taking, there is no clear evidence that regulation focused towards a shareholder-centric model would be the better alternative (Bainbridge, 2012). The distance created between shareholders and managers through the board of directors may actually be preferable to a situation of direct shareholder influence. The very point of separating ownership, control, and monitoring across three actor groups must necessarily be to allocate the responsibility for day-to-day

business decisions with persons who are more adept at the task and less time constrained towards it than the shareholders themselves. In addition, collective management is quite simply unviable in firms of a certain size (ibid.).

Outside of the scope of executive compensation, the Dodd-Frank Act also includes Section 971 on proxy access, which assigns the SEC authorization to implement shareholder nomination of directors in a format they deem appropriate. The SEC's proposal was adopted in November 2010, and mandated that any shareholder which had held at least three percent or more of the company's outstanding shares for at least three years were eligible to nominate a candidate to the director slate (Libit & Freier, 2015). The SECs proposal was vacated by the U.S. Court of Appeals in July 2011 on the grounds that the SEC had failed to properly consider the potential economic effects of the rule, along with its potential consequences for 'efficiency, competition and capital formation' (Kemp & Lester, 2011), but many companies have continued to honor the mandated thresholds of three percent and three years as the limits over which proxy access propositions are taken into consideration. Proxy access nominations bypass the nominating committee, and Bainbridge (2012) highlights that shareholders may not be as conscious of the mix of competences and experience needed in their nominations and consequent proxy votes as the nominating committee would be. The company could thus end up missing important – or even required – skills among the board of directors. An audit committee without a single eligible financial expert would be one potential and highly problematic outcome which could compromise the board's ability to honor their fiduciary duty (ibid.). Shareholders may also favor nominees who will focus on a narrow set of interests, which may not necessarily be in line with the interests of all shareholders, e.g. in relation to temporal horizons or risk tastes. Finally, the author highlights the economics of shareholder involvement: general proxy contests are costly and require the involvement of professional consultants within a number of areas, both on the part of the authoring shareholder and directors' response. The expenses for the latter are likely to originate from corporate funds, as are the former if the proxy contest ends up being ratified. While not directly related to executive compensation, the listed concerns clearly show that managing to shareholder interests is not always entirely optimal.

Bratton and Wachter (2010) attribute part of the shareholder-centric development to the arrival of activist hedge funds who seek to influence short-term to medium-term value maximization. As previously mentioned, the average holding period for institutional shareholders is comparatively brief, and a focus on short-term value maximization would therefore be entirely natural. When regulatory steps are taken towards increased shareholder power and influence, regulators should take

into account who these shareholders are likely to be and what their temporal horizons look like on average. Regulations written under assumptions of long holding periods may not be effective if the actual horizons are notably lower, and vice versa. Yet according to Bebchuk, Brav and Jiang (2015), the market reacts positively to the involvement of activist investors on average, with no consequent negative long-term effect to offset the increase. Large activist shareholders have two channels through which they can correct or punish top management: 'voice' involves involvement through communication or voting rights, while 'exit' is the threat of them selling their stock in the firm, potentially pushing the stock price downwards (Anand, 2017). The implementation of Say on Pay aids investor 'voice' involvement within the area of executive compensation.

8.4.3 Externalization of Risk

The financial crisis also became a breeding ground for difficult relations between the U.S. government and struggling financial firms which were deemed to have systemic impacts on the financial system. The Troubled Asset Relief Program (TARP) was put in place to prevent a catastrophic turn for the worse. The sudden implications of "too big to fail" status and the consequent flows of funds ultimately amounted to an externalization of risk. Shareholders of the firms, which engaged in particularly risky behavior, thus did not end up carrying the costs in full. Instead, these costs risked being passed on to American taxpayers if break-even was not reached (Manns, 2011). The financial crisis helped emphasize that questions of corporate governance quality and the proper scope of managerial and director responsibility can have important direct financial implications for the general public in addition to the obvious indirect effects of such market downturns such as job security, pension investment values, access to capital, etc. If the (albeit decreasing) improvement in M&A quality we see during the period is indeed grounded in a short-term sentiment change as some of our results suggest, executive decision-making may regress to the mean over time. Judging from our two post-Dodd-Frank Act periods, the part of the Dodd-Frank Act, which revolves around executive compensation practices, does not appear to have had a notable and lasting influence on managerial behavior in non-financial firms. Of course, the Dodd-Frank Act is much larger in scope than Sections 951 to 955 alone, and its many sections focusing on an overall stabilization of the financial system may have significant impact on systemic risk within financial firms, specifically. While the judgment is entirely outside the scope of our topic, these parts of the reform may be instrumental in safeguarding the funds of the general public against crises of a similar magnitude in the near future. There is also a possibility that the Dodd-Frank Act would be more impactful if

implemented in full. Yet after the implementation of Say on Pay and new independence requirements for compensation committees alone, we see markedly higher equity compensation levels and lower formal CEO power without systematic corresponding improvements in CEO value-creation.

9 Conclusion

This paper sought to investigate changes in different components of executive compensation following the Dodd-Frank Act and whether the Act has had an effect on M&A decision-making, thus implying a change in the alignment of shareholder and executive interests. Our focus revolved around the two sections that were enacted in the period, namely the implementation of Say on Pay and new requirements for the independence of compensation committee members. The results showed that material changes were experienced to most studied components of executive compensation. We see the most significant changes in the proportion of equity-based compensation, which almost became twice as large through the three time periods. Executive equity ownership also increases significantly after the enactment of the Dodd-Frank Act, and we see a significant increase in the natural logarithm of total compensation between the two periods after the enactment as well. Entirely independent compensation committees thus do not appear to have had the curbing effect on total compensation, which some scholars previously found.

On the topic of changes in the effect of the different components on M&A decision-making quality measured through CAR and premiums, we found ambiguous results and little evidence that the Dodd-Frank Act should have had a systematic and meaningful impact in any of the periods. The Act therefore does not appear to have been successful in improving the alignment between executive and shareholder interests. We do see that an executive's unvested stock holdings as a percentage of their total compensation have a positive impact on CAR immediately after the Act's implementation and a negative impact on premiums in the period that follows. While these are positive developments, changes in unvested stock holdings are difficult to attribute directly to the implementation of the Dodd-Frank Act. The proportion of equity-based compensation was negatively related to premiums paid in the pre-crisis period, but the effect disappears in the two following periods. Higher total compensation had a positive effect on premiums pre-crisis, and again the relationship disappears after the Act's enactment.

Lastly, we examined the potential implications of our results for relevant stakeholders, including regulators, shareholders, boards of directors, managers, and society at large. Since the Dodd-Frank Act does not seem to have had the expected effect on all compensation components, and

since those components that have changed have not materially impacted the quality of M&A decisions, it is implied that a different approach must be taken to regulating executive compensation effectively, provided that the overarching goal is to improve alignment of shareholder and executive interests. One potential way to modify the Say on Pay vote could be to adopt the two-strike system employed in Australia, as the system has proven effective in changing voting behavior. Regulators may also consider more direct approaches to regulating executive compensation to e.g. increase executive holdings of unvested stock, which we found to have a positive effect on the quality of M&A decisions. In a disclosure-based governance system as the one employed in the U.S., direct caps or demands on the use of certain compensation components are an unlikely outcome, but alterations in the tax code have repeatedly proven effective in changing compensation component weights. Since the explosion in equity-based compensation relative to all other components has not yielded improved decision-making directly attributable thereto, regulators may also want to consider restraining continued proportional increases. Although it is too early to make definitive inferences about its potential consequences, the notable changes in the tax deductibility of equity and other incentive compensation in the Tax Cuts and Jobs Act of 2017 may already be a step in that exact direction.

Boards of directors and shareholders should of course focus on similar considerations as those presented for regulators when constructing and voting on compensation packages, respectively. Independent compensation committees should focus on granting RSUs with temporal horizons that motivate executives to behave in the best interests of shareholders, stakeholders, or something third, depending on whether one subscribes to the finance model of the firm, stakeholder theory, or a third option. Boards and shareholders should also be critical of any views that more equity compensation should always result in improved interest alignment, as we saw that any benefits from equity compensation on premiums paid disappeared after the ratio's substantial growth spurt. The absence of any effect from the Act's provisions on the alignment of shareholder and executive interests could also be grounded in low voting participation rates by smaller shareholders. The fact that institutional shareholders clearly dominate Say on Pay votes disproportionately to their actual holdings may skew voting outcomes towards compensation packages that favor executive decision-making, which is in the interests of some investors and not others. As an example of such a discrepancy, the average institutional shareholder holding period is comparatively brief, and they may wish to skew decision-making towards the short term. If other investors disagree without voicing their concerns explicitly in a Say on Pay vote, we could see an effect of that disagreement on short-term acquisition announcement performance.

Short-term M&A performance as measured by CAR improved markedly over the period, particularly from the pre-crisis period to the early post-Dodd-Frank Act period. In the late post-Dodd-Frank Act period we saw a rather prominent decline, although CAR did not return entirely to its pre-crisis low. Based on our results, these changes clearly do not appear to be a consequence of changes in compensation practices post-crisis. While a change in sentiment is a concept which is both difficult to define clearly, measure, and prove, developments in several of our control variables point towards a potential temporary change in executive sentiment and a reduction in overconfidence after the crisis. Its influence looks prominent in the early post-Dodd-Frank Act period, where several types of M&A, which have previously been found to underperform no longer did so. The indications are not as clear in the late post-Dodd-Frank Act period, which could signal a gradual return to pre-crisis sentiments and levels of confidence. Such a return would have important implications. Subtitle E on executive compensation is only a fraction of the full Dodd-Frank Act, and a return to pre-crisis managerial behavior and corresponding levels of market risk could put other provisions targeted more directly at systemic risk to the test when the next potential financial crisis rears its head at some point in the future.

10 Future Research

Given the widespread view that excessive executive risk-taking - partially resulting from suboptimal compensation packages - was one source of the Financial Crisis of 2007-2009, and since Subtitle E of the Dodd-Frank Act was in part introduced for this very reason, an interesting direction for further research could include technical studies of how the identified changes in executive compensation have impacted risk-taking incentives.

While we investigated only short-term shareholder reactions to M&A announcements, concerns of bounded rationality and private information may not make shareholders fully equipped to assess the quality of the transaction at the announcement date. This detail may have had adverse implications for the clarity of our results. While assessing medium- or long-term M&A performance is a difficult feat, future research could attempt a look into the long-term performance of transactions in relation to the Dodd-Frank Act's implementation, or use operational figures as a measurement of performance rather than stock price performance.

We identified the impact of large institutional shareholders and more dispersed ownership as a potential partial reason for the absence of a clear effect of the Dodd-Frank Act's Say on Pay provision. This notion could be investigated further by mapping potential differences between different ownership structures and their potential impact on M&A decision-making quality.

Further studies on the impact of the Dodd-Frank Act may also be conducted in the future to track any changes to the effect of the Act's provisions on compensation and performance. Continued assessments could assist in determining whether the changes we did identify to compensation components were results of the Act or in fact due to market-wide changes in sentiment. As previously noted, several sections of the Act have only been implemented recently or have yet to be. Perhaps the combination of the different sections could turn out to have a larger impact than each section in isolation. Lastly, despite the growing international popularity of Say on Pay, research on the provision around the world remains limited. A comparative study of its effects and usefulness could shed light on the pros and cons of different formats of the model, including the differences between non-binding votes versus binding votes, one-off periodical votes relative to the two-strike system, and so on.

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12 Appendices

Appendix 1: Index distribution of observations

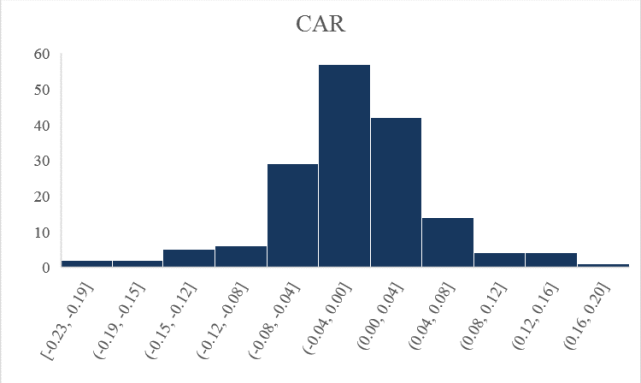
Appendix 1: Distribution of deal in terms of indices

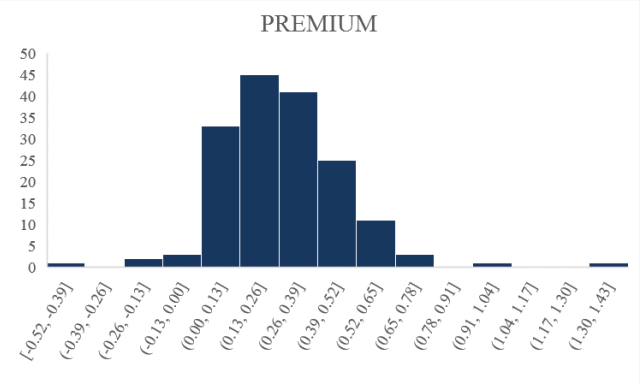
The distribution of transactions performed by companies in the three indices as a percentage of total observations in respective years.

