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# Inside the Boardroom

CEO Involvement on the Board and M&A Performance in the Swedish Corporate Setting

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# Abstract

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**Key words:** Cumulative Abnormal Return, CAR, CEO on Board, Agency Theory, Hubris Theory

**Purpose:** This study seeks to analyze whether the presence of CEOs on the board affects the stock returns of acquiring firms during merger and acquisition announcements.

## **Theoretical perspectives:**

The theoretical perspective of this study consists of Agency Theory, Stewardship Theory, Resource Dependence Theory, and Hubris Theory.

**Methodology:** The econometric approach is an OLS regression on cross-sectional data. We conduct an event study where we use Cumulative Abnormal Return (-1;1) as the dependent variable. The main explanatory variable is CEO on the board, which is a dummy variable that takes on 1 if the CEO is present on the board at the time of the acquisition and 0 otherwise. Further, we use control variables consisting of board, deal and firm characteristics. We also control for year and industry effects.

## **Empirical foundation:**

The sample consists of 1,190 acquisitions by Swedish companies during the years 2015-2023.

## **Conclusions:**

The study finds that CEO on board negatively impacts M&A announcement returns. The results indicate that, on average, companies with CEO on board experience 0,6% lower announcement returns than companies without CEO on board. Additionally, the study does not find any moderating role of board independence and board size.

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## **1. Introduction**

*This chapter covers the background, problem discussion, purpose, and research questions. Further on, it will include the main findings, the contribution of the study, and lastly the study's limitations.*

### **1.1 Background**

Mergers and Acquisitions (M&A) are corporate actions undertaken to achieve various objectives, such as diversification, expansion and synergy realization. The purpose of M&A is to increase the value of the firm and thereby, increase value for the shareholders (Arzac, 2008). However, previous research has not reached any consensus on whether M&A in actuality creates value. Jensen and Ruback (1983) argue that acquisitions typically yield neutral outcomes, whereas Franks et al. (1988) assert that acquisitions result in negative post-merger returns. More recent research suggests that M&A deals create value for the acquiring firms' shareholders with significant abnormal returns (Alexandridis, Antypas and Travlos, 2017).

M&A activity in Sweden has experienced fluctuations over the years, influenced by industry trends, regulatory changes, macroeconomic conditions, and global market dynamics. Sweden has witnessed periods of robust M&A activity, with notable transactions in technology, healthcare, and clean energy (Statista, 2024). The number of transactions reached its lowest level in ten years during 2023, but now, clear signs of a turnaround are emerging. Factors such as decrease in inflation and a lower interest rate are necessary to reignite the market (Danske Bank, 2024). The M&A activity in Sweden is expected to grow due to the extensive interest in sustainable and socially responsible investments (Statista, 2024). It is crucial for Swedish companies to establish a governance structure that enables an effective decision-making process with aligned interests to capture the value-creation of the growing M&A market.

Corporate governance is one core component for corporations and influences many parts of the business. It is an important tool for corporations in order to set strategies, policies and targets. However, it does also incur certain problems. One of the main problems regarding corporate governance is the agency problem that Jensen (1986) discusses. The issue descends from a separation of *ownership* and *control*, where managers might act in their best interest, and not the shareholders. The board of directors aims to mitigate these issues by serving as

the bridge between shareholders and management. Unlike some jurisdictions where Chief Executive Officers (CEO) may hold the dual role of CEO and chairman of the board, Swedish law prohibits such duality (8 kap. 49§ aktiebolagslagen, ABL).

## **1.2 Problem Discussion**

Corporate governance plays a pivotal role in shaping decision-making processes within firms, particularly in the context of M&A. Central to this governance structure is the relationship between the CEO and the board of directors. In many firms, the CEO also holds a position on the board, diminishing the distinction between management and oversight. There are currently two dominant theories that predict the relationship between CEO duality and firm performance. Jensen (1986) suggests that this dual role raises questions about potential conflicts of interest and the overall effectiveness of board governance in strategic decisions such as M&A transactions. In contrast, according to Donaldson and David (1991), the CEO is not assumed to act in personal self-interest. Instead, it claims that the CEO is motivated to enhance firm performance and maximize its value. Each form of leadership arrangement comes with its own benefits and costs. A non-duality leadership provides better oversight of CEOs, thereby diminishing managerial agency costs. However, it may incur costs related to information sharing costs, create rivalry between CEO and board directors, and result in ineffective strategy development and implementation. When the costs associated with maintaining a non-dual leadership structure outweigh its monitoring benefits, a dual-leadership structure should be preferred (Chen, Lin and Yi, 2008).

Numerous studies have explored the relationship between CEO duality and M&A performance, but with mixed findings. While some research suggests that CEO duality can enhance firm performance by streamlining decision-making processes, reducing information costs, and aligning managerial incentives with shareholder interests (Yang and Zhao, 2014; Contratto, 2014), other research argues that it may lead to managerial entrenchment, reduced independence, and poor oversight, hence value destruction (Duru et al., 2016; Shrivastav and Kalsie, 2016; Hsu et al., 2021). The present literature focuses on the CEO duality role while controlling only for the CEO's presence on the board has been understudied, particularly in the context of M&A and the Swedish market. Existing research in other jurisdictions provides valuable insights but may not fully capture the nuances of corporate governance practices and regulatory environments unique to Sweden.

Board independence and board size are crucial aspects of corporate governance that significantly impact M&A performance and decision-making processes (Desai et al., 2003; Teti et al., 2017; Lawrence, 2024; Guest 2009; Khan et al., 2019). The present literature demonstrates a positive relationship between the proportion of independent directors and M&A performance. Lawrence et al (2024) assert that boards with high independence avoid overpaying for targets, which affect the returns positively following a transaction. Low independence can lead to weakened governance and less effective monitoring which impacts M&A performance (Desai et al, 2003; Teti et al, 2017). Due to these findings, there is a possibility that low independence along with the CEO on the board can exacerbate the returns upon M&A announcement. Optimal board size is another critical factor. Smaller boards are often more cohesive and flexible, leading to quicker decision-making and more effective oversight (Dahya, McConell and Travlos, 2002). Conversely, larger boards can benefit from enhanced diversity and strategic guidance but may struggle with inefficiencies and slower decision-making processes (Dalton and Dalton, 2005; Yermack, 1996). The presence of the CEO on a larger board may exacerbate the balance of power and hinder effective oversight.

One feature of Swedish corporate governance is the separation of the CEO and chairman roles. Unlike in some other jurisdictions where CEOs may also serve as chairman of the board, Swedish law prohibits the CEO from being chairman of the board. The separation is assigned by the Swedish Companies Act (8 kap. 49§ aktiebolagslagen, ABL) and is reinforced by the Swedish Corporate Governance Code. Even though CEOs are forbidden to serve as chairman of the board, the act allows them to be a member of the board and still be able to influence decision-making processes. The separation is intended to mitigate conflicts of interest and promote effective oversight by the board (Randøy and Nielsen, 2002). This governance structure underscores the importance of collective decision-making within Swedish firms. By limiting the concentration of power in the hands of the CEO, Swedish corporate governance aims to foster a culture of accountability, transparency, and long-term value creation for shareholders. However, to what extent the CEO's membership on the board influences strategic decisions, such as M&A, remains an open question.

### **1.3 Purpose and Research Question**

The purpose of our study is to examine the influence of CEO presence on the board of directors on M&A announcement returns. We are also aiming to investigate whether the



impact of CEO presence varies depending on board size and board independence in the company. By exploring these dynamics, we seek to provide valuable insights into the role of CEO governance in shaping acquisition strategies and their subsequent success or failure. Ultimately, our research aims to contribute to a deeper understanding of corporate governance dynamics in the Swedish market and their implications for strategic decision-making in the context of M&A. The following research questions are used to address the purpose of the study:

RQ1: *How does CEO presence on the board affect M&A performance?*

RQ2: *Does board independence have an impact on the relationship between the CEO on the board and M&A performance?*

RQ3: *Does board size have an impact on the relationship between the CEO on the board and M&A performance?*

#### **1.4 Main Findings**

Using a sample of 1,190 acquisitions made by Swedish companies from 2015 to 2023, our results provide support for CEOs on the board having an impact on M&A announcement returns. The study finds that firms with CEOs on the board, on average, are associated with a 0,6% lower announcement return than companies without CEOs presence on the board. Moreover, our results do not find any support for boards with low independence or larger boards having a moderating effect on the relationship between the CEO on the board and our dependent variable Cumulative Abnormal Return (CAR), as hypothesized. We base our findings on the theories *Agency theory*, *Stewardship theory*, *Resource Dependence theory*, and *Hubris theory*.

#### **1.5 Contributions**

There is a scarce body of literature regarding CEO presence on the board in M&A deals. We contribute with a new geographical perspective which is the Swedish stock market. Thereby, we fill a gap in the existing literature, highlighting the perspective of the CEO on the board, and not CEO duality, which is the main focus in previous literature. Additionally, our study aims to investigate the transaction in recent years, which adds a more present perspective on the subject.

## **1.6 Outline**

The structure of the rest of the paper starts with section 2, which delves into the theoretical background, followed by the empirical literature in section 3. Based on the previous sections, section 4 focuses on the development of the hypotheses. Section 5 discusses the methodology, followed by the data and sample for the study in section 6. Further on, section 7 presents the results and analysis. Finally, section 8 will conclude the paper.

## **2. Theoretical Background**

*This chapter aims to explain the theoretical background of the study. The concepts of M&A will be covered, followed by the theoretical framework of Agency theory, Stewardship theory, Resource Dependence theory, and Hubris theory that will support our analysis.*

### **2.1 Conceptualization of M&A**

Arzac (2008) suggests that if a merger or acquisition enhances the value of shares for the shareholders of the involved companies, it should be appealing to them. Increased shareholder value can stem from various factors including economies of scale in production, distribution and management, the optimal deployment of technology by the surviving company, the acquisition of new distribution channels, and the mutual promotion of each other's products. Nonetheless, historical evidence shows that achieving merger synergies are challenging, and their magnitude may fall short of expectations. Arzac (2008) illustrates the various forms M&A activities can have, including mergers, where two companies combine to form a new entity, and acquisitions, where one company takes over another. The process of M&A involves thorough analysis, negotiation, due diligence, and integration planning.

According to Bhagwan, Grobbelaar, and Bam (2018), enterprises face constant pressure to expand due to heightened competition, changing circumstances, and increasingly relaxed country and currency regulatory environments. Remaining competitive or achieving a leading position in an industry requires real growth. The study conceptualizes M&A as a tool for organizations to attain such growth. Bhagwan et al (2018) emphasize the crucial role of the due diligence stage in determining whether to proceed with a deal or not. Effective management of the due diligence process is essential to increase the likelihood of success in completing the deal (Bhagwan et al., 2018). Caiazza and Volpes (2015) agree that M&A transactions are a way of remaining and achieving a competitive edge, particularly with the acceleration of globalization and changes in international economic and regulatory environments. Many companies have realized they need to go global to maintain a competitive edge. This has led to a significant increase in cross-border M&As. While cross-border transactions enable opportunities, they can hinder the effectiveness of the due diligence process that Bhagwan et al. (2018) claim is important.

