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CEO pay incentives & the choice of financing in M&As

Do CEO pay incentives influence financing decisions in M&A deals, and
what is the impact on acquisition announcement returns?

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ABSTRACT:

Mergers and acquisitions (M&As) represent one of the most prominent strategies employed by firms worldwide to achieve non-organic growth, gain access to new markets, or acquire strategic intangible assets such as patents or advanced technologies. Despite their popularity, prior empirical evidence indicates that M&A transactions are more frequently associated with value destruction than value creation. Nevertheless, the academic literature has yet to reach a definitive consensus on the key determinants contributing to such adverse outcomes, despite the global M&A deal value reaching \$2.5 trillion in 2023. This study finds that in the sample of 157 M&A deals recorded in the period of 2018 to 2023, contrary to expectations, higher equity-based compensation for CEOs is not significantly associated with higher post-acquisition abnormal returns. The effect is negative and statistically insignificant. Moreover, CEOs with higher equity-based compensation are not more likely to choose cash as the deal financing method. In fact, they are slightly more inclined to use mixed financing, with marginally lower use of cash and stock compared to their low-EBC counterpart.

Moreover, the data in this study does not support the view that equity-based compensation leads to heightened shareholder value creation, as measured by cumulative abnormal returns. While mixed and stock-financed deals are associated with lower returns, CEO compensation structure does not appear to influence market response in a statistically meaningful way. However, regression results provide support to the expectation that in contrast to cash-financed acquisitions, stock and mixed-financed deals are associated with lower cumulative abnormal announcement returns. Although Alexandridis et al. (2017) report that equity-financed mega-deals (transactions exceeding \$500 million) were not value-destructive in the post-financial crisis environment, this study's findings do not corroborate that conclusion. On the contrary, mega-deals examined here exhibit a statistically significant decline in cumulative abnormal returns (CARs), a result consistent with patterns observed for similar transactions prior to the financial crisis.

KEYWORDS: mergers and acquisitions, CEO compensation, equity-based compensation, cumulative abnormal return

VAASAN YLIOPISTO**Laskentatoimen ja rahoituksen yksikkö**

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TIIVISTELMÄ:

Yrityskaupat ja fuusiot (M&As, mergers and acquisitions) ovat yksi merkittävimpiä strategioita, joita yritykset maailmanlaajuisesti hyödyntävät saavuttaakseen nopeampaa, epäorgaanista kasvua, saadakseen pääsyn uusille markkinoille tai hankkiakseen strategisia aineettomia hyödykkeitä, kuten patentteja tai kehittyneitä teknologioita. Suosiostaan huolimatta aiempi empiirinen tutkimus osoittaa, että M&A-transaktiot näyttävät useammin tuhoavan osakkeenomistajien arvoa kuin luovan sitä. Akateeminen kirjallisuus ei kuitenkaan ole vielä saavuttanut yksimielisyyttä niistä keskeisistä tekijöistä, jotka johtavat tällaisiin kielteisiin lopputuloksiin – vaikka globaalien yrityskauppojen arvo esimerkiksi vuonna 2023 oli 2,5 biljoonaa Yhdysvaltain dollaria. Tämä tutkimus osoittaa, että 157 yrityskaupan otoksessa ajanjaksolta 2018-2023 vastoin odotuksia, toimitusjohtajien korkeampi osakeperusteinen palkitseminen ei ole tilastollisesti merkitsevästi yhteydessä korkeampiin yrityskaupan jälkeisiin epänormaaleihin tuottoihin. Vaikutus on negatiivinen ja tilastollisesti merkityksellinen. Lisäksi korkeamman osakeperusteisen palkitsemisen saaneet toimitusjohtajat eivät todennäköisemmin valitse käteistä kauppojen rahoitusmuodoksi. Itse asiassa toimitusjohtajat kallistuvat hieman enemmän sekamuotoisen rahoituksen käyttöön, ja käyttävät hieman vähemmän käteistä ja osakkeita verrattuna pienemmän osakeperusteisen palkitsemisen saaneisiin kollegoihinsa.

Tämän tutkimuksen aineisto ei myöskään tue näkemystä, että osakeperusteinen palkitseminen lisää osakkeenomistaja-arvon luomista kumulatiivisilla epänormaaleilla tuotoilla (CAR, cumulative abnormal return) mitattuna. Vaikka sekamuotoisesti ja osakeperusteisesti rahoitetut yrityskaupat ovat yhteydessä alhaisempiin tuottoihin, toimitusjohtajan palkitsemisrakenteella ei näytä olevan tilastollisesti merkittävää vaikutusta markkinoiden reaktioon. Analyysi kuitenkin tukee odotusta, että verrattuna käteisellä rahoitettuihin yritysostoihin, osake- ja sekamuotoisesti rahoitetut yritysostot näyttävät tuottavan alhaisempia yrityskaupan jälkeisiä kumulatiivisia epänormaaleja tuottoja. Vaikka Alexandridis et al. (2017) raportoivat, ettei osakeperusteisesti rahoitetut megakaupat (yli 500 miljoonan dollarin transaktiot) olleet arvoa tuhoavia finanssikriisin jälkeisessä ympäristössä, tämän tutkimuksen tulokset eivät tue tuota johtopäätöstä. Päinvastoin tässä tarkastellut megakaupat osoittavat tilastollisesti merkitsevän laskun kumulatiivisissa epänormaaleissa tuotoissa 5 %:n merkitsevyystasolla, mikä on kuitenkin linjassa ennen finanssikriisiä havaittujen vastaavien transaktioiden kehityksen kanssa.

AVAINSANAT: mergers and acquisitions, CEO compensation, equity-based compensation, cumulative abnormal return

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1 Introduction

Mergers and acquisitions (M&As) are one of the most noteworthy topics of research within the field of finance, as firm acquisitions can enable companies to grow faster, expand into new markets, and seize attractive business opportunities (Renneboog & Vansteenkiste, 2019). Datta et al. (2001) argue that although a large proportion of firm investments are minor, M&As are generally substantial long-term investments. Since M&As require substantial operational effort and capital investments from the acquirer's perspective, the acquiring shareholders expect the deal to be profitable in both the short- and especially long-run. However, prior empirical evidence indicates that public M&A deals generate zero or even negative returns at the acquisition announcement day (see e.g., Renneboog & Vansteenkiste, 2019; Alexandridis et al., 2010).

Chief Executive Officer (CEO) typically exhibit tremendous managerial power over the company, and Harford and Li (2007) imply that studying CEO pay incentives behind corporate acquisition decisions sets a noteworthy research path due to this reason. Thus, CEO pay incentives and compensation is a widely investigated phenomenon in corporate and behavioral finance. Ross (1973) proposes that the actions of agents do not always align with the interests of principals. This concept forms the foundation of the principal-agent problem, commonly known as agency theory. Datta et al. (2001) state that compensation packages are an effective means of aligning the interests of executives with those of shareholders, thereby fostering harmony between the two parties. This thesis emphasizes upon Datta et al. (2001) study, which questions whether acquiring executives' compensation can explain poor acquisition announcement performance. In their paper, CEOs are divided into two groups, with firms offering either high or low equity-based compensation (EBC) to the executives. Datta et al. (2001) show that firms managed with high-EBC executives generate statistically significant positive returns, while firms with low-EBC managers face statistically significant negative returns. Moreover, they show that while all-cash transactions are value-creating, the outcome depends on whether the acquiring firm's CEO is high- or low-EBC executive. This thesis assesses whether compensation incentives affect the payment method in M&A

transactions and whether there is a statistically meaningful impact on acquisition announcement cumulative abnormal returns. Thus, different payment methods are introduced in the following paragraph.

Payment methods, or the choice of financing, in M&As can be categorized into three subgroups: equity (stock swaps), cash or debt (leverage), and generally an acquisition offer is a mix of these methods. Martynova and Renneboog (2009) state that an acquisition classified as a cash-offer is at least partially financed with external funds. Moreover, Martynova and Renneboog (2009) confirm that, for instance, 70 percent of acquisitions with external funds are financed with debt, while 30 percent are financed with equity. Alexandridis et al. (2010) indicate that M&As financed with stock-swaps destroy more shareholder value than they create in contrast to cash-financed deals. If empirical evidence strongly suggests that stock-swaps are a signal of value-destructive acquisition decision, a relevant research trajectory is to investigate what drives managerial payment method decisions in corporate takeovers.

In an overview study of the existing literature, Renneboog and Vansteenkiste (2019) identify that increased acquisitiveness – driven by CEO (chief operating officer) overconfidence – is one of the most prevailing characteristics to predict poor post-acquisition firm performance. The importance of CEO overconfidence for this type of study derives from that CEOs typically exhibit stock options as a part of their compensation packages, and empirical evidence illustrates that overconfident CEOs fail to exercise highly in-the-money vested options (Malmendier & Tate, 2008). By the means of M&As, Malmendier and Tate (2008) propose that a CEO is overconfident when the CEO undertakes numerous acquisitions in a short time interval. Although the purpose of this paper is to investigate whether CEO pay incentives have an impact on the choice of financing in M&As, and whether this choice influences the post-deal performance, CEO overconfidence is a vital meter for assessing the research question. The main objective of this thesis is to investigate whether CEO compensation structures affect the choice of financing in M&As, and whether this choice influences post-acquisition acquiring firm

performance. Prior empirical literature has focused essentially on announcement returns of a chosen payment method, but little attention has been set on whether different compensation incentives derive different results in post-acquisition firm performance. In the next subchapter, motivation for the study is under discussion.

1.1 Motivation and purpose of the study

As stated in the introduction chapter, M&As are one of the most significant corporate events and they are a widely studied subject in the field of corporate finance. Company executives – specifically CEOs – and shareholders are typically subject to the principal-agent problem, as managerial interests may not always align with those of shareholders. As a result, the structure of CEO pay incentives is considered an effective means of aligning the interests of both parties. However, a CEO's managerial power over board decisions can significantly influence M&A activity.

Harford and Li (2007) document that firms with CEOs of the highest influence generate -3.8% two-day post-acquisition abnormal returns – three times lower returns than the rest of acquiring firms. Moreover, CEOs who also serve as chairpersons of the board tend to receive larger bonuses upon the completion of M&A deals. Furthermore, Datta et al. (2001) show that executives receiving higher EBC are more likely to pursue firm acquisitions involving firms with enhanced growth prospects, while those executives with lower EBC are generally associated with acquisitions of firms exhibiting weaker growth prospects. Also, Datta et al. (2001) show a statistically significant association between equity-based executive compensation and acquisition-related cumulative abnormal returns.

Datta et al. (2001) further contend that this evidence indicates a greater propensity among executives with high-EBC to undertake acquisitions that enhance shareholder value. Overall, the primary objective of this paper is to examine whether CEO pay incentives influence the choice of financing in M&A deals, and whether there is a statistically significant difference in acquisition announcement returns – driven by

financing decisions – between CEOs with high and low proportions of equity-based compensation. The chosen research path offers a novel view on M&As and the influence of CEO compensation on the choice of financing a deal.

1.2 Hypotheses development

This section develops the hypotheses for the thesis. The main research question aims to determine whether CEO pay incentives influence the choice of financing in M&A deals, and whether this choice yields statistical significance in terms of post-acquisition acquirer stock returns.

Datta et al. (2001) argue that unlike most firm investments, which tend to be relatively modest, M&A transactions are typically substantial, high risk, and discretionary long-term commitments. Moreover, such investments may offer executives avenues for personal gain, thereby highlighting potential agency conflicts between management and shareholders. Executive compensation contracts are widely regarded as a key mechanism for mitigating agency conflicts between executives and shareholders, particularly in the context of firm acquisition decisions. The authors further propose that when executives receive low levels of EBC, their actions are more likely to reflect personal incentives, leading to a higher tendency to overpay for acquisition targets. Furthermore, Jensen and Meckling (1976) state that the classic view of the principal-agent problem centres on the fundamental question of how to design a contractual relationship between the principal (shareholders) and the agent (CEO) such that the agent acts in a way that maximizes the principal's welfare. Walker (2002) explains that it is impossible to design a compensation contract that entirely aligns the interests of shareholders and executives. Therefore, the optimal contracting perspective on executive compensation is the one that minimizes agency costs. If executives with high levels of equity-based compensation are more closely aligned with shareholder interests in the context of corporate acquisitions, the first hypothesis is formulated as follows:

H₁: Higher equity-based compensation for CEOs is associated with positive post-acquisition cumulative abnormal returns (CARs), reflecting improved alignment with shareholder interests.

Datta et al. (2001) provide evidence that executives with high equity-based compensation tend to finance acquisitions with cash, resulting in statistically significant positive post-acquisition returns. Moreover, firms managed by executives with high EBC exhibit statistically significant two-day (-1,0) CARs of 0.88% at the 1% significance level, whereas firms with low-EBC executives record modest CARs of 0.17% that is a statistically insignificant finding. Datta et al. (2001) further note that the difference in mean CARs between firms managed by low-EBC and high-EBC executives is statistically significant, highlighting the impact of compensation structure on acquisition outcomes. Thus, the second hypothesis is as follows:

H₂: CEOs with high levels of equity-based compensation are more likely to employ cash as the preferred payment method, resulting in higher and statistically significant post-acquisition returns relative to their low-EBC counterparts.

Moreover, in European public acquisitions, Martynova & Renneboog (2009) show that equity-financed deals generate significantly negative ACARs in the six-months following deal completion. Moreover, cash-financed deals yield significantly less negative returns during the 1993-2001 sample period. Nevertheless, Martynova & Renneboog (2009) state that the trend of generating significantly negative ACARs in equity-financed deals is largely attributed to share price correction, as equity-offers often encounter a significant price spike prior to the official bid. Martynova & Renneboog (2009) further argue that their results support the view that an equity offer signals to the market that the company's shares may be overvalued. In contrast, Alexandridis et al. (2017) contend that following the financial crisis of 2007 to 2009, public equity-financed deals in the U.S. generate shareholder value instead of destroying it. This observation can be considered economically significant, as the tendency of such deals to generate zero or negative

returns – and thereby destroy shareholder value – has been well-documented in prior empirical research. Major difference between these two outcomes can be attributed to changes in regulatory environment and improvements in firm-specific corporate governance, as noted by Alexandridis et al. (2017). Thus, the third hypothesis based on these findings are formulated as follows:

H₃: Cash-financed M&A deals are more likely to generate positive acquirer post-acquisition returns in contrast to equity-financed deals.