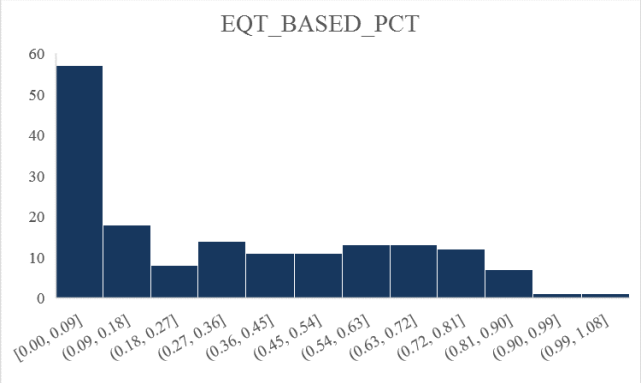
	SP 400	SP 500	SP 600
2005	15.25%	59.32%	25.42%
2006	16.07%	69.64%	14.29%
2007	29.41%	56.86%	13.73%
2010	16.00%	48.00%	36.00%
2011	31.48%	51.85%	16.67%
2012	35.90%	41.03%	23.08%
2013	37.14%	40.00%	22.86%
2014	29.63%	53.70%	16.67%
2015	24.14%	60.34%	15.52%
2016	15.22%	56.52%	28.26%
2017	24.24%	51.52%	24.24%
Total	24.71%	54.90%	20.39%

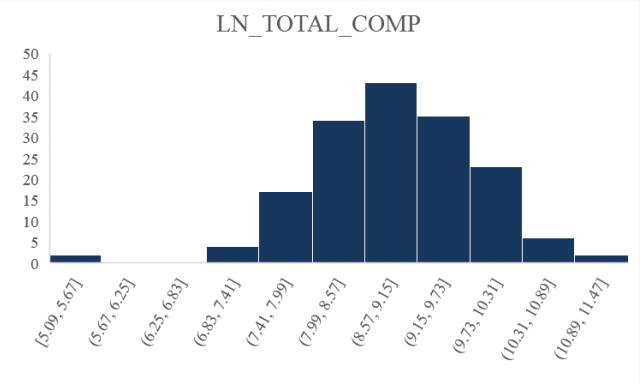
Appendix 2: Histograms for the Variables in the Three Time Periods

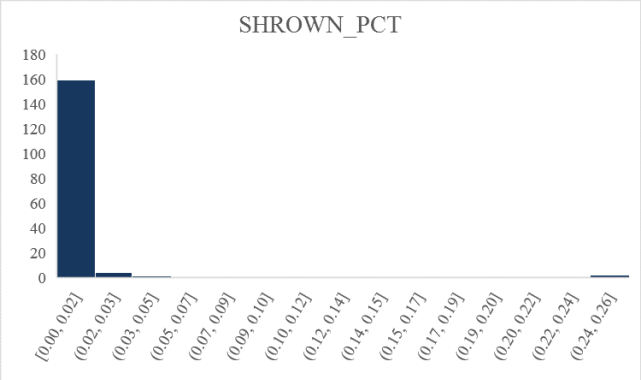
Histograms for the Pre-Crisis Period:

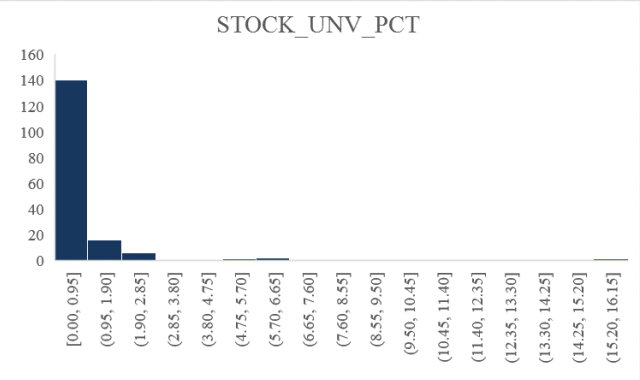


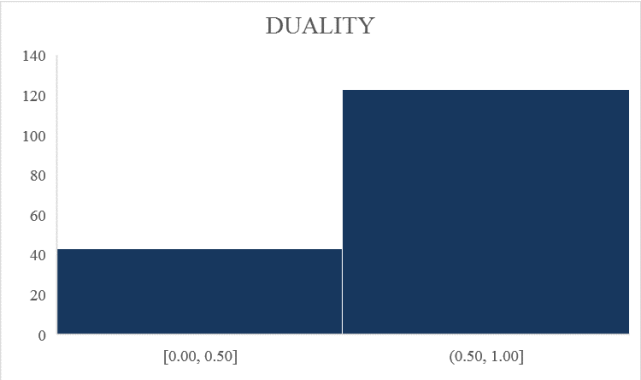


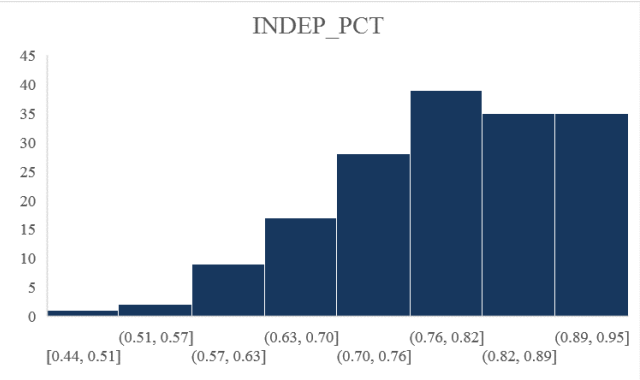


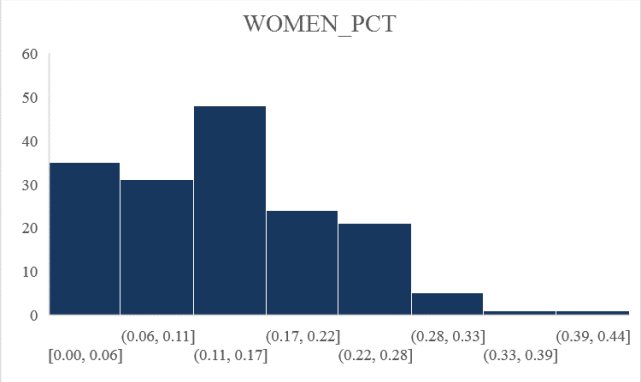








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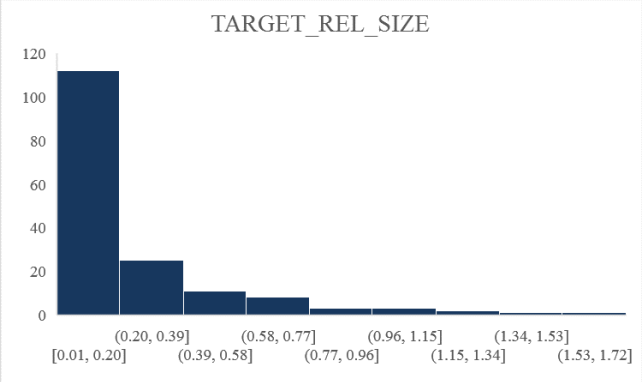
(0.22, 0.28]
(0.33, 0.39]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40
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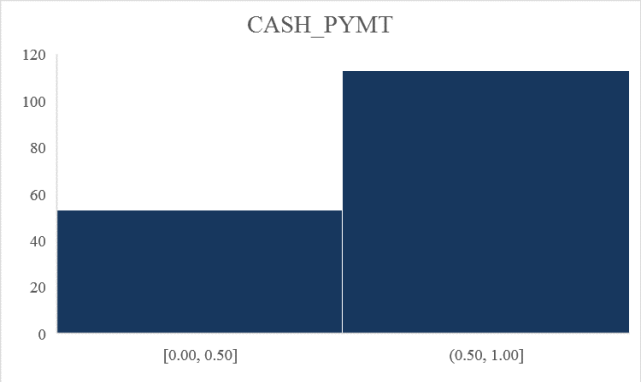
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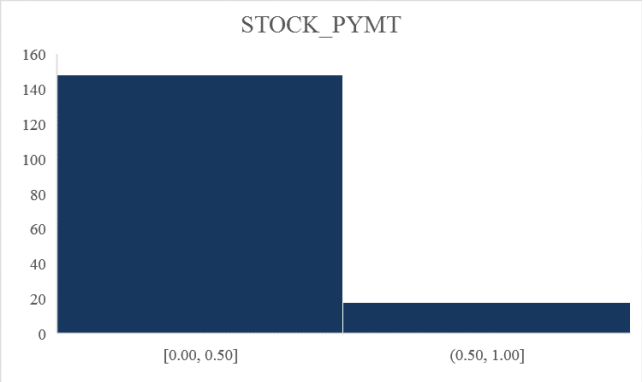
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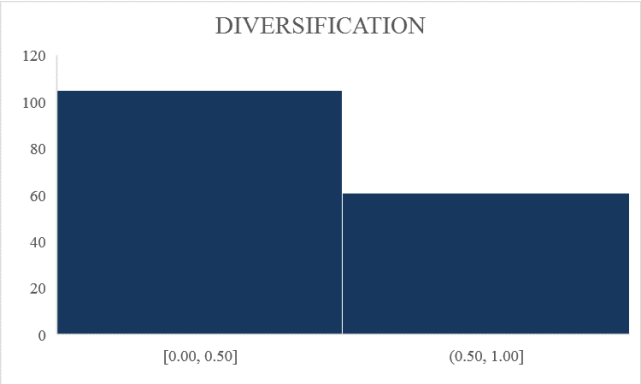
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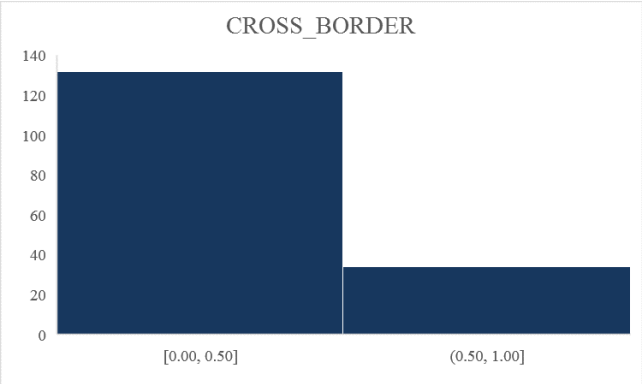
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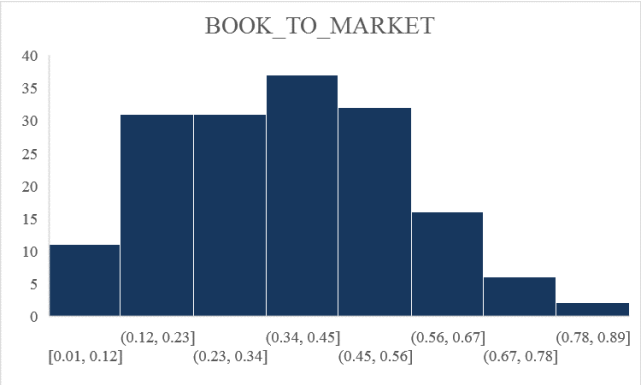
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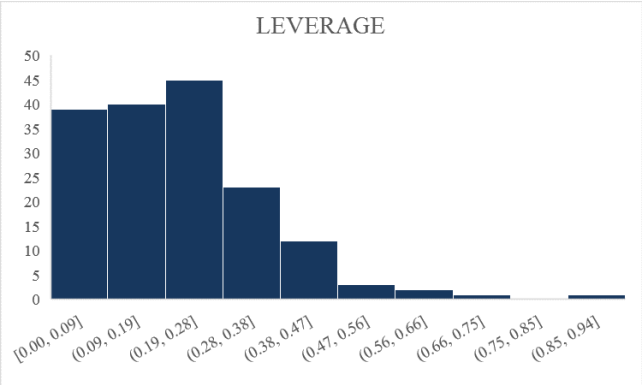
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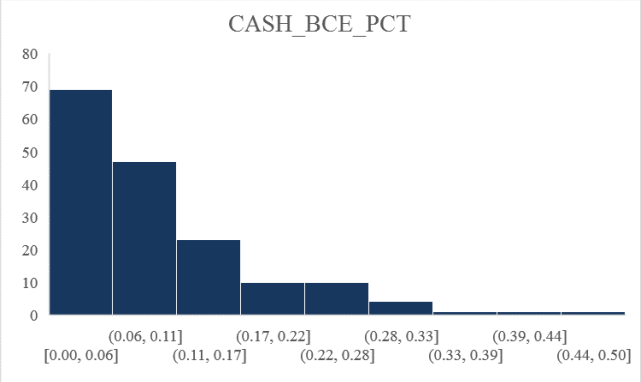
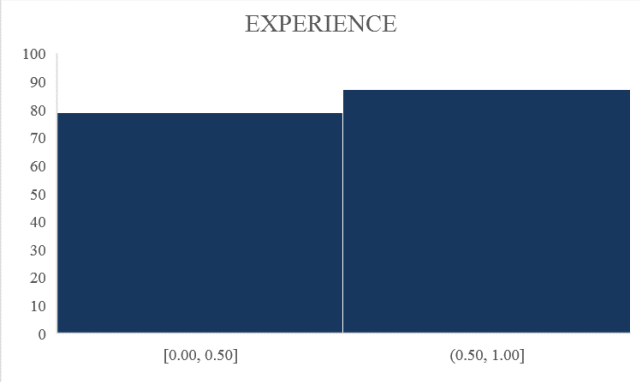
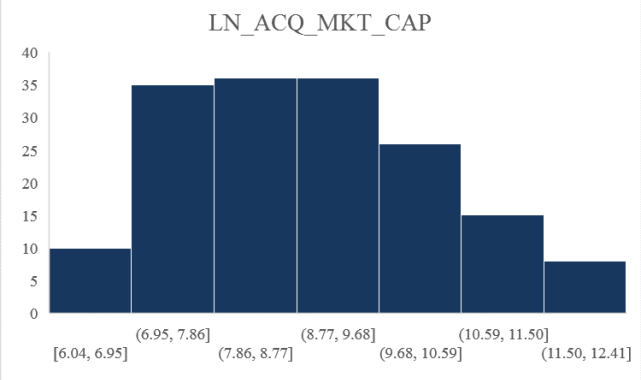
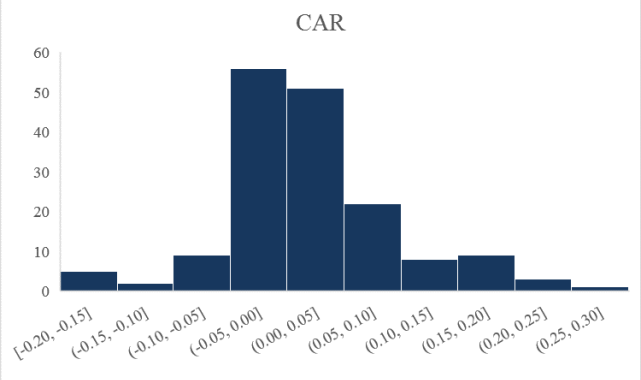
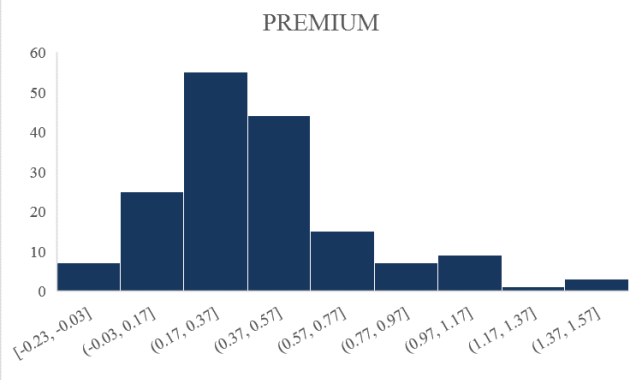