Herd and Perry (2004) argue that making an M&A deal “work” is one of the hardest tasks in business. They suggest that due diligence is the most important factor for a successful deal and it is not just about conducting due diligence, but doing it well. Improved due diligence would reduce the M&A risk. Herd and Perry (2004) recommend engaging experienced internal and external experts to identify and capitalize on cost and revenue synergies. They emphasize essential aspects such as aggressive market penetration strategies, innovative product launches, sales force realignment, supply chain optimization, and IT application rationalization. Additionally, they stress the importance of prioritizing complex initiatives, assessing associated risks, and developing mitigation plans (Herd and Perry, 2004).

## **2.2 Agency Theory**

According to Jensen and Meckling (1976) corporate managers are the agents of shareholders, driven by conflicting interests. Agency costs arise due to the separation of ownership and control, where managers may pursue their own interests instead while acting on behalf of shareholders. Managers tend to keep cash available when starting new investments instead of paying it out to shareholders. They have an interest in limiting the external source of financing in order to avoid additional market monitoring (Jensen, 1986). The Cash Flow Hypothesis (Jensen, 1986) connects directly to M&A activities, suggesting that CEOs with free cash available can engage in M&A transactions without external monitoring. Jensen (1986) argues that managers have incentives to grow their firm beyond optimal size, to increase power and compensation which correlates positively with sales growth. Morck et al. (1990) support the hypothesis and claim that when an acquisition provides managers with private benefits, they are more willing to give up the firm's market value to pursue the investment.

Stulz (1990) discusses the common problem of managerial discretion, highlighting overinvestment costs from excessive investment and underinvestment costs from a lack of credibility when claiming an inability to fund positive Net Present Value (NPV) projects with internal resources. He argues that debt can reduce the overinvestment but exacerbates the underinvestment as funds are paid out. Kanniainen (2000) supports Stulz's hypothesis, showing that management often fails to maximize the wealth of the owners, leading to inefficient investments under the separation of ownership and control.

Since the introduction of Jensen's (1986) theory, the business landscape has undergone transformations driven by technological advancements, globalization, and evolving regulatory frameworks. Despite these changes, the core principles of Jensen's (1986) agency theory remain highly relevant today. According to Ranjan (2020), strong and effective corporate governance policies are essential to mitigate agency costs and achieve long-term sustainability.

Agency theory identifies three different types of costs: monitoring costs, bonding costs and residual losses. Fama and Jensen (1983) describe monitoring costs as the expenses associated with overseeing the agent's performance, including the costs of observing, compensating and assessing the agent's conduct. Since the owners appoint boards to monitor managers, the expenses related to maintaining a board are also considered monitoring costs.

Jensen and Meckling (1976) explain bonding costs as the expenses incurred to align managers' actions with owners' interests. These costs fall on managers, who must adhere to contractual obligations that limit their freedom. Monitoring and bonding costs are inversely related: a decrease in monitoring costs typically leads to an increase in bonding costs.

The third type of cost is residual loss, which arises from conflicts of interest where managers' decisions do not maximize owners' wealth. Proper governance can mitigate these costs. Both Ranjan (2020) as well as Panda and Leepsa (2017) suggest that effective governance policies, such as granting stocks to managers, increase their incentives to align with the firm's performance goals. Managerial ownership encourages managers to act like owners focusing on enhancing firm performance. Panda and Leepsa (2017) also argue that increasing debt levels can discipline managers, making them more cautious in their decision-making. Additionally, including more independent and outside directors on the board can help align the interests of owners and managers by providing effective oversight.

### **2.3 Stewardship Theory**

The stewardship theory was developed by Donaldson and David (1991 and 1993) and serves as a counterpart to the agency theory, offering a more positive view of management and organizations. It suggests that there is no inherent conflict of interest between the management and shareholders, assuming that agents' behavior is aligned with the interests of the principals. This theory posits that cooperative behavior provides more utility than

self-serving behavior, maximizing shareholders' wealth (Davis, Schoorman & Donaldson, 1997).

Donaldson and David (1991) argue that stewardship theory is more evident when the CEO is also chairman of the board, as power and authority are assignable to the same person, making responsibility more addressable. This unified leadership structure provides more incentives to act as a steward. This is also further evident after their study which finds that shareholder returns, in terms of ROE, is higher for firms with CEO duality. The authors argue that this supports the stewardship theory, and there are reasons to believe that the management and shareholders' interests are aligned (Donaldson and David, 1991).

Recent approaches to stewardship view it as an efficient model of governance and organizational leadership, emphasizing collective and pro-organizational behavior to fulfill organizational objectives. Stewardship is also seen as an extension of social accountability, highlighting the duties of the steward to act in others' interests and build a relationship based on accountability (Contrafatto, 2014).

#### **2.4 Resource Dependence Theory**

Resource Dependence Theory (Pfeffer and Salancik, 1978) explains how organizations depend on external resources for survival and success. The theory suggests that dual leadership provides the CEO with increased discretion to react and adapt quickly in a dynamic business environment, securing resources crucial for the firm's success. Similar to the stewardship theory, Resource Dependence theory predicts a positive relationship between CEO duality and performance. Davis and Cobb (2010) explain that inter-organizational interdependencies, driven by factors such as globalization, limited credit supply, and energy shortages, are key drivers of M&A. Acquiring a resource supplier ensures sustainable access to desired inputs, expands the organization's knowledge base, and facilitates collaborative strategy development.

#### **2.5 Hubris Theory**

The managerial hubris theory, originally proposed by Richard Roll (1986), suggests that managers, despite having good intentions to enhance their firm's value, may exhibit overconfidence, leading them to overestimate their ability to generate synergies. This theory provides a psychological perspective on understanding M&As, asserting that acquiring firms'

management tends to overrate their capacity to evaluate potential acquisition targets. According to hubris theory (Roll, 1986), when a merger or acquisition is announced, shareholders of the bidding firm typically experience a decline in share price, whereas shareholders of the target firm often witness an increase. This occurs because the target firm's price rises as shareholders transfer shares in response to the premium offered by the acquiring firm. One key aspect of the theory that Roll (1986) focuses on is the divergence of interests between shareholders and managers. While managers may pursue M&A deals with the belief that they will enhance the firm's value, shareholders may not necessarily share the same level of optimism.

Hayward and Hambrick (1997) explain the hubris theory and the premium paid for large acquisitions, suggesting that CEO hubris plays a substantial role in the acquisition process. They find that the greater the CEO's confidence in their abilities, the higher the price paid for acquisitions. While Roll (1986) and Hayward and Hambrick (1997) suggest that CEO hubris stems from self-conceit and arrogance, Doukas and Petmezas (2007) consider the theory as a consequence of an overconfident CEO due to their initial success. Managers tend to credit the initial success to their ability and therefore become overconfident and engage in more deals.

### **3. Literature Review**

*This chapter establishes a link between the theoretical framework presented earlier and empirical research conducted in the realm of M&A performance, the impact of CEO Duality, Board Independence, and Board Size.*

#### **3.1 M&A Performance**

Mergers and acquisitions (M&As) involve transactions aimed at creating value through fundamental changes to a company's corporate and organizational structure (Gaughan, 2010; Miller, 2008). The literature presents mixed findings on M&A value creation. For instance, acquisitions generally benefit target shareholders. Bradley et al (1987) find that target firms typically experience significant positive returns when acquisition deals are announced. However, the impact on bidding shareholders is more varied. Early studies, such as Jensen and Ruback (1983) suggest neutral outcomes for bidders, while Franks et al (1988) reveals negative post-merger returns, particularly in cash acquisitions. They attribute these results to overpayment and integration challenges. However, Franks et al. (1991) counter these

findings, emphasizing positive returns for acquirers and identifying biases in prior assessments of stock performance. More recent studies do not agree on the positive value created by M&As. Grigorieva, and Petrunina (2015) as well as André et al (2004) find results indicating that M&As can be value-destroying, particularly in equity-financed and cross-border deals. These negative outcomes are often due to cultural integration issues and overestimation of synergies. Berriategortua et al (2018) confirm the inconsistency in M&A literature, suggesting the need for careful deal structuring and post-merger integration to realize potential benefits.

### **3.2 CEO Duality on Firm Performance**

The relationship between corporate governance mechanisms and managerial decisions, particularly in the context of M&A, has been the subject of extensive research in recent years. CEO duality, where the CEO also serves as the chairman of the board, is a recurring theme with mixed findings. While CEO duality is not possible to check for in the Swedish market, the previous literature still gives indications of what to expect.

Duru, Iyengar and Zampelli (2016) find that CEO duality negatively impacts firm performance, particularly when independent directors are few. They suggest that the concentration of power in one individual undermines board independence and oversight leading to managerial entrenchment. This entrenchment can result in decisions that favor the CEO's interests over those of shareholders', reducing overall firm performance. The lack of independent oversight means that there needs to be more critical evaluation of strategic decisions, which can lead to suboptimal outcomes.

Conversely, Yang and Zhao report positive effects of CEO duality in Canada and the US, attributing benefits to savings in information costs and faster decision-making. They argue that when the CEO also chairs the board, there is less duplication of information and a more streamlined decision-making process. This can be especially beneficial in dynamic environments where quick and decisive action is needed. The faster decisions can lead to better responsiveness to market opportunities and threats, potentially enhancing firm performance.

Evidence from emerging markets shows mixed results. Shrivastav and Kalsie (2016) find negative but insignificant results using Tobin's Q as a measure of firm performance, but



significant negative results using return on equity. They highlight board independence as an important mitigating tool to adverse the effects of CEO duality. Additionally, they suggest that without sufficient independent oversight, the negative impacts of CEO duality become more pronounced. Similarly, Hsu, Lin, and Chen (2021) observe a negative impact of CEO duality, particularly when information costs are high. This underscores the importance of an effective monitoring mechanism to balance the concentrated power of CEO duality.

### **3.3 CEO Duality on M&A Performance**

When controlling for CEO duality in M&A transactions, several studies highlight the challenges and outcomes associated with this governance structure.

Desai, Kroll, and Wright (2003) find that CEO duality negatively affects performance in the short run due to weakened governance and less effective monitoring. They suggest that the concentration of power in the CEO can lead to overconfident and suboptimal acquisition decisions. This overconfidence can result in overestimating the potential synergies of a merger or acquisition, leading to overpayment and subsequently, negative performance (Desai et al., 2003).

Another study, by Teti, Dell'Acqua, Etrò and Volpe (2017) indicate that CEO duality is more likely to result in value-destroying acquisitions. Effective board monitoring can mitigate the risk, but when such monitoring is weak, it is more likely to make poor acquisition decisions. They also argue that the presence of independent directors is crucial in providing the necessary oversight to prevent overconfident decisions by a dual-role CEO. When this oversight is lacking, the risk of value-destroying acquisitions is heightened (Teti et al., 2017).