Alexandridis et al. (2017) argue that the nature of large public mergers and acquisitions – valued at over \$500 million and financed with equity – has shifted from value-destroying to value-creating investments post-financial crisis. This phenomenon is particularly interesting as prior empirical evidence () suggests that these deals destroy more shareholder value than create it. Alexandridis et al. (2017) suggest that this change can be attributed to extraordinary regulatory improvements after the financial crisis of 2007 to 2009. Consequently, the final (4) hypothesis is formulated as follows:

H₄: In large public deals (priced at least \$500 million or more), equity-financing generates positive abnormal returns during 2018 to 2023.

1.3 Structure of the thesis

This section provides an overview outlines the thesis structure. The first chapter introduces the topic, explains the relevance of the research, establishes the research question, and develops hypotheses based on prior empirical studies. The second chapter presents the fundamental concepts of mergers and acquisitions, including different types of M&As, synergy creation, and methods of payment. The third chapter provides theoretical framework on CEO compensation such as agency theory, optimal contracting, rent extraction and managerial power, CEO pay slice, tournament theory, and deferred compensation. Chapter four presents a comprehensive literature review on payment methods, CEO compensation structures, and post-deal performance in mergers and

acquisitions. The fifth chapter outlines the data and methodology employed in the regression analysis. Chapter six presents the empirical results, and chapter seven concludes the thesis by interpreting the findings, acknowledging the study's limitations, and offering practical implications alongside avenues for future research.

2 Basic concepts of M&As

This chapter outlines the basic concepts of M&A deals, introducing different types of M&As, synergies, payment methods affiliated with deals, and CEO compensation structures and incentives. M&As are typically categorized into vertical, horizontal, and conglomerate deals. Payment methods are generally divided into three subgroups: cash (internal funds), equity (stock-swaps), and debt (leverage). Synergies are frequently a primary motivation for pursuing M&A deals, making their introduction highly relevant in this context. Also, this chapter covers the basic concepts and provides an introductory overview of key theories on CEO compensation and incentives.

2.1 What are M&As?

Terms “merger” and “acquisition” are generally used interchangeably, though they carry somewhat different implications. Term “merger” refers to an instance, in which separate firms combine to form a single corporation (Giddy, 2006). Term “acquisition” typically refers to a company purchasing the assets (tangible and intangible) of another company. Giddy (2006) further explains that an acquisition can involve either share purchases or asset purchases exclusively.

Giddy (2006) continues that in share purchases, the acquirer purchases the shares of the target company’s shares to gain the ownership and total control of the firm and its assets. However, in an asset purchase, the acquiring company does not gain full control over the target firm but instead acquires ownership of specific assets. The primary distinction between share and asset purchases lies in the level of selectivity: in an asset purchase, the acquiring company can choose which assets and liabilities to acquire, whereas in a share purchase, the acquirer assumes ownership of all assets and liabilities of the target company. In the following subchapters, different types of M&A deals are introduced.

2.2 Horizontal

A deal is categorized as a horizontal merger or acquisition, when both the acquiring and target companies operate within the same market (Rozen-Bakher, 2018). Capron (1999) demonstrates that horizontal acquisitions create shareholder value through both cost-based and revenue-based synergies. Such synergies arise when the combined value of the merging firms exceeds the sum of their standalone values. Rozen-Bakher (2018) continues that horizontal M&As supposedly increase market power of the merging firms, as horizontal mergers decrease the number of competitors operating in the same market. This phenomenon may generate increases in profit margin as the deal enables merged firms to elevate their prices due to increased market power.

2.3 Vertical

An M&A deal is considered vertical when the acquiring and target firm have a commercial relationship (Gaughan, 2015). There are two types of vertical mergers: upstream and downstream deals (Rozen-Bakher, 2018). An upstream merger arises when a producer acquires one of its suppliers, while a downstream merger refers to an instance where a company acquires another company that purchases its goods. The main difference between vertical and horizontal mergers is that vertical mergers involve a limited selection of potential target companies, which can make them more difficult to complete. Rozen-Bakher (2018) notes that there is a certain degree of observable risk included in vertical M&As due to the inherent buyer-seller relationship between the merging firms. If the two merging firms exhibit drastically different degrees of competitiveness in the marketplace, it may decrease the profit margin of the merged companies.

2.4 Conglomerate

King et al. (2004) define conglomerate mergers – utilizing Federal Trade Commission's definition – as mergers between two entirely unrelated firms, firms operating in

geographically distinct markets, or those that do not compete in the same product categories. Thus, such mergers are considered diversifying acquisitions. King et al. (2004) continue that diversifying mergers may enable firms to create value through the merger itself, rather than solely acquiring existing value (Salter & Weinhold, 1978).

2.5 Synergies

Feldman and Hernandez (2022) assert that shareholder value in M&A transactions arises from the value-enhancing integration of the acquiring and target firms. Moreover, classical definition for synergy is that the combined value of the merging companies' assets exceeds their value in contrast to operating independently, as Formula 1 (Damodaran, 2005) indicates:

$$V(AB) > V(A) + V(B) \quad (1)$$

where:

$V(AB)$ = value of firm created by merging A and B

$V(A)$ = Independent value of A

$V(B)$ = Independent value of B

Damodaran (2005) categorizes synergies into two distinct groups: financial synergies and operating synergies. Financial synergies strive to create value through tax benefits, diversification, and heightened debt capacity, as well as through the investment of excess cash in acquiring another firm. In contrast, operating synergies aim to create value through economies of scale, enhanced pricing power – as noted earlier in this chapter – and increased growth potential.

2.5.1 Financial synergies

Damodaran (2005) further explains that tax benefits arise from the acquiring firm's ability to appreciate the book value of the target firm's assets through accounting

practices, or from utilizing the target's operating losses to shelter future income, thereby creating a tax advantage (tax shield). Diversification is arguably a complex and controversial source of synergy, as investors – particularly in public firms – can often achieve diversification at a much lower cost on their own. However, diversification may generate meaningful synergies in the context of private firms. Merging firms can achieve higher debt capacity by increases in profitability and stabilizing cash flows, ultimately making their financial performance more predictable.

2.5.2 Operating synergies

Damodaran (2005) states that, as a result of a merger, economies of scale may emerge, enabling the merged firm to operate more cost-efficiently and increase profitability. Economies of scale are more likely to arise in horizontal mergers, as the merging companies operate in the same market and exhibit similar characteristics. This can also enhance the merged firm's market power. Synergies can also arise from increased market power, as reduced competition and a larger market share benefit the merged firm – assuming that the combining companies operate within the same market, and do not exhibit a buyer-seller relationship. Additionally, operating synergies may be achieved by pursuing growth through expansion into new emerging markets or by strengthening presence in existing ones.

2.6 Payment methods

As outlined in the introduction chapter, payment methods in M&As can be categorized into three subgroups: cash (internally generated funds), equity (stock-swaps) and debt (external funds). Although internal funds and leverage may ultimately both be classified as cash acquisitions, they are treated as distinct payment methods in this thesis. This distinction is since internal funds and leverage typically carry different costs of capital, which, as Martynova and Renneboog (2009) document, influence the acquirer's choice of bid financing. Additionally, debt financing involves an element not associated with

internally generated funds: bank monitoring. The following section examines the established shareholder value effects associated with each payment method.

2.6.1 Internally generated funds: Cash

Alexandridis et al. (2010) state that prior empirical literature has been able to indicate that cash payments do not necessarily destroy shareholder value. Martynova and Renneboog (2019) report that prior research shows only-cash offers generally resulting in higher announcement returns. Datta et al. (2001) document that cash offers made by executives with high equity-based compensation (EBC) result in lower premiums paid – corresponding to approximately \$55 million in savings. Moreover, not all cash-offers are received positively by the market. Specifically, cash-offers made by executives with high EBC are generally viewed favourably, whereas those made by executives with low EBC tend to result in negative average cumulative abnormal returns (ACARs).

2.6.2 Equity

Martynova and Renneboog (2009) show that equity-financed deals yield more negative returns in contrast to cash-financed deals. Moreover, the explanation for this phenomenon is that equity-financed deals are subject to share price correction. Prior to the official bid, stock-for-stock offers typically encounter a significant increase in share price, which is then corrected in the post-announcement period. Interestingly, Alexandridis et al. (2017) report that value-creation effects of equity-financed M&As improved significantly during the 2010s. The authors propose that this shift from value-destroying to value-creating acquisitions stems from significant legislative reforms implemented after financial crisis of 2007-2009.

2.6.3 External funds: Debt

As stated earlier in this paper, debt financing is ultimately a form of cash, but with certain distinguishing characteristics. At least in Europe, Martynova and Renneboog (2009) argue that banks are exceptionally skilled at acquiring and analysing firm information.

Consequently, banks' lending practices in M&As can generate positive market reactions, as such decisions typically imply that the acquisition has a positive net present value.

3 Theoretical framework

This chapter covers the basic concepts and provides an overview of key theories on CEO compensation and incentives. Additionally, certain prior results are revisited to examine the methods used and the practical implications derived from them. A classical topic of interest in corporate finance is how a company's shareholders' preferences can be aligned with those of its executives. A CEO typically holds significant authority over a firm's core operating activities, while the board of directors – elected by the shareholders – focuses more on the company's long-term strategic direction. Datta et al. (2001) confirm that aligning executive interests with those of shareholders relies substantially on the structure of executive compensation. This chapter discusses different theories on executive compensation. Theories under review include agency theory, optimal contracting, rent extraction and managerial power, together with deferred compensation.

3.1 Executive compensation and agency problems

This subsection represents the interaction between executive compensation and agency problems by discussing agency theory, optimal contracting and deferred compensation. Different compensation schemes may present different outcomes.

Garen (1994) explains that the research on executive compensation represents a classic example of the principal-agent problem. Jensen and Meckling (1976) state that the classic view of the principal-agent centers on the fundamental question of how to design a contractual relationship between the principal (shareholders) and the agent (CEO) such that the agent acts in a way that maximizes the principal's welfare. A practical implication of this is that the CEO's compensation should be aligned with the best interests of shareholders, ensuring that the CEO's wealth increases as shareholder wealth increases – and decreases when it declines. Additionally, Jensen and Meckling (1976) propose that deferred compensation for executives can mitigate agency costs associated with debt.

Garen (1994) continues that the central challenge for the firm is how to align the interests of executives with those of shareholders. A straightforward method to align the interests of both parties is to design the CEO's incentives appropriately. A common approach to achieving this alignment has been to assess how the CEO's compensation relates to the firm's income, and to evaluate the sensitivity of CEO pay to the firm's performance, as shown by Equation 2:

$$Y_i = b_0 + b_1 R_i \quad (2)$$

where:

Y_i = CEO compensation of firm i

b_1 = sensitivity of CEO pay to firm performance

R_i = firm income

Garen (1994) further states that the majority of prior research finds b_1 to be positive and statistically significant. Nevertheless, although the equation appears reasonable in the context of the principal-agent problem, it assumes that all firms share a common value for b_1 , which may not reflect firm-specific differences. Garen (1994) highlights that Jensen and Murphy (1990) document that b_1 varies across firms, indicating that the sensitivity of CEO pay to firm performance is not uniform.

Garen (1994) utilizes model by Holmstrom and Migrom (1987) and Rosen (1992). In short, the model posits that the CEO is a risk-averse agent, while shareholders act as principals. Moreover, the model assumes that shareholders hold well-diversified portfolios and are therefore exposed only to the firm's idiosyncratic risk. The CEO seeks to maximize his utility (U), by allocating a portion of his salary between the risk-free asset (r_f) and the market portfolio (r_m), while simultaneously determining his level of effort (μ). However, the shareholders are primarily concerned with the firm's rate of return and its covariance risk. Garen (1994) points out that tying the CEO's pay to firm performance relative to the market effectively removes covariance risk from the CEO's compensation, as it is then

based on relative rather than absolute performance. The significance of stocks and stock options in total CEO compensation stems from the fact that these incentives expose the CEO – who is expected to act in the best interests of shareholders – to substantial covariance risk.

According to Garen (1994), there is an inverse relationship between CEO pay-performance sensitivity and firm's idiosyncratic volatility. This implies that the sensitivity of CEO pay-performance decreases as the firm's idiosyncratic risk increases – highlighting a fundamental aspect of the principal-agent problem. Additionally, Garen (1994) demonstrates that as firm's assets increase, the CEO's salary tends to increase correspondingly – consistent with agency theory - whereas the residual standard deviation has a negative effect on the CEO's salary, though with low statistical significance, which does not align with agency theory. In this context, the residual standard deviation measures the variation in the firm's returns after accounting for its covariation with the market. Overall, Garen (1994) finds that absolute pay performance is more commonly utilized than relative performance pay in CEO compensation. This is somewhat paradoxical in light of the principal-agent problem, as the risk in the CEO's compensation should ideally mirror the risk borne by shareholders.

Agency theory, as outlined by Jensen and Meckling (1976) and supported by Garen (1994), argues that equity-based compensation can help align the interests of executives and shareholders by mitigating agency conflicts. However, Walker (2002) highlights a limitation of the optimal contracting approach, suggesting that in practice it may be impossible to design contracts that fully eliminate the divergence of interests between managers and shareholders. Therefore, the optimal contracting perspective on executive compensation is the one that minimizes agency costs. Agency costs in this context include monitoring costs, contracting costs, and other expenses to ensure a certain level of alignment with shareholder's interests. From the perspective of optimal contracting, this aligns closely with the intended purpose of executive compensation packages. Moreover, Walker (2002) states that designing the optimal executive compensation

contract typically is concerned by three factors, which include (1) attracting and retaining highly skilled and talented executives, (2) minimizing managerial opportunism, and (3) reducing overall costs.

