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Chief Executive Officers as Outside Directors on Corporate Boards

A study on whether CEO director appointments influence firm performance and corporate decision-making

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Abstract

This paper investigates the effects of appointing Chief Executive Officers (CEOs) as outside directors on firm performance and corporate decision-making in S&P 1500 firms. A sample of outside director appointments from years 2010-2018 are analyzed using a univariate analysis, multivariate analyses, and a difference-in-difference approach. Four different hypotheses are tested to determine the influence CEO director appointments have on stock market reactions, different measures of long-term firm performance, and two major corporate decisions. Contrary to expectations, the findings reveal that CEO director appointments lead to 0.35% lower cumulative abnormal returns (CARs) in the short term after controlling for firm and appointee characteristics. However, when examining long-term firm performance, CEO director appointments result in 0.85% higher changes of return on assets (ROA) around the appointment date, although this relationship weakens when changes in alternative firm performance measures are researched and when a propensity score matching analysis is utilized. Moreover, this paper finds no noteworthy findings that indicate CEO director appointments to influence corporate decision-making. Neither change in the leverage ratio and levels of innovation, as measured by increased research & development (R&D) expenditures, should be allocated to CEO director appointments. This study adds to the existing literature on corporate governance and board of directors by delving into the composition of corporate boards and investigating consequential influence of CEOs within boards on firm performance and strategic decisions. To further enrich our understanding of this phenomenon this paper also distinguishes between directors with any past or current CEO experience, and those currently serving as CEOs.

Table of contents

1 Introduction

The Chief Executive Officer (CEO) plays a pivotal role in the corporate realm, holding top leadership positions within companies. CEOs have the ability to steer firms in actively pursuing opportunities and making important and strategic decisions that can impact the performance of their firms (Keon, 1986). Past literature agrees that the survival and success of a firm hinge largely on the performance and caliber of its top managers (Ireland and Miller, 2004; Priem, 1990). Yet to what extend can CEOs transfer both skills and knowledge to another firm where they fulfill a role of an outside, independent director on its board? As these top managers are assumed to possess valuable experience which they gather during their executive roles, this paper aims at investigating the benefits to companies appointing these managers as outside directors to their board.

Corporate boards are an integral part of modern corporate governance, acting as a mechanism to oversee and provide guidance to a firm's executive or management team. They exist to provide strategic direction, set policies, and monitor the performance of a company's management team. Boards play a crucial role in ensuring that the company is managed in the best interests of its shareholders, while also being accountable to other stakeholders. They hire and evaluate top executives, approve important decisions, and provide oversight to safeguard the company's financial and ethical integrity. Functioning as a crucial link between management and a firm's shareholders, corporate boards promote accountability, transparency and responsible decision-making, ultimately contributing to the long-term success and sustainability of a firm (Finegold, Benson and Hecht, 2007).

Regarding CEO directors[1] on boards, past literature reaches no consensus on whether outside directors possessing this type of human capital add value to firms or not. Whereas Fich (2005) finds higher market reactions to director appointments of CEOs, evidence by Fahlenbrach, Low and Stulz (2010) shows that stock markets react more favorably to the appointment of a CEO director only when the firm has no outside CEO present on its board yet. Even though majority of research agrees on the unique skills and networks that CEO directors possess, it lacks agreement on whether CEO directors do in fact enhance firm value. In addition, the effect of CEO director appointments on (operating) firm performance remains a subject of ongoing debate within scientific literature (Fahlenbrach et al., 2010). Finally, this paper tests the assertions put forth by authors in previous literature regarding the positive relationship

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[1] From here onwards, outside directors with any CEO experience at another firm are referred to as CEO directors.

between CEO director appointments and corporate decisions, such as the level of innovation and leverage (Balsmeier, Buchwald and Stiebale, 2014; Chizema and Kim, 2010; Güner, Malmendier and Tate (2008).

Ultimately, this paper aims at investigating whether the appointments of CEOs as outside directors lead to short-term market reactions, affect different longer term firm performance measures and influence longer term corporate decisions. This can be captured by the following research question:

Do appointments of CEOs as outside directors on boards increase firm performance and corporate decision-making of S&P 1500 firms?

Using a sample of 1,955 outside director appointments by S&P 1500 firms for years 2010-2018, this paper aims to test four different hypotheses to answer the research question. Through the application of univariate-, multivariate-, and difference-in-difference analyses, this paper aims at finding statistical evidence to accept or reject the four different hypotheses individually.

Contrary to Fich (2005) and overall expectations, this paper finds that CEO director appointments lead to lower cumulative abnormal returns (CARs), also when controlling for firm and appointee characteristics. These CEO director appointments seem to negatively influence a firm's stock market returns. Besides, results on long term firm performance indicate that CEO director appointments are positively correlated with a firm's change in return in assets around the appointment date. However, these results do not hold when substituting ROA for other measures of firm performance as dependent variables. Finally, this study does not find CEO director appointments to significantly impact corporate decision-making. Multivariate regression analysis shows that appointments of CEO directors do not increase the level of innovation (measured by R&D expenditures) and leverage within firms.

This paper adds to the existing corporate governance literature by further investigating the composition of boards of directors and what implications these can have for firm performance and strategic decisions. This paper examines firm performance around and after the announcements of CEO directors. Whereas previous research investigates the effects and market reactions of outside directors with overall CEO experience, this paper differentiates between CEO directors as those that have fulfilled CEO roles in the past and those that are enrolled as CEO at the time of appointment as an outside director.

The remainder of this paper is structured as follows. In chapter 2 the literature background is discussed, and the hypotheses are formulated. Chapter 3 describes the data sample and the employed methodology. Next, Chapter 4 discusses the results from the different analyses. Chapter 5 concludes and lays out potential limitations to this paper.

2 Theoretical framework

2.1 Literature background

In this section the empirical and theoretical literature on board of directors and its background as a CEO will be explored, resulting in the theoretical framework. Hereupon, four hypotheses will be formulated.

2.1.1 Corporate governance

Corporate governance carries substantial practical importance within business and management, by focusing on the separation of ownership and control within firms (Schleifer and Vishny, 1997). Combining the objective of maximizing all stakeholders' interests with the objective of long-term sustainability and success of companies, corporate governance plays a major role in all major companies nowadays. However, past literature presents strong disagreements on the effectiveness of corporate governance systems that are being used. Whereas Easterbrook and Fischel (1991) are very optimistic about the United States corporate governance system, Jensen (1993) states that it is deeply flawed, and focus should be put much more on highly leveraged companies. Extensive past research also discusses the corporate governance mechanisms that are put in place aiming to balance the interests of various stakeholders, such as shareholders, employees, management, and the community. Examples are risk management, financial reporting, board of directors and shareholder rights. Since this paper investigates the appointments of CEOs as outside directors on corporate boards, this theoretical framework will continue by exploring the relevant literature associated with boards of directors.

2.1.1.1 Board of Directors

To address agency problems, boards of directors are set up to act as a crucial tool to ensure shareholder's interests. One way that directors can be of valuable influence in reducing agency costs is through the monitoring of management (Fama, 1980; Jensen, 1993). Within corporate governance, this supervising role of directors has been widely researched till date. It should be

concluded that three topics are most frequently being studied related to the effectiveness of monitoring by directors: size, composition and independence of the board (Garner, 2017).

Overall, a negative relation between board size and firm performance is found in past studies. Yermack (1996) finds that smaller boards lead to better operational efficiency, higher profitability, and stronger CEO performance incentives. Eisenberg, Sundgren and Wells (1998) build on this by stating that this relationship does not only hold for large US firms, but also for small and mid-sized international firms. Concerning the independence of boards of directors, academic research takes opposing views on the relation between board independence and firm performance. Whereas Agrawal and Knoeber (1996) found a greater percentage of outside directors on a board to negatively affect firm performance, Rosenstein and Wyatt (1990) found that announcements of appointed outside directors led to an increase in shareholder wealth. Wagner, Stimpert and Fubara (1998) confirm these contradicting views by stating that both greater insider and outsider board representation can positively impact firm performance. Previous theory and literature have mainly investigated board composition by researching the relation between board diversity and firm performance. Overall tendency is that diverse boards lead to better firm performance, since diverse directors bring diverse experiences and knowledge, useful to corporate firms (Garner, 2017). For example, Adams and Ferreira (2009) and Carter, Simkins and Simpson (2003) find a positive relation between both the proportion of women and minority groups on boards, and firm value.

Another role for directors, which has been overlooked due to the major empirical focus on the director's monitoring role, is providing knowledge, advice and business networks to support the CEO and management team in achieving better firm performance (Kumar and Zattoni, 2013). Often, a tradeoff arises between the advisory and monitoring role. On the one hand, a director's job is to watch over the CEO at the interest of shareholders. On the other hand, in its advisory role, a director is dependent on information shared by the executive. In light of strong monitoring by directors, CEOs might be hesitant sharing information about the firm. According to Adams and Ferreira (2007), this tradeoff indicates that it may not be beneficial to monitor a CEO very intensely, thereby increasing the CEO's willingness of sharing valuably information with the board. This would benefit the advisory role that directors have and ultimately profiting shareholders as well (Song and Thakor, 2006).