In addition to these findings, Defrancq, Huyghebaert and Luypaert (2020) note that CEO duality is particularly harmful in transactions involving companies from different industries without a dominating shareholder. Strong legal frameworks can mitigate these adverse effects by providing additional oversight and governance mechanisms. They explain that in environments with robust legal protections and governance standards, the risks associated with CEO duality are less notable since the legal framework compensates for the lack of internal checks and balances (Defrancq et al., 2020).

In contrast, Pham, Oh, and Pech (2015) provide evidence supporting stewardship theory, where CEO duality instead enhances M&A performance, leading to higher abnormal returns. They argue that CEO duality can maximize leadership capabilities and ensure fast strategic decisions when monitored effectively. Martinez and Alvarez (2019) also report positive impacts of CEO duality, suggesting that it enhances corporate value through better use of leadership capabilities. They argue that in cases where the CEO's interests are well-aligned with those of the shareholders, the unified leadership structure can lead to more coherent and effective strategic decisions (Martinez and Alvarez, 2019).

Chadam (2018) does not find any support for that CEO duality affects M&A performance. However, she emphasizes the need for effective boards to limit value-destroying investments. Chadam (2018) argues that regardless of the governance structure, the presence of a strong and effective board is critical in ensuring that investment decisions, including M&As, are made in the best interest of the shareholders.

Although these studies do not specifically investigate the impact of a CEO on the board, there is clear evidence that the CEO's presence on the board is interlinked with the M&A performance.

### **3.4 Impact of Board Independence on M&A Performance**

Board independence holds particular relevance when examining the influence on M&A deals. According to Agrawal and Knober (1996), independent directors are professionals without any relation to the company's management, which makes them less likely to interfere with personal opinions in corporate decisions. The independent directors work as a relevant control mechanism for companies in order to make more objective decisions than managers and shareholders and to provide other points of view focused on financial issues (Zahra & Stanton, 1988). Also, the presence of independent directors usually takes care of all stakeholders, since most firms are likely to hide useful information from their stakeholders (Ibrahim and Angelidis, 1995).

The present literature demonstrates a positive relationship between independent directors and performance. Dahya and McConnell (2007) as well as Weir, Laing and McKnight (2002) find that integrating independent or external directors onto the board correlates with significant positive performance. They explain that independent directors bring diverse perspectives and

are less likely to be influenced by the CEO, thus enhancing the board's ability to monitor and evaluate management decisions effectively (Dahya and McConell, 2007; Weir et al., 2002).

Studies conducted in various countries yield similar positive findings. Coles, McWilliams & Sen (2001) suggest that a higher proportion of independent directors enhances board oversight and strategic decision-making processes through improved monitoring.

More recent studies by Martinez and Alvarez (2019) and Lawrence, Nguyen and Upadhyay (2024) confirm that high board independence correlates with better M&A outcomes. They argue that independent boards enhance value by choosing targets with substantial synergies, thus avoiding overpayment, and ensuring smooth post-acquisition transitions (Martinez and Alvarez, 2019; Lawrence et al., 2024). The presence of independent directors helps when evaluating the potential benefits and risks of acquisitions, leading to more informed and balanced decisions.

Additional studies support the positive relationship between board independence and performance (Defrancq et al., 2018; Thenmozhi and Sasidharan, 2020). These studies underscore the importance of independent oversight in diverse regulatory and cultural environments. They suggest that independent directors are better positioned to act in the best interests of shareholders, particularly in complex and cross-border M&A transactions (Defrancq et al., 2018).

### **3.5 Impact of Board Size on M&A Performance**

Board size, defined as the number of directors on a company's board, influences governance dynamics and performance. Dalton, Daily, Johnson and Ellstrand (1999) suggest that larger boards can enhance diversity and provide strategic guidance, which is beneficial for M&A decisions. They argue that a diverse board brings varied expertise and perspectives, leading to more comprehensive strategic discussions and better decision-making.

However, Lipton and Lorsch (1992) and Jensen (1993) argue that larger boards may face coordination challenges and diluted responsibility, leading to inefficiencies. They explain that as the number of board members increases, it becomes more difficult to coordinate and communicate effectively, which can slow down decision-making processes and reduce the board's overall effectiveness (Lipton and Lorsch, 1992; Jensen, 1993).

Smaller boards are often more agile and effective in decision-making, facilitating faster responses to M&A opportunities and challenges. Dahya, McConell and Travlos (2002) highlight that smaller boards can facilitate faster decision-making processes and more effective communication among directors. They argue that with fewer members, it is easier to achieve consensus and make timely decisions, which is crucial in dynamic business environments (Dahya et al., 2002).

Yermack (1996) and Guest (2009) suggest that small boards provide stronger CEO performance incentives and are associated with better firm profitability and share returns. They argue that smaller boards are more cohesive and can provide more focused oversight, leading to better alignment of the CEO's interests with those of the shareholders (Yermack, 1996; Guest, 2009).

Evidence from the Malaysian market supports the negative impact of larger boards on firm performance (Saif, Khan and Al-Jabri, 2019). They find that larger boards are less effective in monitoring and decision-making, leading to weaker firm performance. Larger boards may be less willing to pursue rewarding yet risky takeovers due to increased risk aversion and slower decision-making processes (Seif et al., 2019).

Shivdasani and Yermack (1999) highlight the trade-off between diversity and agility, emphasizing the need to balance board size to avoid potential governance shortcomings. They suggest that while diversity and broad expertise are important, they should not come at the cost of decision-making efficiency (Shivdasani and Yermack, 1999). Effective board composition can significantly influence the success of M&A decisions and overall firm performance, suggesting that an optimal board size balances these competing needs.

#### **4. Hypothesis Development**

Existing research examines the relationship between corporate governance mechanisms and managerial decisions within M&A. However, a noticeable gap remains regarding the influence of CEO presence on the board. The gap is particularly apparent in Sweden, where CEO duality is prohibited by law, thereby emphasizing the need to investigate alternative governance structures. Understanding the role of CEOs on the board, and the impact on decisions regarding M&A and ultimately creating value for shareholders is essential. By examining the influence, we can gain deeper insights into the governance mechanisms that drive successful M&A outcomes.

The previous literature provides solid evidence supporting a negative relationship between CEO presence on the board and M&A performance. According to Jensen and Meckling (1976), maintaining board independence is crucial to mitigate opportunism and enhance the board's monitoring role. Consequently, CEO duality is often viewed negatively as it compromises the board's independence and its effectiveness in oversight. Similarly, the CEO's presence on the board can affect the independence and monitoring role (Jensen and Meckling, 1976).

Present studies support this stance, revealing a negative relationship between CEO duality and M&A performance. For instance, Desai et al (2003) find that CEO duality negatively impacts acquisitions due to weakened board monitoring. Duru et al (2016) and Shrivastav and Kalsie (2016) also display evidence that CEO duality leads to poorer M&A outcomes, reinforcing the agency argument that an increase in power for the CEO does not lead to decisions in the shareholders' best interests. Hsu et al (2021) further elaborate on the negative effect of CEO duality on M&A performance, particularly in situations with high information asymmetry.

This narrative underscores the critical need to dig deeper into the implications of CEO presence on the board in the context of board dynamics and mainly the M&A performance. Based on these insights we formulate the following hypothesis:

*H1a: The relationship between the CEO on the board and M&A performance is negative.*

In contrast to the agency theory that suggests a negative impact of CEO presence on the board, stewardship theory offers a conflicting perspective. According to stewardship theory, CEOs who are also board members can align their interests with shareholders, encouraging a unified leadership that enables faster decision-making and reduces information asymmetry (Contrafatto, 2014).

Donaldson and Davis (1991) find evidence that firms with CEO duality performed better in terms of return on equity. Yang and Zhao (2014) further support the positive relationship of CEO duality and firm performance. The evidence is particularly prevalent in larger firms and explained by the savings in information costs and efficient decision-making.

In the context of M&A performance, Pham et al (2015) find that CEO duality leads to higher abnormal returns due to the CEO's comprehensive understanding of the firm. Similarly, Teti et al (2017) provide evidence that CEO duality can positively influence the return on M&A for the bidding company. They explain their findings by highlighting the unified leadership structure that reduces information asymmetry and is particularly beneficial in the complex environment that surrounds M&A transactions (Teti et al., 2017). These findings are in line with the stewardship theory, where the CEO prioritizes organizational goals instead of egocentric ones.

This conflicting view with support from the stewardship theory, we formulate the following alternative hypothesis:

*H1b: The relationship between the CEO on the board and M&A performance is positive.*

Board independence holds particular relevance when examining the influence on M&A deals. The presence of an independent board serves as a crucial mechanism for oversight and governance in M&A transactions (Agrawal and Knober, 1996). When inside directors hold positions on the board, questions arise regarding potential conflicts of interest and the ability of the board to provide oversight. According to Zahra & Stanton (1988), independent directors work as a relevant control mechanism for companies to make more objective decisions than managers and shareholders and to provide another point of view focused on financial issues.

Previous literature demonstrates a positive relationship between the proportion of independent directors and firm performance. Coles, McWilliams and Sen (2001) argue that a higher proportion of independent directors enhances board monitoring and strategic decision-making which ultimately leads to value-creating decisions. More recent studies approve these findings, and provide support that higher board independence is related to higher returns around M&A announcements. Lawrence et al (2024) assert that boards with high independence avoid overpaying for targets, which affects the returns positively following a transaction.

Studies that find that CEO duality is negatively related with M&A returns also state that the level of independence can inflict on the decisions. Low independence can lead to weakened governance and less effective monitoring which impacts M&A performance (Desai et al, 2003; Teti et al, 2017). Due to these findings, there is a possibility that low independence along with the CEO on the board can exacerbate the returns upon M&A announcement. Based on this argumentation, we formulate the following hypothesis:

*H2: The CEO in the board's effect on M&A performance is exacerbated when board independence is low*

Board size is a key component of corporate governance structures and finds attention in research for its implications on board effectiveness, decision-making processes, and firm performance (Dalton et al., 1999). However, the number of members of the board has been discussed and studied extensively. While a large board can enhance diversity and strategic guidance (Dalton and Dalton, 2005), it may also face challenges related to communication and coordination which can dilute responsibility (Lipton and Lorsch, 1992; Jensen, 1993). Contrarily, smaller boards might offer greater agility and efficiency in decision-making, which can be crucial when engaging in M&A (Dahya, McConell and Travlos, 2002).

Research on the influence of board size yields mixed findings. Some studies suggest that larger boards can lead to better M&A decisions through enhanced strategic guidance (Dalton and Dalton, 2005). However, larger boards have been related to negative performance due to poor communication (Guest, 2009; Khan et al, 2019). Other studies highlight the efficiency and stronger CEO performance incentives associated with smaller boards (Yermack, 1996). The predominant negative impact of larger board sizes has raised a concern if it can

exacerbate M&A returns in firms that also have their CEO on the board. Based on this reasoning, the following hypothesis is presented:

*H3: The CEO in the board's effect on M&A performance is exacerbated in larger board sizes*



## 5. Methodology

We will conduct an event study to explore the potential effect of CEO involvement on the board of Swedish companies and its impact on abnormal returns. The subsequent chapter provides an overview of the event study conducted to calculate abnormal returns. The issue of endogeneity will finally be discussed.