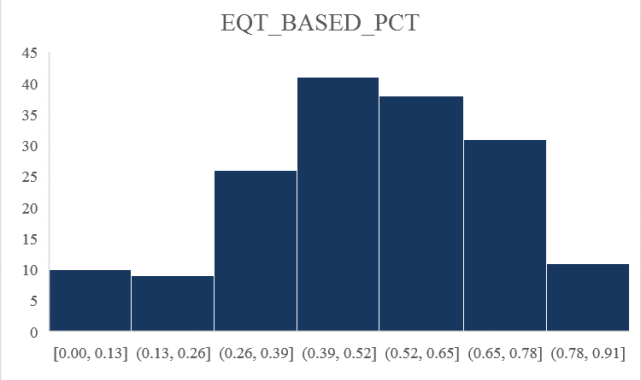


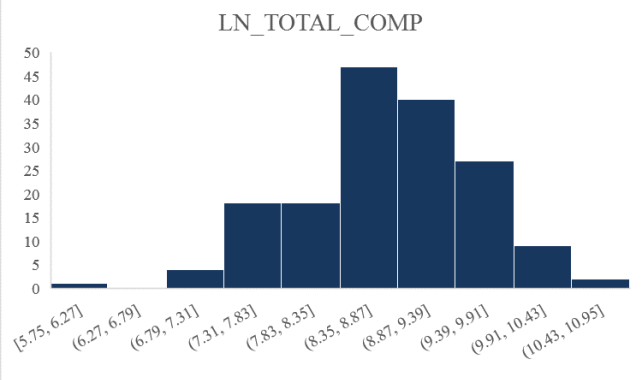


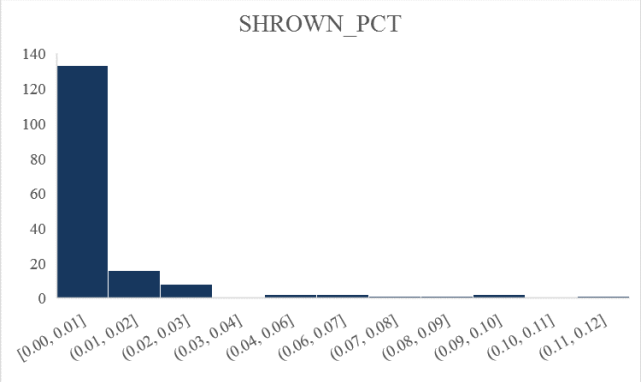
<u>Histograms for the Early post-Dodd-Frank Act Period:</u>

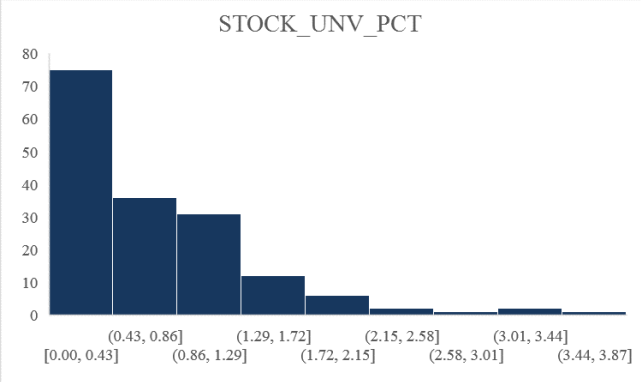


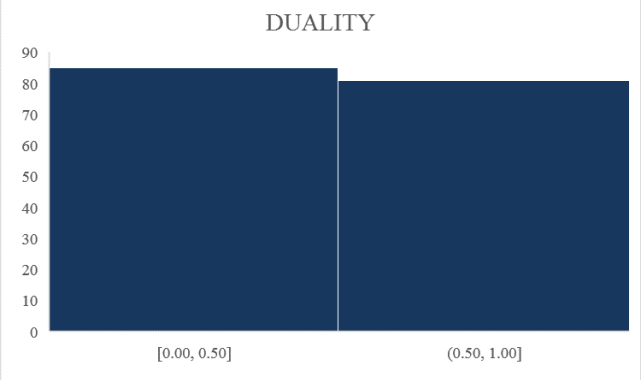


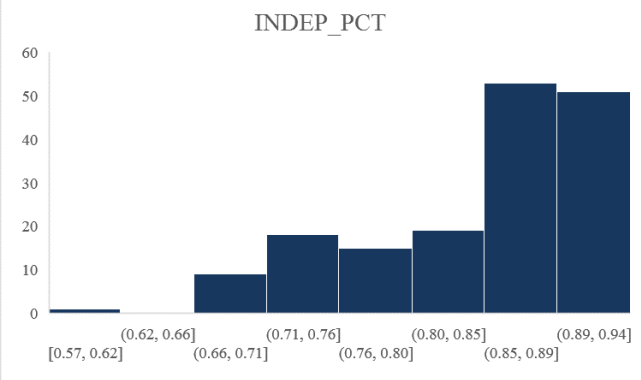


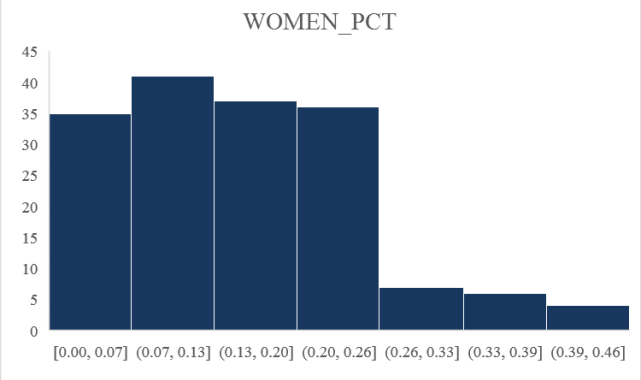


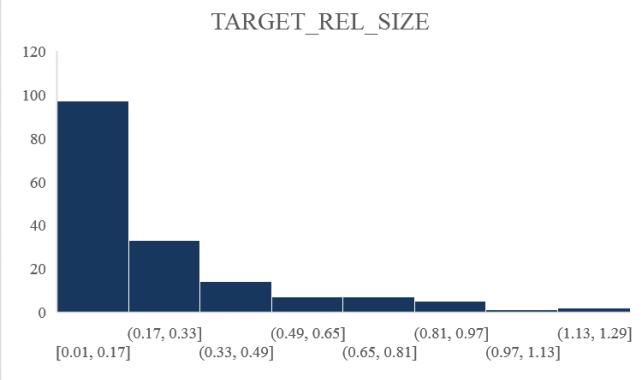

SHROWN_PCT
140
120
100
80
60
40
20
0
[0.00, 0.01]
(0.01, 0.02]
(0.02, 0.03]
(0.03, 0.04]
(0.04, 0.06]
(0.06, 0.07]
(0.07, 0.08]
(0.08, 0.09]
(0.09, 0.10]
(0.10, 0.11]
(0.11, 0.12]

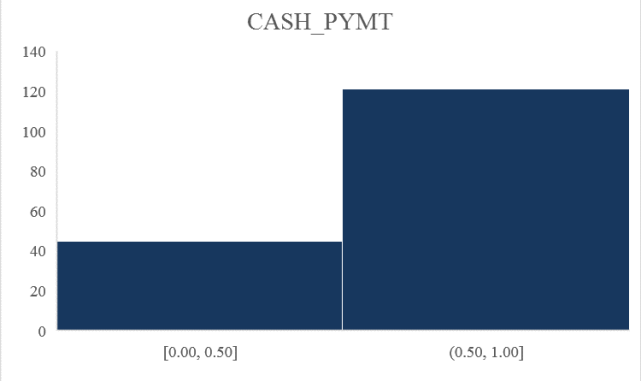

STOCK_UNV_PCT
80
70
60
50
40
30
20
10
0
[0.00, 0.43]
(0.43, 0.86]
(0.86, 1.29]
(1.29, 1.72]
(1.72, 2.15]
(2.15, 2.58]
(2.58, 3.01]
(3.01, 3.44]
(3.44, 3.87]

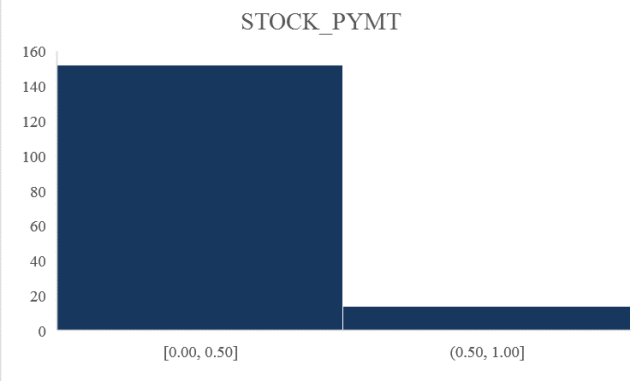

DUALITY
90
80
70
60
50
40
30
20
10
0
[0.00, 0.50]
(0.50, 1.00]