Through sharing his knowledge and skills retrieved from being a CEO, an outside board member may exert most influence through advising instead of monitoring the CEO of a company and its top management team. Since the primary focus of this paper is on the impact

of outside directors with CEO experience on firm performance, the advisory role will be discussed in the subsequent analysis and discussion.

2.1.1.1.1 CEOs as outside board members

Professional background of directors is believed to directly influence their behavior and way of adding value to these firms (Wang, Jin and Yang, 2016). Examples are experience within certain or similar industries, experience as bankers, and the experience of working in venture capital. This paper looks at specifically the CEO experience that directors possess, a topic that has been less frequently researched than most other professional backgrounds. A CEO can share a valuable mix of industry, managerial and functional knowledge with a firm, helping it in its director role of advising and monitoring the current CEO, (Larcker and Tayan, 2011). Furthermore, CEO directors can also transfer intangible attributes such as the ability to lead in crisis and strong work ethic and help the firm with a connection to crucial resources, as described by Pfeffer and Salancik (1978). Remarkably enough, the number of these sought after directors are declining over the past decades. Reasons given are the growing complexity of the CEO Job as reported by Lorsch and MacIver (1989), but also the introduction of more corporate guidelines, limiting the number of outside directorships held by active CEO's (Spencer Stuart, 2010).

Even though research is limited regarding CEOs as outside directors, there is still a vast amount of empirical literature that discusses both the executive experience that CEO directors possess, and the effect of these CEO directors on firm performance. Overall, there seems to be no clear consensus on whether CEO directors do enhance firm performance. On the one hand authors do find that investors react positively to the announcement of a CEO director, due to them bringing valuable skills to a firm, as discussed above (Fich, 2005). On the other hand, authors mention that CEOs are too busy with their own companies to be effective, resulting in a reduction of board quality (Heidrick and Struggles, 2011). Next, the most relevant papers linked to CEO directors will be discussed, focusing on their contradicting findings.

Fich (2005) studies whether market reactions to appointments of outside directors indicate that some outside directors are perceived more favorably than others. His main findings show that appointments of CEO directors are associated with significantly positive CARs, but appointments of non-CEO directors are associated with insignificantly negative CARs. It is suggested that this is due to their source of managerial expertise and skills that these CEO directors bring with them. Fich (2005) also introduces the *certification hypotheses,* stating that firms are eager to accept a well-known CEO onto their board since this may serve as a

'certification' of the firm's future prospects. Subsequently, this may cause investors to be more positive, leading to positive stock market reactions.   Furthermore, he finds that these positive market reactions are more pronounced when CEO directors are CEOs at commercial banks. Finally, he also finds long-term positive performance benefits for appointing firms. Fich (2005) concludes by saying that he believes, based on his findings, that appointments of CEOs are sought to improve firm performance.

Oppossingly, Fahlenbrach, Low and Stulz (2010) only find significantly higher CARs for appointments of CEO directors when there is no CEO director on the board prior to the announcement. Results show no significant CARs when CEO directors are already present on the board beforehand. To investigate whether firms react positively in a more longer-term, the authors introduce the *performance hypothesis*, which expects that operating performance and decision-making of a firm improve when CEO directors are announced to the board. Using return on assets (ROA) as a proxy for operating performance, they find no improvements in operating performance upon CEO director appointments.

Several other papers have also researched these CEO directors and found notable, but also opposing results. Kosnik (1987) and Larcker and Tayan (2011) suggest that boards are more effective when CEO directors are part of their board and that therefore CEOs directors are more sought after. Subsequently, Adams and Ferreira (2007) find that especially young and experienced CEOs would benefit from the human capital that these CEO directors carry with them. Oppossingly, Stevenson and Adin (2009) find outside directors with CEO experience to have no effect on the influence that these directors have within their board. Other relevant literature finds that CEO directors on a company's board lead to positive market reactions when the firm appoints new CEOs (Tian, Haleblian and Rajagopalan, 2011), and, from a CEO directors' supply perspective, CEOs are less likely to hold outside directorships when their own firm has high growth opportunities (Booth and Deli, 1996).

2.2 Hypotheses

As highlighted in section *2.1.1.1.1 CEOs as outside board members,* past literature on the effects and influence of CEO directors on board and firm performance has led to contradictory results. In the first place, this paper will look at what appointments of CEO directors cause in terms of stock market reactions. As discussed earlier, previous literature finds opposing results regarding these market reactions. Whereas Fich (2005) finds that shareholders seem to value CEO experience of directors, Fahlenbrach et al. (2010) find that CEOs do not add value to firms (Adams, Akyol and Verwijmeren, 2018). Less debate arises around the rising importance of the

outside director role, especially for CEO directors. They are assumed to be the most popular and valuable directors due to variable governance reasons, such as their ability to connect management to vital resources and their role of advising and counseling the current CEO (Fama and Jensen, 1983; Johnson, Daily, Dalton and Ellstrand, 1996). In line with the latter theory and the findings by Fich (2005), the following hypothesis is formulated:

H1: *Appointments of CEO directors to the board of S&P 1500 firms lead to higher positive stock market reactions than other outside director appointments.*

Even though stock market reactions provide valuable insight in the investor sentiment around CEO director announcements, they play a minimal role in indicating firm performance over a longer period of time. In line with the paper by Fahlenbrach et al. (2010), this paper investigates what effect these announcements can have on a firm's operating performance. As discussed earlier, their paper has introduced the *performance hypothesis*, which implies that CEO directors should be more valuable to appointing firms due to their exceptional advising and monitoring skills to the incumbent management. In line with this hypothesis, they expect that operating performance will improve upon CEO director announcements.

In their paper, they fail to reject the null hypothesis that the appointment of a CEO outside director has no impact on operating performance. However, they also mention that a concern arises, questioning whether there is just no effect, or an effect which is insignificant caused by very high standard errors. Since they mention this could be related to their sample size and period, this paper will look at another sample, differing in both the selection of companies and chosen time interval. Based on the performance hypothesis, the validity concerns by Fahlenbrach et al. (2010), and the remaining popularity of CEO directors over the past decades, operating performance is expected to thrive after the appointments of these directors:

H2: *Appointments of CEO directors to the board of S&P 1500 firms improve operating firm performance.*

Furthermore, past research has also demonstrated corporate decision-making to be affected by how corporate boards are set up. For example, Sierra-Morán, Cabeza-García, González-Álvarez and Botella (2021) find significant positive correlations between the board independence ratio and firm innovation. Complementing these findings, Jiraporn, Lee, Park,

and Song (2018) find that board independence leads to significantly higher investments in innovation and higher innovation productivity. Other research by Balsmeier, Buchwald and Stiebale (2014) find similar results and mention that their analysis shows a positive influence of external CEOs on innovative firm performance. This effect seems to be significant especially when CEOs from innovative firms are appointed. They conclude by saying that external executives' professional backgrounds can provide valuable innovative knowledge and expertise to the appointing firm. In line with these findings, it is expected that CEO directors may enhance levels of innovation within the firms where they serve as outside director on the board:

H3: Appointments of CEO directors to the board of S&P 1500 firms increase a firm's level of innovation.

Another widely research topic in corporate decision-making is the leverage ratio held by S&P 1500 firms. Both papers by Chizema and Kim (2010) and Alves, Couto and Francisco (2014) find a positive and significant relationship between the percentage of outside directors on boards and higher levels of firm leverage. Güner et al. (2008) display similar findings and state that this positive relationship may be a result of valuable banking connections that outside directors possess. Ultimately, their extensive banking or financial networks improves their chances of accessing external capital. Since CEOs are often regarded as influential managers with a great network, they are believed to positively influence a company's leverage ratio, when serving as an outside director. This has given rise to the fourth and final hypothesis:

H4: Appointments of CEO directors to the board of S&P 1500 firms increase a firm's level of leverage.

3 Data & Methodology

3.1 Data

This paper will address 1,955 appointment announcements of independent directors to the boards of S&P 1500 firms between years 2010-2018. 1,840 unique directors and 632 unique firms make up this main announcement sample. Narrowing down this research to analyze firms within the S&P 1500 index has several advantages such as the availability of data and the significant coverage (90%) of the total US stock market. Another main advantage is the representativeness of the index, since it not only comprises large cap firms (S&P 500), but also mid-cap (S&P 400) and small-cap (S&P 600) firms, resulting in a comprehensive view of the overall market. The time period is chosen to ensure no biased data arises due to the global financial crisis taking place before, and the global pandemic happening after the selected time period.

Various databases have been consulted to ensure the relevant data would be collected. First of all, the index constituents for years 2010-2018 are found through the identification tool provided by the Center for Research in Security Prices (CRSP). Only firms that are present in the S&P 1500 index for the entire specified time period are included in the analysis. Furthermore, financial and utility firms are excluded from our research. Due to strong government regulation linked to these types of firms, boards seem to play a limited role (Yermack, 1996).

Since this paper focuses on announcement returns and firm performance around the announcements of outside directors, the BoardEx – Directors and Announcements database was used to retrieve all executive/director announcements for the sample of S&P1500 firms.