In highly competitive markets, attracting highly competent executives poses a particularly significant challenge. As Walker (2002) further explains, in order to attract executives and retain them, the overall compensation package should be structured to meet or even exceed the executive's opportunity cost. When hiring a risk-averse CEO, a firm must design a compensation package that adequately compensates for the risks involved, ensuring the variable elements (i.e. parts of the CEOs compensation that are not guaranteed) are balanced by appropriate financial incentives (stock options, performance-based bonuses, and equity awards). From the optimal contracting perspective, the firm must offer at least the executive's opportunity cost in compensation, as it cannot pay less. However, it may offer more to strengthen incentives and better align the executive's interests with those of the shareholders.

Walker (2002) continues that the risk of agent opportunism exists in any agency relationship. Simply put, executives may pursue decision-making that maximize their own utility while failing to enhance shareholder value. Such decisions may involve pursuing low-risk business opportunities, even when higher-risk alternatives could offer greater potential benefit to shareholders, or refraining from restructuring operations when restructuring is necessary. Moreover, Walker (2002) explains that the firm shareholders should continue to pay executives as long as the marginal cost of doing so exceeds the marginal benefits generated by the incentives. This perspective is particularly intriguing in the context of this study. While agency theory broadly supports the notion that equity-based compensation is an effective tool for aligning the interests of executives and shareholders, the optimal contracting approach emphasizes that the primary objective of executive compensation is to minimize agency costs. Accordingly, this view implies that executive compensation should be structured with a stronger

emphasis on long-term firm performance, rather than solely on short-term market responses that equity-based compensation may support.

While agency theory emphasizes equity-based compensation as a tool to align executive and shareholder interests (Jensen and Meckling, 1976; Garen, 1994), the optimal contracting broadens this by recognizing that alignment can be achieved through a wider range of incentive schemes. One such mechanism is deferred compensation, which serves not only as a long-term incentive but also as a form of internal lending. As Yermack and Wei (2010) explain, deferred compensation involves executives postponing receipt of earnings they would otherwise receive during their tenure, effectively tying their financial well-being to the firm's sustained performance and, in doing so, reinforcing alignment with shareholders. Moreover, deferred compensation can be allocated to the firm's stock, a firm-determined mix of equities or bonds, or invested at a predetermined fixed rate of return. Bolton et al. (2015) propose that while non-financial firms carry, on average, a debt ratio of 35%, financial institutions (e.g., banks) operate with approximately 90% debt. Consequently, Srivastav et al. (2018) argues that e.g., in the case of financial institutions, the primary conflict of interest lies between shareholders and creditors over firm risk, rather than shareholders and executives. Srivastav et al. (2018) further explain that CEO compensation can also be aligned with the interests of debt holders through deferred compensation, in this instance known as "inside debt".

Although deferred compensation is particularly effective in organizations that operate with high leverage, the underlying principle can be beneficial for other types of organizations as well. Martynova and Renneboog (2009) state that among M&A deals classified as cash offerings, approximately 33% are financed with external funds, of which 70% are financed through debt. Parrino and Weisbach (1999) state that executives tend to pursue investments that maximize shareholder value rather than overall firm value, which may ultimately cause executives to decline safe, positive net present value (NPV) projects where the value is created primarily through an increase in the value of debt. Harford and Li (2007) show that, historically, CEOs wealth declined alongside that

of shareholders. However, under current practices – particularly granting of stock options – CEOs may see their wealth increase even when an acquisition underperforms or destroys shareholder value.

Yermack and Wei (2010) argue that, in the aftermath of the 2007 to 2008 financial crisis, there has been growing consensus among professionals and regulators proposing for the expanded usage of deferred compensation schemes for top executives. As previously noted, granting stock options to CEOs introduces a significant element of risk into firm performance. Yermack and Wei (2010) further argue that, although inside debt holdings can help suppress managerial opportunism, an overly large share of deferred compensation may induce excessively conservative management behavior, effectively transferring risk from shareholders to debtholders. Overall, Yermack and Wei (2010) argue that when a CEO's inside debt holdings significantly exceed their equity stake, it can create misaligned incentives and increase the likelihood of conservative risk-taking behavior. This dynamic leads to an increase in the firm's debt value at the expense of equity value, ultimately resulting in the destruction of overall shareholder wealth. This outcome arises as the benefits accrued to the bondholders are more than outweighed by the corresponding losses sustained by shareholders.

3.2 Managerial power and rent extraction

This section seeks to present the critical view that CEOs can influence their own pay packages and extract rents from the firm's shareholders, possibly weakening the alignment benefits proposed in Section 3.1., using CEO pay slice as a measure of power concentration.

Edmans et al. (2023) present two classical perspectives on shaping CEO compensation: the "shareholder value" view and the "rent extraction" view. Edmans et al. (2023) further explain that the shareholder value view emphasizes maximizing shareholder value by aligning executives' interests with those of shareholders – aiming to resolve the classic principal-agent problem. The rent extraction view is the primary counterpart to the

shareholder value perspective, emphasizing that boards may be influenced by CEOs prioritizing personal gain over maximizing shareholder value. This distinction is particularly relevant for levered non-financial firms.

Bebchuk et al. (2001) explain that the rent extraction perspective is focuses on executives' ability to influence their own compensation structures for personal gain. The term "rent" implies that when executives receive compensation beyond the optimal level, the excess pay is effectively extracted as rent from the shareholders. The rent extraction perspective acknowledges the agency problem but views executive compensation as part of the problem rather than solution to it. Bebchuk et al. (2001) further explain that the executives' ability to extract rents does not imply the absence of constraints on their actions. A significant limiting force in this context is referred to as the "outrage constraint", which refers to the reputational and social pressure that discourages firm directors and executives from approving lucrative compensation proposals for managers. If such a plan were initiated, it could reduce shareholders' willingness to support the management in future contests. Therefore, executives may be tempted to conceal acts of rent extraction and to disguise its magnitude.

As was discussed in the section on optimal contracting theory, the board of directors seeks to mitigate the agency problem between executives and shareholders through the design of executive compensation structure. In the context of rent extraction theory, executives possess the power to influence the compensation contracts in ways that allow them to extract rents from shareholders – a phenomenon commonly referred to as managerial power (Bebchuk et al., 2001). Moreover, Walker (2002) explains that the managerial power perspective suggests that greater CEO power leads to higher levels of rent extraction. This perspective considers how additional factors – such as executive influence or governance structures – may affect the outcomes of major corporate investments like mergers and acquisitions, reflecting the roles and motivations of both the board and top executives.

Bebchuk et al. (2001) explain that even the most independent directors – often ultimately selected by the CEO – may share common interests and collegial ties with executives. This finding highlights the substantial managerial power CEOs can exert over firm decision-making, particularly regarding their own compensation structures. The CEO's managerial power is influenced by several factors, which include (1) the presence of directors – such as independent directors – who may share personal ties with the CEO, such as long-standing friendships, and may therefore be more likely to support the CEO's interests, and (2) the presence of directors over whom the CEO holds a certain degree of influence. Walker (2002) proposes a particularly interesting and economically significant application of managerial power in the context of executive compensation: the design of stock option plans.

During the 1980s and 1990s, stock options emerged as a dominant form of incentive compensation for top executives (Walker, 2002). In the context of managerial power, stock options are typically viewed as desirable by both theoretical models and real-world executives, as they offer enhanced motivation to increase shareholder value. However, the key question in this context is whether the degree and structure of option-based compensation packages align with those that would arise under optimal contracting. More importantly, the specific details of a compensation package reveal whether it is designed to create shareholder value or destroy it. In short, the details include the number of options granted and the conditions attached to them. Walker (2002) shows that a study investigating U.S. firms in 1992 to 1997, which finds that boards grant stock options to CEOs too generously. As a result, *ceteris paribus*, shareholder value declines as the number of executive stock options increase.

The concentration of managerial power can be measured using the CEO Pay Slice (CPS) as proposed by Bebchuk et al. (2011), who introduce a framework linking CPS to firm value, performance, and behavior in publicly listed companies. Furthermore, the CPS is defined as the proportion of total compensation received by the CEO relative to the average compensation of the top five executives. The CPS has a significant impact on

various aspects of a firm's performance and behavior. Specifically, a high CPS is linked with value-destroying acquisitions decisions, lower profitability, and a higher likelihood of granting the CEO opportunistically timed options.

Bebchuk et al. (2011) report economically meaningful results regarding the CPS and firm-performance. A one standard deviation increase in CPS leads to a 0.276% decline in acquisition announcement returns, which corresponds to a loss of about \$18 million per acquisition, given an average firm market value of \$6.40 billion in their sample. Also, a firm's accounting profitability decreases as the CPS increases. More specifically, accounting profitability is measured by net income divided the book value of assets (ROA). The authors find that, given an average return on assets of 3.7% in their sample, a one standard deviation increase in CPS results in a 0.48 percentage point decrease in ROA – representing a reduction of approximately 10% relative to the average level. Furthermore, the incidence of opportunistically timed option grants – defined as grants awarded shortly prior to favorable news that boosts the firm's stock price (Yermack, 1997) – rises with higher levels of CPS. Additionally, high CPS is associated with governance issues.

Altogether, the perspective of managerial power challenges the assumption that executive compensation schemes reflect optimal contracting. On the contrary, managerial power emphasizes that executives may exert substantial influence over their own compensation, especially when power is concentrated. CEO pay slice exhibits a practical and empirical method to capture the power asymmetries within the top management team. Moreover, while CPS is not directly included in the empirical analysis of this thesis, it offers a useful conceptual view for understanding how power concentration within executive teams could influence major corporate decisions, such as M&A financing.

3.3 Incentives and competitive dynamics

Incentives and competitive dynamics offer an additional perspective through which executive behavior can be understood, particularly through the framework of tournament theory. Moreover, this view proposes that compensation schemes are not only about aligning interests, but also about motivating executives to outperform their peers in pursuit of promotions or reputational gains. Unlike agency theory, which focuses on mitigating motivational issues between executives and shareholders, tournament theory centers on the internal hierarchy and the performance-based competition it creates (Lazear and Rosen, 1981). In the context of M&As, such competitive pressures may drive CEOs to pursue high-profile deals as a means of signaling their capability for advancement.

Lazear and Rosen (1981) argue that, under the assumption of risk-neutral workers, hierarchical wage structures yield the same efficient resource allocation as incentive methods tied to individual performance known as rank-order payment scheme. This compensation structure rewards both the high and low performers within the labor market hierarchy. The key distinction of this incentive structure is that, in a competitive framework (i.e., tournament), earnings are determined by relative ranking rather than by absolute performance differences. In other words, employees within firms compete for the highest reward – namely, promotion to the position of CEO. Moreover, this implies that rewards are predetermined, meaning that employee compensation is not contingent upon the specific outcomes of individual competitive scenarios. Lazear and Rosen (1981) continue that this type of incentive scheme is particularly effective in environments where monitoring employee performance is both expensive and challenging. In these contexts, the inability to accurately observe effort allows employees to adjust their input strategically, making input-based wage structures susceptible to opportunistic behavior.

Lazear and Rosen (1981) demonstrate that, in a two-person tournament model, the winner's prize is represented by w_1 and the loser's by w_2 . These rewards are

predetermined, and the participants are assumed to be unaware one another's identity, reflecting the anonymity and structure of real-world competitive markets. Lazear and Rosen (1981) analyse a scenario involving a firm with both a president and a vice president, where the structure of their compensation is subject to evaluation. The wage differential between the two competitors is represented by $w_1 - w_2$, indicating the spread between the president's and the vice president's compensation. Although vice presidents typically earn significantly less than presidents, the presidential role is most often filled by promoting individuals from the vice-presidential position. As Hasan et al. (2020) suggest drawing on Goel and Thakor's (2008) model, the vice president's position in the internal competition is inherently double-edged: if the vice president chooses not to support the CEO in pursuing a high-risk acquisition that ultimately turns out to be successful, their relative standing in the competition may deteriorate consequently.

Upon promotion to the presidential role, the vice president's (VP) salary increases to w_1 , aligning with the compensation designated for the higher position. Since the VP's skills are unlikely to have increased by the wage differential $w_1 - w_2$ overnight, this raises a challenge to standard economic view, which posits that supply-side factors should maintain approximate wage parity between closely related positions. Nevertheless, this apparent inconsistency is resolved when the wage differential is viewed through the lens of a tournament-style prize rather than a reflection of marginal productivity. Within the framework of tournament theory, the firm's president represents the winner of the internal competition, with w_1 reflecting the top prize awarded for securing the position. Lazear and Rosen (1981) further argue that such an incentive scheme encourages junior-level employees to continuously enhance their productivity and develop skills across their careers prior to assuming the position.

Lazear and Rosen's (1981) framework has since been applied to various corporate settings, including executive decision-making in the context of corporate acquisition performance. Hasan et al. (2020) examine whether tournament-based incentives affect corporate acquisition performance in the U.S. They hypothesize that due to major

corporate decisions being a combined effort of the top management team, stronger tournament-based incentives lead to more value-enhancing acquisitions decisions by firms. This is based on the idea that VPs, motivated by the prospects of securing the top prize – the CEO position – exert greater effort in assisting the CEO with identifying acquisitions that are most advantageous for the firm. However, Hasan et al. (2020) highlight that Goel and Thakor's (2008) findings that stronger tournament-based incentives may foster greater risk-taking in corporate decision-making. Goel and Thakor's (2008) model demonstrates that, assuming all senior executives have identical levels of risk appetite, each has an equal probability of promotion, as the shared risk-return relationship results in comparable output performance across individuals. Consequently, executives can enhance their chances of promotion to CEO by initiating or endorsing riskier and more substantial projects, given that these initiatives have the potential to produce more extreme performance outcomes. Moreover, if the VP refrains from endorsing a highly risky and large-scale acquisition that ultimately proves successful, their relative standing in the internal promotion tournament may decline as a result. Notably, VPs are generally incentivized to support the CEO in such acquisitions, as the risk of personal consequences is minimal. In the event of an unsuccessful corporate takeover, accountability typically falls on the CEO, who bears ultimate responsibility for the firm's strategic decisions.