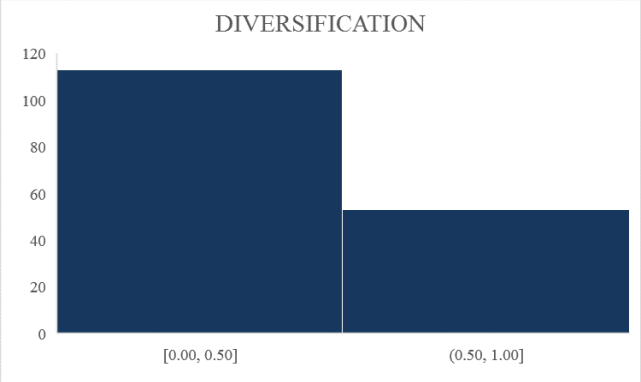

INDEP_PCT
60
50
40
30
20
10
0
[0.57, 0.62]
(0.62, 0.66]
[0.66, 0.71]
(0.71, 0.76]
[0.76, 0.80]
(0.80, 0.85]
[0.85, 0.89]
(0.89, 0.94]

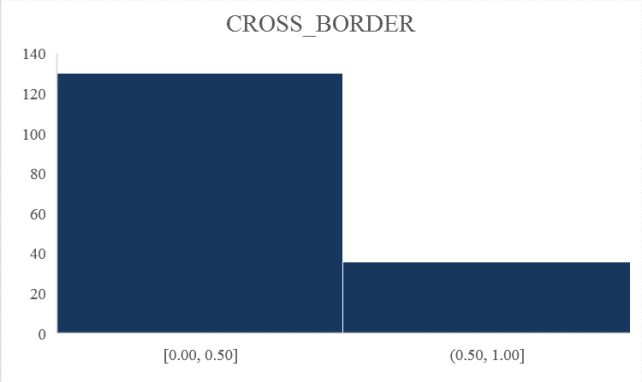

WOMEN_PCT
45
40
35
30
25
20
15
10
5
0
[0.00, 0.07]
(0.07, 0.13]
(0.13, 0.20]
(0.20, 0.26]
(0.26, 0.33]
(0.33, 0.39]
(0.39, 0.46]

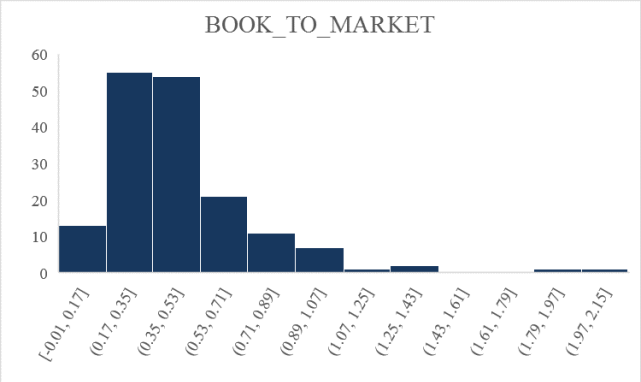

TARGET_REL_SIZE
120
100
80
60
40
20
0
[0.01, 0.17]
(0.17, 0.33]
[0.33, 0.49]
(0.49, 0.65]
[0.65, 0.81]
(0.81, 0.97]
[0.97, 1.13]
(1.13, 1.29]

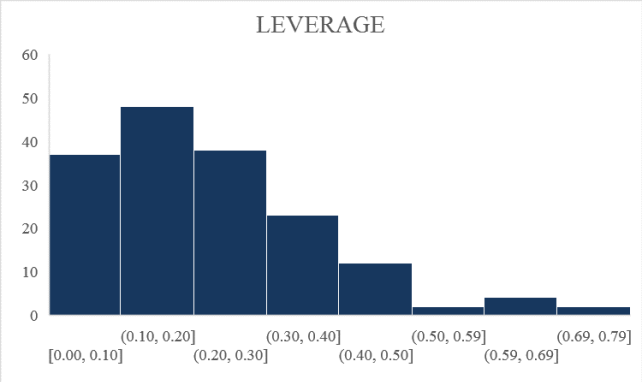

CASH_PYMT
140
120
100
80
60
40
20
0
[0.00, 0.50]
(0.50, 1.00]

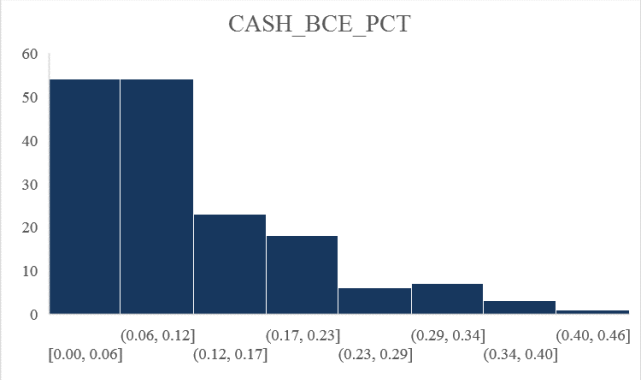

STOCK_PYMT
160
140
120
100
80
60
40
20
0
[0.00, 0.50]
(0.50, 1.00]

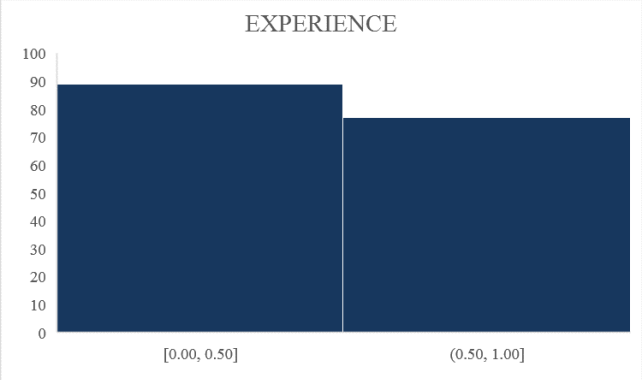

DIVERSIFICATION
120
100
80
60
40
20
0
[0.00, 0.50]
(0.50, 1.00]

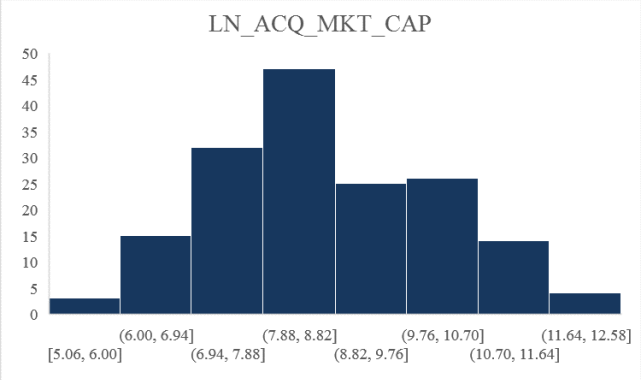

CROSS_BORDER
140
120
100
80
60
40
20
0
[0.00, 0.50]
(0.50, 1.00]


BOOK_TO_MARKET
60
50
40
30
20
10
0
[-0.01, 0.17]
(0.17, 0.35]
(0.35, 0.53]
(0.53, 0.71]
(0.71, 0.89]
(0.89, 1.07]
(1.07, 1.25]
(1.25, 1.43]
(1.43, 1.61]
(1.61, 1.79]
(1.79, 1.97]
(1.97, 2.15]

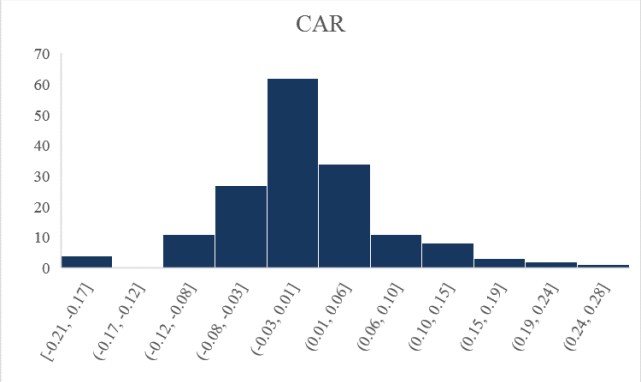

LEVERAGE
60
50
40
30
20
10
0
[0.00, 0.10]
(0.10, 0.20]
(0.20, 0.30]
(0.30, 0.40]
(0.40, 0.50]
(0.50, 0.59]
(0.59, 0.69]
(0.69, 0.79]

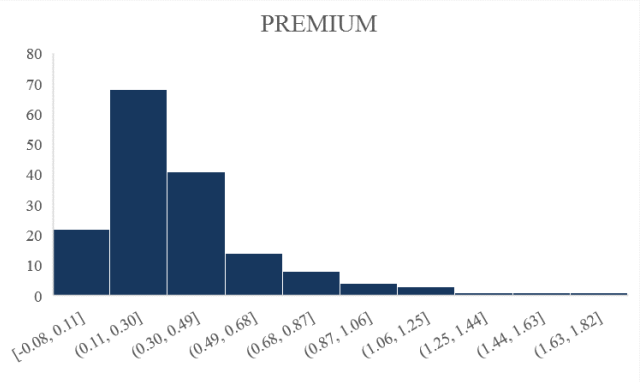

CASH_BCE_PCT
60
50
40
30
20
10
0
[0.00, 0.06]
(0.06, 0.12]
(0.12, 0.17]
(0.17, 0.23]
(0.23, 0.29]
(0.29, 0.34]
(0.34, 0.40]
(0.40, 0.46]

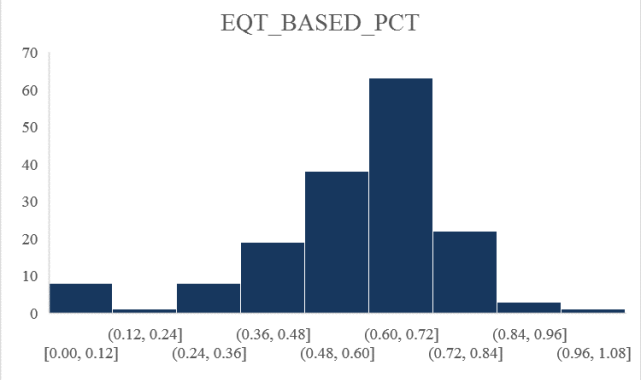

EXPERIENCE
100
90
80
70
60
50
40
30
20
10
0
[0.00, 0.50]
(0.50, 1.00]

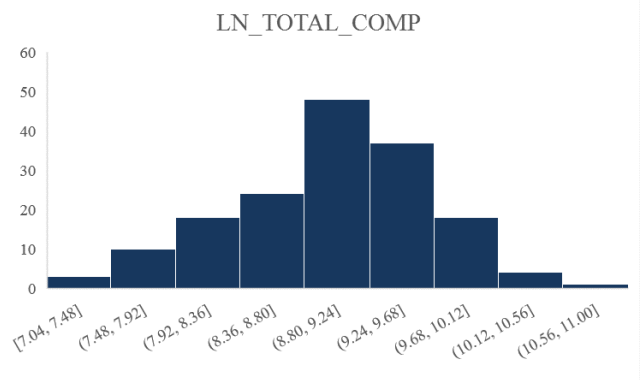

LN_ACQ_MKT_CAP
50
45
40
35
30
25
20
15
10
5
0
[5.06, 6.00]
(6.00, 6.94]
(6.94, 7.88]
(7.88, 8.82]
(8.82, 9.76]
(9.76, 10.70]
(10.70, 11.64]
(11.64, 12.58]

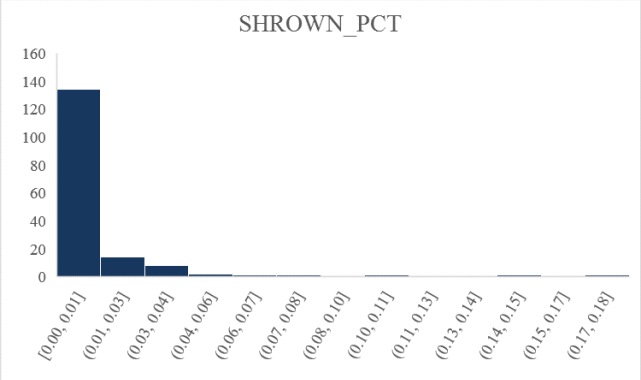
Histograms for the Late post-Dodd-Frank Act Period:

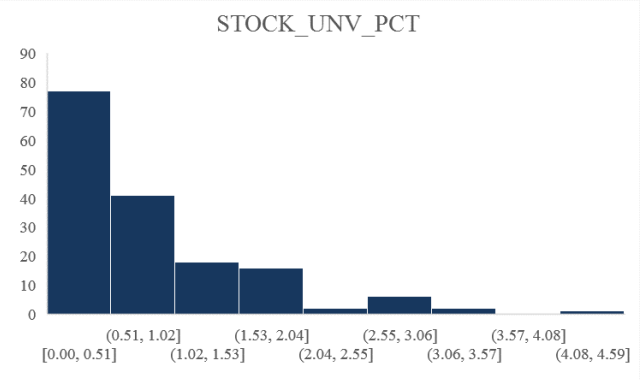


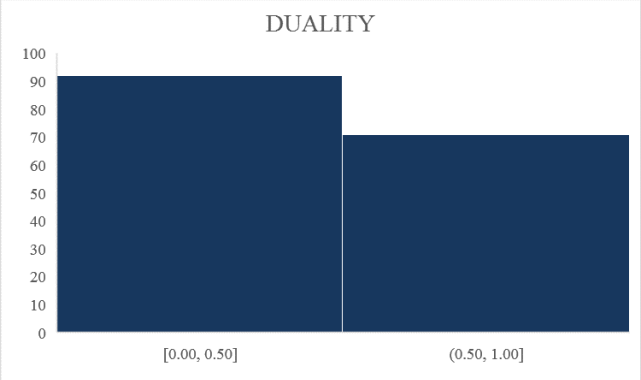


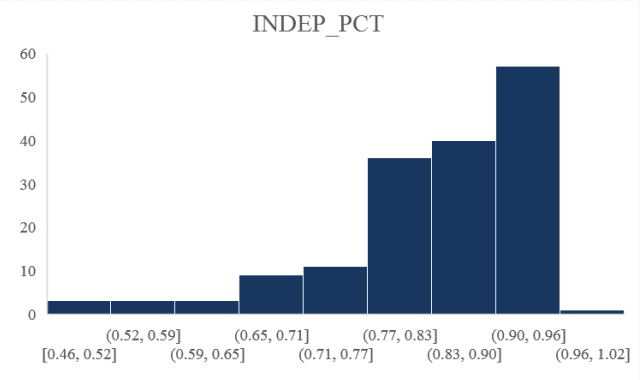


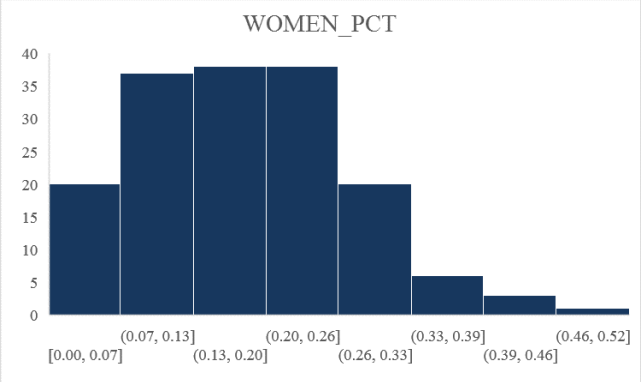


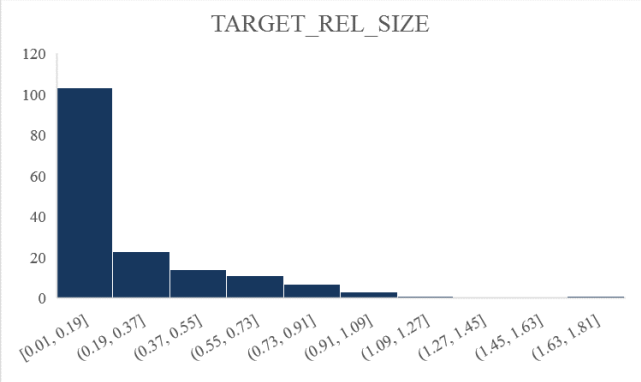


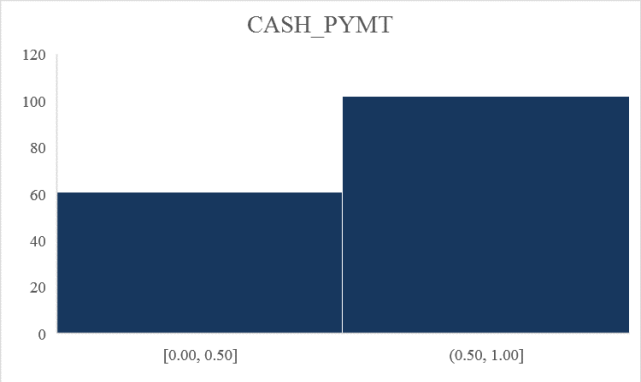


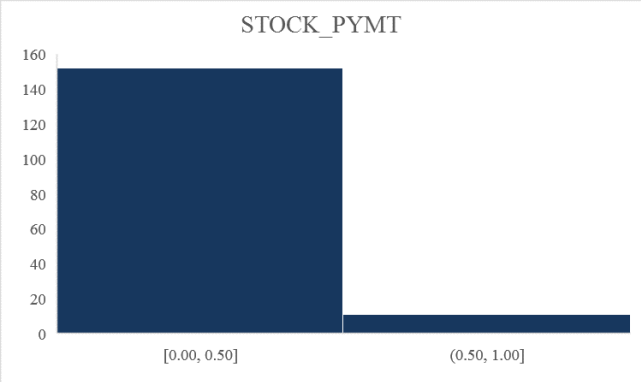


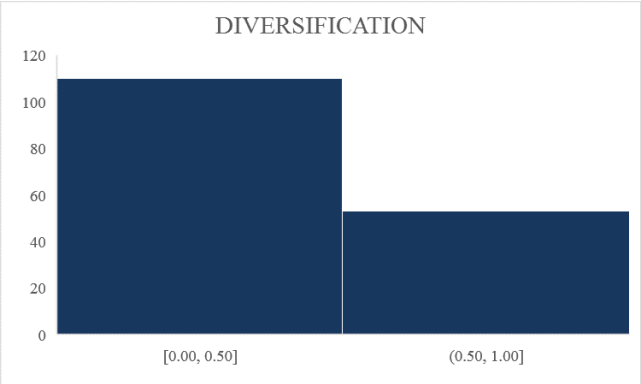


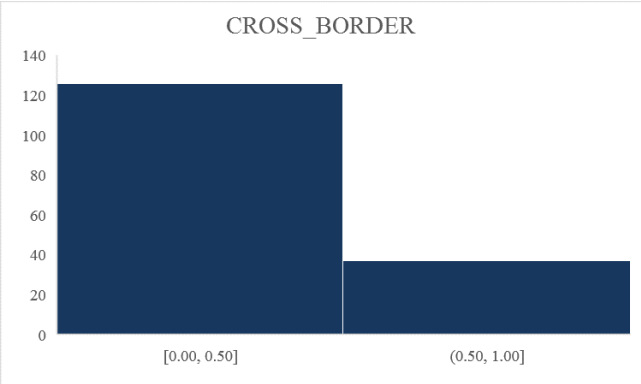

WOMEN_PCT
40
35
30
25
20
15
10
5
0
[0.00, 0.07]
(0.07, 0.13]
(0.13, 0.20]
(0.20, 0.26]
(0.26, 0.33]
(0.33, 0.39]
(0.39, 0.46]
(0.46, 0.52]

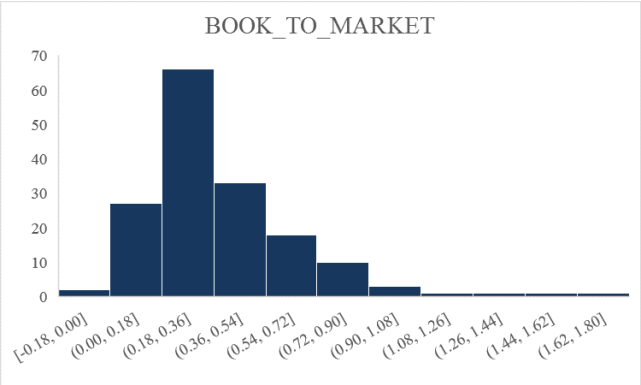

TARGET_REL_SIZE
120
100
80
60
40
20
0
[0.01, 0.19]
(0.19, 0.37]
(0.37, 0.55]
(0.55, 0.73]
(0.73, 0.91]
(0.91, 1.09]
(1.09, 1.27]
(1.27, 1.45]
(1.45, 1.63]
(1.63, 1.81]

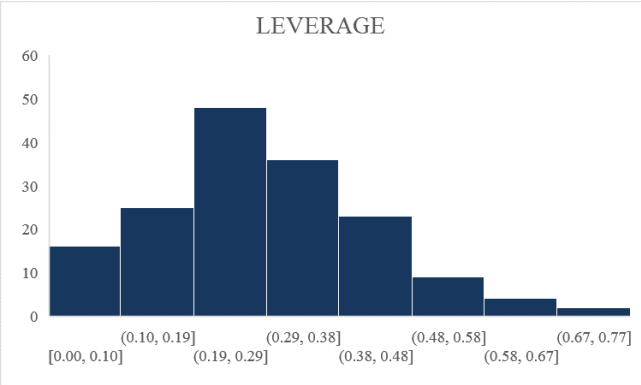

CASH_PYMT
120
100
80
60
40
20
0
[0.00, 0.50]
(0.50, 1.00]

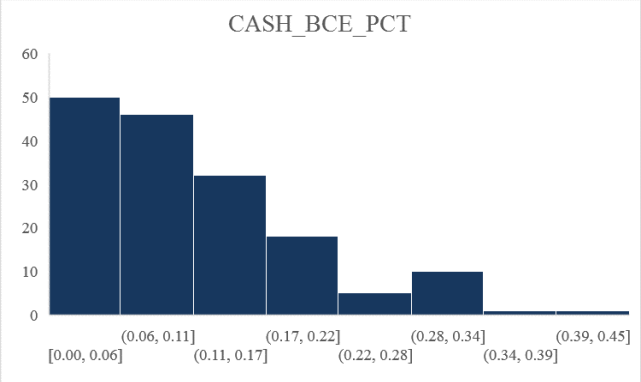

STOCK_PYMT
160
140
120
100
80
60
40
20
0
[0.00, 0.50]
(0.50, 1.00]

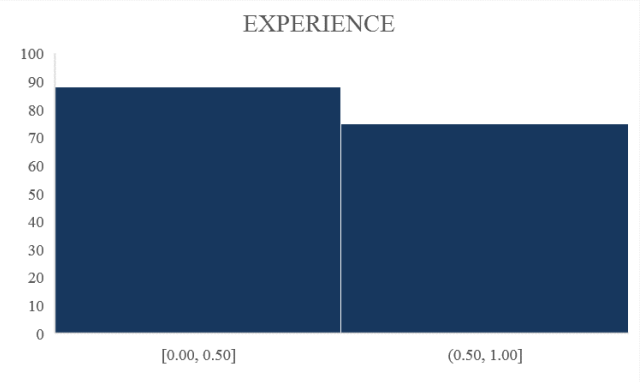

DIVERSIFICATION
120
100
80
60
40
20
0
[0.00, 0.50]
(0.50, 1.00]

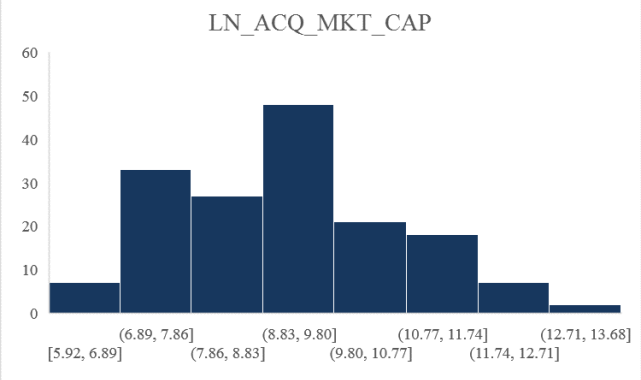

CROSS_BORDER
140
120
100
80
60
40
20
0
[0.00, 0.50]
(0.50, 1.00]


BOOK_TO_MARKET
70
60
50
40
30
20
10
0
[-0.18, 0.00]
(0.00, 0.18]
(0.18, 0.36]
(0.36, 0.54]
(0.54, 0.72]
(0.72, 0.90]
(0.90, 1.08]
(1.08, 1.26]
(1.26, 1.44]
(1.44, 1.62]
(1.62, 1.80]