After filtering out all irrelevant announcements, a total of 1,955 outside director appointments have been found to the boards of 632 firms present in the S&P 1500 index over years 2010-2018. Financials of these companies are collected through Capital IQ – Compustat. Of the 1,955 appointment announcements, 1,840 unique individuals are appointed as outside directors to the boards of these firms. Director level data, such as age and gender, is then retrieved from BoardEx – Individual Profile and linked to the main dataset with director appointment announcements through the merging on DirectorIDs. Board level data is gathered through BoardEx as well.

To find a director's past or current CEO experience the database BoardEx – Individual Profile Employment has been used. Again, DirectorIDs have been used as input to retrieve as much past employment information as possible. Directors with CEO experience were identified

by searching for the words "CEO" or "Chief Executive Officer" within the RoleName variable. Then, for every single sample period year (2010-2018) variables were created to determine a director's total years of CEO experience, their last day in a CEO role or whether he/she is currently enrolled as a CEO. By merging the data together with the announcement file, dummy variables could be created to serve as indicators for this relevant CEO information.

Table 1. Summary statistics

Variables	Obs.	Mean	Median	Std. Dev.
Panel A. Director statistics (N = 1,840)				
CEO experience (dummy)	1,955	0.510	1	0.500
CurrentCEO	1,955	0.272	0	0.445
CEO experience (years)	997	9,880	7,825	8,531
Age	1,721	56,510	57	7.198
Female	1,725	0.278	0	0.448
MBA	1,725	0.241	0	0.428
Other current directorships	1,174	1.935	1	1.984
Panel B. Firm statistics (N = 632)				
Assets	1,738	18,223.75	3,886.34	43,641.45
PP&E	1,737	5,627.30	588.35	21,560.47
CAPEX	1,738	852.84	104.90	2,966.31
Cash Flow	1,738	1,935.70	337.02	5,300.43
ROA	1,720	0.07	0.06	0.07
ROE	1,729	0.04	0.14	4.62
Tobin's Q (Q)	1,730	2.00	1.61	1.25
Market-to-Book (MtB)	1,730	6.26	2.43	83.98
R&D expense	1,120	554.19	61.96	1,590.19
Leverage	1,728	0.23	0.22	0.16
ROA change	1,714	0.004	0.002	0.077
ROE change	1,724	-0.107	0.008	7,535
Q change	1,727	0.051	0.034	0.269
MtB change	1,727	0.422	0.060	4.717
R&D change	1,107	0.218	0.102	0.697
Leverage change	1,721	0.023	0.007	0.091
Board size	1,714	10.13	10	2.15
Board male ratio	1,714	0.83	0.83	0.11
Board foreign ratio	1,707	0.13	0	0.19

Panel C. Fama-French 17 industries (Excl. Utility/Finance)

Industry	Mean	Industry	Mean	Industry	Mean	Industry	Mean
Food	0.07	Durables	0.03	Steel	0.02	Transportation	0.06
Mining	0.01	Chemicals	0.03	Fabr. Products	0.01	Retail	0.09
Oil	0.05	Consumer	0.05	Machinery	0.17	Other	0.32
Textiles	0.02	Construction	0.04	Automobiles	0.03		

The collection and merging of all data from previously addressed databases have resulted in a final dataset of 1,955 announcement observations. The summary statistics are presented in Table 1, where change is measured in absolute values for ROA, ROE, and Leverage. Panel A presents the director level statistics. On average, appointed outside directors possess any kind of CEO experience for 51% of the total appointments. Of these CEO directors, the total amount of years in a CEO role comes down to 9.9 years. Of all outside director appointments, 27.2% seem to still fulfill a chief executive role within another firm. Typically, directors are 57 years old and 24.1% of them have achieved an MBA in the past. Finally, 27.8% of appointed directors is female and they own approximately 2 other directorships at the time of their appointment.

Panel B of Table 1 summarizes annual accounting and financial data of firms, as well as board level data. On average, the bottom rows of Panel B indicate that an appointing firm's board consists of approximately 10 directors, where 83% is identified as male and 13% as foreigner. All other rows relate to different financial data collected for the different firms. PP&E represents property plant and equipment while CAPEX are the capital expenditures. Return on assets (ROA) is calculated by dividing the combined income before extraordinary items and deferred income taxes by the average value of current and lagged total assets. Likewise, return on equity (ROE) is determined by normalizing the net income with the average of current and lagged book equity. Book leverage is derived by dividing the interest-bearing debt by the operating assets, while market leverage is determined by dividing the interest-bearing debt by the sum of the interest-bearing debt and market equity.

Tobin's Q is calculated as the ratio of the market value of assets to the book value of assets. The market value of assets is obtained by adding the total assets to the market equity and then subtracting the book equity. Market-to-Book (MtB) is calculated as the ratio of market equity divided by book equity. Serving as dependent variables for the main regressions, some "change" variables have been created indicating the absolute change for a variable that has been calculated by taking the difference between the t-1 and t+1 observations (Fahlenbrach et al., 2010). In this manner, the following variables are computed: ROA change, ROE change, and Leverage change. These variables will be of importance when regressions are performed to determine firm performance changes over time.

On top of director and firm characteristics, stock prices for the relevant S&P 1500 firms have been analyzed. The option US Daily Event Study provided by WRDS calculates the CARs around certain event dates. Unique combinations of cusips and announcement dates from the director appointment announcement sample have been used as input for these event studies. We

collected CARs around announcement dates using a three-day and five-day event window, but more on this will be discussed in section *3.2.1 Announcement returns*, where CARs surrounding announcements are further addressed.

3.2 Methodology

3.2.1 Announcement returns

As previously stated, this paper employs the concept of Cumulative Abnormal Returns (CARs) to examine the announcement returns surrounding outside director appointments. This CAR method is widely used in financial studies to assess the stock market's reaction to specific news or events. It provides a measure of abnormal stock price movements beyond what would be expected based on normal stock market behaviour. Since this paper puts a focus on the appointments of outside directors, the impact of those appointments on shareholder value will be researched. In other words, by collecting CARs for our analysis, a light will be shed on the worth and significance of specific CEO directors within corporate governance.

Vital in ensuring an appropriate event study are the event window and estimation window. The event window includes the event, the appointment announcement in this case. This paper uses CARs for 3-day and 5-day event windows to cancel out as much noise caused by other news or events around the event date (McWilliams and Siegel, 1997). For the estimation window, a clean period in which normal returns are calculated, a period of 200 days has been taken (Tian et al., 2011). A gap of 50 days is used between the end of the estimation window and the begin of the event window. The estimation of normal returns can be approached in various ways using different models normal/expected returns. This paper employs the market model as it effectively reduces the abnormal return's variance by excluding the portion of return associated with market return fluctuations (Armitage, 1995). The market model assumes a linear correlation between the stock return of a firm (R_{it}) and the market return (R_{mt}), represented as:

$$E(R_{it}) = \alpha + \beta_i(R_{mt}) + \varepsilon_{it}$$

The formulas for calculating abnormal returns and subsequently, cumulative abnormal returns are as follows:

$$AR_{it} = R_{it} - E(R_{it})$$

$$CAR_{it} = \sum AR_{it\ \tau=\tau1}$$

3.2.2 Regressions

After having discussed summary statistics and announcement returns, focus will shift to multivariate regressions. First of all, probit regressions are performed to find determinants of CEO director appointments. For both director appointments CEOexperience and CurrentCEO the relationship between appointing firm's characteristics and these two 'CEO' dependent variables will be analyzed to find any correlation. The following equation displays the regression, where X_{it}^k are the independent firm variables and γ_{it} is the CEO indicator dependent variable:

$$\gamma_{it} = a + \sum\beta_i X_{it}^k + \epsilon_{it} \qquad (1)$$

Moving forward, this paper aims at testing hypothesis 1 by examining the impact of CEO director appointments on the abnormal returns surrounding these announcements. Using OLS regressions, the effect of CEO indicators as independent variables, on the dependent variables three-day CAR and five-day CAR are researched:

$$\gamma_{it} = a + \beta_1 CEOexp_{it} + \beta_2 CEOnow_{it} + \beta_3 X_{it} + \dots + \epsilon_{it} \qquad (2)$$

Here, the three-day and five-day CARs will be captured by γ_{it}. The specific variables that are of interest are the binary indicators for the outside director appointments being current CEOs (CEOnow) or having overall CEO experience (CEOexp), present or past. X_{it} will capture different firm and board characteristics that will be added to these regressions as control variables. It should be note that this regression methodology (equation 2) will be used extensively in this paper, incorporating different dependent variables and board/firm characteristics, depending on the specific hypotheses being examined.