### 5.1 Econometric Methodology

Consistent with the present literature, an event study is conducted to calculate the abnormal return of a company's stock surrounding the M&A announcement (Desai et., 2003; Teti et al., 2017; Defrancq et., 2020; Pham et al., 2015). The study follows MacKinlay's (1997) guidance for calculating abnormal returns within the event window. We employ the market model to calculate abnormal returns by contrasting the return of each security with that of a diversified market portfolio, as outlined by MacKinlay (1997). Specifically, the return of a diversified market portfolio is estimated using OMXSPI, since it is viewed as a valid representation of the Swedish market (Nasdaq, 2024). For security  $i$  during time period  $t$ , the return is determined by the following equation:

$$R_{it} = a_i + \beta_i R_{mt} + \varepsilon_{it} \quad [1]$$

$$E(\varepsilon_{it}) = 0 \quad VAR(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2 n \quad [2]$$

Where  $a_i$ , represents the intercept,  $\beta_i$ , denotes the coefficient,  $R_{mt}$  signifies the return of the market portfolio, and  $\varepsilon_{it}$  stands for the error term (MacKinlay, 1997). The abnormal return for each specific firm is calculated using the equation:

$$AR_{it} = R_{it} - \hat{R}_{it} \quad [3]$$

Here,  $AR_{it}$  denotes the abnormal return on day  $t$  for firm  $i$ ,  $R_{it}$ , represents the realized return for firm  $i$  on the same day, and the last one signifies the estimated return from the market model (MacKinlay, 1997). Cumulative Abnormal Returns (CAR) are computed for various event windows using the equation:

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it} \quad [4]$$

We adopt an estimation window of -130 to -10, a period of 120 trading days similar to Teti et al. (2017). To avoid any potential biases, we ensure that the estimation window and event window do not overlap, aligning with the methodology presented by MacKinlay (1997). This separation is crucial to prevent the event itself from affecting the estimation of normal performance parameters. We estimate abnormal returns within a three-day event window (-1;1). Additionally, to assess the robustness of our findings, we compute returns over both a five-day (-2;2), seven-day (-3;3) and an eleven-day (-5;5) event period (Chadam, 2018). This extended window aims to capture any potential impact from information leakage preceding M&A announcements. The selection of short-term event windows aligns with Fama, Fisher, Jensen and Roll's (1969) findings on immediate stock reactions to events and new information. Longer event windows may overstate the impact of the events and long-term anomalies, consistent with the efficient market hypothesis. Our choice of short-term event windows isolates the impact more effectively and mitigates the diluting effect observed over longer periods (Chadam, 2018). According to Pham et al. (2015), Defrancq et al. (2020), and Chadam (2018) we designate the CAR from the event window of (-1 to +1) as our primary dependent variable.

## 5.2 Ordinary Least Squares (OLS)

To examine the initial hypothesis, if the CEO on the board impacts the acquiring firm's announcement return, we estimate an Ordinary Least Squares (OLS) regression model with  $CAR(-1,+1)$  as the dependent variable and the *CEO on Board* as the main explanatory variable. Control variables that relate to the firm, deal and board characteristics are also included. In addition, we are also controlling for year and industry effects to mitigate endogeneity.

The base model is as follows:

$$CAR(-1;1)_{it} = \beta_0 + \beta_1 \text{CEO on Board}_{i,t-1} + \beta_2 \text{Board controls}_{i,t-1} + \beta_3 \text{Deal controls}_{i,t} + \beta_4 \text{Firm controls}_{i,t-1} + \text{Year controls} + \text{Industry controls} + \varepsilon_{i,t}$$

To examine the second hypothesis we will introduce a dummy variable for board independence. For board independence we divide the sample into two groups. One that is considered to be low independence, i.e. less than the median of 62%. The other group consists of those with independence larger than the median of 62%. The dummy variable will

be used in the creation of the interaction term *CEO on board\*Low independence*. As discussed in the empirical review, firms that have a lower proportion of independent board members tend to perform worse than those with a higher proportion of independent members (Desai et al, 2003; Teti et al, 2017).

With the introduction of our first interaction term, our model is as follows:

$$CAR(-1;1)_{it} = \beta_0 + \beta_1 \text{CEO on Board}_{i,t-1} + \beta_2 \text{CEO on Board*Low Independence} + \beta_3 \text{Board controls}_{i,t-1} + \beta_4 \text{Deal controls}_{i,t} + \beta_5 \text{Firm controls}_{i,t-1} + \text{Year controls} + \text{Industry controls} + \varepsilon_{i,t}$$

Furthermore, to examine the third hypothesis we will create a dummy variable that equals 1 if the board size is larger than the median of 8, and 0 otherwise. By this, we introduce our second interaction term, *CEO on board\*Large Boards*. Previous literature has argued that the performance can be exacerbated in larger boards due to communication and coordination issues (Lipton and Lorsch, 1992; Jensen, 1993). These interaction terms will nuance our results and increase the scope and magnitude of the results.

With the introduction of our second interaction term, our model is as follows:

$$CAR(-1;1)_{it} = \beta_0 + \beta_1 \text{CEO on Board}_{i,t-1} + \beta_2 \text{CEO on Board*Large Boards} + \beta_3 \text{Board controls}_{i,t-1} + \beta_4 \text{Deal controls}_{i,t} + \beta_5 \text{Firm controls}_{i,t-1} + \text{Year controls} + \text{Industry controls} + \varepsilon_{i,t}$$

When performing an OLS regression there are certain assumptions that should not be violated, otherwise it will affect the reliability of the results. One of the assumptions is that the error terms are homoskedastic. If they are heteroskedastic, the OLS estimates are no longer BLUE and there is bias in the standard errors which leads to bias in the test statistics. To address potential violation of the assumption a White test will be conducted. If the results of White's test show significant heteroskedasticity, we will utilize robust standard errors in our regressions to cope with the issue (Williams, 2020).

## **5.3 Variable Definitions**

### **5.3.1 Dependent Variable**

The dependent variable  $CAR(-1,+1)$ , represents the cumulative abnormal return of the acquiring firm, signifying the acquirer's abnormal return relative to the expected return of the market during the event window (MacKinlay, 1997). The market return is derived from the OMXSPI index.

### **5.3.2 Main Explanatory Variable**

Our main explanatory variable is CEO on the board, a dummy variable that indicates whether the Chief Executive Officer simultaneously holds a position on the board of directors within a company. The variable takes a value of 1 if the CEO is also a member of the board and 0 otherwise. The variable aims to capture the unique corporate governance code in Sweden.

### **5.3.3 Board and Deal Control Variables**

The first variable included, *Board Size*, is representing the number of directors on the acquirer board. A larger board size is expected to be negatively associated with firm performance since the monitor incentives and communication are decreasing (Guest, 2009). A dummy variable, *Large Boards*, will also be included where 1 equals board size above the median, 0 otherwise. We interact *large Boards* with *CEO on Board*, which allows us to test our second hypothesis. *Board Independence* is also included as a control variable, calculated as the fraction of independent members on the board and the total number of board members. A high presence of independence is positively associated with firm performance and tends to improve shareholder wealth (Martinez and Alvarez, 2019; Lawrence et al., 2024). Coles et al. (2001) argue that a high percentage of independent directors is crucial for effective monitoring and oversight. A dummy variable, *Low Independence*, is also included where 1 equals board independence under the median, 0 otherwise. The dummy will interact with our main explanatory variable in order to test the third hypothesis. Methods of payment are also included as control variables, where dummy variables will be structured. A dummy variable, *Cash Payment*, is included to investigate the method of payment effect, where transactions completed entirely in cash equals 1, and 0 otherwise. According to Teti et al. (2017), acquirers have significant negative returns if the acquisition is paid in stock, due to the overvaluation signal. Consequently it is expected that acquisitions that are completed with cash are more positive compared to those paid in stock.

### 5.3.4 Firm Characteristics Control Variables

Our research includes commonly used control variables to enhance the robustness of our results. The control variables are aimed to represent firm characteristics that present research has found to have an impact on acquirer returns surrounding deal announcements. All the variables are winsorized on the 1st and 99th percentile. The first control variable, *Total Assets*, is included as a proxy of the acquirer firm size. The variable is measured as the natural logarithm of the book value of total assets in million EUR. Evidence has been found that managers of large companies are more entrenched and likely to undertake value-destroying acquisitions (Chadam, 2018). Similar to Defrancq et al. (2020), the natural logarithm of *Market Cap* will also be included as a measure of firm size.

The next variable Return on Assets, *ROA*, is measured as the ratio between net income and total assets, in line with Martinez & Alvarez (2019), who anticipates that operating performance has a positive relationship with firm performance. The variable *EBITDA Margin*, is also included as an operating performance measure and is measured as the ratio between Earnings Before Interest Taxes Depreciation and Amortization (EBITDA) and total assets (Pham et al., 2015). *Cash Ratio* is a representation of the cash and cash equivalents to total assets of the acquirer. The variable is expected to have a negative association with firm performance, supported by Jensen (1986) who suggests that CEOs tend to avoid external sources of financing to avoid additional market monitoring. However, a larger ratio of cash can indicate a good recent performance of the company (Chadam, 2018). Therefore, *Cash Ratio* can be positively or negatively correlated with the acquirer's abnormal returns.

*Debt to Assets* has also been considered as a control variable and is measured as the ratio between long-term debt and total assets. A positive effect of leverage on acquisition quality is expected, as entrenched managers often maintain low levels of debt to retain greater discretion in making investment decisions. This expectation arises from the strong monitoring efforts by creditors and the intention to avoid financial distress (Teti et al., 2017). Capital expenditure will also be included as a variable, defined as *Capex*. According to Grigorieva and Petrunina (2015), industries with high capital expenditures tend to make more value-destroying acquisitions. To potentially reduce the issue of endogeneity, the model will use lagged variables. By including lagged variables in the regression model we can account

for temporal dynamics and dependencies in the data. This can help address endogeneity arising from dynamic relationships between variables over time (Guest, 2009).

#### **5.4 Instrumental Variable**

Endogeneity presents a prevalent challenge in corporate finance research, which refers to the problem where the independent variables in a regression model are correlated with the error term, violating the assumption of exogeneity. This correlation can bias the estimates of the coefficients and lead to misleading results (Roberts and Whited, 2012). One way of dealing with the endogeneity issue is via Instrumental Variables (IV) estimation. Instrumental Variables are variables that are correlated with the endogenous variable of interest but not correlated with the error term. Applying suitable instrumental variables can satisfy the necessary conditions to obtain consistent estimates of the causal relationship between variables (Roberts & Whited, 2012).

In our analysis, we employ an IV within the framework of two-stage least squares regressions (2SLS) to address potential endogeneity concerns. We select Industry CEO (*IN.CEO*) as our instrumental variable. This variable is a dummy that equals 1 when there are more firms with a CEO on the board than firms without within a particular industry, 0 otherwise. We justify this choice based on Pham et al. (2015) success of using the instrumental variable. One might argue that a higher prevalence of CEO presence on the board within an industry increases the likelihood of individual firms adopting the dual role.