LEVERAGE
60
50
40
30
20
10
0
[0.00, 0.10]
(0.10, 0.19]
(0.19, 0.29]
(0.29, 0.38]
(0.38, 0.48]
(0.48, 0.58]
(0.58, 0.67]
(0.67, 0.77]

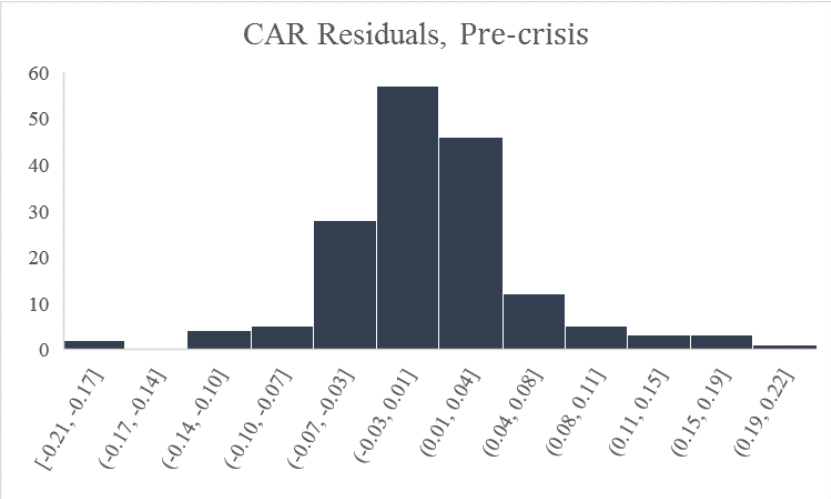

CASH_BCE_PCT
60
50
40
30
20
10
0
[0.00, 0.06]
(0.06, 0.11]
(0.11, 0.17]
(0.17, 0.22]
(0.22, 0.28]
(0.28, 0.34]
(0.34, 0.39]
(0.39, 0.45]


EXPERIENCE
100
90
80
70
60
50
40
30
20
10
0
[0.00, 0.50]
(0.50, 1.00]

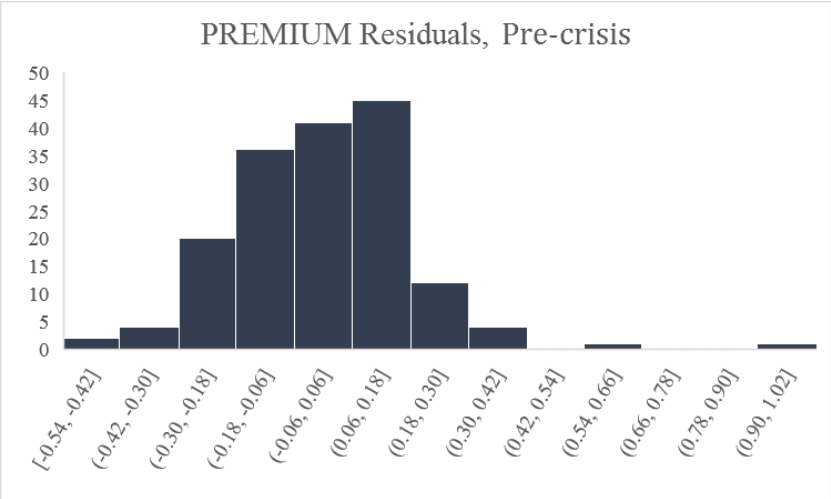

LN_ACQ_MKT_CAP
60
50
40
30
20
10
0
[5.92, 6.89]
(6.89, 7.86]
(7.86, 8.83]
(8.83, 9.80]
(9.80, 10.77]
(10.77, 11.74]
(11.74, 12.71]
(12.71, 13.68]

Appendix 3: Histogram of Residuals for Dependent Variables

Histograms of Residuals in the Pre-Crisis Period:

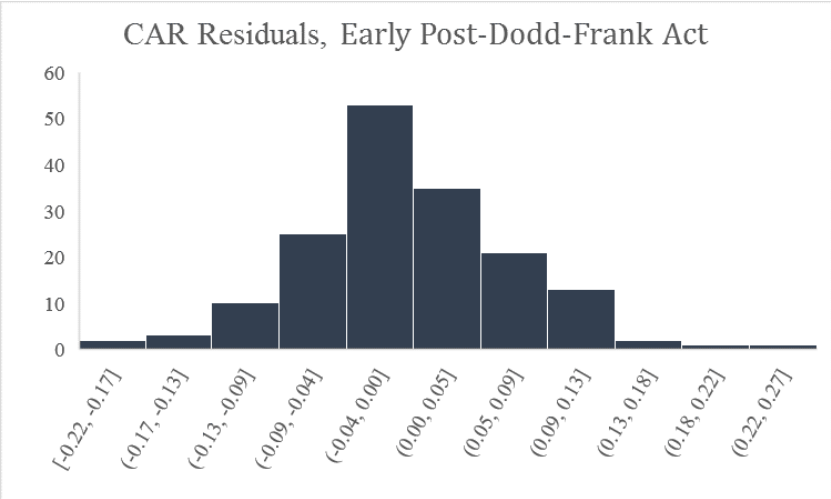


Summary Statistics CAR Residuals, Pre-Crisis			
Mean	7.00E-18	Minimum	-0.21037
Std. Dev	0.05721	25%	-0.02602
N	166	Median	-0.00020
		75%	0.02275
		Maximum	0.21140

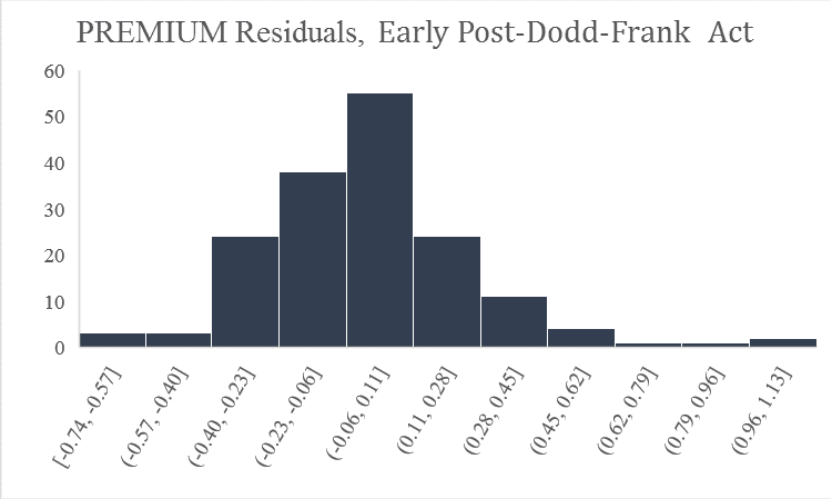


Summary Statistics Premium Residuals, Pre-Crisis			
Mean	1.60E-16	Minimum	-0.53823
Std. Dev	0.18496	25%	-0.14218
N	166	Median	0.00977
		75%	0.11814
		Maximum	0.99918

Histograms of Residuals in the Early Post-Dodd-Frank Act Period:

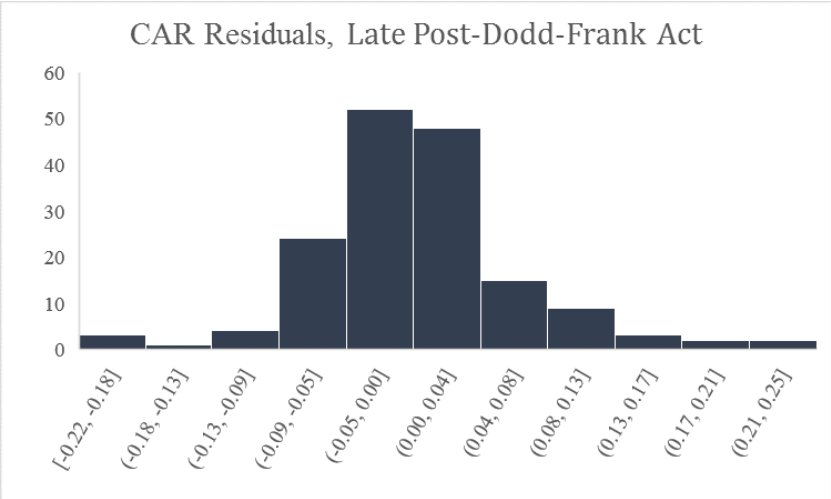


Summary Statistics CAR Residuals, Early Post-Dodd-Frank Act			
Mean	1.66E-17	Minimum	-0.21781
Std. Dev	0.06866	25%	-0.04056
N	178	Median	-0.00685
		75%	0.03889
		Maximum	0.25652

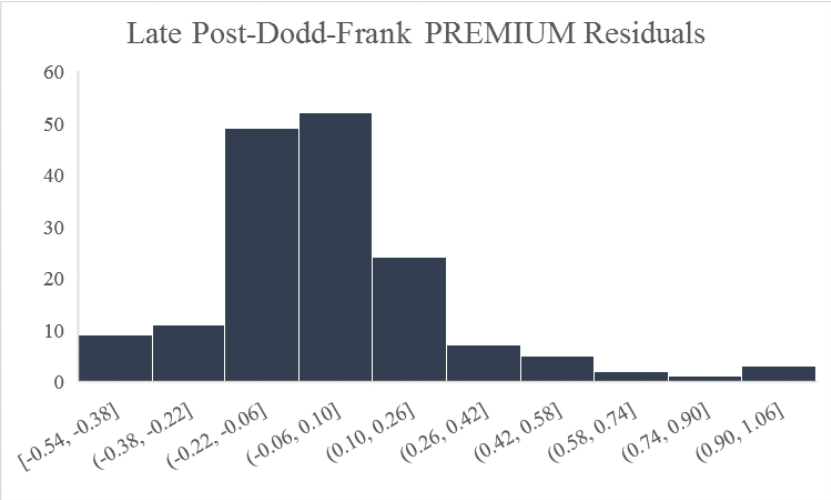


Summary Statistics Premium Residuals, Early Post-Dodd-Frank Act			
Mean	1.78E-16	Minimum	-0.78564
Std. Dev	0.28143	25%	-0.17570
N	178	Median	-0.01054
		75%	0.12884
		Maximum	1.04287

Histograms of Residuals in the Late Post-Dodd-Frank Act Period:



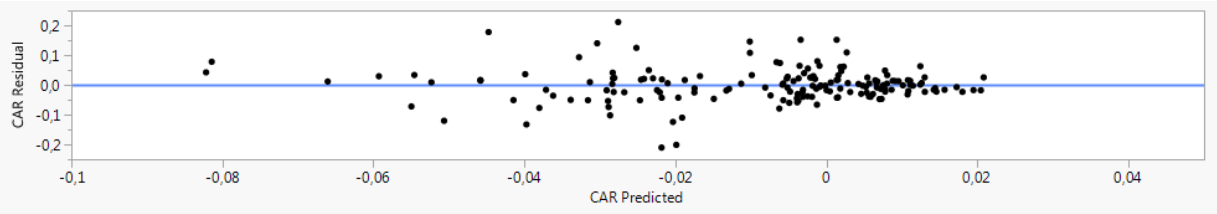
Summary Statistics CAR Residuals, Late Post-Dodd-Frank Act			
Mean	-2.12E-17	Minimum	-0.21872
Std. Dev	0.06698	25%	-0.03792
N	163	Median	-0.00442
		75%	0.02640
		Maximum	0.22087



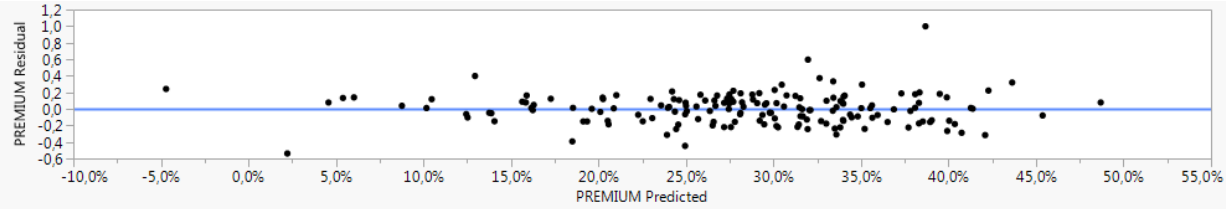
Summary Statistics Premium Residuals, Late Post-Dodd-Frank Act			
Mean	9.04E-17	Minimum	-0.54161
Std. Dev	0.25405	25%	-0.14381
N	163	Median	-0.03725
		75%	0.10347
		Maximum	1.00564