Hasan et al. (2020) find that, after controlling for performance-based incentives, CEO risk-preferences, firm, and deal characteristics, and year and industry fixed effects, tournament-induced pay gaps between the CEO and VPs are significantly negatively associated with post-acquisition performance, as measured by cumulative abnormal returns (CARs) surrounding the acquisition announcement. They argue that the sources of poor post-acquisition performance derive from three factors: (1) firms with stronger tournament-based incentives exhibit a higher acquisition probability and are more likely to pursue additional takeovers that tend to be value-destroying, (2) owing to the risk-seeking behavior of vice presidents, the negative effects of tournament incentives on post-acquisition performance is especially evident in large scale and high-risk deals,

which are more likely to be undertaken in pursuit of promotion opportunities, and (3) the adverse impact of tournament incentives is most pronounced in firms where senior executives are more likely to actively compete for the CEO position – for example in organizations with a strong preference for internal succession or where particular VPs lag behind in the tournament rankings and are incentivized to engage in greater risk-taking to close the gap with higher-ranked executives.

Overall, the perspective of incentives and competitive dynamics adds a significant behavioral dimension to the understanding of executive incentives by highlighting the role of internal competition and career dynamics. In contrast to agency theory, which views compensation as an effective tool for resolving principal-agent issues – or managerial power emphasizing that executives may exert substantial influence over their own compensation, especially when power is concentrated – tournament theory suggests that CEOs may be driven by relative performance concerns such as pursuing high-risk endorsements like mergers and acquisitions to enhance their current status or maintain their relative position in the competition. Furthermore, this perspective helps explain why some executives tend to pursue more riskier or more ambitious M&A strategies, not merely in the interest of shareholder value, but also as a means of advancing within the corporate hierarchy. Consequently, tournament theory complements the broader theoretical framework by offering insight into the non-financial motivations that may shape executive decision-making.

4 Literature review on payment method, CEO compensation, and post-acquisition performance in M&As

This chapter reviews the empirical literature on the determinants of payment methods in M&As and evaluates the performance outcomes associated with different financing choices. Additionally, the role of CEO compensation incentives is analysed in relation to the financing decisions of M&A deals and their subsequent post-acquisition performance. The literature review seeks to integrate both foundational theories and practical evidence drawn from real-world transactions. Although prior empirical evidence indicates that M&A deals are more often associated with value destruction than creation (see e.g., Renneboog & Vansteenkiste, 2019), deal performance may vary significantly based on the method of payment employed. The first section of this chapter discusses the underlying factors behind financing choices and their post-deal performance, second examines CEO compensation and M&A performance, and third assesses whether payment method influences post-acquisition return outcomes.

4.1 Determinants of M&A financing choices

This section explores the key firm-specific factors that may influence an acquirer's choice of financing method in mergers and acquisitions. In particular, it considers how financial constraints, capital costs, credit rating, and reputational concerns – such as corporate social responsibility – can shape the decision to finance a deal with either cash or equity. These factors are essential in understanding the determinants behind payment method selection, independent of managerial incentives. By reviewing the empirical literature on these dimensions, this section provides a foundation for distinguishing between firm-level determinants and executive-driven motivations, which are addressed in subsequent sections.

Martynova and Renneboog (2009) examine the underlying factors behind financing choices in firm acquisitions. They contend that, despite the extensive focus on payment

methods in prior empirical studies, the specific sources of acquisition financing sources have received comparatively little scholarly attention. Among takeovers categorized as all-cash deals, approximately a third are at least partially financed through external sources of capital. Moreover, around 70% of externally financed M&A transactions utilize debt financing, with the remaining proportion funded through equity issuance. Consequently, utilizing the payment method as a proxy for financing sources may introduce discrepancies, given the aforementioned considerations. However, Karampatsas et al. (2014) find that credit ratings serve as a factor influencing the acquirer's choice of payment method in M&As. Credit rating agencies (CRAs) have a significant role in financial markets by evaluating the creditworthiness of entities – such as firms – and issuing corresponding credit ratings. Moreover, CRAs help reduce information asymmetry in financial markets by providing credible assessments, thereby lowering firms' cost of capital. Additionally, the issuance of credit ratings facilitates timely access to capital for firms with publicly traded debt, allowing them to secure funding in alignment with their financial requirements. Firms with robust credit ratings experience lower financial constraints as a result of a higher debt capacity and superior credit quality.

Martynova and Renneboog (2009) categorize acquisitions based on their sources of financing to evaluate the projections derived from the fundamental theories of firm financing align with their investment project behavior. Martynova and Renneboog (2009) suggest that the negative market reaction generally associated with stock-swap announcements is primarily explained by information asymmetry between acquiring and target firms. Moreover, a stock-swap offer can signal that the acquiring firm's shares are overvalued, which raises the perceived cost of equity issuance and leads firms to utilize equity financing for takeovers only when alternative funding options are either inaccessible or more costly. Additionally, Martynova and Renneboog (2009) highlight that prior empirical evidence emphasises the regulatory environment as a critical factor influencing firms' financing choices. By safeguarding firms, investors, and financial institutions (e.g., banks) against managerial expropriation, a strong regulatory

environment can facilitate access to external financing at a cost that reflects lower perceived risk associated with it. Consequently, robust creditor protection ensures that debtholders can monitor the firm more effectively and are better positioned to enforce repayment, seize collateral, or even assume control of the firm. These factors reduce the perceived risk faced by creditors, thereby leading to lower borrowing costs for both the creditor, making leverage financing a more appealing option for firms. Effective shareholder protection likewise contributes to the increased attractiveness of equity financing, lowering the cost of equity. Martynova and Renneboog (2009) find that firms with substantial internal cash holdings typically finance takeovers using exclusively cash, while those facing liquidity constraints are more inclined to seek external sources of funding. Moreover, a higher ratio of cash flow to transaction value increases the likelihood that a firm will pursue a totally cash-financed acquisition. Furthermore, firms with higher borrowing capacity are more likely to utilize leverage as a primary source of acquisition financing. Martynova and Renneboog (2009) suggest that empirical evidence indicates a link between the choice of equity financing and the bidder's preceding stock price performance, though this evidence apparently lacks strong statistical robustness.

By contrast, Karampatsas et al. (2014) hypothesize that rated acquirers are less inclined to utilize internal funds for acquisitions, owing to their enhanced access to public debt markets. Furthermore, firms with high credit ratings benefit from enhanced opportunities to increase leverage, driven by reduced external financing costs and heightened investor demand for their debt instruments. These differences in the use of internally generated funds are particularly relevant in the context of M&As, which are often pursued when a firm is in strong financial condition – potentially signalling no immediate need for external financing. However, for firms with high credit ratings, the cost of external capital may be lower than that of internal funds, making debt or equity issuance a more attractive option despite ample internal liquidity. This highlights the importance of creditworthiness as a factor in financing decisions. As demonstrated by Martynova and Renneboog (2009), higher levels of shareholder protection – when adjusted for the strength of law enforcement – are associated with a greater likelihood

of debt financing in acquisitions. In contrast, lower levels of the index correspond to a preference for using internal cash. Similarly, higher values of the creditor protection index are linked to greater use of external financing – both debt and equity – while lower index values corresponds to a preference for financing acquisitions with internally generated capital.

Martynova and Renneboog (2009) conclude that firms with substantial internal cash reserves are more likely to use these resources to finance takeovers, as they are perceived to be less costly than external financing options such as debt or equity. Unsurprisingly, acquiring firms view strong shareholder and creditor protection favorably, as it broadens their access to financing options. This may enable them to strategically combine various funding sources to optimize their cost of capital – a decision that is economically rational at both macro and micro levels. In contrast, Karampatsas et al. (2014) document that the probability of using cash – in whole or in part – as the payment method in acquisition offers is not significantly influenced by whether the acquiring firm holds a credit rating. This finding is consistent with their hypothesis that the presence of a credit rating does not inherently reflect greater debt capacity among rated companies. However, the level of a firm's credit rating is significantly positively associated with the likelihood of including a cash component – either fully or partially – in takeover offers. They argue that this finding possesses robust economic significance through that as credit rating increases by one point, the probability of utilizing cash in an acquisition offer increases by 7.04%.

The findings presented by Karampatsas et al. (2014) suggests that the presence of credit ratings is positively related to the acquirer's choice to utilize cash in an M&A transaction. Furthermore, the relative credit rating of the acquirer as opposed to the target – serving as a proxy for unused debt capacity – emerges as a significant factor in the decision to use cash financing, thereby reinforcing the association between credit ratings and payment method choice. Their findings further reinforce the view that enhanced access to public debt markets shapes firms' financing choices in M&A transactions. As

Martynova and Renneboog (2009) suggest, strong shareholder and creditor protection tends to encourage the use of cash, or a mixed offer involving internal funds (cash) and external funds (debt), as firms seek to optimize their cost of capital when selecting a financing method. Moreover, as noted by Karampatsas et al. (2014) in the context U.S. acquirers – where strong shareholder and creditor protection is prevalent – improvements in credit ratings are associated with a heightened likelihood of firms favouring cash over leverage, recognizing that stronger credit profiles afford them greater flexibility to secure capital for future investments at lower cost and amid increased investor demand for their debt instruments. Moreover, the authors argue that a credit rating represents a high-quality asset from the perspective of the acquiring firm's shareholders, as their evidence suggests that using cash to finance acquisitions is associated with positive outcomes, including enhanced firm valuation and the prevention of competing takeover bids. Enhanced firm valuation denotes to a positive shift in the market value of the bidding firm, whereby shareholders experience appreciation in equity value resulting from favourable market reactions to the firm's strategic preferences, such as utilizing cash for financing an acquisition.

Beyond credit ratings, another intangible asset that may influence a firm's financing choice in M&A transactions is corporate social responsibility (CSR), which can similarly affect perception of firm risk and credibility in the perspective of investors and creditors. Lins et al. (2017), citing the World Business Council for Sustainable Development, define CSR as a firm's commitment to sustainable development through active engagement with employees, their families, local communities, and broader society to enhance overall quality of life. Moreover, Lins et al. (2017) suggest that during macroeconomic shocks, such as the financial crisis of 2008-2009, firms with higher CSR ratings generated significantly higher stock returns than firms with low CSR. In the context of mergers and acquisitions, this finding may suggest that high CSR engagement may additionally signal stronger governance and stakeholder trust, potentially contributing to more favorable outcomes in major corporate investments, such as mergers and acquisitions. Vo et al.

(2024) examine the extent to which a firm's level of corporate social responsibility (CSR) influences its choice of payment method in mergers and acquisitions.

Vo et al. (2024) note that although previous empirical studies have explored the relationship between corporate social responsibility and acquisition performance, the potential influence of CSR on payment method selection in M&A deals remains largely unexamined. CSR is typically categorized into two conceptual frameworks: the stakeholder-oriented view and managerial agency perspective. From the stakeholder-oriented view, CSR initiatives can foster trust among stakeholders, contributing to a stronger corporate reputation and increased customer loyalty. CSR can be interpreted as a means of aligning the interests of executives and shareholders, while also extending that alignment to a broader range of stakeholders. On the contrary, Vo et al. (2024) state that the managerial agency perspective views CSR as a reflection of agency conflicts, whereby managers pursue socially responsible activities to advance personal benefits rather than maximize shareholder value. As previously discussed in this thesis and highlighted by Vo et al. (2024), M&As represent major corporate investments that demand considerable operational effort and capital investments.

Vo et al. (2024) hypothesize that if CSR contributes to the creation and enhancement of firm's social capital, thereby benefiting shareholders, the stakeholder-oriented perspective suggests that acquiring firms are more inclined to use their own equity as a payment method in M&As. Additionally, the stakeholder-oriented perspective suggests that target company are more inclined to accept the acquiring firm's equity as consideration in the transaction. Conversely, if corporate social responsibility reflects underlying agency problems, the managerial agency perspective projects that firms with higher CSR engagement are more likely to utilize cash financing in acquisitions. Vo et al. (2024) further argue that when CSR is indicative of agency-related concerns, target shareholders may demand cash payment in M&A deals to avoid the risks associated with

holding potentially risky equity from the acquiring firm. Collectively, the insights from Vo et al. (2024), Martynova and Renneboog (2009) and Karampatsas et al. (2014) suggest that CSR may be one of the most vital aspects, alongside cost of capital and credit ratings, thereby also influencing financing choices in mergers and acquisitions.

Vo et al. (2024) document that a one standard deviation increase in a firm's level of CSR corresponds to a 0.0143 reduction in the probability of using all-equity as the payment method. This finding supports the managerial agency hypothesis, indicating that high-CSR acquirers are less inclined to employ solely equity financing in M&A transactions. Additionally, the authors observe that the positive association between cash payment and high-CSR is primarily driven by firms with weak corporate governance structures, lending further support to the managerial agency perspective. Moreover, higher levels of CSR are negatively correlated with the use of stock as a payment method in acquisitions, with this effect being especially pronounced in firms characterized by weak governance structures.

Vo et al. (2024) further argue that high-CSR acquirers who opt for stock-based payments in M&A transactions encounter an increased likelihood of deal failure. Furthermore, high-CSR acquirers may mitigate the risk of value-destroying transactions by preferring all-cash payments in M&A deals. The authors further demonstrate that high-CSR acquirers, when opting against stock payments, tend to offer higher acquisition premiums to secure targets with substantial synergistic potential – thereby improving the likelihood of deal success and ultimately enhancing shareholder value. In contrast, the use of all-cash payments combined with higher offer premiums may improve the likelihood of winning a bidding contest, this approach tends to serve managerial objectives than to generate value for shareholders. The authors find that, under conditions of weak corporate governance, CSR exerts a marginally negative effect on the shareholder value of acquiring firms. Conversely, in the context of strong corporate governance, CSR appears to have an insignificant effect on the shareholder value of acquiring firms.

Overall, Vo et al. (2024) find that high-CSR firms with weak corporate governance structures tend to prefer all-cash payments in corporate acquisitions. This finding is particularly noteworthy as prior empirical evidence suggests that all-cash deals are associated with higher acquisition announcement returns compared to mixed or equity issues (Martynova & Renneboog, 2009; Renneboog & Vansteenkiste, 2019). Higher announcement returns may reflect greater investor trust in the firm's decision making, therefore the finding of Vo et al. (2024) is rather intriguing. Vo et al. (2024) further propose that the likelihood of a successful M&A transaction is higher when all-cash payments are coupled with elevated acquisition premiums, a pattern particularly evident among high-CSR firms. The authors conclude that their findings support the notion that CSR activities driven by managerial agency motives influence the choice of payment method in acquisitions and are associated with a negative impact on the shareholder value of acquiring firms.