To test hypothesis 2, this paper aims to explore whether appointments of CEO directors may lead to changes in firm performance. Four different firm performance measures are taken as dependent variables in our subsequent regressions. These are: ROA, ROE, Tobin's Q and Market-to-Book. Individually, each of these performance measures provide a unique insight into the different financial situations and operational efficiencies of companies. Whereas ROA and ROE assess the profitability of firms by evaluating the earnings relative to its total assets and shareholder's equity, Tobin's Q (Q) reflects a firm's market value relative to the book value

and captures the market's perception of a firm's growth potential and investment opportunities. The Market-to-Book (MtB) ratio put's a stronger emphasis on the market valuation of a firm's tangible assets compared to their book value. Definitions of these variables are given in section 3.1 Data. For each of these firm performance measures, data is collected for a year t-1 and year t+1, where t represents a singular appointment. In line with the paper by Fahlenbrach et al. (2010), the absolute difference between these firm performance measures before and after appointments enables us to analyze changes in these financials, and test whether specifically CEO director appointments are related to this. All four of these dependent variables are winsorized using 1st and 99th percentile cuts to correct for outliers.

This paper's third hypothesis directs attention towards corporate decision-making and explores the extent to which appointments of CEO directors influence the outcome of these corporate decisions. First the effect of CEO director appointments will be determined on the dependent variable research & development (R&D) expenditures, as a proxy for the degree of innovation that firms undertake (Shefer and Frenkel, 2005). R&D investments demonstrate a firm's commitment to advancing knowledge, developing new products, and improving technological skills. Thus, R&D expenditures serve as an informative measure of a firm's attitude towards innovation and strategic decision-making.

Finally, this paper also researches the leverage ratio change around CEO director appointments. In line with Abobakr and Elgiziry (2016), who indicate that board characteristics and director appointments play an important role in deciding a firm's financial leverage, this paper analyses whether changes in leverage can be allocated to CEO director appointments. An overall measure of leverage is generated, computed by dividing the interest-bearing debt by total assets. Consistent with testing for hypothesis 2, leverage is also calculated as the absolute difference between the lagged year and lead year surrounding every appointment announcement.

3.2.3 Endogeneity concerns

Endogeneity and heteroskedasticity often pose problems for financial research, making it harder to draw strong conclusions on regression results and correlations between independent and dependent variables. In this paper's context specifically, there is risk of unreliable estimates due to the violation of the data homogeneity assumption. Heterogeneity in the data implies that different subgroups (industries/years/firms) may exhibit differing characteristics or responses to the variables that are being investigated. Furthermore, endogeneity may also be present in this paper's research. Especially since appointed director's characteristics in relation to firm

performance are studied, there is a plausible likelihood that an unobserved variable influences the results that are found in this study. One possibility would be that observed firm performance changes are not only caused by the CEO director appointments, captured in our analysis, but also by past firm performance having led to the selection of certain new outside directors. Even though endogeneity and heteroskedasticity issues are assumed to be extremely difficult to eliminate completely, this paper has found several ways of dealing with both issues, as outlined below.

In the first place, this paper aims to diminish heterogeneity concerns as much as possible by including year, firm or industry fixed effects. These fixed effects help to address the issue of heterogeneity by controlling for time-invariant factors. Furthermore, in some regressions lagged values of dependent independent variables are incorporated as independent variables. This eliminates the endogeneity concerns that are time-variant in particular. Finally, this paper includes robust standard errors that are clustered at the firm or industry level.

Another measure that this paper incorporates to address endogeneity concerns is propensity score matching. This method matches treated and control groups based on their propensity scores. By creating a balanced comparison group, endogeneity concerns may be reduced (Caliendo and Kopeinig, 2008). This will serve as a robustness check to this paper's initial results for firm performance. Elaboration on the steps taken to apply this method will be included in section *4.3.2.2 Propensity score matching*.

4 Results

4.1 Determinants of director appointments

Even though summary statistics in section 3.1 'Data' provide a clear overview of firm and board characteristics for appointing firms it should be noted that these include all outside director appointments in the sample. Therefore, multiple probit regressions are conducted to find estimates indicating whether the appointing firm's firm or board characteristics influence the probability of CEO directors being appointed as outside directors. In all four models

Table 2

Probit estimates of Director Appointments

	Director with any CEO experience		Director with current CEO role	
	(1)	(2)	(3)	(4)
Total assets	0.120	0.151	0.253*	0.274*
	(0.90)	(1.10)	(1.65)	(1.73)
ROA	-0.842	-0.806	-0.041	-0.009
	(-1.04)	(-0.98)	(-0.04)	(-0.01)
Lagged ROA	-0.122	0.027	0.031	0.130
	(-0.17)	(0.04)	(0.04)	(0.16)
CAPEX	0.012	0.017	-0.007	0.002
	(0.17)	(0.22)	(-0.09)	(0.02)
Sales	0.190	0.240*	0.351**	0.367**
	(1.43)	(1.71)	(2.35)	(2.43)
Leverage	-0.007	-0.032	-0.1763	-0.1188
	(-0.02)	(-0.09)	(-0.47)	(-0.31)
R&D expenditures	0.020	0.011	0.059	0.037
	(0.51)	(0.25)	(1.28)	0.72
Board size	-0.214	-0.244	-0.549*	-0.465
	(-0.69)	(-0.75)	(-1.68)	(-1.37)
Board male ratio	0.036	0.006	-0.842	-1.065*
	(0.07)	(0.01)	(-1.55)	(-1.94)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	No	Yes	No	Yes
Observations	1,455	1,439	1,455	1,439

provided, the dependent variable equals one if the appointed director has any past or current CEO experience (model (1) and (2)) or is currently an outside CEO (model (3) and (4)), and 0 if the appointed is a non-CEO outside director.

The findings have been presented in Table 2, where the natural logarithm is used for all continuous independent variables. The findings suggest that CEO director appointments are not uniformly influenced by the appointing firm's board or firm characteristics, as evident from the lack of significance in most coefficients. On the one hand, it could be argued that this alleviates endogeneity concerns, since CEO directors are appointed in a rather arbitrary manner. On the other hand, Table 2 shows that firms with high total assets and sales appoint outside directors that are current CEOs at other firms more often. Total assets and sales of a firm provide a reliable indication of a firm's size as these offer a comprehensive measure of its scale and economic activity (Al-Khazali and Zoubi, 2005)**.** In other words, these coefficients for model (3) and (4) point at current CEO directors being appointed more frequently by these larger firms.

This finding bears resemblance to that reported by Fahlenbrach et al. (2010), where they also find that these appointments happen at firms with more assets. Possible explanations can be found both from a supply and a demand perspective for the appointments of current CEO directors. Whereas appointees may be more willing to join boards of large, well-known companies to boost their career and reputation, appointing firms may display more eagerness to appoint these types of directors since outside CEOs bring valuable expertise in tackling the complex and strategic challenges that larger firms encounter. Another reason for CEO director appointments to be favoured typically by larger firms, could be the signal that they can send towards investors. Through the appointments of these top-tier executives, a firm could demonstrate that it has strong governance practices in place, strengthening a firm's investor confidence and credibility.

4.2 Announcement returns

4.2.1 Univariate analysis

4.2.1.1 Summary Statistics

Previous section has provided a clear indication of the determinants for appointing CEO directors. Even though those findings show that certain types of firms are more likely to appoint CEO directors, it cannot be deduced whether certain director types are perceived as more favourable than others. The following reverse causality problem arises. Not only may CEOs be seen as more popular outside directors from the perspective of an appointing firm, CEOs themselves might also be more eager to join boards of successful firms to boost their own

reputation and career. To resolve this problem, stock market reactions to different types of director appointments are studied, using event-study methodology.

Table 3 exhibits the results for announcement returns around the appointments of outside directors who are currently enrolled as CEO at another firm. The results for appointed directors with any CEO experience can be found in Appendix A. Overall, the latter results don't seem to differ from those in Table 3, which is why they are not represented in this section. First of all, none of the mean or median CARs for both three-day and five-day event windows appear to differ significantly from zero. Furthermore p-values for two sample t-tests and Wilcoxon rank sum tests indicate that mean and median CARs do not differ across CEO and non-CEO subgroups (column 2 & 3). Even though no statistical evidence is present to draw hard conclusions, results indicate that lower mean and median CARs are found for CEO director appointments (-0.0002 & -0.0004) compared to non-CEO director appointments (0.0016 & 0.0003). These preliminary findings are inconsistent with findings by Fi (2005), who also studies market reactions and demonstrates that investors react more positively to CEOs of other firms than their non-CEO counterparts. To further research the relationship between CEO director appointments, and CARs, a correlation matrix will be set up within next section.

Table 3
Outside director appointment announcement returns

	Director is an outsider	Director is currently CEO	Non-CEO outside director	p-Value (mean)	p-Value (median)
Three-day event window					
N	1,470	403	1,067		
Mean CAR	0.0011	-0.0002	0.0016	0.36	
Median CAR	0.0000	-0.0004	0.0003		0.71
Five-day event window					
N	1,470	403	1,067		
Mean CAR	0.0009	-0.0007	0.0014	0.40	
Median CAR	-0.0004	-0.0017	0.0003		0.49

4.2.1.2 Correlations

Table 4 presents a correlation matrix for the dependent variable "CAR3", representing the three-day cumulative abnormal returns, and all independent variables. Through pairwise correlations, Stata provides an option to determine relationships between variables that include

missing observations. Correlations greater than 0.3 are marked by a *. Appendix B displays similar results for the five-day cumulative abnormal returns.