However, it is important to note that Industry CEO is unlikely to be directly associated with the performance of any particular firm, thus meeting the requirement for the exclusion restriction condition (Pham et al. 2015). To distinguish the strength of the instrument, a F-test can be conducted (Roberts and Whited, 2012; Wooldridge, 2016). To ensure that the instrument is not weak, a rule of thumb for the F-test is that  $F > 10$  (Wooldridge, 2016). Therefore, a first-stage F-test will be conducted to the test strength of the instrument.

#### **5.5 Robustness**

As mentioned before, this study uses a three-day event window in line with previous research (Chadam, 2018). Two additional event windows will also be used, both a five-day, seven-day, and an eleven-day event window. This aims to nuance the results and provide robustness for the study. The wider event windows will be useful in capturing potential noise surrounding

the announcement date, such as information leaks. The short-term event window methodology is supported by Kaplan and Weisbach (1992), who found that announcement returns were significantly positively related to subsequent merger success.

If the White test indicates presence of heteroskedasticity, the study will use clustered standard errors by industry to further enhance the robustness. This will mitigate any potential correlation within the industries that are due to unobserved factors. We will also do various robustness tests to improve the robustness of our results. Such additional tests include using different proxies for size and profitability. We will use both total assets and market cap as proxies for size (Defrancq, 2020), and EBITDA margin and return on assets as proxies for profitability. Additionally, we will exclude the smallest companies by cutting the sample at the 25th percentile to test a sub-sample (Defrancq, 2020).

## 6. Data and sample description

*This chapter presents first the sample description, and the variable definitions, followed by the descriptive statistics, and correlation table of the data.*

### 6.1 Sample Description

Our sample of M&A transactions is collected using Refinitiv Eikon. The criteria is based on present research (Teti et al., 2017; Defrancq et al., 2020). The transactions are filtered on the following criterias: (I) The announcement date is between 2015 and 2023 resulting in 523,620 transactions; (II) the acquirer obtains 100 percent of the target shares after completing the acquisition resulting in 416,892 transactions; (III) the acquirer is a listed company on a Swedish stock exchange resulting in 3,007 transactions; (IV) financial institutions are excluded resulting in 2,836 transactions; (V) acquiring firm must have sufficient financial data surrounding the M&A announcement resulting in a final sample of 1,190 observations.

Using the years 2015-2023 for analyzing the context of the Swedish market offers valuable insight. This is due to the combination of market stability, regulatory consistency, and economic resilience navigating through global uncertainties such as geopolitical tensions, and the COVID-19 pandemic. The raw dataset obtained from Refinitiv Eikon results in 2,836 transactions, and after following the restrictions mentioned above the final sample results in 1,190 transactions made by 195 unique firms. A large portion of the sample is excluded due to insufficient data on the main explanatory variable (CEO on board), where 1,547 observations are removed. An additional 99 transactions are excluded due to insufficient stock data. The market model index is obtained by Yahoo. As mentioned above, financial institutions are removed from the sample. In line with Defrancq et al. (2020) financial institutions are removed due to the unique regulations they face and the fact that their annual reports are compiled under different accounting standards. Financial firms encountering the same regulations and accounting standards as non-financial companies will not be removed from the sample. Two-digit Industry Classification Benchmark (ICB) codes are specified by Eikon ranging from 10 to 60.

In table 1, the distribution of industries based on the ICB classification, several sectors stand out for their contribution to the total transaction sample. “Industrials” (ICB 50) emerge as the most dominant sector, representing nearly half of the transactions (44.96%). The sector



encompasses a wide range of companies and reflects the diverse nature of industrial companies in the market. The sectors “High Technology” (ICB 10) and “Consumer Products and Services” (ICB 40) also hold a significant contribution of the sample at almost 14% each. Meanwhile, “Energy and Power” (ICB 60) only accounts for 0.25% of the distribution. The rest of the industries contribute with a percentage from 2-10%.

Table 1. Industry Distribution

ICB	Industry	Freq.	Percent	Cum.
10	High Technology	165	13.87	13.87
15	Telecommunications	26	2.18	16.05
20	Healthcare	75	6.30	22.35
30	Financials	80	6.72	29.08
35	Real Estate	111	9.33	38.40
40	Consumer Products and Services	158	13.28	51.68
45	Consumer Staples	37	3.11	54.79
50	Industrials	535	44.96	99.75
60	Energy and power	3	0.25	100.00
Total		1190	100.00	

In Table 2, the data shows that the years 2021 and 2022 dominate the distribution, accounting for a combined total of 46.56%. Before 2019, the distribution of transactions is smaller, ranging from 3% to 6%. The years 2019, 2020, and 2023 each contribute between 9.5% and 14% to the distribution. The low frequency in the early years is attributed to a lack of data.

Table 2. Year Distribution

year	Freq.	Percent	Cum.
2015	37	3.11	3.11
2016	65	5.46	8.57
2017	51	4.29	12.86
2018	70	5.88	18.74
2019	113	9.50	28.24
2020	134	11.26	39.50
2021	314	26.39	65.88
2022	240	20.17	86.05
2023	166	13.95	100.00
Total	1190	100.00	

## 6.2 Summary Statistics

Summary statistics for our variables are presented in table 3. Regarding our dependent variable,  $CAR(-1;1)$ , we observe a mean of 1% and a median of 0.55%. This indicates that the

majority of the sample experienced a positive short-term CAR upon the announcement. We can also observe a large variability in the CAR's, with a minimum of -33% and a maximum of 33.5%. The mean CAR for all event windows is positive, suggesting that on average the firms experience a slight increase in abnormal returns following the event. The medians are slightly lower than the means, indicating that the distribution of CAR is skewed to the right, meaning that there are some high positive returns that pull the mean up. We can also see that the standard deviation increases as the event window widens, from 0.043 for  $CAR(-1;1)$  to 0.069 for  $CAR(-5;5)$ . This suggests that the variability in abnormal returns increases with a larger event window. The range of CAR values also widens with longer event windows. The minimum CAR increases from -0.330 for  $CAR(-1;1)$  to -0.255 for  $CAR(-5;5)$ , and the maximum CAR follows a similar pattern.

Our main explanatory variable, *CEO on the board*, has a mean of 51.6%, suggesting that a small majority of the observations have the CEO present on the board. As we can see in table 3, the presence of the CEO on the board has a descending trend, and as of 2023, the majority of the observed firms do not have their CEO on the board. Our variable *Board Size* observes a mean of 8.202 and a median of 8, indicating that the average board size has eight members. The minimum is three members, which is reasonable since the least number of board members allowed in a public Swedish company is three. The variable regarding *Board Independence* has a mean of approximately 63% suggesting a majority of independent board members in our sample.

Regarding *Total Assets*, we observe a mean of MEUR 4,754 and a median of MEUR 1,790 indicating that the distribution is right-skewed, possibly due to the high variability which can be seen in the difference between the minimum and maximum. The same is seen for *Market Cap*, with a mean of MEUR 8,296 and a median of MEUR 2,211. The average firm has a *ROA* of 6.9%, *EBITDA-margin* of 20.9% and *Cash Ratio* of 8.9%. Additionally, the ratio of *Debt-to-Assets* has a mean of 22.3%, suggesting that the sample observations are not very levered. The dummy variable *Cash Payment* is rather low with an average of 12.4%, indicating that firms in our sample do not tend to acquire using only cash. Lastly *CapEx* has a mean of 117.7 MEUR and a median of 13.4 MEUR, indicating a right-skewed distribution. We can also observe that there is at least one company with a high capital expenditure of 1,879.

Table 3: Summary Statistics

	Mean	Median	SD	Min	Max	N
CAR(-1;1)	.01	.0055	.043	-.330	.335	1190
CAR(-2;2)	.01	.0056	.052	-.289	.339	1190
CAR(-3;3)	.01	.0047	.059	-.245	.318	1190
CAR(-5;5)	.008	.0043	.069	-.255	.354	1190
CEO on Board	.516	1	.500	0	1	1190
Board Size	8.202	8	2.417	3	17	1190
Independence (%)	.634	.615	.191	.111	1	1190
Total Assets	4754	1790	63344	36	50565	1190
Market Cap	8296	2211	13920	39.31	71783	1190
Cash Payment	.124	0	.329	0	1	1190
EBITDA Margin	.209	.16	.177	-.18	1.165	1190
ROA	.069	.066	0.050	-.141	.232	1190
Cash Ratio	.089	.065	0.089	.002	.541	1190
CapEx	117.7	13.4	265.2	0	1878.6	1190
Debt-to-Assets	.223	.211	0.127	0	.58	1190
Low Independence (%)	.499	0	0.500	0	1	1190
Large Boards	.508	1	0.500	0	1	1190

Over the entire period from 2015 to 2023 51.68% of the observations have the CEO on the board, while 48.32% do not. There is a clear trend indicating a change towards shifting the roles of CEO and board member during these years. In table 4 we can see that the trend for having a CEO on the board is decreasing every year. 73% of the firms had a CEO on the board in 2015, while only 42% in 2023.

Table 4: Statistics for CEO on the board by year

year	CEO on Board		
	0	1	Total
2015	27.03	72.97	100.00
2016	32.31	67.69	100.00
2017	35.29	64.71	100.00
2018	44.29	55.71	100.00
2019	48.67	51.33	100.00
2020	49.25	50.75	100.00
2021	54.46	45.54	100.00
2022	44.58	55.42	100.00
2023	57.83	42.17	100.00
Total	48.32	51.68	100.00

### **6.3 Correlation Matrix**

The pairwise correlation matrix is presented in table 5 below. The correlation between CAR(-1;1) and CEO on board is negative and statistically significant. CAR(-1;1) and board size are also negatively correlated with statistical significance. As for independence we observe a negative correlation with CAR, however with no statistical significance. Total assets are negatively correlated with CAR, and show significance on the one-percent level. Cash payment and cash ratio are positively correlated with CAR on the one-percent significance level. Further on, we observe a negative correlation between CAR and ROA, EBITDA-margin, and Debt-to-Assets, but with no significance.

Additionally, we can observe some expected results, such as the positive correlation between board size and total assets, suggesting that larger firms tend to have larger boards. Total assets are also positively correlated with CEO on the board, which indicates that larger firms are more prone to have their CEO present on the board. Overall, we observe reasonable and expected correlations between our variables.

Table 5: Correlation Matrix

Pairwise correlations										
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) CAR(-1;1)	1.000									
(2) CEO on Board	-0.091***	1.000								
(3) Board Size	-0.119***	0.236***	1.000							
(4) Board Independence	-0.027	-0.256***	-0.385***	1.000						
(5) Total Assets	-0.165***	0.321***	0.577***	-0.182***	1.000					
(6) Cash Payment	0.136***	-0.071**	-0.045	0.029	-0.076***	1.000				
(7) EBITDA Margin	-0.042	0.037	-0.069**	0.077***	0.332***	0.047*	1.000			
(8) Cash Ratio	0.149***	-0.005	-0.059**	-0.020	-0.232***	0.159***	-0.103***	1.000		
(9) Capex	-0.033	0.241***	0.263***	0.015	0.471***	0.007	0.142***	-0.051*	1.000	
(10) Debt to Assets	-0.014	0.012	-0.252***	0.127***	0.050*	-0.075***	0.248***	-0.218***	0.131***	1.000

*Note: For variable explanation, see Table 9 in appendix.*

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

#### **6.4 T-tests for CAR by CEO on Board**

The results of our t-tests are presented in table 6 in the appendix. The t-tests compare CAR across different event windows based on whether the CEO is on the board or not. Across all event windows (-1;1, (-3;3), and (-5;5), firms exhibit higher mean CAR when the CEO is not on the board compared to when the CEO is present.