Appendix 4: Residual Plots – Checking for Homoscedasticity

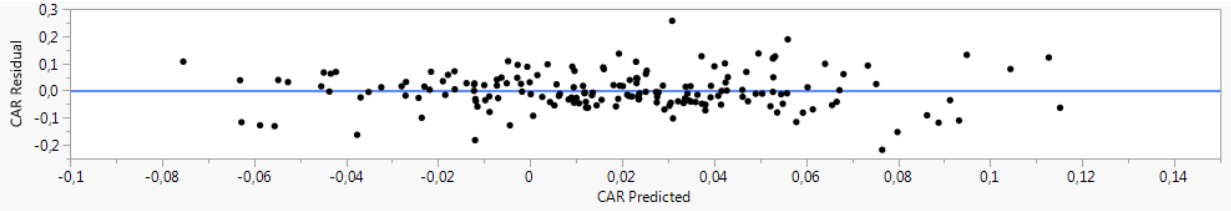
Residual Plot - Pre-Crisis CAR



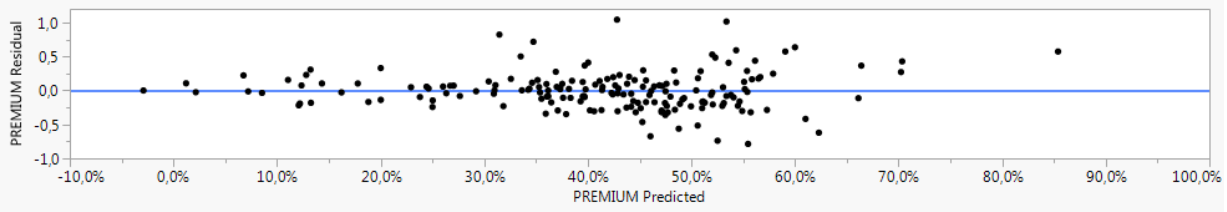
Residual Plot – Pre-Crisis PREMIUM:



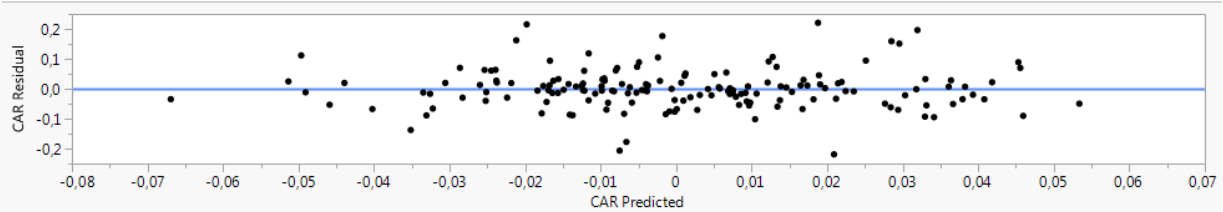
Residual Plot – Early Post-Dodd-Frank Act CAR:



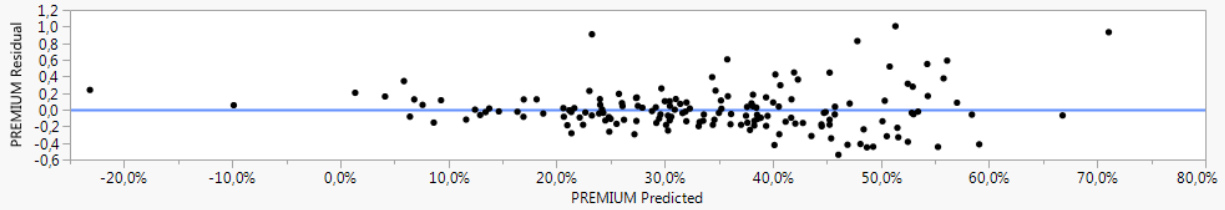
Residual Plot – Early Post-Dodd-Frank Act PREMIUM:



Residual Plot – Late Post-Dodd-Frank Act CAR:



Residual Plot – Late Post-Dodd-Frank Act premium:



Appendix 5: Checking for Multicollenarity

Correlation Matrix, Pre-crisis Period:

Appendix 5A: Coefficient Correlation in the Pre-Crisis Period

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
(1) Intercept	1	-0.0838	-0.4682	0.0545	0.0003	-0.1037	-0.429	0.0668	-0.2686	-0.1629	0.0311	-0.0289	-0.0485	-0.2933	-0.1244	-0.1894	0.0861	-0.2561
(2) EQT_BASED_PCT	-0.0838	1	-0.0854	-0.1992	0.1346	-0.0278	-0.0048	0.0515	-0.0242	-0.0469	-0.0112	0.1262	0.0715	-0.0339	-0.0316	0.0878	0.0863	0.0962
(3) LN_TOTAL_COMP	-0.4682	-0.0854	1	-0.1093	0.0511	0.0237	-0.0597	0.0038	-0.1034	-0.0579	0.0301	0.0259	0.0866	-0.0957	-0.0767	-0.1486	-0.0189	-0.4873
(4) SHROWN_PCT	0.0545	-0.1992	-0.1093	1	0.0106	0.1268	0.1926	-0.0486	0.0309	-0.094	-0.0273	0.0921	0.0368	0.0284	-0.0311	-0.1607	-0.0983	-0.0963
(5) STOCK_UNV_PCT	0.0003	0.1346	0.0511	0.0106	1	-0.0638	-0.0462	0.0805	0.0109	-0.078	-0.0309	0.111	0.1542	-0.064	0.0568	0.1284	0.0891	-0.1143
(6) DUALITY	-0.1037	-0.0278	0.0237	0.1268	-0.0638	1	-0.1023	-0.0717	0.0975	0.0171	-0.0638	-0.1185	0.0155	-0.0068	0.0551	0.013	-0.0232	0.038
(7) INDEP_PCT	-0.429	-0.0048	-0.0597	0.1926	-0.0462	-0.1023	1	-0.1426	0.0565	-0.0618	-0.0418	0.0408	-0.1417	-0.1114	-0.1243	-0.0697	0.0097	-0.1334
(8) WOMEN_PCT	0.0668	0.0515	0.0038	-0.0486	0.0805	-0.0717	-0.1426	1	0.0379	-0.1526	-0.1524	0.0665	0.13	0.0646	-0.0528	0.1109	0.0753	-0.1485
(9) TARGET_REL_SIZE	-0.2686	-0.0242	-0.1034	0.0309	0.0109	0.0975	0.0565	0.0379	1	0.2637	-0.1414	0.0742	0.1049	0.0559	0.0313	0.1356	-0.0345	0.2649
(10) CASH_PYMT	-0.1629	-0.0469	-0.0579	-0.094	-0.078	0.0171	-0.0618	-0.1526	0.2637	1	0.4518	-0.1874	-0.1486	0.042	0.0547	0.1068	-0.1449	0.1686
(11) STOCK_PYMT	0.0311	-0.0112	0.0301	-0.0273	-0.0309	-0.0638	-0.0418	-0.1524	-0.1414	0.4518	1	-0.1154	0.0036	-0.1637	-0.0364	-0.0164	-0.0246	-0.0651
(12) DIVERSIFICATION	-0.0289	0.1262	0.0259	0.0921	0.111	-0.1185	0.0408	0.0665	0.0742	-0.1874	-0.1154	1	0.1285	0.0144	-0.0126	-0.0726	-0.0303	-0.0915
(13) CROSS_BORDER	-0.0485	0.0715	0.0866	0.0368	0.1542	0.0155	-0.1417	0.13	0.1049	-0.1486	0.0036	0.1285	1	-0.048	-0.0398	0.0187	0.0352	0.0135
(14) BOOK_TO_MARKET	-0.2933	-0.0339	-0.0957	0.0284	-0.064	-0.0068	-0.1114	0.0646	0.0559	0.042	-0.1637	0.0144	-0.048	1	0.1655	0.193	-0.1409	0.3603
(15) LEVERAGE	-0.1244	-0.0316	-0.0767	-0.0311	0.0568	0.0551	-0.1243	-0.0528	0.0313	0.0547	-0.0364	-0.0126	-0.0398	0.1655	1	0.2397	0.0107	0.1611
(16) CASH_BCE_PCT	-0.1894	0.0878	-0.1486	-0.1607	0.1284	0.013	-0.0697	0.1109	0.1356	0.1068	-0.0164	-0.0726	0.0187	0.193	0.2397	1	0.2402	0.2237
(17) EXPERIENCE	0.0861	0.0863	-0.0189	-0.0983	0.0891	-0.0232	0.0097	0.0753	-0.0345	-0.1449	-0.0246	-0.0303	0.0352	-0.1409	0.0107	0.2402	1	-0.2272
(18) LN_ACQ_MKT_CAP	-0.2561	0.0962	-0.4873	-0.0963	-0.1143	0.038	-0.1334	-0.1485	0.2649	0.1686	-0.0651	-0.0915	0.0135	0.3603	0.1611	0.2237	-0.2272	1

Appendix 5B: Coefficient Correlation in the Early Post-Dodd-Frank Act Period

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
(1) Intercept	1	0.1316	-0.4954	-0.3124	-0.1253	0.2993	-0.6616	0.1772	-0.2488	-0.1894	-0.0203	0.0046	0.0888	-0.1321	-0.0899	-0.2544	0.1519	-0.1354
(2) EQT_BASED_PCT	0.1316	1	-0.3912	0.0721	-0.0806	0.2552	-0.0729	-0.0116	0.1349	0.0461	0.0547	0.1448	0.0426	0.0478	0.0838	-0.1887	-0.0607	0.1704
(3) LN_TOTAL_COMP	-0.4954	-0.3912	1	0.0012	-0.0832	-0.2254	-0.0303	-0.0168	-0.0847	0.0305	0.0459	-0.1345	-0.003	-0.0975	-0.0285	0.0919	-0.1292	-0.5613
(4) SHROWN_PCT	-0.3124	0.0721	0.0012	1	0.117	-0.2033	0.2389	0.0748	0.2065	0.051	-0.1508	0.0135	-0.0466	-0.0425	-0.055	-0.1365	0.1056	0.1979
(5) STOCK_UNV_PCT	-0.1253	-0.0806	-0.0832	0.117	1	-0.0411	0.1205	-0.0453	-0.039	-0.0364	-0.1099	0.0421	-0.1671	0.1268	0.0977	-0.0569	0.0355	0.1402
(6) DUALITY	0.2993	0.2552	-0.2254	-0.2033	-0.0411	1	-0.297	0.0346	0.0603	0.1262	0.0497	-0.0118	0.0466	-0.01	0.1137	0.0049	-0.0607	-0.0235
(7) INDEP_PCT	-0.6616	-0.0729	-0.0303	0.2389	0.1205	-0.297	1	-0.1699	0.1182	-0.0281	-0.0687	0.0184	-0.1443	-0.0744	-0.1293	0.0663	-0.0218	0.0854
(8) WOMEN_PCT	0.1772	-0.0116	-0.0168	0.0748	-0.0453	0.0346	-0.1699	1	-0.0854	-0.0133	-0.017	-0.0083	-0.0247	0.0237	-0.1474	0.0161	0.0093	-0.2225
(9) TARGET_REL_SIZE	-0.2488	0.1349	-0.0847	0.2065	-0.039	0.0603	0.1182	-0.0854	1	0.4142	-0.0705	0.1307	-0.0087	-0.0698	-0.1244	0.0101	0.1064	0.2328
(10) CASH_PYMT	-0.1894	0.0461	0.0305	0.051	-0.0364	0.1262	-0.0281	-0.0133	0.4142	1	0.3957	0.0513	-0.1346	-0.058	0.1522	-0.0576	0.0497	0.0247
(11) STOCK_PYMT	-0.0203	0.0547	0.0459	-0.1508	-0.1099	0.0497	-0.0687	-0.017	-0.0705	0.3957	1	0.0088	0.0203	-0.1206	0.0341	0.0427	0.053	-0.0657
(12) DIVERSIFICATION	0.0046	0.1448	-0.1345	0.0135	0.0421	-0.0118	0.0184	-0.0083	0.1307	0.0513	0.0088	1	-0.1458	-0.0383	0.0736	0.0063	0.1207	0.0441
(13) CROSS_BORDER	0.0888	0.0426	-0.003	-0.0466	-0.1671	0.0466	-0.1443	-0.0247	-0.0087	-0.1346	0.0203	-0.1458	1	0.027	-0.0124	-0.1047	-0.1419	0.0452
(14) BOOK_TO_MARKET	-0.1321	0.0478	-0.0975	-0.0425	0.1268	-0.01	-0.0744	0.0237	-0.0698	-0.058	-0.1206	-0.0383	0.027	1	0.196	0.1796	-0.141	0.3082
(15) LEVERAGE	-0.0899	0.0838	-0.0285	-0.055	0.0977	0.1137	-0.1293	-0.1474	-0.1244	0.1522	0.0341	0.0736	-0.0124	0.196	1	0.2894	-0.1344	0.1203
(16) CASH_BCE_PCT	-0.2544	-0.1887	0.0919	-0.1365	-0.0569	0.0049	0.0663	0.0161	0.0101	-0.0576	0.0427	0.0063	-0.1047	0.1796	0.2894	1	-0.0708	0.1117
(17) EXPERIENCE	0.1519	-0.0607	-0.1292	0.1056	0.0355	-0.0607	-0.0218	0.0093	0.1064	0.0497	0.053	0.1207	-0.1419	-0.141	-0.1344	-0.0708	1	-0.1157
(18) LN_ACQ_MKT_CAP	-0.1354	0.1704	-0.5613	0.1979	0.1402	-0.0235	0.0854	-0.2225	0.2328	0.0247	-0.0657	0.0441	0.0452	0.3082	0.1203	0.1117	-0.1157	1