In light of addressing multicollinearity concerns, table 4 validates that multicollinearity is not present in this paper. Most independent variables indicate low correlations between each other. Exceptions are found for correlations between total sales & firm size and board size & firm size, for example. However, these findings are not surprising and rather intuitive since larger firms are often found to have larger boards and higher total sales. A higher correlation is also found between the two main independent variables (CEOrole & CurrentCEO). Nonetheless, no multicollinearity issues arise, since these variables are only included separately in this paper's models. From the correlation matrix, it seems that no strong correlations appear between CEO director appointments and cumulative abnormal returns. Within next section it will be tested whether these uncorrelated relationships are also found within a multivariate setting.

Table 4
Correlations three-day CAR & independent variables

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Three-day CAR	1.000									
(2)	CEOrole	-0.017	1.000								
(3)	CurrentCEO	-0.024	0.599*	1.000							
(4)	Firm Size	-0.025	0.113	0.121	1.000						
(5)	Capex	-0.050	0.037	0.024	0.026	1.000					
(6)	Sales	-0.029	0.118	0.139	0.932*	0.028	1.000				
(7)	Leverage	0.003	0.029	0.005	0.362*	-0.005	0.278	1.000			
(8)	Female	-0.013	-0.148	-0.093	0.071	-0.014	0.072	0.013	1.000		
(9)	Board Size	-0.022	0.063	0.081	0.607*	-0.035	0.605*	0.281	0.045	1.000	
(10)	Male ratio Board	0.036	-0.029	-0.065	-0.304*	0.030	-0.317*	-0.169	-0.186	-0.285	1.000

4.2.2 Multivariate analysis

A multiple regression analysis is performed on the CARs using several control variables and two indicator variables that take the value of 1 if the appointee has CEO experience (or is a current CEO at another company) and 0 otherwise. Adding control variables allows for detailed analyses examining whether results are driven by characteristics of the appointee or the appointing firm. To control for firm size, the natural logarithm of total assets is included. Other

appointing firm's characteristics such as capital expenditures, sales and the leverage ratio have also been incorporated in the regressions. The variable 'Female' controls for the effect that particularly females may have on abnormal returns when they are appointed as outside directors. Finally, the number of directors and the male ratio of the appointing firm's board have been accounted for.

Table 5
Cumulative Abnormal Returns for Director Appointments

	Three-day CAR (-1,1)			
	(1)	(2)	(3)	(4)
CEO experience	-0.002		-0.004**	
	(-1.08)		(-2.11)	
Current CEO		-0.003		-0.003*
		(-1.54)		(-1.79)
Firm size	-0.002	-0.003	-0.004	-0.004
	(-0.63)	(-0.65)	(-0.89)	(0.95)
CAPEX	0.050	0.0481	0.059	0.055
	(0.95)	(0.91)	(1.00)	(0.95)
Sales	-0.002	-0.002	-0.001	-0.001
	(-0.66)	(-0.62)	(-0.23)	(-0.17)
Leverage	0.0070	0.0064	0.0069	0.0064
	(0.60)	(0.55)	(0.54)	(0.51)
Female	-0.001	-0.001	-0.001	-0.001
	(-0.32)	(-0.29)	(-0.29)	(-0.25)
Board size	0.009	-0.009	0.011	0.011
	(1.05)	(1.02)	(1.17)	(1.14)
Board male ratio	-0.004	-0.005	-0.002	-0.004
	(-0.26)	(-0.32)	(-0.11)	(-0.20)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	No	No	Yes	Yes
Observations	1,371	1,371	1,371	1,371
Adjusted R-squared	0.008	0.008	0.017	0.018

Results for three-day CARs are presented in Table 5, whereas five-day CARs can be found in Appendix C. Column (1) and (2) display the coefficients of CEO experience directors and current CEO directors respectively using firm fixed effects, while column (3) and (4) display coefficients including firm and industry fixed effects. The findings in Table 5 do not indicate that CARs seem to be (partially) caused by appointing firm or appointee characteristics, as can be deduced from insignificant coefficients for all control variables.

However, significant coefficients are found for CEO indicators 'CEO experience' and 'Current CEO' when controlling for industry firm effects in column (3) and (4). These results seem to indicate appointments of (current) CEO directors to be interpreted worse by investors compared to other outside directors. These findings are also economically significant, stating that CEO experience and being a current CEO lead to 0.4% and 0.3% lower cumulative abnormal returns respectively.

Again, these finding oppose those found by Fich (2005) who also looked at CEO director appointments in a multivariate setting. He finds that these CEO directors might be perceived better by investors, compared to other outside directors. It should be noted, however, that he analyzes firms during a three-year sample period 1997-1999. This paper examines a sample period that is almost two decades later, resulting in a plausible explanation for conflicting findings. Certainly, it can be said that the corporate governance landscape has experienced major changes over the past two to three decades. Highly influenced by major events such as the financial crisis and other scandals, new rules such as the Sarbanes-Oxley Act were put in place to enhance regulatory oversight and improve corporate governance standards (Coates, 2007). This automatically changed the role of boards and the way they are composed, with investors adjusting their perspectives on this matter as well (Larcker and Tayan, 2011). Ultimately, the latter observation should be seen as a plausible explanation for investors interpreting CEO director appointments worse than other director announcements, yielding poorer market reactions.

Another reason could be the growing complexity of a CEO role in combination with increasing commitment required for being a director (Horner, 2016). Concerns around the dedication by CEOs to their directorship could arise. This also holds for potential conflicts of interest that CEOs experience around their dual roles as director and CEO. Consequently, this can lead to biased decision-making by these directors and lead to potential governance shortcomings (Felo, 2011). Investors may have become more cautious of these conflicts of interests and have increasing doubts regarding the beneficial effect that CEOs could have on the boards of other firms. To say something about the actual effect that CEO director appointments may have on different firm performance measures, financials of firms around these appointments will need to be studied. Next section will delve into this to investigate these effects on operating firm performance.

4.3 Firm performance

4.3.1 Return on assets

In past corporate finance and governance literature, a frequently used tool in measuring operating firm performance has shown to be return on assets (ROA). This paper aims to test whether CEO director appointments do not only lead to stock market reactions, but also lead to an increase or decrease in their operating performance. In line with Fahlenbrach et al. (2010), the 'performance hypothesis' is tested that predicts operating performance to thrive after CEO directors are appointed, due to their extensive amount of monitoring skills and experience.

Also considering negative stock market reactions found in previous section, this paper now studies whether CEO directors actually affect a firm's operating performance negatively or positively. This will be done using both difference-in-difference (diff-in-diff) and multivariate analyses.

4.3.1.1 Difference-in-difference analysis

Operating performance changes around outside (CEO) director appointments can be mistakenly attributed solely to the CEO director. Therefore, a diff-in-diff approach is used to compare changes in operating performance between CEO-director appointments and other outside director appointments. Table 6 presents the difference-in-difference results for ROA around different director appointments. Panel A compares directors with any past CEO experience to other outside directors and shows that, overall, firms appoint a CEO director perform better in terms of ROA before and after director appointments. For the main time variable of interest (t-1, t+1), panel A displays a stronger increase in ROA after CEO director appointments, compared to other outside director appointments. When studying the operating performance change over a longer period (t-1, t+3), we see that CEO experience does not seem to positively influence ROA. However, caution should be placed on making inferences on these numbers, since none show statistical significance.

Panel B compares current CEO directors to other outside directors and find that ROA changes more around current CEO director appointments. Whereas ROA seems to increase for CEO directors by 0.72%, the ROA for other outside directors increases by only 0.28%. Furthermore, panel B states that the ROA after a current CEO director appointment is significantly higher than for their non-CEO counterparts, by an economically 0.78%. These findings provide an indication that specifically current CEO directors might be able to enhance operating performance with the exceptional skills, networks, and authority that they bring with them. The findings oppose those by Fahlenbrach et al. (2010), who find no effect of CEO

directors on the appointing firm's operating performance. However, thorough examination is required to make stronger conclusions upon this. To further analyse relationships between CEO directors and control for several firm and appointee characteristics a multivariate setting will be explored in the next section.