4.2 Equity-based compensation, M&A financing choices, and performance

This subsection explores relevant literature in relation to CEO compensation, M&A financing choices, and the deal performance. Executive compensation, particularly equity-based incentives, exhibits a vital role in shaping managerial behavior in major corporate decision making as outlined in Section 3.1. As Datta et al. (2001) and Feito-Ruiz and Renneboog (2017) show, equity-based compensation can align the interests of CEOs with those of shareholders, while excessive or poorly structured equity incentives may instead encourage excessive risk-taking or decision making driven purely by managerial interests.

As was outlined in the introduction, this thesis is largely motivated by the study of Datta et al. (2001), which examines the influence of executive compensation structures on corporate acquisition decisions in the U.S. during the period of 1993-1998. The authors argue that unlike most firm investments, which tend to be relatively modest, M&A

transactions are typically substantial, high risk, and optional long-term commitments. Moreover, such investments may offer executives avenues for personal gain, thereby highlighting potential agency conflicts between management and shareholders. Executive compensation contracts are widely regarded as a key mechanism for mitigating agency conflicts between executives and shareholders, particularly in the context of firm acquisition decisions. The authors further propose that when executives receive low levels of equity-based compensation (EBC), their actions are more likely to reflect personal incentives, leading to a higher tendency to overpay for acquisition targets.

Feito-Ruiz and Renneboog (2017) examine several aspects of CEO compensation in the context of mergers and acquisitions, including its effect on acquirer valuation at the deal announcement, the association between equity-based compensation and alternative governance mechanisms (such as ownership concentration), and whether excessive compensation influences both the likelihood of initiating a takeover and the valuation of the transaction itself. Feito-Ruiz and Renneboog (2017) note that, unlike shareholders who may mitigate risk through portfolio diversification, corporate executives are exposed to largely undiversifiable risk, given that their primary asset – human capital – is closely linked to the fortunes of the firm under their management. Moreover, Feito-Ruiz and Renneboog (2017) hypothesize (1a) that in acquiring firms with widely dispersed ownership, high levels of EBC for executives positively influence shareholder value. In contrast, (1b) EBC levels appear to have no significant effect on shareholder value in firms where ownership is substantially concentrated among active monitoring shareholders. Moreover, the authors propose that (2) disproportionate CEO compensation is negatively correlated with acquiring firm's shareholder value at the time of an acquisition announcement, suggesting potential agency concerns in such transactions.

Datta et al. (2001) report that executives receiving higher EBC are more likely to pursue firm acquisitions involving firms with enhanced growth prospects, while those

executives with lower EBC are generally associated with acquisitions of firms exhibiting weaker growth prospects. Additionally, Feito-Ruiz and Renneboog (2017) indicate that acquisitions undertaken by firms with high-EBC CEOs yield higher post-acquisition CARs (0.70%) in contrast to firms managed by CEOs with lower EBC. The findings remain robust after controlling for additional variables, such as board characteristics, corporate governance indices, and deal-specific factors, suggesting mitigation in principal-agent issues. Moreover, Datta et al. (2001) contend that these findings reinforce the argument that shareholders can mitigate the risk of managers rejecting risky but value-enhancing projects by strengthening the alignment between managerial wealth and firm performance – i.e., increasing the curvature of that relationship. Furthermore, the authors suggest that changes in the acquirer's risk profile following an acquisition may reflect the structure of executive incentive schemes. Companies with high EBC executives encounter a broader growth in risk in contrast to companies granting executives with low EBC. Datta et al. (2001) propose that the observed change in risk may be attributed not to the acquisition per se, but to an increase in the firm's book-value leverage following the transaction. The findings indicate that executives with high EBC tend to elevate firm risk to a greater extent than those with low EBC, irrespective of changes in leverage. This implies that high EBC executives are more inclined to engage in riskier acquisitions, despite the additional risk posed by increased leverage.

Datta et al. (2001) show a significant association between equity-based executive compensation and acquisition-related cumulative abnormal returns. Moreover, they show that firms managed by executives with high EBC generate positive average CARs of 0.30% at 5% significance level during the two-day (-1,0) acquisition announcement period. In contrast, companies managed by executives with low EBC exhibit a negative CAR of -0.25%, also significant at 5% level. These results are broadly consistent with Feito-Ruiz and Renneboog (2017). Datta et al. (2001) further contend that this evidence indicates a greater propensity among executives with high-EBC to undertake acquisitions that enhance shareholder value.

Moreover, Datta et al. (2001) presents evidence that cash-financed acquisitions do not consistently generate positive market reactions, suggesting that payment method alone does not determine investor perception. Firms managed by executives with high EBC exhibit statistically significant two-day (-1,0) CARs of 0.88% at the 1% significance level, whereas firms with low-EBC executives record modest CARs of 0.17% that is a statistically insignificant finding. Datta et al. (2001) further note that the difference in mean CARs between firms managed by low- and high-EBC executives is statistically significant, highlighting the impact of compensation structure on acquisition outcomes. When it comes to equity-financed acquisitions, firms managed by low-EBC executives exhibit negative two-day CARs of 0.36%, which is a statistically significant finding at 1% level. By contrast, firms with high-EBC executives report positive two-day CARs of 0.16%, although the finding lacks statistical significance. Overall, Datta et al. (2001) results suggest that the value-creation effects of cash acquisitions and value-destroying impacts of equity-financed acquisitions can be attributed to executives' incentive compensation.

Datta et al. (2001) perform robustness tests confirming that executive incentive compensation in acquiring firms exerts a consistently positive effect on shareholder value-creation around acquisition announcements. Moreover, equity-based compensation appears to mitigate executives' engagement in value-destroying activities, thereby protecting the interests of the acquiring firm's shareholders. Overall, Datta et al. (2001) state that although the view on substantial compensation packages for executives in U.S. firms has been particularly negative among news coverage agencies, their results and, most importantly, general academic research highlights that equity-based compensation can be a vital factor in aligning managerial interests with those of the shareholders and ultimately motivating the executives to perform value-enhancing corporate activities. Building on Datta et al. (2001), this thesis explores whether the relationship between high equity-based compensation and value-creation in M&A decisions has shifted over the past twenty years, reflecting changes in executive incentives, governance practices and market dynamics.

The acquiring firm's board characteristics have no significant impact on acquisition returns. By contrast, returns are approximately one-third lower for firms managed by busy CEOs – those serving on multiple external boards. However, as the acquiring firm has both highly concentrated ownership and high-EBC CEO, the positive impact of the CEO's high equity-based compensation on acquisition returns is significantly mitigated – especially when another firm is a major shareholder (i.e., a “blockholder”). Feito-Ruiz and Renneboog (2017) validate hypothesis 1b, showing that in acquiring firms with highly concentrated ownership by monitoring blockholders, executive decision-making is subject to closer oversight. Consequently, key strategic decisions likely to affect firm value are screened by the blockholder, thereby diminishing the necessity for strong equity-based compensation incentives. Based on this finding, equity-based compensation and large equity stake by another firm function as substitute governance mechanisms.

Excessive compensation is measured as the difference between the actual CEO compensation and the predicted compensation by Feito-Ruiz and Renneboog's (2017), which accounts for various factors associated with CEO compensation, such as bidder ownership structure, acquirer growth opportunities, and state of corporate governance. Feito-Ruiz and Renneboog (2017) propose that the relatively highest earning acquiring firm CEOs may exert substantial influence over the negotiation of their compensation contracts, hence allowing them to extract rents at the expense of the firm's shareholders. Moreover, such elevated compensation levels may stem from deficiencies in board monitoring (internal) or external monitoring (shareholders) mechanisms, granting management considerable discretion in corporate decision-making processes. Feito-Ruiz and Renneboog (2017) find that firms with larger boards are associated with higher CEO compensation, whereas the presence of blockholders tends to constrain total compensation. This is likely due to stronger shareholder oversight, which diminishes the bargaining power of top executives during compensation negotiations. Moreover, the authors document that excess CEO total compensation is significantly associated with

lower acquirer returns, implying that such compensation fails to alleviate agency conflicts and may indeed signal governance issues within the firm.

Overall, Feito-Ruiz and Renneboog (2017) findings suggest that equity-based compensation and stock prices are positively associated, while controlling for a range of variables including CEO characteristics (age, tenure), board traits (size, independence of directors), and the degree of external monitoring (ownership concentration). A key finding suggests that CEO equity-based compensation and concentrated ownership by another firm function as substitute governance mechanisms. Specifically, the positive impact of high EBC on stock returns diminishes when substantial ownership is held by an external corporate blockholder. Additionally, although equity-based compensation aligns executives with shareholders by making them partial owners of the firm, in firms with weak corporate governance and insufficient shareholder oversight, powerful CEOs may exploit their position to extract rents, indicating low CSR as proposed by Vo et al. (2024).

4.3 Payment methods and M&A performance around the globe

As discussed earlier in the introduction chapter, payment methods in M&A transactions can generally be categorized into three types: shareholder equity (stock-for-stock), liquid assets (cash), and leverage (debt). A typical M&A deal is financed with a blend of these options (Martynova & Renneboog, 2009). This section aims to determine whether equity-financed deals underperform relative to cash-financed deals after the transaction has been publicly announced. First, stock-for-stock and cash type of transactions are introduced, and relevant results are reviewed. Second, a comparative analysis of the post-performance of equity-financed and cash-financed deals is conducted.

Martynova and Renneboog (2009) stated that M&A deals are generally financed with exogenous funding, such as shareholder equity or leverage, at least in European firm takeovers. The authors report that equity payments occur in 33.7 percent and cash payments are in 43.4 percent of all transactions. Martynova and Renneboog (2009) also

show that a blended offer of equity and debt is not a predominant financing choice among acquiring companies. Moreover, the authors indicate that acquiring companies in equity-financed deals generated statistically significant at 1% positive announcement returns (0.49%), and statistically significant at 1% negative acquisition ACARs (-5.73%) within a six-month window following the deal. By contrast, cash-financed deals generated statistically significant at 1% level higher announcement returns (0.79%) and statistically significant at 1% negative ACARs (-1.35%) over the six months following the deal (Martynova & Renneboog, 2009). Consequently, equity-financed deals yield lower, but positive, announcement returns than cash-financed deals.

However, Alexandridis et al. (2017) argue that the nature of equity-financed public M&A deals has shifted from being value-destroying to value-creating post-2009. Alexandridis et al. (2017) continue that this phenomenon can be attributed to the unprecedented legal reforms and the advancement of corporate governance and risk management practises following the 2007-2009 financial crisis. Overall, Alexandridis et al. (2017) report that the mean ACAR for acquirers in public takeovers between 2010 and 2015 is 1.05%, a statistically significant finding at 1% level. Alexandridis et al. (2017) contend that following the financial crisis of 2007 to 2009, public equity-financed deals in the U.S. generate shareholder value instead of destroying it. This observation can be considered economically significant, as the tendency of such deals to generate zero or negative returns – and thereby destroy shareholder value – has been well-documented in prior empirical research. Major difference between these two outcomes can be attributed to changes in regulatory environment and improvements in firm-specific corporate governance, as noted by Alexandridis et al. (2017). These aspects may influence the quality of takeover decisions, particularly in deals valued at least \$500 million or more (mega deals). Moreover, Alexandridis et al. (2017) find that the post-financial crisis availability of low-cost liquidity resulted in a statistically significant reduction in equity-financed deals, with their frequency falling from 56.2% recorded prior to 2010 to 38.1% between 2010 and 2015. The authors report that public equity-financed transactions generated the highest announcement returns, averaging 2.30%, representing one of the

earliest instances a non-negative shift in returns within a sample of public U.S. mergers and acquisitions.

However, Alexandridis et al. (2010) suggest that geographical location may have an impact on the outcome of an M&A deal. More specifically, Alexandridis et al. (2010) investigate whether the geographical setting of a public M&A deal affects its post-deal performance. Moreover, Alexandridis et al. (2010) utilize an extensive global sample of 39 countries from all continents. Alexandridis et al. (2010) further explained that the use of data of global M&A deals derived from the concern that prior empirical research may have overused typical settings in North America or Europe to draw evidence from M&A activity. Alexandridis et al. (2010) showed that in the UUC subset (United States, the United Kingdom, and Canada) – which comprised the most competitive markets – acquirers underperformed relative to the rest of the world (RoW), including Europe, Japan, rest of Asia, Oceania, South Asia, and South America. Alexandridis et al. (2010) measured market competitiveness as the percentage of public firms within a given country (e.g., the U.S.) that were acquired in completed transactions during a particular year. Moreover, the authors show that within the UUC subset, cash-financed deals yield stronger (0.44%) CARs compared to equity-financed deals (-2.29%). Interestingly, in the RoW subset, acquirers exhibit statistically significant ($p < 0.01$) mean CARs in both cash- and equity-financed deals, at 1.72% and 1.63%, respectively. Altogether, Alexandridis et al. (2010) presented that the differences in returns between the RoW and UUC acquirers are positive and statistically significant regardless of the choice of financing method.

Subsequently, Alexandridis et al. (2017) investigate whether the observed improvements in corporate governance post-2009 drive their unconventional findings related to equity-financed deals. They argue that regulatory reforms, along with broader post-crisis developments, may have reshaped executive decision-making in the context of M&A strategies. Furthermore, heightened executive accountability toward shareholders can be instrumental in driving the pursuit of value-enhancing acquisition strategies. Alexandridis et al. (2017) further explain that the Dodd-Frank Act of 2010 introduced

substantial regulatory reforms, notably the restructuring of executive compensation frameworks and the novel mandatory disclosure obligations aimed at enhancing corporate transparency. However, the authors contend that regulatory reforms may explain merely part of the broader transformation, as evidence indicates that large, publicly traded firms underwent even more profound operational shifts, such as the voluntary implementation of more effective executive incentive structures and an elevated emphasis on addressing the risks of strategic objectives and operational execution. Alexandridis et al. (2017) find that the post financial crisis improvements in post-acquisition performance in mega-deals (valued at least \$500 million or more) can be attributed to enhancements in corporate governance. To ensure the robustness of their findings, Alexandridis et al. (2017) extend their analysis to include all public M&A transactions, rather than limiting the sample to solely mega deals, thus confirming the broader applicability of their results.