Appendix 5C: Coefficient Correlation in the Late Post-Dodd-Frank Act Period (CAR)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
(1) Intercept	1	0.2486	-0.7311	-0.2	-0.2299	0.1877	-0.5258	0.0208	-0.148	-0.1099	-0.2548	-0.0403	-0.034	-0.181	-0.0171	-0.2444	-0.0502	0.2121
(2) EQT_BASED_PCT	0.2486	1	-0.4869	-0.0063	-0.089	0.1804	-0.1941	0.1359	0.0497	0.0405	-0.1167	0.1173	0.1637	0.2104	0.0125	0.0209	-0.0725	0.3077
(3) LN_TOTAL_COMP	-0.7311	-0.4869	1	0.1836	0.1953	-0.1097	0.1278	0.0076	-0.0692	-0.0017	0.1948	-0.0683	-0.1189	-0.1552	-0.1349	0.0286	0.0735	-0.6819
(4) SHROWN_PCT	-0.2000	-0.0063	0.1836	1	-0.0799	-0.0951	0.1029	0.1494	-0.0451	-0.095	-0.0245	-0.1322	0.0406	0.0482	0.0208	-0.0286	0.1139	-0.161
(5) STOCK_UNV_PCT	-0.2299	-0.0890	0.1953	-0.0799	1	0.0304	-0.0164	-0.0146	0.1042	0.0104	0.0732	-0.0143	0.0027	0.0794	-0.0422	0.0555	-0.063	-0.0535
(6) DUALITY	0.1877	0.1804	-0.1097	-0.0951	0.0304	1	-0.3465	-0.0365	0.0318	0.0444	-0.1361	0.0497	0.0118	0.0417	0.0147	0.1345	-0.1635	0.0288
(7) INDEP_PCT	-0.5258	-0.1941	0.1278	0.1029	-0.0164	-0.3465	1	-0.1242	0.015	-0.0293	0.0834	-0.0393	-0.0205	0.0487	-0.1086	0.0065	0.1608	-0.0844
(8) WOMEN_PCT	0.0208	0.1359	0.0076	0.1494	-0.0146	-0.0365	-0.1242	1	0.0495	-0.0606	0.0568	-0.0782	0.0788	0.094	0.0367	0.0302	0.1085	-0.2133
(9) TARGET_REL_SIZE	-0.148	0.0497	-0.0692	-0.0451	0.1042	0.0318	0.015	0.0495	1	0.5669	-0.0201	0.0241	0.1025	0.0555	0.0809	0.0724	0.0118	0.1303
(10) CASH_PYMT	-0.1099	0.0405	-0.0017	-0.095	0.0104	0.0444	-0.0293	-0.0606	0.5669	1	0.2006	-0.0065	-0.0753	-0.0685	0.1473	0.003	-0.0571	-0.0124
(11) STOCK_PYMT	-0.2548	-0.1167	0.1948	-0.0245	0.0732	-0.1361	0.0834	0.0568	-0.0201	0.2006	1	0.0564	0.0718	-0.0943	-0.1016	0.1916	0.1254	-0.0472
(12) DIVERSIFICATION	-0.0403	0.1173	-0.0683	-0.1322	-0.0143	0.0497	-0.0393	-0.0782	0.0241	-0.0065	0.0564	1	0.0223	-0.0075	0.0512	0.0105	-0.0283	0.1556
(13) CROSS_BORDER	-0.034	0.1637	-0.1189	0.0406	0.0027	0.0118	-0.0205	0.0788	0.1025	-0.0753	0.0718	0.0223	1	0.1088	0.025	0.0114	-0.0167	0.1855
(14) BOOK_TO_MARKET	-0.181	0.2104	-0.1552	0.0482	0.0794	0.0417	0.0487	0.094	0.0555	-0.0685	-0.0943	-0.0075	0.1088	1	0.3495	0.1886	-0.0859	0.284
(15) LEVERAGE	-0.0171	0.0125	-0.1349	0.0208	-0.0422	0.0147	-0.1086	0.0367	0.0809	0.1473	-0.1016	0.0512	0.025	0.3495	1	0.1289	-0.0753	0.1079
(16) CASH_BCE_PCT	-0.2444	0.0209	0.0286	-0.0286	0.0555	0.1345	0.0065	0.0302	0.0724	0.003	0.1916	0.0105	0.0114	0.1886	0.1289	1	0.0107	0.1613
(17) EXPERIENCE	-0.0502	-0.0725	0.0735	0.1139	-0.063	-0.1635	0.1608	0.1085	0.0118	-0.0571	0.1254	-0.0283	-0.0167	-0.0859	-0.0753	0.0107	1	-0.2556
(18) LN_ACQ_MKT_CAP	0.2121	0.3077	-0.6819	-0.161	-0.0535	0.0288	-0.0844	-0.2133	0.1303	-0.0124	-0.0472	0.1556	0.1855	0.284	0.1079	0.1613	-0.2556	1

Appendix 6: Robustness check: Removing 5% extreme observation

Appendix 6A: Robustness Check for Pre-Crisis Regression

5% of the most extreme values are removed from the data (2.5% of the lowest and 2.5% of the highest) and the regression is run again to check for robustness. ***, **, * indicate that the coefficient is significant at the one, five, and ten percent level, respectively, for a two-sided t-test.

	CAR		PREMIUM	
	Coefficient	P-value	Coefficient	P-value
Intercept	-0,014887	0,8462	0,4461616**	0,0391
EQT_BASED_PCT	0,0219754	0,2832	-0,135288**	0,0191
LN_TOTAL_COMP	0,0019333	0,8322	0,0395696	0,1225
SHROWN_PCT	0,2453455	0,8120	5.4663956*	0,0596
STOCK_UNV_PCT	0,001131	0,7563	-0,008576	0,4002
DUALITY	-0,003095	0,8032	0,0182851	0,5984
INDEP_PCT	-0,007139	0,9014	0,0359541	0,8233
WOMEN_PCT	0,0038532	0,9547	0,2879359	0,1308
TARGET_REL_SIZE	-0,037904	0,1435	-0,211681***	0,0039
CASH_PYMT	0,0237829*	0,0968	-0,046655	0,2425
STOCK_PYMT	-0,011441	0,5714	-0,0864	0,1276
DIVERSIFICATION	0,0034818	0,7597	-0,014202	0,6553
CROSS_BORDER	-0,003193	0,8170	-0,023739	0,5384
BOOK_TO_MARKET	0,0130956	0,6988	-0,27697***	0,0039
LEVERAGE	0,0058356	0,8731	-0,098088	0,3373
CASH_BCE_PCT	0,0036315	0,9560	0,0213869	0,9074
EXPERIENCE	-0,003293	0,7817	0,042644	0,2005
LN_ACQ_MKT_CAP	-0,002733	0,6206	-0,042171***	0,0070
R-Squared	0.10	0.10	0.24	0.24
Adjusted R-Squared	-0.02	-0.02	0.14	0.14

Appendix 6B: Robustness Check for Early post-Dodd-Frank Act Regression

5% of the most extreme values are removed from the data (2.5% of the lowest and 2.5% of the highest) and the regression is run again to check for robustness. ***, **, * indicate that the coefficient is significant at the one, five, and ten percent level, respectively, for a two-sided t-test.

	CAR		PREMIUM	
	Coefficient	P-value	Coefficient	P-value
Intercept	0,0703659	0,4815	0,7633*	0,0570
EQT_BASED_PCT	-0,040154	0,2078	0,061934	0,6254
LN_TOTAL_COMP	0,004524	0,6680	-0,04104	0,3300
SHROWN_PCT	0,2445602	0,4945	0,8768907	0,5392
STOCK_UNV_PCT	0,017457*	0,0907	-0,000887	0,9827
DUALITY	-0,026958**	0,0329	-0,026564	0,5955
INDEP_PCT	-0,005644	0,9468	-0,174508	0,6053
WOMEN_PCT	0,2675555***	0,0002	0,0961973	0,7261
TARGET_REL_SIZE	0,0418533	0,2231	-0,242815*	0,0773
CASH_PYMT	0,0198454	0,2159	0,037847	0,5533
STOCK_PYMT	-0,034608	0,1436	-0,205094**	0,0306
DIVERSIFICATION	-0,02038*	0,0929	-0,01309	0,7857
CROSS_BORDER	-0,010629	0,4456	0,0244852	0,6594
BOOK_TO_MARKET	-0,009844	0,6397	0,2707765***	0,0015
LEVERAGE	0,036576	0,3916	0,091733	0,5899
CASH_BCE_PCT	-0,125737*	0,0717	0,01395	0,9598
EXPERIENCE	0,0019405	0,8714	-0,029107	0,5430
LN_ACQ_MKT_CAP	-0,012027**	0,0376	0,00033	0,9885
R-Squared	0.27	0.27	0.20	0.20
Adjusted R-Squared	0.18	0.18	0.10	0.10

Appendix 6C: Robustness Check for Late post-Dodd-Frank Act Regression

5% of the most extreme values are removed from the data (2.5% of the lowest and 2.5% of the highest) and the regression is run again to check for robustness. ***, **, * indicate that the coefficient is significant at the one, five, and ten percent level, respectively, for a two-sided t-test.

	CAR		PREMIUM	
	Coefficient	P-value	Coefficient	P-value
Intercept	0,0786137	0,4966	0,7864967*	0,0697
EQT_BASED_PCT	0,0228968	0,5602	-0,228484	0,1205
LN_TOTAL_COMP	-0,017042	0,2600	0,0306335	0,5863
SHROWN_PCT	-0,162115	0,6075	-0,785963	0,5043
STOCK_UNV_PCT	0,0039678	0,6617	-0,069891**	0,0403
DUALITY	-0,000624	0,9629	-0,024239	0,6283
INDEP_PCT	0,0173258	0,7998	0,2685267	0,2929
WOMEN_PCT	0,0188272	0,7961	0,7989788***	0,0038
TARGET_REL_SIZE	0,0126869	0,7254	-0,517833***	0,0002
CASH_PYMT	0,017424	0,3166	-0,077024	0,2355
STOCK_PYMT	-0,027011	0,3550	-0,052705	0,6279
DIVERSIFICATION	0,0232148*	0,0778	-0,029828	0,5411
CROSS_BORDER	0,0103193	0,4723	-0,079353	0,1396
BOOK_TO_MARKET	-0,02661	0,3067	-0,043312	0,6548
LEVERAGE	0,0141134	0,7499	-0,324177*	0,0513
CASH_BCE_PCT	0,0199386	0,7822	0,174098	0,5176
EXPERIENCE	-0,008665	0,5082	-0,022864	0,6394
LN_ACQ_MKT_CAP	0,0026649	0,6908	-0,064645**	0,0106
R-Squared	0.10	0.10	0.28	0.28
Adjusted R-Squared	-0.02	-0.02	0.19	0.19

Appendix 7: Distribution of Negative-CAR and Positive-CAR deals

Appendix 7: Negative vs. Positive CAR

		No. of deals	Percentage
Pre-crisis Period	***Positive***	65	39.2%
	Negative	101	60.8%
Early post-Dodd-Frank Act Period	***Positive***	101	56.7%
	Negative	77	43.3%
Late post-Dodd-Frank Act Period	***Positive***	77	46.4%
	Negative	89	53.6%
Total	***Positive***	243	47.6%
	Negative	267	52.4%