Table 6

Firm performance around director appointments

| | **A. Directors with CEO experience** | | |
| | Appointment type | | |
	Director with any CEO experience (1)	Non-CEO outside director (2)	Difference (3)
Panel A: ROA (t = -1 to t = 1)			
Before	0.0585	0.0573	*0.0012*
After	0.0641	0.0597	*0.0044*
Difference	0.0056	0.0024	
Panel B: ROA (t = -1 to t = 3)			
Before	0.0585	0.0573	*0.0012*
After	0.0582	0.0604	*-0.0022*
Difference	*-0.0003*	*0.0031*	

| | **B. Directors with current CEO roles** | | |
| | Appointment type | | |
	Director with current CEO role (1)	Non-CEO outside director (2)	Difference (3)
Panel A: ROA (t = -1 to t = 1)			
Before	0.0604	0.0570	*0.0034*
After	0.0676	0.0598	*0.0078**
Difference	*0.0072*	*0.0028*	
Panel B: ROA (t = -1 to t = 3)			
Before	0.0604	0.0570	*0.0034*
After	0.0610	0.0586	*0.0024*
Difference	*0.0006*	*0.0016*	

4.3.1.2 Multivariate analysis

Table 7 displays the multivariate regression results for operating performance change. The dependent variable being used is the absolute change in ROA between t-1 and t+1 surrounding the year of director appointment. Whereas firm fixed effects are included for all four column, industry fixed effects are considered for column (3) and (4). Results show that coefficients for CEO experience and Current CEO are significantly positive for all four columns. Columns 1 and 2 indicate that appointed directors with any kind of CEO experience improve ROA by 0.8% compared to other outside directors. A slightly stronger effect is found for current CEOs,

Table 7

Multivariate analysis of firm performance change

	Absolute change in Return on Assets (ROA) from t-1 to t+1			
	(1)	(2)	(3)	(4)
CEO experience	0.008*		0.008*	
	(1.92)		(1.75)	
Current CEO		0.010*		0.009*
		(1.90)		(1.82)
Firm size	-0.003	-0.003	-0.005	-0.005
	(-0.54)	(-0.53)	(-1.01)	(-0.98)
CAPEX	-0.134	-0.133	-0.168*	-0.168*
	(-1.45)	(-1.44)	(-1.72)	(-1.72)
Sales	0.002	0.002	0.002	0.002
	(0.25)	(0.23)	(0.27)	(0.24)
Leverage	0.029	0.029	0.035*	0.035*
	(1.46)	(1.46)	(1.76)	(1.75)
Female	-0.015***	-0.015***	-0.015***	-0.015**
	(-2.81)	(-2.75)	(-2.67)	(-2.60)
Director age	-0.001*	0.000	-0.001*	-0.001
	(-1.76)	(-1.50)	(-1.81)	(-1.55)
MBA	0.006	0.006	0.007	0.007
	(1.10)	(1.13)	(1.12)	(1.15)
Total current directorships	0.000	0.000	0.000	0.000
	(-0.09)	(0.01)	(0.02)	(0.11)
Board size	-0.020	-0.020	-0.016	-0.016
	(-1.07)	(-1.07)	(-0.80)	(-0.81)
Board male ratio	0.018	0.021	0.015	0.018
	(0.55)	(0.65)	(0.47)	(0.57)
Board foreign ratio	-0.013	-0.013	-0.017	-0.016
	(-0.96)	(-0.89)	(-1.12)	(-1.07)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	No	No	Yes	Yes
Observations	1,123	1,123	1,123	1,123
Adjusted R-squared	0.05	0.05	0.06	0.06

who seem to improve ROA by 1.0% or 0.9%. These findings seem interesting, especially with regard to the previous findings of negative stock market reactions. Even though investors perceive CEO director appointments negatively, it seems that these types of directors are not detrimental to the operating performance of firms. Instead, these results actually indicate that CEOs can use their skills, networks, and authority to influence a firm's operating performance (Stevenson and Radin, 2009).

When interpreting coefficients for other control variables, significant negative coefficients for CAPEX are found when including industry fixed effects. This is in line of expectation, since practice tells us that high capital expenditures ask for significant financial resources, which could have been used for alternative purposes (Thomya, Likitwongkajon and Rangsungnoen, 2023). Table 7 also indicates that appointed female directors are less able to improve ROA in comparison with their male counterparts. Reasoning behind this could be implicit gender biases within firms that restrict them from access to influential networks or key resources (Yang, Riepe, Moser, Pull and Terjesen, 2019). Ultimately, restricting their ability to implement strategic objectives could lead to a weaker impact that they can have on the firm's ROA. Finally, an effect for directors age is also observed for CEO experience regressions specifically. The negative effect is not surprising and in line with findings by Fairchild and Li (2005), who show that older directors are accompanied by worse impact on firm performance.

Appendix D includes similar regressions but with an absolute ROA change between t-1 and t+3, so that longer term effects can also be studied. In contrast to Table 7, these results indicate that CEO director appointments do not significantly improve a firm's ROA more than other outside director appointments do. It can be said that the positive effects these directors have within 1 year after their appointment, do not hold in the longer term. Since this section led to no clear-cut conclusions around the effect of CEO director appointments on firm performance, other firm performance measures should also be studied and analysed. These will be thoroughly discussed in next section.

4.3.2 Robustness checks

4.3.2.1 Other measures of firm performance

To investigate whether previous multivariate results are robust to other types of firm performance measures serving as dependent variables, this paper continues by doing several robustness checks. For these robustness checks the dependent variables 'Return on Equity' (ROE), 'Tobin's Q' (Q) and 'Market-to-Book' (MtB) are used, where ROE is measured in absolute change, and the latter two are measured in percentual change. Extensive reasoning for

the choice and creation of these measures can be found in section 3.2 Methodology. To correct for outliers within the three dependent variables, they are winsorized at the 1st and 99th percentile. Results are presented in Table 8, including firm- and industry fixed effects for all six models. In contrast to results on ROA change in the previous section, there seems to be no significant relationship between the appointments of CEO directors and other measures of firm performance change. This aligns with the findings reported in the Fahlenbrach et al. (2010)

Table 8
Multivariate analysis of firm performance measures around director appointments

	Change in firm performance measures from t-1 to t+1					
	Return on Assets (ROE)		Tobin's Q		Market-to-Book	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO experience	0.021		-0.008		-0.014	
	(1.08)		(-0.57)		(-0.34)	
Current CEO		0.019		-0.009		-0.026
		(0.87)		(-0.58)		(-0.51)
Firm size	-0.028	-0.028	-0.026	-0.026	-0.025	-0.025
	(-1.28)	(-1.27)	(-1.31)	(-1.32)	(-0.56)	(-0.57)
CAPEX	-0.505*	-0.501*	-0.143	-0.144	0.056	0.059
	(-1.74)	(-1.73)	(-0.47)	(-0.47)	(0.06)	(0.06)
Sales	0.017	0.017	0.009	0.009	0.025	0.026
	(0.84)	(0.83)	(0.44)	(0.45)	(0.59)	(0.62)
Leverage	0.197*	0.196*	0.070	0.070	0.227	0.227
	(1.75)	(1.74)	(1.10)	(1.10)	(1.21)	(1.21)
Female	-0.021	-0.022	-0.028	-0.028	-0.089**	-0.090**
	(-1.07)	(-1.11)	(-1.58)	(-1.57)	(-2.11)	(-2.10)
Director age	0.000	0.000	0.000	0.000	-0.001	-0.001
	(0.01)	(0.14)	(0.02)	(-0.06)	(-0.36)	(-0.42)
MBA	0.005	0.005	0.019	0.018	-0.042	-0.042
	(0.21)	(0.23)	(1.05)	(1.04)	(-0.98)	(-0.98)
Current directorships	-0.011*	-0.010	0.004	0.004	0.013	0.013
	(-1.69)	(-1.62)	(1.01)	(0.98)	(0.77)	(0.78)
Board size	-0.019	-0.019	0.012	0.013	0.059	0.059
	(-0.32)	(-0.33)	(0.18)	(0.19)	(0.40)	(0.40
Board male ratio	-0.005	0.001	-0.086	-0.089	-0.308	-0.316
	(-0.05)	(0.01)	(-0.73)	(-0.75)	(-1.29)	(-1.31)
Board foreign ratio	0.010	0.012	-0.036	-0.037	-0.132	-0.132
	(0.09)	(0.10)	(-0.73)	(-0.75)	(-0.93)	(-0.94)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,131	1,131	1,132	1,132	1,132	1,132
Adjusted R-squared	0.01	0.01	0.16	0.16	0.09	0.09

paper, who conclude that CEO directors do not affect the appointing firm's performance. Concerning the control variables, we see can find some similarities with the ROA change analysis. For example, it shows that CAPEX is also negatively related to ROE and female directors seem to have a negative effect on the Market-to-Book ratio change of firms. In A Appendix E the results for time window t-1 until t+3 are presented. These results also display mostly insignificant coefficients. Another robustness check is applied in next section to further investigate what effect CEO director appointments may have on different measures of firm performance.

4.3.2.2 Propensity score matching

As an extra robustness check and attempt to further alleviate endogeneity concerns, the propensity score matching method is applied in relation to this paper's firm performance findings. To estimate the propensity score, first the treatment assignment, CEO experience or Current CEO in this case, is regressed on the firm and appointee characteristics. Through employing a probit regression, the probability of being in the treatment group (CEO experience/Current CEO) based on the observed firm and appointee characteristics is determined. Observations from the two groups (control/treatment) are then matched based on their propensity scores, using a nearest-neighbour match. This paper applies a nearest-neighbour match linking 5 five similar observations from the control group to one observation of the treatment group. This way a comparison group that closely resembles the treatment group is created. As these groups have now been created, analysis may be performed. This paper applies a univariate regression to the two created groups, in line with the methodology used in the paper by Huang and Kisgen (2013).