Specifically for the event windows (-1;1), the mean CAR is 0.013 when the CEO is absent on the board, while it reduces to 0.007 when the CEO is on the board. This difference indicates that CEO presence correlates with diminished abnormal returns during this period. Expanding the window to (-2;2) and (-3;3), similar trends persist. Firms without the CEO on the board experience higher mean CAR compared to firms with CEO on the board. Even across a wider event window (-5;5), the difference in mean CAR remains significant. Here the mean CAR is 0.014 for firms without the CEO on the board, whereas it decreases to 0.003 for firms with CEO board presence.

All of our t-tests show a p-value of less than 0.01, which implies that we can reject the null hypotheses. This suggests that there is a statistical significant difference in the CAR between firms with CEOs on the board and firms without. Hence, the presence of the CEO on the board has a notable impact on stock returns surrounding M&A announcements. Economically the mean difference across all event windows suggests that M&As made by firms not having the CEO on board create more value for their shareholders.

## **7. Results and Analysis**

*This section will present the regression results for the hypotheses, include robustness checks, and discuss the reliability of the results.*

### **7.1 White Test for Heteroskedasticity**

To increase the reliability and validity of our results, we conduct a White's test to detect heteroskedasticity in our sample. The results are presented in table 10 in the appendix and they imply that the null hypothesis of homoskedasticity can be rejected. With the presence of heteroskedasticity, we can not rely solely on standard errors. Hence, we will apply robust standard errors in all our regressions. The robust standard errors will also be clustered by industry, to deal with any potential correlation within the industries due to unobserved factors.

### **7.2 Impact of CEO on the Board on CAR**

Our base model in, model 1, in table 7 serves as the foundation for our analysis, while additional models 2-7 were incorporated to enhance the robustness and are discussed later in a separate section.

In table 7, model 1, we observe significant coefficients for several variables. Notably, the explanatory variable, CEO on board, demonstrates a negative coefficient at the five-percent significance level. The coefficient implies that, on average, acquiring companies with a CEO on the board experience a 0.7% lower CAR on the announcement day compared to companies where the CEO is not on the board. The negative coefficient shows support for hypothesis H1a - *The relationship between CEO on the board and M&A performance is negative.*

This finding aligns with the core principles of agency theory (Jensen and Meckling, 1976), which posits that the concentration of power in the CEO can lead to decisions that are not optimal for the shareholders. The negative coefficient supports the idea that CEO involvement in the board may compromise the board's independence, leading to suboptimal decisions in M&A. The negative relationship is also consistent with the results from the study by Desai et al (2003). Their idea that CEO duality weakens governance and leads to poorer

acquisition outcomes, is applicable in this study as well. With the CEO on the board, there is an increase in power for one individual, possibly hindering the board's ability to act in shareholders' best interests. Similarly, Teti et al (2017) argue that due to less effective board monitoring as a result of CEO duality, M&A announcements tend to exhibit negative returns.

Our results are economically significant and further supports previous studies that find a negative relationship between CEO duality and CAR surrounding M&A announcements. In the context of Sweden, CEOs may prioritize job security and personal reputation, over shareholder value. As Jensen (1986) intended, the negative result can be due to the fact that managers are growing the firm beyond optimal size. Since growth in sales is positively related to power and compensation, Swedish managers may have the incentives to grow without creating value for the shareholders. A reason for the overinvestment is the availability of free cash flow, as discussed by Jensen (1986). Although, we do not find any evidence of free cash being a factor for negative returns, due to the positive coefficient of the variable, *Cash Ratio*. These findings instead suggest that managers can react and adapt immediately in a dynamic business environment (Pfeffer and Salancik, 1978). The negative announcement returns is then more likely to refer to underinvestment costs, caused by the management's lack of credibility and ability to fund positive NPV projects with internal resources (Stulz, 1990).

The negative relationship between CEO presence on the board and M&A announcement returns can be analyzed through the lens of three different types of agency costs: monitoring costs, bonding costs, and residual losses. The concept of monitoring costs, as outlined by Fama and Jensen (1983), appears to be more related when the CEO is not part of the board. In contrast, bonding costs are more relevant when the CEO is on the board. According to Jensen and Meckling (1976), a decrease in monitoring costs typically leads to an increase in bonding costs. However, bonding costs are intended to align the actions of managers with the interest of owners. In the context of Swedish companies, there seems to be a failure to effectively align these interests. Rather than commanding contractual obligations that restrict managerial discretion, there is an increase in managerial freedom, which undermines the alignment of interest.

The most substantial cost identified is the residual losses, which arises from conflicts of interest where managers' decisions do not maximize owners' wealth. Panda and Leepsa



(2017) argues that increasing debt levels can discipline managers, and make them more cautious in their decision-making. The positive relationship between debt to assets and M&A performance is the notion that debt can act as a disciplinary mechanism. Higher levels of debt can pressure managers to make more cautious and value-creating decisions to meet debt obligations. Although the variable, *Debt to Assets*, is not significant, the coefficient is pointing in one direction. This suggests that CEOs on the board may tend to maintain lower debt levels to avoid the pressure that comes with higher debt. This may be a result of their influence in decision-making processes. To align the interest of managers and owners in Swedish companies, implementing managerial ownership can encourage managers to act like owners and focus on enhancing firm performance (Panda and Leepsa, 2017).

Given the context, where the CEO assumes both executive and governance roles, the dynamics of group decision-making can be influenced by the CEO's authority and leadership style. Group conformity, matching one's attitudes, beliefs, and behaviors to group norms, poses a notable threat to the robustness of board discussions (Lipton and Lorsch, 1992). A heightened level of authority can be assessed by the manager, given the information asymmetry between the parties. In such settings, the thorough evaluation of strategic decisions might suffer, resulting in negative outcomes in M&A deals.

Furthermore, the negative impact of the CEO's presence on the board can be explained by Roll's (1986) hubris theory. Managers, especially those who hold both executive and board positions, might develop inflated confidence and sense of their ability to generate synergies from acquisitions. One possible explanation may be that an overconfident CEO pays excessive premiums for acquisition targets which is punished by the market. The overconfidence can stem from past successes in acquisitions, which contributes to the belief that they can create more value than actually possible. The results are also in line with what Desai et al. (2003) found in their study. They suggest that a concentration in power in the CEO can lead to overconfidence and thereby an overestimation of synergies which eventually affects the returns negatively.

Secondly, the presence of the CEO on the board can inflict and exacerbate the issue of groupthink within the boardroom. With the CEO present, he or she may exert substantial influence which can influence critical evaluations of proposed M&A deals negatively. This dynamic can lead to insufficient scrutiny of the acquisition strategy, where potential

downsides are downplayed, and the focus is solely placed on optimistic projections. Moreover, Roll (1986) highlights that the market tends to react negatively to M&A announcements when there is a perception of managerial hubris. Investors, recognizing the signs of overconfidence, may anticipate overestimated synergies and thereby a unreasonably high price paid. The result of this study, showing an initial negative CAR upon announcement can be explained by this theory, as investors adjust their expectations based on the perceived overvaluation and hubris of the empowered CEO.

However, M&A is typically made with a long-term perspective, where the acquirer wants to capitalize on synergies that might not be present in the short term. The initial market reaction may not be representative for the future performance of the merged entity. The management, as well as the board, can see potential opportunities that are not known by the public. Therefore, an initial negative market reaction does not ultimately equal a failed acquisition in the long term. In the relationship between the CEO and shareholders, a substantial part is the creation of shareholder value in the long term. Initial market reactions will affect the stock price, investor sentiment and future expectations but the ultimate result cannot be definitely determined solely based on these short-term movements.

The idea of long-term acquisitions can be connected to the Resource Dependent Theory (Pfeffer and Salancik, 1978). The objective from this perspective is to acquire resources that are critical for the firm's success. If certain resources are considered vital for the long-term success of the company, management may act reactively to be able to secure these resources. However, in a dynamic and fast-paced business environment, firms have to act accordingly, which might affect the quality of the due diligence. Herd and Perry (2004) emphasizes the importance of proper due diligence, highlighting it as the most important aspect for a successful acquisition. If the due diligence is weakened, it can signal overestimation of synergies and hence, an excessive premium paid. This can affect the investor sentiment negatively which leads to negative returns upon announcement.

Beyond the significant result of our main explanatory variable, some of our control variables show interesting results. Board independence has a negative coefficient of -0.021 on the ten-percent level. This is contrary to previous literature as well as our expectations and the result will be further elaborated in the coming section. Total Assets exhibit a negative coefficient of -0.003 on the one-percent significance level. This suggests that larger firms, in

terms of book value of total assets, experience negative returns following a M&A announcement. The variable cash payment has a positive coefficient of 0.012 on the five-percent significance level, indicating that firms who pay by cash have positive returns. Finally, cash ratio has a positive coefficient of 0.057 on the five-percent significance level which suggests that firms with a higher relative amount of cash to their total assets experience positive returns upon announcement.

In conclusion, our study reveals that a CEO on board negatively impacts M&A performance. This supports the literature that CEO on board compromises effective monitoring and leads to suboptimal decisions, consistent with agency theory. In Sweden, despite regulatory framework and internal checks, CEO on board can still result in overconfidence and groupthink, negatively affecting acquisition outcomes. These findings underscore the importance of maintaining strong corporate governance to protect long-term shareholder value.