Altogether, the findings of Alexandridis et al. (2017) provide novel evidence on (large) public equity-financed M&A transactions, contrasting with the prevailing view in the empirical literature that equity-financed deals tend to destroy, rather than create, shareholder value. Moreover, the findings offer additional insight into the potential for major macroeconomic shocks to enhance corporate decision-making processes, thereby generating widespread benefits for shareholders.

The study by Alexandridis et al. (2010) shows that geographical location may influence the choice of payments methods, and that the same payment method in different geographical setting may yield significantly different outcomes on the post-deal performance, thus this phenomenon is generally attributed to the state of market competitiveness. In the most competitive markets, cash-financed deals generate higher CARs in contrast to equity-financed deals. However, outside the most competitive markets, both cash- and equity-financed transactions are associated with positive CARs. This finding is somewhat significant as Martynova and Renneboog (2009) suggest that equity-financed deals are generally value-destroying. Alexandridis et al. (2010) argue

that the generally negative outcomes of equity-financed deals are mitigated in the RoW subset, likely due to the positive effect of lower premiums paid as a result of reduced market competition. Alexandridis et al. (2010) continue that this claim is based on the observation that acquirers in less competitive markets experience approximately half the abnormal return gains observed in the most competitive markets. This finding appears to be consistent with higher average premium paid in more competitive markets. Higher average premium indicates that gains from acquisitions are unevenly accrued between the acquirer and the target company. Thus, if market competitiveness leads to more uneven distribution of acquisition gains between the acquirer and the target, it becomes evident that the acquirer tends to lose shareholder value, while the target gains it.

Datta et al. (2001) propose that CEOs with high equity-based compensation manage to acquire target firms with higher growth potential. However, they continue to show that equity-financed deals generate negative CARs following the acquisition announcement. Nevertheless, Tseng and Chen (2024) argue that a widely acknowledged motive for acquiring firms to pursue M&A activity is the strategic acquisition of the target firm's intangible assets. The authors emphasize that the proprietary nature of intangible assets makes them inherently difficult to duplicate, thus enhancing their strategic value in M&A transactions. Additionally, many intangible assets – such as customer goodwill – are inherently difficult to observe thus further motivating full-firm acquisitions. These aspects pose certain efficiencies in the context of M&As. First, the valuation of intangible assets poses significant challenges, as target firms may overprice them. Consequently, acquiring firms may need to devote additional resources to conduct thorough due diligence. Second, as a firm is acquiring a target firm with substantial intangible assets, it becomes more challenging to fully deliver those assets. Thus, this increases the risk of sellers underdelivering, potentially resulting in costly post-acquisition legal or enforcement actions for the acquirer.

Tseng and Chen (2024) further argue that the use of equity as a payment method can alleviate the risks of overvaluation and underdelivery, particularly as target firms exhibit characteristics such as advanced technological capabilities and high levels of customer goodwill. Accordingly, they hypothesize that equity financing is more frequently employed in such conditions. Tseng and Chen (2024) suggest that the likelihood of choosing equity as a payment method decreases as the acquirer gains more experience with M&As. Moreover, the experienced acquirers should also possess enhanced skills in evaluating potential synergies within the transaction. The authors also note that acquirers with broader business portfolios tend to be more capable of addressing potential market inefficiencies, owing to their diversified operational experience. Furthermore, acquirers with more diversified business portfolios tend to incur lower costs related to due diligence, likely due to their enhanced institutional knowledge and recourse capabilities. As discussed earlier in this thesis, Tseng and Chen (2024) also emphasize that equity-financed acquisitions tend to be received negatively by the market, as they often convey a signal of stock overvaluation (see e.g., Martynova & Renneboog, 2009). Moreover, the target firm becomes a partial owner of the new, combined business, but does not gain proportional control or decision-making authority. This may lead to mismanagement by the acquirer, resulting in a decline in the swapped stock value, and, consequently, a reduced overall payoff to the target from the transaction.

Tseng and Chen (2024) find a positive and statistically significant association between the use of equity financing and the presence of high-quality technology and strong customer goodwill in target firms, thus supporting their hypothesis. The analysis indicates that as acquirers gain more M&A experience, their likelihood of utilizing equity financing declines significantly, evidenced by a negative and statistically significant coefficient. Moreover, when the acquirer has a well-diversified business portfolio, the use of equity-financing decreases significantly resulting in negative coefficient between the two variables. This result supports Tseng and Chen's (2024) hypothesis that well-diversified acquirers possess greater capacity to manage market inefficiencies, owing to

their extensive operational experience. Overall, Tseng and Chen's (2024) paper shows that equity financing can serve as a mechanism to align the interests of both acquirers and target firms, hence alleviating issues related to factors, such as the overvaluation of target firm's intangible assets and the risk of underdelivery that can contribute to undesirable post-acquisition outcomes. The study by Tseng and Chen (2024) suggests that equity-financing does not yield uniform outcomes for all high-growth targets but is particularly beneficial for those with high-quality intangible assets – an aspect not accounted for in the earlier work by Datta et al. (2001).

5 Data and methods

This chapter outlines the dataset utilized in the paper and details the methodologies employed for data collection. Moreover, this chapter introduces the initial dataset, outlines the study's methodological approach, describes the data filtering criteria, and provides descriptive statistics of the research sample. Additionally, the limitations associated with the data and methodological choices are discussed.

5.1 Data collection

The data for this study were obtained through LSEG Workspace Refinitiv Database. The initial data sample contained 4,742 M&A transactions completed between 2018-2023, based on the following criteria:

1. M&A data from U.S. publicly listed companies with an announcement and effective date between 1.1.2018 and 31.12.2023
2. Deal status: Completed
3. Acquirer obtains at least 50% of the target firm
4. Total deal value known
5. Deal value is at least \$1 million
6. Acquirer is listed on NYSE or Nasdaq
7. Breakdown of payment type: cash, stock, or other
8. Type of bid
9. Premium paid to target 4 weeks prior to the announcement
10. Market capitalizations of both acquirer and target
11. Target's book-to-market value 4 weeks prior to the announcement
12. Stock prices of both acquirer and target on the announcement day, and 1 and 10 days after
13. SDC deal number
14. Acquirer stock price data for at least -100 business days from deal announcement date

Based on these criteria, the descriptive statistics for deals completed between the research period are as follows in Table 1 and Table 2:

Deal Characteristics					
	Deal Size	Acquirer Market Cap	Target Market Cap	Premium (%)	Target Book-to-Market Ratio
Mean	1051.04	140562.25	363.16	8.71	0.38
Standard Error	59.34	128655.00	37.64	2.99	0.06
Median	175.00	191.64	0.00	0.00	0.00
Mode	100.00	0.00	0.00	0.00	0.00
Standard Deviation	4086.00	8859464.21	2591.71	206.16	3.98
Sample Variance	16695391.26	78490106021316.00	6716980.37	42500.18	15.83
Kurtosis	174.91	4741.40	198.25	4138.63	1765.31
Skewness	11.53	68.86	12.86	62.76	37.07
Range	86830.16	610074812.96	50977.38	13803.05	210.89
Minimum	1.00	0.00	0.00	-82.32	0.00
Maximum	86831.16	610074812.96	50977.38	13720.73	210.89
Sum	4984044.97	666546179.22	1722097.09	41286.63	1785.40
Total	4742	4742	4742	4742	4742

Table 1. Descriptive statistics of the full sample (LSEG Workspace Refinitiv Database).

Distribution of Payment Method		
Payment Method	Number of Acquisitions	% of Subsample
Cash	871	18 %
Stock	548	12 %
Mixed	3318	70 %
Total	4742	100 %

Table 2. Distribution of payment method (LSEG Workspace Refinitiv Database).

The initial data sample consists of 4,742 public acquisitions during the period January 1, 2018, to December 31, 2023. The deals are listed in the LSEG Workspace Refinitiv Database. Deal size is measured in U.S. dollars. Cash refers to transactions financed with 100 percent cash. Equity refers to transactions financed with equity securities. Mixed refers to a payment method that includes cash, equity or other forms of financing. Acquirer Market Capitalization (Acquirer Market Cap) is measured 4 weeks prior to the acquisition announcement date. Target Market Capitalization (Target Market Cap) date is measured four weeks prior to the acquisition announcement date. Acquisition premium is premium (Premium) offered offer price to target closing stock price four

weeks prior to the original announcement date. Target Book-to-Market Ratio is the target firm's book value of equity divided by market value of equity.

The descriptive statistics on Table 1 show that the mean deal value for 4,742 completed deals was approximately 1051 million dollars during the period 2018 to 2023, with a median of 175 million dollars explained also by the positive skewness of the sample. An average acquirer's market capitalization was 140,562.25 million dollars, whereas the median acquirer's market capitalization was merely 191.64 million dollars. An average target firm's market capitalization was 363.15 million dollars, with a median value of 37.64 million dollars. The average premium offered to the target firm was 8.71 percent, while the median was zero percent. An average target firm's book-to-market value was 0.38, suggesting that acquirers may have targeted firms perceived to be undervalued.

Table 2 summarizes the distribution of payment methods in 4,742 transactions. As can be seen from the table, cash was employed in 18 percent of the transactions, stock in 12 percent, while mixed offers constituted a predominant 70 percent of the total sample. Compared to the study of Datta et al. (2001), mixed offers have increased significantly in prevalence, as their study reported fewer than 30 percent of transactions were financed using mixed offers. All-stock financing has encountered a significant decline, decreasing from over 50 percent to the currently observed level of 12 percent.

Since the primary dependent variable in this study is the cumulative abnormal return (CAR) of publicly listed U.S. firms, market return data are necessary for computing CARs. The S&P 500 index is employed as the benchmark index, reflecting the study's focus on public U.S. companies. Moreover, the index data correspond to the same time frame as the stock price data to ensure consistency in the analysis.

To examine whether CEO compensation affects the choice of payment method in M&A transactions and whether this choice has statistically significant implications as measured by cumulative abnormal returns (CARs), this study draws on executive

compensation data from the ExecuComp database. ExecuComp is well-suited for this analysis, as it provides detailed compensation information for the top five executives across a wide range of publicly listed U.S. firms. The study relies on ExecuComp's standardized definitions for the following compensation components:

1. Base Salary: The fixed annual salary earned during the fiscal year
2. Bonus: Annual performance-based bonuses
3. Stock Awards: The value of equity-based awards (e.g., restricted stock) without option-like features, expensed during the fiscal year
4. Option Awards: The fair value of option based compensation, including stock options and stock appreciation rights, recorded in the fiscal year
5. New Option Awards (Option_Awards_FV): The fair value of all newly granted options during the fiscal year
6. Change in Pension Value (+/-): Includes both above-market earnings on deferred compensation and increases in actuarial value of pension and benefit plans
7. Other compensation: Includes non-salary benefits such as personal perks, retirement contributions (e.g. 401K Plans), and insurance premiums

In this study, total CEO compensation is defined as the sum of base salary, bonus, stock awards, option awards, new option awards, change in pension value (positive or negative), and other compensation, in order to capture the most comprehensive and relevant measure of CEO compensation, as Datta et al. (2001).

Given the relatively large dataset capturing a significant share of publicly listed U.S. mergers and acquisitions between 2018 to 2023, the final research sample was subjected to additional screening based on the following criteria:

1. Target company is based in the U.S.
2. Observations missing the target's book-to-market value were excluded

3. Only deals where the acquiring firm's CEO compensation data is available in the ExecuComp dataset year prior to the acquisition announcement were included in the final sample
4. Deals that became effective in 2024 were excluded
5. Acquirer must have stock price data available from -100 to +10 business days around the deal announcement (starting from 1.12.2016 for deals completed in 2018, and from 29.12.2017 for deals completed in 2019-2023)
6. If an acquirer completed more than one deal during the sample period, only the first deal was included

This filtering process resulted in a final sample of 157 deals completed during 2018-2023, with Table 3 providing descriptive statistics of the deals and Table 4 represents the distribution of payment method across these 157 deals.

	Deal Characteristics				
	Deal Size	Acquirer Market Cap	Target Market Cap	Premium (%)	Target Book-to-Market Ratio
Mean	5735.85	22057.48	4098.80	119.85	3.37
Standard Error	1044.49	3670.06	673.32	87.31	0.43
Median	1622.86	4669.86	1197.69	22.97	1.62
Mode	#N/A	0.00	#N/A	0.00	1.58
Standard Deviation	13087.47	45985.76	8436.73	1093.95	5.33
Sample Variance	171281790.40	2114690427.32	71178438.05	1196723.58	28.40
Kurtosis	20.33	21.97	16.17	156.11	26.12
Skewness	4.30	4.22	3.85	12.48	4.52
Range	86810.12	326783.34	50972.57	13759.06	44.06
Minimum	21.04	0.00	4.82	-38.33	0.15
Maximum	86831.16	326783.34	50977.38	13720.73	44.22
Sum	900528.07	3463024.41	643510.92	18816.45	529.03
Total	157	157	157	157	157

Table 3. Descriptive statistics of 157 deals (LSEG Workspace Refinitiv Database).

Distribution of Payment Method		
Payment Method	Number of Acquisitions	% of Subsample
Cash	49	31 %
Stock	59	38 %
Mixed	49	31 %
Total	157	100 %

Table 4. Distribution of payment method (LSEG Workspace Refinitiv Database).

The final sample consists of 157 public acquisitions after further filtering during the period January 1, 2018, to December 31, 2023. The firms are listed in the LSEG Workspace Refinitiv Database. Deal size is measured in U.S. dollars. Cash refers to transactions financed with 100 percent cash. Equity refers to transactions financed with equity securities. Mixed refers to a payment method that includes cash, equity or other forms of financing. Acquirer Market Capitalization (Acquirer Market Cap) is measured 4 weeks prior to the acquisition announcement date. Target Market Capitalization (Target Market Cap) date is measured four weeks prior to the acquisition announcement date. Acquisition premium is premium (Premium) offered offer price to target closing stock price four weeks prior to the original announcement date. Target Book-to-Market Ratio is the target firm's book value of equity divided by market value of equity.