The results are presented in table 9. The dependent variables that are being used are the changes in the different firm performance measures around the appointment date of an outside director. In Panel A, the explanatory variable *CEO experience* indicates no significant differences to previous results found in this paper. Again, the experience as CEO seems to be slightly significantly correlated to the change in ROA, but mostly uncorrelated to other measures of firm performance. Similar conclusions can be drawn upon results from Panel B, as these don't seem to change the results found before. Here only the change in the Market-to-Book ratio is likely to be influenced by appointments of outside directors that are also currently enrolled as CEO.

Table 9
Propensity score matching

	Change in firm performance measure from t-1 to t+1			
	ROA (1)	ROE (2)	Tobin's Q (3)	Market-to-Book (4)
Panel A: CEO experience				
CEO experience	0.009*	0.034*	0.002	0.021
	(1.90)	(1.69)	(0.15)	(0.53)
Constant	0.165***	0.069	0.368**	0.886**
	(3.68)	(0.37)	(2.53)	(2.40)
Number of observations	1,118	1,098	1,106	1,106
Adj. R-squared	0.10	0.06	0.20	0.17
Panel B: Current CEO				
Current CEO	0.008	0.030	-0.004	0.089*
	(1.45)	(1.36)	(-0.25)	(1.91)
Constant	0.072	0.185	0.006	-0.692*
	(1.48)	(1.01)	(0.04)	(-1,79)
Number of observations	1,056	1,058	1,077	1,077
Adj. R-squared	0.11	0.07	0.17	0.17

4.4 Corporate decision-making

Next to investigating the effect that CEO director appointments have on stock market reactions and firm performance, this paper also analyses to what extend other corporate decisions are affected.

4.4.1 Innovation

Serving as a measure of innovation, this paper looks at the research & development (R&D) expenditures and how these change for firms around the appointments of CEO directors. A multivariate analysis is conducted. Results in Table 10 indicate that there is no significant relationship to be found for CEO directors and R&D expenditures, since none of the coefficients appear to be significant. Thus, CEOs don't seem to affect the level of innovation of the firm that they get appointed to as outside board member.

Moreover, Table 10 indicate that a firm's sales are negatively correlated to the change in R&D expenditures. Since total sales often serves as an indicator for a firm's size, these coefficients may point at relatively lower (higher) R&D expenditures for larger (smaller) firms. A potential explanation could be that smaller firms see R&D as a strategic growth opportunity.

Through investing heavily in R&D, they may be able to scale their operations, enhance their revenues and ultimately capture a larger market share.

Table 10 also finds significant coefficients for 'Female' and 'Board male ratio'. Evident from these results is that R&D expenditures seem to increase around female CEO appointments and an increasing female ratio within the board of directors. This would be in line with Liao,

Table 10

Multivariate analysis of R&D expenditures around director appointments

	Absolute change in R&D exp. from t-1 to t+1	
	(1)	(2)
CEO experience	-0.005	
	(-0.16)	
Current CEO		0.05
		(1.21)
Firm size	0.070	0.070
	(1.34)	(1.41)
CAPEX	0.982	0.933
	(1.32)	(1.29)
Sales	-0.094*	-0.101*
	(-1.82)	(-1.94)
Leverage	0.038	0.047
	(0.29)	(0.36
Female	0.096**	0.104**
	(2.19)	(2.32)
Director age	0.001	0.001
	(0.41)	(0.51)
MBA	-0.013	-0.015
	(-0.45)	(-0.53)
Total current directorships	-0.011	-0.011
	(-1.42)	(-1.54)
Board size	0.044	0.055
	(0.31)	(0.40)
Board male ratio	-0.422**	-0.444**
	(-2.24)	(-2.27)
Board foreign ratio	-0.098	-0.105
	(-0.99)	(-1.05)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	605	605
Adjusted R-squared	0.11	0.12

Zhang and Wang (2019), who find that female independent directors have a significant effect on a firms' environmental innovations. Finally, the effect of CEO director appointments on firm innovation has also been studied over a longer time period, to include potential delayed influence that these directors have. Appendix F.1 displays results for the longer time frame, indicating no substantial differences to the analysis incorporated in this section.

4.4.2 Leverage ratio

Table 11 displays results concerning the effect of CEO director appointments on the leverage ratio. The absolute change in leverage is taken from 1 year before to 1 year after a CEO director appointment. Findings show that neither an appointed outside director with any experience, nor an outside director who is currently enrolled as CEO influence the leverage ratio change for firms. Previous papers by, for example, Güner et al. (2008) look at directors with current or past banking experience, and find that those directors increase external financing. However, analysing this specific type of directors is beyond the scope of this paper and might serve as an interesting avenue for further research.

Table 11 does show that one of the control variables, 'Board size' is positively correlated to the change in Leverage. In other words, firms with a higher number of directors on their board, have higher leverage on average. A reason for this could be larger boards consisting of individuals with extensive networks and connections. This might make it easier for firms to attract debt financing, through their exploiting of these strong individual networks. This theory is also confirmed by Güner et al. (2008) who state the beneficial banking connections that some board members might have in attracting debt financing. The effect of CEO director appointments on firm leverage has also been studied over a longer time period, to include potential delayed influence that these directors have. In Appendix F.2 the results for the longer time frame are incorporated. These don't seem to differ notably from the results shown in this section.

Table 11

Multivariate analysis of leverage around director appointments

	Absolute change in Leverage from t-1 to t+1	
	(1)	(2)
CEO experience	0.001	
	(0.21)	
Current CEO		0.002
		(0.39)
Firm size	0.010	0.010
	(1.52)	(1.52)
CAPEX	0.031	0.030
	(0.31)	(0.31)
Sales	-0.010	-0.010
	(-1.54)	(-1.56)
Female	-0.003	-0.003
	(-0.55)	(-0.52)
Director age	-0.001	-0.001
	(-1.44)	(-1.41)
MBA	-0.009	-0.009
	(-1.45)	(-1.45)
Total current directorships	-0.001	-0.001
	(-0.57)	(-0.57)
Board size	0.050**	0.050**
	(2.10)	(2.10)
Board male ratio	0.027	0.028
	(0.73)	(0.76)
Board foreign ratio	-0.027	-0.027
	(-1.35)	(-1.34)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	1,132	1,132
Adjusted R-squared	0.05	0.05

5 Conclusion & Discussion

5.1 Conclusion

This paper's analysis has used a sample of outside director appointments by S&P1500 firms to determine relationships between CEO director appointments and stock market reactions, different measures of firm performance, and two major concepts in corporate decision-making. Previous research has shown contradicting results regarding these relationships, finding different results for them. Something that past research seems to agree on however, is the growing complexity of the CEO role and the unique skills and networks that these managers seem to bring to the boards that they sit on. By utilizing univariate, multivariate and diff-in-diff analysis, this paper tried to answer the main research question, while testing four different hypotheses.

This paper starts by testing the first hypotheses which predicts that investors react positively to announcements of CEO director appointments. So-called positive stock market reactions are expected to thrive after the news of these director appointments compared to other outside director appointments. Contrary to expectations, this paper finds that CEO director appointments negatively influence stock market reactions. Differentiating between directors who possess any CEO experience or are currently enrolled as CEO leads to no notable differences. There are two potential explanations for this. A new regulatory environment, as a result of the financial crisis and several scandals, has led to stronger corporate governance laws, making investors more wary of certain type of newly appointed outside directors. Another explanation is the biased decision-making by CEO directors as a consequence of conflicts of interest around their dual roles as director and executive.

Further results show no convincing evidence in support of the second hypothesis. Empirical analysis of CEO directors and operating firm performance, measured by return on assets (ROA), indicates that CEO director appointments significantly increase a firm's ROA measured as the change in ROA between t-1 and t+1, surrounding the appointment. These results vanish however, when looking at longer term effects, measured by the change in ROA between t-1 and t+3. Furthermore, when determining changes in other firm performance measures, such as return on equity, Tobin's Q and Market-to-Book, no significant results are observed. This is in line with Fahlenbrach et al. (2010), who also finds no relationship between CEO director appointments and firm performance. Overall, it seems that these directors are not able to significantly improve a firm's performance, by providing firms with their unique skills and valuable networks.

To test hypotheses 3 and 4, an investigation into changes in R&D expenditures and the leverage ratio is conducted. This paper finds no significant relationship between CEO director appointments and the change in level of innovation and leverage of firms that these CEO directors get appointed to. Even though R&D expenditures seem to be unaffected by CEO director appointments, a firm's size is found to be negatively related to R&D expenditures. Moreover, it is worth mentioning that, on average, female CEO directors tend to prioritize innovation more than their male counterparts.

Multivariate regressions on the change in leverage neither find significant results. Both directors with any CEO experience and currently enrolled CEO seem to have no significant effect on the appoint firm's leverage ratio when they get appointed. The research does show, however, that firms consisting of larger boards tend to increase leverage more than smaller boards. This can be attributed to an increased likelihood of larger boards consisting of directors that possess connections and networks within the banking industry. Ultimately, these directors may make attracting external financing easier for firms (Güner et al., 2008).