Table 7: CEO on Board on CAR

VARIABLES	(1) CAR(-1;1)	(2) CAR(-2;2)	(3) CAR(-3;3)	(4) CAR(-5;5)	(5) CAR(-1;1)	(6) CAR(-1;1)	(7) CAR(-1;1)
CEO on Board	-0.007** (0.002)	-0.008** (0.003)	-0.009** (0.003)	-0.011* (0.005)	-0.007** (0.002)	-0.007** (0.002)	-0.006* (0.003)
Board Size	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)
Board Independence	-0.021* (0.010)	-0.021** (0.008)	-0.017 (0.012)	-0.009 (0.008)	-0.021* (0.010)	-0.021* (0.010)	-0.021 (0.012)
Total Assets	-0.003*** (0.001)	-0.004*** (0.001)	-0.005** (0.002)	-0.003 (0.002)	-0.003*** (0.001)		-0.004*** (0.001)
Cash Payment	0.012** (0.004)	0.010 (0.006)	0.010* (0.005)	0.007 (0.005)	0.012** (0.004)	0.012** (0.004)	0.014** (0.005)
EBITDA Margin	-0.007 (0.008)	-0.000 (0.007)	0.002 (0.008)	-0.016 (0.013)		-0.007 (0.009)	-0.008 (0.011)
Cash Ratio	0.057** (0.019)	0.066** (0.021)	0.066*** (0.015)	0.088*** (0.019)	0.057** (0.019)	0.061** (0.020)	0.062** (0.026)
Capex	0.000 (0.000)	0.000** (0.000)	0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Debt to Assets	0.002 (0.012)	0.010 (0.010)	0.013 (0.013)	0.024 (0.024)	0.001 (0.012)	-0.003 (0.012)	0.002 (0.014)
ROA					-0.006 (0.023)		
Market Cap						-0.002** (0.001)	
Constant	0.082*** (0.013)	0.051*** (0.011)	0.055*** (0.013)	0.031* (0.014)	0.083*** (0.014)	0.080*** (0.013)	0.085*** (0.008)
Observations	1,190	1,190	1,190	1,190	1,190	1,190	892
Adjusted R-squared	0.078	0.053	0.048	0.033	0.077	0.077	0.083
Standard errors	Clustered (industry)	Clustered (industry)	Clustered (industry)	Clustered (industry)	Clustered (industry)	Clustered (industry)	Clustered (industry)
Industry controls	YES	YES	YES	YES	YES	YES	YES
Year controls	YES	YES	YES	YES	YES	YES	YES

Note: For variable explanation, see Table 9 in appendix

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### 7.3 The Moderating Effect of Board Independence

As our investigation progresses, our attention turns to exploring how Board Independence moderates the relationship between CEO on board and CAR. This analysis includes the interaction term, *CEO\*Low Independence*. The results in table 8, model 9, show that the coefficient associated with CEO on board is negative and significant at the five-percent level, whereas the coefficient associated with the interaction term *CEO\*Independence* is positive but not statistically significant. While the interaction term shows no significant result, the model stays consistent with model 1. Consequently, we do not find evidence supporting H2 - *The CEO in the board's effect on M&A performance is exacerbated when board independence is low.*

Our results do not support Desai et al. (2003) and Teti et al. (2017) findings that the level of independence can inflict on the decisions, especially when the CEO is present on the board. Coles et al. (2001) argues that a higher proportion of independent directors enhances board oversight and strategic decision-making processes, while low independence can lead to weakened governance and less effective monitoring. Yet this phenomenon does not seem evident in Swedish firms. The rejection of H2 can make economic sense, especially in the Swedish context. Even if the board lacks strong dependence, there are other factors like regulatory oversight, and internal checks and balances within the organization that can limit the CEO's influence on M&A decisions. In Sweden, it might be the developed regulatory framework that limits the CEO's influence.

In model 8 an interesting finding is the positive coefficient of the dummy variable low independence which implies that companies with low independence, on average, have an announcement return on 0.8% more than companies with high independence. The variable is significant at the five-percent level and deviates from the previous literature (Coles et al., 2001; Lawrence, 2024; Desai et., 2003; Teti et al., 2017). Unlike previous research, which indicates that a higher proportion of independent board members improves board monitoring and strategic decision-making, the Swedish context appears to favor strategic flexibility in companies with lower board independence. This agility can lead to more effective and timely capitalizing of market opportunities, including M&A, which may result in higher CARs.

Furthermore, fewer independent directors may lead to better aligned interest. This alignment can reduce conflicts between the inside and outside board members. If the inside board

members have a profound company knowledge, this expertise can lead to better informed decisions regarding M&A. The aligned interest of inside directors can reduce monitoring costs, as the need for extensive oversight diminishes (Fama and Jensen, 1983).

Our findings indicate that in the Swedish context, lower board independence does not exacerbate the CEO's impact on M&A performance, contrary to prior research. Instead, lower independence can promote strategic flexibility, and better-aligned interest among board members can reduce conflicts and monitoring costs.

#### 7.4 The Moderating Effect of Board Size

In table 8, model 11, to explore how board size together with CEO on the board affect M&A performance, we introduce the interaction term *CEO\*Large Boards*. We do not find any support for H3, and hence, we reject the hypothesis. The rationale behind the hypothesis originates from the idea that large boards face communication and coordination issues which negatively affects decision-making processes. However, there is a possibility that Swedish firms with large boards have established efficient mechanisms to cope with complex processes. This will mitigate the potential negative issues of communication and coordination a large board may have, and therefore not show any significance supporting our hypothesis.

Furthermore, one possible explanation can be rooted in the ideas of Dalton et al (1999) that suggests that larger boards enhance diversity and strengthen the strategic guidance. By looking from this perspective, it can be argued that larger boards mitigate the negative influence of CEO on the board by limiting the individual's power, hindering value-destroying acquisitions. Elaborating on this idea, it contrasts the findings of Dahya et al (2002) that argues that smaller boards can more easily make timely decisions because of less disagreement. However, an important note is that fast and active decisions do not necessarily equal decisions that are best for the company. Possibly, fast responses can exacerbate the due diligence as a consequence of the time-pressure of the acquisition. Therefore a reasonable thought in the context of our results is, that a larger board size mitigates the negative effect of the CEO on the board, because there is less consensus and therefore more due diligence to reach an agreement.

An interesting aspect when introducing our interaction term is that the regression result deviates from model 1, as it eliminates the significance in the main explanatory variable, CEO on the board. A possible explanation to this is that the interaction term absorbs some of the variance that is earlier attributed to the variable CEO on the board. This makes both of the variables insignificant since the interaction effect is not strong enough on its own. There is also a possibility of multicollinearity within the variables which causes the variable to lose its significance.

Summarizing, we do not find any support for our hypothesis that large boards do exacerbate the effect of the CEO on the board in M&A deals. The hypothesis suggested that large boards struggle with communication and coordination, negatively affecting decisions. However,

Swedish firms may have mechanisms to mitigate these issues. Larger boards might enhance diversity and strategic guidance, limiting the CEO's negative influence by reducing individual power and preventing poor acquisitions.



Table 8: The Moderating Effect of Board Independence and Board Size on The Relationship  
Between CEO on Board and CAR

VARIABLES	(8) CAR(-1;1)	(9) CAR(-1;1)	(10) CAR(-1;1)	(11) CAR(-1;1)
CEO on Board	-0.007** (0.002)	-0.011** (0.003)	-0.006** (0.002)	-0.004 (0.005)
Low Independence	0.008** (0.003)	0.004 (0.003)		
CEO*Low Independence		0.008 (0.006)		
Board Independence			-0.017 (0.010)	-0.017 (0.010)
Large Boards			0.002 (0.003)	0.004 (0.004)
CEO*Large Boards				-0.005 (0.007)
Board Size	-0.000 (0.001)	-0.000 (0.001)		
Total Assets	-0.003** (0.001)	-0.003** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
Cash Payment	0.013** (0.004)	0.013** (0.004)	0.012** (0.004)	0.012** (0.004)
EBITDA Margin	-0.009 (0.008)	-0.009 (0.007)	-0.008 (0.007)	-0.009 (0.007)
Cash Ratio	0.059** (0.020)	0.059** (0.019)	0.059** (0.020)	0.061** (0.020)
Debt To Assets	0.003 (0.013)	0.003 (0.013)	0.004 (0.012)	0.003 (0.011)
Constant	0.062*** (0.006)	0.064*** (0.007)	0.074*** (0.009)	0.072*** (0.009)
Observations	1,190	1,190	1,190	1,190
Adjusted R-squared	0.077	0.078	0.076	0.076
Standard errors	Industry (clustered)	Industry (clustered)	Industry (clustered)	Industry (clustered)
Industry controls	YES	YES	YES	YES
Year Controls	YES	YES	YES	YES

Note: For variable explanation, see Table 9 in appendix

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 7.5 Robustness Tests

In order to test for potential endogeneity the Instrumental Variable *IN.duality* is controlled to assure its strength. Table 11 in the appendix reports the F-test of the variable. The test statistics  $>10$  indicates the strength of the Instrumental Variable (Wooldridge, 2016). The instrument helps us address the endogeneity in the model and ensures the validity and reliability of our estimates.

The base model indicates a statistically significant negative relationship between CEO on board and CAR. The robustness checks conducted in table x, models 2 to 4 reaffirm the findings of model 1. This demonstrates a consistency in the negative relationship between CEO on board and CAR. The coefficient for CEO on board remains consistently negative and statistically significant across all models.

In model 2, a wider event window of five days (-2; 2) is incorporated. The results suggest a five-percent significance, the same as model 1. We additionally rerun the model with extended event windows of (-3;3) and (-5;5), as shown in models 3 and 4. Despite the extension our findings remain consistent. However, in the latter event window the significance decreases to ten percent, similar to the results observed by Defrancq et al. (2020) when examining extended event windows. This can indicate that when the event window extends beyond (-5;5), there is a possibility that noise is introduced, as discussed by Fama et al. (1969).

In model 5 and 6 we run the model using different measures for firm size and profitability. Specifically, we replace total assets with market capitalization (Defrancq et al., 2020), and EBITDA margin with ROA. Despite these changes, our results remain consistent, demonstrating that the negative impact of CEO on board on CAR persists across different specifications. This consistency strengthens the reliability of our findings.

In model 7 we perform a separate regression model from a subsample to test for robustness by excluding the 25th percentile of the smallest companies. Excluding the smallest companies helps ensure that the analysis stays consistent and stable. Since smaller companies have less reliable data or greater variability in performance, excluding them may improve the overall quality and consistency of the data. The results stay consistent with the base model but with a ten-percent significance on the main explanatory variable.

## **7.6 Limitations**

While the regression analysis provides valuable insights, it is essential to acknowledge its limitations. Despite our efforts to maximize our sample size during the selected period, the availability of Swedish corporate governance data was a limitation of the study. A larger sample size may affect the findings from the regression results and result in more precise estimations. Moreover, the model's explanatory power, the adjusted R-squared, suggests that other unobserved factors influence M&A performance.

To further enhance the robustness of the estimations, additional variables, such as CEO characteristics, industry-specific factors, and board dynamics can provide a more comprehensive understanding of the determinants of M&A returns. The model can suffer from omitted variable bias if important determinants of M&A performance are not included in the analysis. Failure to control for these omitted variables can lead to biased coefficient estimates and inaccurate conclusions.

## 8. Conclusion

Mergers & Acquisitions play a crucial role in the corporate landscape and are highly significant for companies to provide strategic growth, market positioning, and financial improvement. Using a sample of 1,190 acquisitions made by Swedish publicly traded companies, this paper aims to answer these research questions: *How does CEO involvement in the board affect M&A performance? Does board independence have an impact on the relationship between CEO on the board and M&A performance? Does board size have an impact on the relationship between the CEO on the board and M&A performance?* This is achieved by conducting an event study and employing OLS regressions with Cumulative Abnormal Returns as the dependent variable and the CEO on Board as the main explanatory variable.

The study finds that having the CEO present on the board, on average, is associated with a 0.7% negative cumulative abnormal return. The relationship is driven by agency problems, where the manager acts in self-interest over shareholders' wealth. It can also be explained by hubris, overconfidence and CEO authority. In addition, the study does not find any moderating effect on boards with lower independence or larger boards on the relationship between CEO on board and announcement returns.