Table 3 indicates that the average deal size for transactions completed between 2018 and 2023 is \$5,735.85 million, substantially exceeding the full sample mean of \$1,051 million across 4,472 M&A transactions. This upward shift in the mean transaction value likely results from the applied sample restrictions—specifically, the inclusion of only those deals for which acquiring firm CEO compensation data, adequate stock price histories, target firm book-to-market ratios, and U.S. domicile of the target were available. These criteria may tend to favor the inclusion of larger, high-profile acquisitions, commonly referred to as “mega-deals” (typically valued at over \$500 million, see e.g., Alexandridis et al., 2017), which are more prevalent in mature, developed markets particularly in the U.S. Moreover, the median market capitalization of acquiring firms value was 4669.86 million dollars, representing a substantial increase compared to the full sample. Also, the acquirers appear to target larger firms, as both the mean and median market capitalization of targets was \$4098.80 million and \$1197.69 million. The premium offered to the target firms was 119.85 percent, representing a significant increase relative the full sample. As previously noted, Alexandridis et al. (2010) suggest that such elevated premiums may be attributable to intensified acquisition market competition.

Table 4 shows the distribution of payment method across 157 transactions. As shown in the table, both cash and mixed each comprise 31 percent of the sample, whereas stock financing emerges as the most prevalent financing method, accounting for 38 percent of the deals. This represents a notable shift in financing patterns relative to the full sample: stock-financed deals represent the most prevalent choice, whereas mixed offers have declined by more than half, and cash offers have increased to the same level of frequency as mixed offers.

Descriptive Statistics of CEO Compensation								
	<i>Base_Salary</i>	<i>Bonus</i>	<i>Stock_awards</i>	<i>Option_awards</i>	<i>New_Options_Granted</i>	<i>Pension_chg</i>	<i>Other_comp</i>	<i>Total_comp</i>
Mean	979.23	343.11	5295.78	15574.13	1703.88	238.40	247.23	22677.88
Standard Error	32.71	98.80	782.97	14541.75	222.51	94.43	60.33	14519.92
Median	950.00	0.00	3000.04	0.00	1031.28	0.00	85.90	5681.88
Mode	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	#N/A
Standard Deviation	409.79	1237.99	9810.54	182207.61	2269.14	1183.16	755.90	181934.09
Sample Variance	167930.32	1532607.69	96246756.08	33199612400.05	5149016.98	1399857.71	571378.29	33100013457.86
Kurtosis	6.44	26.52	55.76	156.97	7.35	100.11	120.62	155.95
Skewness	1.51	4.94	6.65	12.53	2.19	9.39	10.41	12.47
Range	3000.00	9000.00	98322.84	2283988.50	13697.80	13392.52	9067.79	2283530.13
Minimum	0.00	0.00	0.00	0.00	0.00	-9.14	0.00	514.75
Maximum	3000.00	9000.00	98322.84	2283988.50	13697.80	13383.38	9067.79	2284044.88
Sum	153739.06	53868.02	831438.20	2445138.37	177203.35	37428.75	38614.67	3560427.07
Total	157	157	157	157	104	157	157	157

Table 5. Descriptive statistics of CEO compensation during 2018 to 2023 (ExecuComp).

Table 5 presents summary statistics on CEO compensation included in this study. The average base salary is approximately \$973.23 thousand during the research period, with a median of \$950.00 thousand. The observed minimum and maximum base salaries are \$0.00 and \$3000.00 thousand, respectively. The presence of zero salaries is notable indicating that a minor subset of firms may choose to compensate their CEOs entirely through variable pay components, such as equity-based incentives. Furthermore, a substantial portion of CEO compensation during the research period originated from redeemed option awards, which had a mean value of \$15,574.13 thousand. However, the median value of \$0.00 suggests that only a limited number of CEOs realized such compensation, indicating significant variation across the sample. Additionally, redeemed option awards exhibited substantial variation, ranging from a minimum of \$0.00 to a maximum of \$2,283,988.50 thousand, highlighting the considerable disparity in equity-based compensation across CEOs in the sample.

5.2 Methodology

In this study, the acquiring firm's share returns for both the 60-day estimation window (-100, -40) and the three-day event window (-1, +1) are calculated using the traditional logarithmic return method, and then transformed using the natural logarithm, due to its advantages in time-series analyses. Furthermore, logarithmic returns exhibit advantageous statistical properties, most notably their tendency toward a more normal distribution. This characteristic facilitates their use in econometric analyses, particularly those relying on the assumption of normality in linear regression models. The equation is as follows:

$$R_{it} = \ln \left(\frac{P_{it}}{P_{i(t-1)}} \right) \quad (3)$$

Given that the primary dependent variable in this study is the cumulative abnormal return (CAR), abnormal returns (ARs) were first estimated using the market model and subsequently summed over the event window to derive CARs. The estimation window was 60 (-100, -40) business days, while the event window was three days (-1, +1). Market model utilized to calculate CARs is noted by Equation 4:

$$CAR_{i(-1,+1)} = \sum_{-1}^{+1} (R_{it} - (\alpha_i + \beta_i R_{mt})) \quad (4)$$

As indicated by Equation 4, the cumulative abnormal return (CAR) is computed over a three-day event window that includes the day before the announcement, the announcement day, and the day after.

The key independent variables in this study are the classifications of executives as either high- or low-equity-based compensation (EBC). Executives are identified as high-EBC if the value of new options granted in the year preceding the acquisition announcement exceeds the sample average (14.36%). While Datta et al. (2001) similarly categorized executives based on new stock option grants, they used the sample median as the cutoff

point. Given that the median value in the current sample is zero, using it as a basis for classification would be uninformative. Consequently, this study adopts the mean value as a more appropriate threshold.

The empirical analysis uses regression models typically employed in time-series research, including Ordinary Least Squares (OLS) and Multinomial Logit Regression. OLS is a standard linear regression technique that estimates the relationship between a dependent variable and one or more independent variables by minimizing the sum of squared residuals – i.e., the differences between the observed and predicted values. This method identifies the line of best fit by minimizing overall prediction error. On the other hand, multinomial logit regression is particularly useful in instances, where the variable can have two or more values. This issue is present in this study, as the payment method can have three potential outcomes, cash, stock, or mixed. Furthermore, given that this study seeks to estimate the likelihood of choosing among the three identified payment methods—cash, stock, or mixed—as a function of high equity-based compensation (EBC), the use of multinomial logit regression is methodologically well-justified.

6 Results

This section reports the results of multiple regression analyses, centred around several models and supported by a series of more targeted specifications. The first Ordinary Least Squares (OLS) regression investigates the relationship between cumulative abnormal returns (CARs) over the event window $(-1, +1)$, payment method, and whether the acquiring CEO receives high equity-based compensation (EBC). The second model extends the analysis by incorporating the acquisition premium paid. Additional explanatory variables—including the logarithm of deal value, the logarithm of acquirer market capitalization and the logarithm of the target firm’s book-to-market ratio—are introduced in subsequent models to further refine the analysis. Finally, OLS regression with industry and year fixed effects are conducted. After the OLS regressions, a multinomial logit approach is used to determine the probabilities of high-EBC CEOs utilizing cash, stock, or mixed payment methods. The base equation for the OLS regressions is as follows:

$$r = \beta_0 + \beta_1 X + \varepsilon_i \quad (5)$$

where

r = the dependent variable

B_0 = the intercept

B_1 = the independent variable

ε = error term

6.1 OLS regressions

This section explores a detailed examination of multiple regression models that aim to determine whether CEO compensation affects the choice of financing in M&A deals, and whether this choice has positive or negative announcement returns using the predefined estimation and event windows. The equations utilized for the regression analyses are as follows:

$$CAR_{(-1,+1)} = \beta_0 + \beta_1 HIGH_EBC_i \varepsilon_i \quad (1)$$

$$CAR_{(-1,+1)} = \beta_0 + \beta_1 HIGH_EBC_i + \beta_2 STOCK_i + \beta_3 MIXED_i \varepsilon_i \quad (2)$$

$$CAR_{(-1,+1)} = \beta_0 + \beta_1 HIGH_EBC_i + \beta_2 STOCK_i + \beta_3 MIXED_i + \beta_4 PREMIUM_i \varepsilon_i \quad (3)$$

$$CAR_{(-1,+1)} = \beta_0 + \beta_1 HIGH_EBC_i + \beta_2 STOCK_i + \beta_3 MIXED_i + \beta_4 PREMIUM_i + \beta_5 DEAL_SIZE + \beta_6 TARGET_BM_i + \beta_7 ACQUIRER_MARKET_CAP_i \varepsilon_i \quad (4)$$

where

$CAR_{(-1,+1)}$ = dependent variable, representing CARs during the event window (-1,+1)

β_0 = the intercept

β_1 = independent variable representing executives categorized as high-EBC executives

β_2 = independent variable representing stock as payment method

β_3 = independent variable representing mixed offers (stock and cash, or other) as payment method

β_4 = independent variable representing premium paid to target

β_5 = independent variable representing the deal value

β_6 = independent variable representing target book-to-market ratio

β_7 = independent variable representing acquirer's market capitalization

ε_i = error term

In Equations 1, 2, 3, and 4, the variable HIGH_EBC denotes CEOs who received a greater-than-average volume of new option grants in the fiscal year preceding the acquisition announcement. The variables STOCK and MIXED represent alternative payment methods, with CASH serving as the reference category, in evaluating their respective impacts on CARs. Variable PREMIUM (%) represent premium paid to target four weeks

prior to the announcement date, variable DEAL SIZE represents the deal value, while variable TARGET BOOK-TO-MARKET represents the target firm's book-to-market ratio four weeks prior to the announcement date. Finally, variable ACQUIRER_MARKET_CAP represents the acquiring firm's market capitalization four weeks prior to the announcement date. Table 6 provides the results :

Variable	(1)	(2)	(3)	(4)
C	-0.0148778*	0.0055229	0.0073811	0.0173913
HIGH_EBC	-0.106663	-0.009992	-0.0106372	-0.0081858
MIXED		-0.0341722**	-0.0356509**	-0.0328613*
STOCK		-0.0265462*	-0.0280329*	-0.0245147
PREMIUM (%)			-0.0005072***	-0.0004962***
DEAL SIZE				-0.0029618
TARGET BOOK-TO-MARKET RATIO				-0.0080079
ACQUIRER MARKET CAP				0.0012409
YEAR FIXED EFFECTS	NO	NO	NO	NO
INDUSTRY FIXED EFFECTS	NO	NO	NO	NO
R-Squared	0.0037	0.0323	0.0365	0.00419
Observations	157	157	157	157

Table 6. Impact of High Equity-Based Compensation (HIGH_EBC), Payment Method Choice (MIXED and STOCK vs. CASH), Premium Paid to Target Weeks Prior to the Announcement Date (PREMIUM %), Deal Value (DEAL SIZE), Target Firm's Book-to-Market four weeks prior to the announcement date, and the Acquiring Firm's Market Capitalization four weeks prior the the announcement date on CARs. Statistical significance of CARs is represented as ***, **, * indicating significance at 10%, 5%, and 1% levels, respectively.

Table 6 reveals that CEOs with high equity-based compensation do not yield statistically significant improvements in cumulative abnormal returns (CARs) compared to those with lower equity-based incentives. Specifically, in Equations 1,2, 3, and 4, high-EBC CEOs are associated with CARs of -10.60%, -0.99%, -1.10%, and -0.82% compared to low-EBC CEOs; however, these findings are not statistically significant. This finding differs significantly from Datta et al. (2001) results since they show that firms managed by executives with high-EBC exhibit statistically significant two-day (-1,0) CARs of 0.88% at the 1% significance level. Additionally, Feito-Ruiz and Renneboog (2017) indicate that acquisitions undertaken by firms with high-EBC CEOs yield higher post-acquisition CARs (0.70%) in contrast to firms managed by CEOs with lower EBC. However, the Table 6 shows that choice of payment method appears to have a statistically meaningful impact

on post-acquisitions returns. Specifically, acquisitions financed through a combination of cash and stock or other result in CARs that are 3.40% lower than those financed solely with cash, with statistical significance at the 5% level. Similarly, stock-only transactions are associated with a 2.65% reduction in CARs relative to all-cash deals. These findings are consistent Alexandridis et al. (2010) who show that equity-financed deals generated statistically significant negative announcement returns of -2.29%. However, Martynova and Renneboog (2009) document different results as in their sample equity-financed deals generated statistically significant 0.49% announcement returns, although lower than cash-financed deals, 0.79%, respectively.

Table 6 further shows that mixed financing results in CARs approximately 3.6% lower than those of all-cash deals, with statistical significance at the 5% level. This finding is consistent with Alexandridis et al. (2012) who showed that mixed offers generate statistically significant at 10% level negative announcement returns of 1.98% during the period of 2003 to 2007. However, Martynova and Renneboog (2009) show mixed financing with cash and equity yielded statistically significant at 1% level positive 1.22% announcement returns. In addition, all-stock deals generate lower CARs relative to cash-only deals, with a -2.80% difference, also statistically significant at the 5% level. This finding is also consistent with Alexandridis et al. (2012) and Alexandridis et al. (2010) who show that equity-financed deals yielded lower and more negative CARs compared to solely cash-financed deals. Table 6 further indicates that larger acquisition premiums paid to the target firm are significantly associated with marginally lower cumulative abnormal returns (CARs), with a negative effect of 0.05% that is statistically significant at the 1% level.

Table 7 represents whether mega deals (large deals valued at over \$500 million) yield statistically significant positive returns, as shown by Alexandridis et al. (2017).

Variable	(1)	(2)	(3)
LARGE DEAL (CASH)	0.004024		
LARGE DEAL (MIXED)		-0.0376797**	
LARGE DEAL (EQUITY)			-0.0182247
YEAR FIXED EFFECTS	NO	NO	NO
INDUSTRY FIXED EFFECTS	NO	NO	NO
R-Squared	0	0	0
Observations	32	40	41

Table 7. Effect of large-scale transactions (\$500 million or more) on cumulative abnormal returns (CARs). Statistical significance of CARs is represented as ***, **, * indicating significance at 10%, 5%, and 1% levels, respectively.