This study contributes to the existing literature by bringing a recent Swedish perspective on the subject. The current body of literature is sparse with the main focus on CEO duality. With this, the perspective of the CEO on the board is added, as well as the geographical expansion of studying the Swedish market. The findings of the study serve as a part of a foundation for future corporate governance decisions and as an aid when battling agency problems.

However, it is important to notice that the study's result cannot be solely used to address the dual role setting.

Given the uniqueness of corporate governance practices in the Swedish context, this paper provides several future research opportunities. First, given the limitation of governance data, future research can explore a more comprehensive study with additional board and CEO characteristics in the Swedish context. The inclusion can help increase the explanatory power of the study. Moreover, a longitudinal study can be conducted to track the evolution of CEOs on boards impact on M&A decisions. Another interesting future research would be to do a

comparative analysis between Sweden and a country that allows CEO duality. Lastly, the exploration of how CEOs on the board and M&A strategies vary between different industries in the Swedish market would contribute to valuable insights.

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## Appendix

Table 1. Industry Distribution

ICB	Industry	Freq.	Percent	Cum.
10	High Technology	165	13.87	13.87
15	Telecommunications	26	2.18	16.05
20	Healthcare	75	6.30	22.35
30	Financials	80	6.72	29.08
35	Real Estate	111	9.33	38.40
40	Consumer Products and Services	158	13.28	51.68
45	Consumer Staples	37	3.11	54.79
50	Industrials	535	44.96	99.75
60	Energy and power	3	0.25	100.00
Total		1190	100.00	

Table 2. Year Distribution

year	Freq.	Percent	Cum.
2015	37	3.11	3.11
2016	65	5.46	8.57
2017	51	4.29	12.86
2018	70	5.88	18.74
2019	113	9.50	28.24
2020	134	11.26	39.50
2021	314	26.39	65.88
2022	240	20.17	86.05
2023	166	13.95	100.00
Total	1190	100.00	

Table 3: Summary Statistics

	Mean	Median	SD	Min	Max	N
CAR(-1;1)	.01	.0055	.043	-.330	.335	1190
CAR(-2;2)	.01	.0056	.052	-.289	.339	1190
CAR(-3;3)	.01	.0047	.059	-.245	.318	1190
CAR(-5;5)	.008	.0043	.069	-.255	.354	1190
Ceo on Board	.516	1	.500	0	1	1190
Board Size	8.202	8	2.417	3	17	1190
Independence (%)	.634	.615	.191	.111	1	1190
Total Assets	4754	1790	63344	36	50565	1190
Market Cap	8296	2211	13920	39.31	71783	1190
Cash Payment	.124	0	.329	0	1	1190
EBITDA Margin	.209	.16	.177	-.18	1.165	1190
ROA	.069	.066	0.050	-.141	.232	1190
Cash Ratio	.089	.065	0.089	.002	.541	1190
CapEx	117.7	13.4	265.2	0	1878.6	1190
Debt-to-Assets	.223	.211	0.127	0	.58	1190

Low Independence (%)	.499	0	0.500	0	1	1190
Large Boards	.508	1	0.500	0	1	1190

Table 4: Statistics for CEO on the board by year

year	CEO on Board		
	0	1	Total
2015	27.03	72.97	100.00
2016	32.31	67.69	100.00
2017	35.29	64.71	100.00
2018	44.29	55.71	100.00
2019	48.67	51.33	100.00
2020	49.25	50.75	100.00
2021	54.46	45.54	100.00
2022	44.58	55.42	100.00
2023	57.83	42.17	100.00
Total	48.32	51.68	100.00

Table 5: Correlation Matrix

Pairwise correlations										
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) CAR(-1;1)	1.000									
(2) CEO on Board	-0.091***	1.000								
(3) Board Size	-0.119***	0.236***	1.000							
(4) Board Independence	-0.027	-0.256***	-0.385***	1.000						
(5) Total Assets	-0.165***	0.321***	0.577***	-0.182***	1.000					
(6) Cash Payment	0.136***	-0.071**	-0.045	0.029	-0.076***	1.000				
(7) EBITDA Margin	-0.042	0.037	-0.069**	0.077***	0.332***	0.047*	1.000			
(8) Cash Ratio	0.149***	-0.005	-0.059**	-0.020	-0.232***	0.159***	-0.103***	1.000		
(9) Capex	-0.033	0.241***	0.263***	0.015	0.471***	0.007	0.142***	-0.051*	1.000	
(10) Debt to Assets	-0.014	0.012	-0.252***	0.127***	0.050*	-0.075***	0.248***	-0.218***	0.131***	1.000

Note: For variable explanation, see Table 9 in appendix.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table 6: T-tests for CAR by CEO on board

**Two-sample t test with equal variances**

	CEO=0	CEO=1	Mean0	Mean1	dif	St Err	t value	p value
CAR(-1;1)	576	614	0.013	.007	.007	.003	2.85	.005
CAR(-2;2)	576	614	0.015	.005	.009	.003	2.95	.004
CAR(-3;3)	576	614	0.016	.005	.011	.004	3.1	.002
CAR(-5;5)	576	614	0.014	.003	.011	.004	2.9	.004

Table 7: CEO on Board on CAR

VARIABLES	(1) CAR(-1;1)	(2) CAR(-2;2)	(3) CAR(-3;3)	(4) CAR(-5;5)	(5) CAR(-1;1)	(6) CAR(-1;1)	(7) CAR(-1;1)
CEO on Board	-0.007** (0.002)	-0.008** (0.003)	-0.009** (0.003)	-0.011* (0.005)	-0.007** (0.002)	-0.007** (0.002)	-0.006* (0.003)
Board Size	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)
Board Independence	-0.021* (0.010)	-0.021** (0.008)	-0.017 (0.012)	-0.009 (0.008)	-0.021* (0.010)	-0.021* (0.010)	-0.021 (0.012)
Total Assets	-0.003*** (0.001)	-0.004*** (0.001)	-0.005** (0.002)	-0.003 (0.002)	-0.003*** (0.001)		-0.004*** (0.001)
Cash Payment	0.012** (0.004)	0.010 (0.006)	0.010* (0.005)	0.007 (0.005)	0.012** (0.004)	0.012** (0.004)	0.014** (0.005)
EBITDA Margin	-0.007 (0.008)	-0.000 (0.007)	0.002 (0.008)	-0.016 (0.013)		-0.007 (0.009)	-0.008 (0.011)
Cash Ratio	0.057** (0.019)	0.066** (0.021)	0.066*** (0.015)	0.088*** (0.019)	0.057** (0.019)	0.061** (0.020)	0.062** (0.026)
Capex	0.000 (0.000)	0.000** (0.000)	0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Debt to Assets	0.002 (0.012)	0.010 (0.010)	0.013 (0.013)	0.024 (0.024)	0.001 (0.012)	-0.003 (0.012)	0.002 (0.014)
ROA					-0.006 (0.023)		
Market Cap						-0.002** (0.001)	
Constant	0.082*** (0.013)	0.051*** (0.011)	0.055*** (0.013)	0.031* (0.014)	0.083*** (0.014)	0.080*** (0.013)	0.085*** (0.008)
Observations	1,190	1,190	1,190	1,190	1,190	1,190	892
Adjusted R-squared	0.078	0.053	0.048	0.033	0.077	0.077	0.083
Standard errors	Clustered (industry)	Clustered (industry)	Clustered (industry)	Clustered (industry)	Clustered (industry)	Clustered (industry)	Clustered (industry)
Industry controls	YES	YES	YES	YES	YES	YES	YES
Year controls	YES	YES	YES	YES	YES	YES	YES

Note: For variable explanation, see Table 9 in appendix

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 8: The Moderating Effect of Board Independence and Board Size on The Relationship  
Between CEO on Board and CAR

VARIABLES	(8) CAR(-1;1)	(9) CAR(-1;1)	(10) CAR(-1;1)	(11) CAR(-1;1)
CEO on Board	-0.007** (0.002)	-0.011** (0.003)	-0.006** (0.002)	-0.004 (0.005)
Low Independence	0.008** (0.003)	0.004 (0.003)		
CEO*Low Independence		0.008 (0.006)		
Board Independence			-0.017 (0.010)	-0.017 (0.010)
Large Boards			0.002 (0.003)	0.004 (0.004)
CEO*Large Boards				-0.005 (0.007)
Board Size	-0.000 (0.001)	-0.000 (0.001)		
Total Assets	-0.003** (0.001)	-0.003** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
Cash Payment	0.013** (0.004)	0.013** (0.004)	0.012** (0.004)	0.012** (0.004)
EBITDA Margin	-0.009 (0.008)	-0.009 (0.007)	-0.008 (0.007)	-0.009 (0.007)
Cash Ratio	0.059** (0.020)	0.059** (0.019)	0.059** (0.020)	0.061** (0.020)
Debt To Assets	0.003 (0.013)	0.003 (0.013)	0.004 (0.012)	0.003 (0.011)
Constant	0.062*** (0.006)	0.064*** (0.007)	0.074*** (0.009)	0.072*** (0.009)
Observations	1,190	1,190	1,190	1,190
Adjusted R-squared	0.077	0.078	0.076	0.076
Standard errors	Industry (clustered)	Industry (clustered)	Industry (clustered)	Industry (clustered)
Industry controls	YES	YES	YES	YES
Year Controls	YES	YES	YES	YES

Note: For variable explanation, see Table 9 in appendix

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 9: Variable Description

<b>Variable</b>	<b>Explanation</b>
<b>CAR(-1;1)</b>	The three-day cumulative abnormal return using OMXSPI as market index
<b>CEO on Board</b>	A dummy variable equal to 1 if the CEO is present on the board, 0 otherwise
<b>Board Size</b>	The number of directors on the board
<b>Board Independence</b>	The fraction of independent directors on the board
<b>Total Assets</b>	The natural logarithm of book value of total assets (t-1)
<b>Market Cap</b>	The natural logarithm of market capitalization (t-1)
<b>Cash Payment</b>	Dummy variable equal to 1 if the acquisition was paid 100% in cash, 0 otherwise
<b>ROA</b>	The ratio between net income and book value of total assets (t-1)
<b>EBITDA Margin</b>	The ratio between EBITDA and book value of total assets (t-1)
<b>Cash Ratio</b>	The ratio between cash and cash equivalents and book value of total assets (t-1)
<b>Capex</b>	Capital expenditure (t-1)
<b>Debt to Assets</b>	The ratio between long-term debt and book value of total assets (t-1)
<b>Low Independence</b>	A dummy variable equal to 1 if board independence is below the median, 0 otherwise
<b>Large Boards</b>	A dummy variable equal to 1 if board size is above the median, 0 otherwise



Table 10: Test for heteroskedasticity

Test	$H_0$	P-value	Decision	Heteroskedasticity
White test	Homoskedasticity	0	Reject	YES

Table 11: F-test for the strength of the Instrumental Variable

Test for instrumental variable	$H_0$	Test Statistic	Prob.>F	Decision	Weak instrument?
F-test	Weak instrument	20.4308	0	Reject	No