Among the 157 transactions analysed, 113 qualify as large deals. Moreover, 32 large deals were financed with cash, 40 with mixed financing, and 41 with stock. Despite their limited representation in the sample, the associated coefficient is statistically significant at the 5% level. As shown in Table 7, only mixed offers yield statistically significant negative announcement returns of approximately -3.77%. These findings differ significantly from Alexandridis et al. (2017) results from the period of 2010 to 2015, when public mega-deals generated positive 3.60% ACARs at 1% significance level. However, these results conform the study by Gao and Bao (2022), who showed that mega deals yielded negative announcement returns, but the difference was only statistically significant when the announcement returns of mega deals were analysed between higher and lower leverage firms.

6.2 Robustness checks

To ensure robustness of the main results, the regression analysis was re-estimated with year and industry fixed effects. These fixed effects are used to control for unobserved heterogeneity, which are differences across years or industries that may bias the results. More specifically, year fixed effects control for macroeconomic or market-related factors that affect all companies in a given year, thus absorbing factors such as business cycle effects and changes in interest rate environments.

Table 8 includes the aforementioned control variables to the regression, including regression (1) standard OLS and regression (2) year-fixed effects and (3) year and industry fixed effects. Table 8 includes the regression analyses with industry and year fixed effects to better capture whether unobserved firm-level or time-related characteristics influence the results and also to account for the robustness of the key results.

Variable	(1)	(2)	(3)
C	0.0173913	0.0273623	0.0823185
HIGH_EBC	-0.0081858	-0.0071707	0.0034066
MIXED	-0.0328613*	-0.0374538**	-0.0561286***
STOCK	-0.0245147	-0.037312**	-0.0757918***
PREMIUM (%)	-0.0004962***	-0.004708***	-0.0009598***
DEAL SIZE	-0.0029618	-0.0019561	-0.0002262
TARGET BOOK-TO-MARKET RATIO	-0.0080079	-0.0070311	0.0011
ACQUIRER MARKET CAP	0.0012409	-0.0015629	-0.0054503
YEAR FIXED EFFECTS	NO	YES	YES
INDUSTRY FIXED EFFECTS	NO	NO	YES
R-Squared	0.00419	0.0808	0.2231
Observations	157	157	157

Table 8. The Impact of Deal Characteristics on CARs with Year and Industry Effects. Statistical significance of CARs is represented as ***, **, * indicating significance at 10%, 5%, and 1% levels, respectively.

After controlling for year fixed effects in regression (2), mixed offerings yielded CARs in contrast to cash-financed offers of -3.75% representing statistical significance at 5% level, stock offerings yielded CARs of -3.73% worse than cash-offerings at 5% significance level, which did not present statistical significance in prior regressions. The latter suggests that the relationship was earlier being masked by noise or omitted variable bias before controlling for variation within groups. The same impact of robustness checks can be seen on regression (3), where mixed offers yielded -5.61% returns in contrast to cash-financed deals at 1% significance level, while the negative returns of stock offerings decreased to a further -7.58% CARs compared to cash-offerings at 1% significance level.

Also, the regression model's explanatory power increases substantially after controlling for both year and industry fixed effects.

6.3 Multinomial logit regression

This section presents the results of a multinomial logit regression that investigates how the likelihood of selecting all-cash, mixed, or all-stock payment methods in M&A transactions varies between high- and low-equity-based compensation CEOs. As was discussed earlier, multinomial logit regression is a plausible regression option as it takes into consideration if the variable in question has two or more potential values. The two equations estimating the log-odds of choosing stock or mixed relative to cash (the base category):

$$\log \left(\frac{P(STOCK)}{P(CASH)} \right) = \beta_{0,STOCK} + \beta_{1,STOCK} \cdot HIGH_EBC \quad (1)$$

$$\log \left(\frac{P(MIXED)}{P(CASH)} \right) = \beta_{0,MIXED} + \beta_{1,MIXED} \cdot HIGH_EBC \quad (2)$$

where

HIGH_EBC = 1 for CEOs with above-average equity-based compensation. The probabilities predicted for each payment method by CEO's EBC group were obtained using post-estimation margins, which refer to the conversion of first calculated log-odds into predicted probabilities due to log-odds hard interpretation directly.

Consequently, these log-odds are then converted to predicted probabilities for each payment method using:

$$P(j) = \frac{e^{X\beta_j}}{1 + \sum_{k=2}^K e^{X\beta_k}} \text{ for } j \in \{MIXED, STOCK\} \quad (3)$$

$$P(CASH) = \frac{1}{1 + \sum_{k=2}^K e^{X\beta_k}} \quad (4)$$

Variable	HIGH_EBC	LOW_EBC	Difference (%-points)
CASH	0.3035714***	0.3168317***	-0.013
MIXED	0.3392857***	0.2970294***	+0.042
STOCK	0.3571429***	0.381386***	-0.024

Table 9. Multinomial Logit Regression Results: Predicted probabilities of high- and low-EBC executives selecting cash, mixed, or stock financing methods in M&A deals, and associated percentage point differences. Statistical significance of CARs is represented as ***, **, * indicating significance at 10%, 5%, and 1% levels, respectively.

As shown in Table 9, executives with low equity-based compensation (EBC) are 1.3 percentage points more likely to opt for all-cash financing compared to their high-EBC counterparts, a difference that is statistically significant at the 1% level. Conversely, high-EBC executives demonstrate a greater propensity to use mixed payment structures, with a 4.2 percentage point increase relative to low-EBC executives, also significant at the 1% level. Furthermore, the likelihood of using stock financing is 2.4 percentage points lower for high-EBC executives, a statistically significant finding at the 1% level.

7 Conclusions

Mergers and acquisitions (M&As) represent one of the most prominent strategies employed by firms worldwide to achieve non-organic growth, gain access to new markets, or acquire strategic intangible assets such as patents or advanced technologies. Despite their continued popularity, prior empirical evidence indicates that M&A transactions are more frequently associated with value destruction than value creation. Nevertheless, the academic literature has yet to reach a definitive consensus on the key determinants contributing to such adverse outcomes, despite the global M&A deal value reaching \$2.5 trillion in 2023 (IMAA, M&A Statistics, 2025).

This thesis investigates whether CEO compensation influences the financing choice in mergers and acquisitions (M&As), and whether this choice affects cumulative abnormal returns (CARs) following the deal announcement, using data from the period of 2018 to 2023 in the U.S. The study utilizes M&A transaction and stock price data from the LSEG Workspace Refinitiv database and CEO compensation data from ExecuComp. The initial dataset included 4,742 completed M&A transactions by publicly listed U.S. companies between January 2018 and December 2023. The dataset was appropriately narrowed based on the filtering criteria presented in Chapter 5. After comprehensive screening, 157 M&A transactions by public U.S. firms remained in the final sample.

To address the research question, the CEOs of these 157 deals completed by public U.S. firms were classified into high and low equity-based compensation (EBC) categories. A CEO is classified as high-EBC (low-EBC) executive if the value of new stock options granted during the fiscal year prior to the acquisition announcement exceeds (is below) the average for the sample. Additional explanatory variables for CARs include the payment method (cash, stock, or mixed), acquiring firm's market capitalization, target firm's book-to-market value (four weeks prior to the announcement), the acquisition premium (%), and whether the transaction qualifies as a large deal (valued at over \$500 million). Furthermore, a multinomial logit regression is employed to estimate the probability of high-EBC and low-EBC executives choosing each payment method.

This study finds that in the sample of 157 M&A deals, contrary to expectations, higher equity-based compensation for CEOs is not significantly associated with higher acquisition announcement abnormal returns. The effect is negative and statistically insignificant, suggesting that higher EBC may not improve market perception of the deal or align CEO and shareholder interests in a measurable way — at least in the short term. Moreover, CEOs with higher equity-based compensation are not more likely to choose cash as the deal financing method. In fact, they are slightly more inclined to use mixed financing, with marginally lower use of cash and stock compared to their low-EBC counterpart. Moreover, the results in this study do not support the view that equity-based compensation leads to heightened shareholder value creation, as measured by CARs. While mixed and stock-financed deals are associated with lower returns, CEO compensation structure does not appear to influence market response in a statistically meaningful way.

However, regression results provide support to the expectation that in contrast to cash-financed acquisitions, stock- and mixed-financed deals are associated with lower post-acquisition cumulative abnormal returns. Specifically, mixed deals underperform cash deals by 3.42 percentage points at 5% significance level, whereas stock-financed deals underperform by 2.65 percentage points at 10% significance level. These findings suggest that markets interpret cash-financing more favourably, possibly due to stronger signalling effects (see e.g., Martynova & Renneboog, 2009) or reduced agency costs. After controlling for year and industry fixed effects, mixed offers yielded -5.60% CARs at 1% significance level and all-stock offers -7.60% CARs at 1% significance level in contrast to all-cash offers. Also, the results indicate that executives with low-EBC are 1.3 percentage points more likely to opt for all-cash financing compared to their high-EBC counterparts, a difference that is statistically significant at the 1% level. Conversely, high-EBC executives demonstrate a greater propensity to use mixed payment structures, with a 4.2 percentage point increase relative to low-EBC executives, also significant at the 1% level. Furthermore, the likelihood of using stock financing is 2.4 percentage points lower for high-EBC executives, a statistically significant finding at the 1% level. Although

Alexandridis et al. (2017) report that equity-financed mega-deals (transactions exceeding \$500 million) were not value-destructive in the post-financial crisis environment, this study's findings do not corroborate that conclusion. On the contrary, mega-deals examined in this study exhibit a statistically significant decline in cumulative abnormal returns (CARs) of -3.77% at the 5% significance level for mixed offers, while all-cash and all-equity offers did not yield statistically significant CARs.

In summary, the findings of this thesis indicate that higher levels of equity-based compensation are not associated with improved post-acquisition announcement returns: the observed effect is both negative and statistically insignificant. This outcome suggests that, from the perspective of the immediate market reaction, increased equity-based incentives may neither enhance investor perceptions of the acquisition nor meaningfully align managerial and shareholder interests. Consequently, the first hypothesis is rejected. Moreover, although stock- and mixed-financing deals are generally met with lower announcement returns, CEO compensation structures do not appear to exert a statistically significant influence on the market's initial response. Additionally, low-EBC executives are more likely to utilize cash financing compared to their high-EBC counterparts. Thus, the second hypothesis is rejected. However, the results support the expectation that stock-financed and mixed-financed acquisitions generate lower announcement returns relative to cash-financed deals. Therefore, the third hypothesis is supported by the findings. Furthermore, the results indicate that mega-deals do not produce positive acquisition announcement returns. On the contrary, they are perceived as value-destroying, evidenced by statistically significant at 5% negative CARs. Hence, the fourth hypothesis is also rejected.

7.1 Limitations and practical implications

This study is subject to some limitations. The research period of this study (2018–2023) overlapped with several macroeconomic disruptions, including the global Covid-19 pandemic and ongoing geopolitical tensions in Europe and the Middle East. These exogenous shocks may have influenced the study's findings, given that prior empirical

research, such as Bloom (2009), highlights the substantial impact of uncertainty and economic shocks on overall market dynamics. Bloom (2009) further argues that uncertainty, typically proxied by heightened market volatility, tends to surge in the aftermath of major economic or geopolitical shocks. This elevated uncertainty could have influenced the aggregate returns observed during the study's sample period.

A key limitation of this study lies in its relatively small sample size, which results from stringent data requirements and practical constraints. For comparison, Datta et al. (2001) examined 1,799 M&A transactions completed over a five-year period (1993–1998) – equivalent in duration to the present study but encompassing a significantly broader segment of the M&A market. Nevertheless, despite the limited sample, this study offers novel insights into the intersection of CEO compensation and acquisition activity, thereby contributing meaningfully to the existing body of empirical research. Furthermore, given that this study focuses on the immediate market response to acquisition announcements, the long-term implications of such transactions may diverge from the short-term announcement effects captured in this analysis.

Additionally, while equity-based compensation is both theoretically and practically regarded as an effective mechanism for aligning executive and shareholder interests, the findings of this study suggest that higher equity-based compensation may not yield the intended outcomes – at least in the short term. This raises the question of whether alternative forms of executive compensation, such as deferred compensation (e.g., changes in pension value or other deferred remuneration), could have a measurable impact on the market's initial reaction to acquisition announcements. Moreover, as the sample included a limited number of M&A deals with strict information requirements, such as the acquirer's characteristics – especially CEO compensation data available in the ExecuComp database – adequate stock price histories, target firm book-to-market ratios, and U.S.-based target firms, these criteria may bias the sample toward larger, high-profile acquisitions, commonly referred to as “mega-deals” (typically valued at over \$500 million). Prior empirical literature identifies the tendency of these type of transactions

to destroy more shareholder value which may influence the overall results (see e.g., Alexandridis et al., 2017 & Hu et al., 2020). Regarding the practical implications, this study suggests that all-cash financed acquisitions tend to generate statistically significant positive returns compared to stock or mixed-payment deals. This outcome is likely attributable to the signaling theory (see e.g., Martynova & Renneboog, 2009), whereby the use of equity as a payment method may imply that the acquiring firm's shares are overvalued. Accordingly, firms may be better positioned to preserve shareholder value by opting for cash financing—particularly in the short term.

7.2 Future research avenues

Although the empirical literature on CEO compensation and its role in shaping strategic corporate decisions — such as mergers and acquisitions — is relatively well established, there remain several avenues through which the current research can be further enriched. Firstly, future research could benefit from employing an extended event window to assess the long-term implications of executive compensation structures on financing choices and abnormal returns. Given the strategic and complex nature of M&A transactions, the full integration of the target firm into the acquiring firm may take time to materialize, thereby affecting long-term value realization.

Secondly, regional variation may influence M&A outcomes, as demonstrated by Alexandridis et al. (2010), who found that the effectiveness of different payment methods varies significantly across geographic regions. Consequently, the acquisition announcement and long-term effects of CEO compensation on the choice of financing in M&As may vary across geographically different areas. Overall, the topic addressed in this study presents novel opportunities to further develop and extend the existing, comprehensive body of academic research on executive compensation schemes and their influence on major corporate investment decisions.

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