All things considered, this paper answers the central research question, *do appointments of CEOs as outside directors on boards increase firm performance and corporate decision-making of S&P 1500 firms,* by asserting that appointments of CEO directors lead to lower stock market reactions and do not significantly improve a firm's performance. Even though an effect on the change in return on assets is found around CEO director appointments, robustness checks, incorporating other firm performance measures, display no significant results. Subsequently CEO directors do not affect the level of innovation and leverage within companies of which they are appointed to as outside board members. However, this paper is not able to provide concrete reasoning behind the latter findings, since further examination is required into the gender effect on the level of innovation, and the effect of director's financial background on the probability of attracting external financing.

5.2 Discussion

This paper has led to the identification of various limitations, which should be considered when interpreting the results and conclusions from the empirical analysis. Subsequently, this has given rise to concepts or subjects which can be explored or investigated more thoroughly, serving as interesting avenues for further research. These are as follows.

The first limitation relates to endogeneity issues still being present in this paper, despite precautious measures being included to correct for these concerns. Although this paper alleviates endogeneity concerns by deploying propensity score matching, incorporating fixed

effects and robust standard errors, and by investigating CEO director determinants, there may still be endogeneity left which could not have been eliminated so far. Possibly, these arise from unobservable variables that influence CEO director appointments and subsequent firm performance. To further mitigate endogeneity, future research should explore other strategies, such as quasi-natural experiments or an instrumental variable approach.

Another limitation arises from potential heterogeneity in the background of CEO directors. Even though this paper assumes CEO directors to be mostly homogenous, there may be a vast variation in their industry backgrounds, skills, and experiences, that has not been controlled for. For completeness, especially industry backgrounds of CEO directors might serve as an interesting topic for future research. As previously mentioned within this paper, the financial industry is one of those industries which may lead to more relevant results, since appointed CEO directors may use their banking network and connections to increase external financing within firms.

A third limitation is the scope of this paper. Since this paper looks at US firms only, it lacks international perspectives on relationships that were researched in this paper. Since countries, such as Germany consist of different board structures, the roles of CEO directors within these boards may also be different from those in the United States. By including a more international range of firms, researchers will be able to capture potential variations and nuances that exist in corporate governance practices worldwide, enhancing the generalizability of the findings.

Finally, this paper's choice for its methodology could also be a source of limitations. Omitted variable bias is one of those, originated by excluding control variables that are in reality relevant. When these are instead added, they may actually distort the relationships that are being examined and thus lead to different results. Also, cumulative abnormal returns as a measure of stock market reactions incorporate lots of parameters that are crucial in event studies. Further research could dive deeper into the selection of these parameters, as these may yield different results.

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Appendix A: CAR summary statistics

Table A
Outside director appointment announcement returns

	Director is an outsider	Director with any CEO experience	Non-CEO outside director	p-Value (mean)	p-Value (median)
Three-day event window					
N	1,470	741	729		
Mean CAR	0.0011	0.0005	0.0016	0.52	
Median CAR	0.0000	-0.0004	0.0005		0.50
Five-day event window					
N	1,470	741	729		
Mean CAR	0.0009	0.0009	0.0008	0.97	
Median CAR	-0.0004	-0.0004	-0.003		0.96

Appendix B: Correlations dependent/independent variables

Table B
Correlations five-day CAR & independent variables

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Five-day CAR	1.000									
(2)	CEOrole	0.001	1.000								
(3)	CurrentCEO	-0.022	0.599*	1.000							
(4)	Firm Size	-0.045	0.113	0.121	1.000						
(5)	Capex	-0.064	0.037	0.024	0.026	1.000					
(6)	Sales	-0.048	0.118	0.139	0.932*	0.028	1.000				
(7)	Leverage	0.014	0.029	0.005	0.362*	-0.005	0.278	1.000			
(8)	Female	-0.015	-0.148	-0.093	0.071	-0.014	0.072	0.013	1.000		
(9)	Board Size	-0.060	0.063	0.081	0.607*	-0.035	0.605*	0.281	0.045	1.000	
(10)	Male ratio Board	0.048	-0.029	-0.065	-0.304*	0.030	-0.317*	-0.169	-0.186	-0.285	1.000

Appendix C: Cumulative abnormal returns

Table C

Cumulative Abnormal Returns for Director Appointments

	Five-day CAR (-2,2)			
	(1)	(2)	(3)	(4)
CEO experience	0.000		-0.001	
	(-0.08)		(-0.27)	
Current CEO		-0.003		-0.003
		(-1.31)		(-1.42)
Firm size	0.001	0.001	0.002	0.002
	(0.35)	(0.36)	(0.75)	(0.76)
CAPEX	-0.065**	-0.065**	-0.070**	-0.069**
	(-2.31)	(-2.30)	(-2.07)	(-2.04)
Sales	-0.001	-0.001	-0.002	-0.002
	(-0.42)	(-0.38)	(-0.74)	(-0.71)
Leverage	0.008	0.008	0.005	0.005
	(0.99	(0.97)	(0.61)	(0.59)
Female	-0.001	-0.001	-0.001	-0.001
	(-0.28	(-0.36)	(-0.32)	(-0.38)
Board size	-0.012	-0.012	-0.013*	-0.013*
	(-1.54)	(-1.54)	(-1.65)	(-1.65)
Board male ratio	0.012	0.011	0.018	0.017
	(0.84)	(0.78)	(1.12)	(1.07)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	No	No	Yes	Yes
Observations	1,371	1,371	1,371	1,371
Adjusted R-squared	0.013	0.014	0.015	0.016

Appendix D: Return on assets

Table D

Multivariate analysis of firm performance change

	Absolute change in Return on Assets (ROA) from t-1 to t+3			
	(1)	(2)	(3)	(4)
CEO experience	0.000		-0.001	
	(-0.03)		(-0.18)	
Current CEO		0.008		0.007
		(1.42)		(1.30)
Firm size	-0.010	-0.010	-0.010	-0.010
	(-1.63)	(-1.61)	(-1.67)*	(-1.64)
CAPEX	-0.105	-0.108	-0.065	-0.069
	(-1.12)	(-1.14)	(-0.71)	(-0.75)
Sales	0.007	0.006	0.005	0.005
	(0.97)	(0.91)	(0.84)	(0.77)
Leverage	0.047**	0.045**	0.042*	0.042*
	(1.97)	(1.99)	(1.91)	(1.92)
Female	-0.016***	-0.015***	-0.015**	-0.014**
	(-2.76)	(-2.62)	(-2.44)	(-2.30)
Director age	0.000	0.000	0.000	0.000
	(-0.45)	(-0.31)	(-0.44)	(-0.30)
MBA	0.005	0.005	0.005	0.005
	(0.83)	(0.84)	(0.85)	(0.86)
Total current directorships	-0.001	0.000	0.000	0.000
	(-0.38)	(-0.49)	(-0.18)	(-0.30)
Board size	-0.015	-0.015	-0.011	-0.011
	(-0.74)	(-0.73)	(-0.53)	(-0.52)
Board male ratio	-0.058*	-0.055*	-0.064**	-0.061*
	(-1.75)	(-1.68)	(-2.02)	(-1.93)
Board foreign ratio	-0.020	-0.020	-0.017	-0.017
	(-1.25)	(-1.25)	(-1.09)	(-1.10)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	No	No	Yes	Yes
Observations	1,010	1,010	1,010	1,010
Adjusted R-squared	0.06	0.06	0.08	0.08

Appendix E: Alternative measures of firm performance

Table E
Multivariate analysis of firm performance measures around director appointments

	Change in firm performance measures from t-1 to t+3					
	Return on Assets (ROE)		Tobin's Q		Market-to-Book	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO experience	0.003		-0.014		-0.098	
	(0.12)		(-0.58)		(-1.49)	
Current CEO		0.034		0.032		-0.034
		(1.28)		(1.13)		(-0.43)
Firm size	-0.028	-0.026	0.002	0.003	0.007	0.008
	(-0.93)	(-0.89)	(0.04)	(0.08)	(0.07)	(0.07)
CAPEX	-0.259	-0.273	-0.744	-0.764	-1.526	-1.568
	(-0.94)	(-0.98)	(-1.59)	(-1.63)	(-1.24)	(-1.28)
Sales	0.017	0.015	-0.039	-0.041	-0.002	-0.005
	(0.62)	(0.55)	(-1.17)	(-1.25)	(-0.03)	(-0.06)
Leverage	0.199	0.199	0.078	0.080	0.356	0.364
	(1.16)	(1.17)	(0.65)	(0.67)	(0.86)	(0.88)
Female	-0.022	-0.018	-0.037	-0.031	-0.039	-0.029
	(-0.91)	(-0.74)	(1.24)	(-1.05)	(-0.46)	(-0.35)
Director age	0.003	0.003	0.000	0.000	0.004	0.003
	(1.53)	(1.56)	(0.01)	(0.08)	(0.67)	(0.58)
MBA	0.000	0.001	0.026	0.026	-0.051	-0.052
	(0.01)	(0.02)	(0.95)	(0.95)	(-0.69)	(-0.71)
Current directorships	-0.017*	-0.018*	0.004	0.003	-0.023	-0.027
	(-1.72)	(-1.78)	(0.67)	(0.48)	(-1.20)	(-1.38)
Board size	-0.005	-0.004	0.065	0.067	0.152	0.161
	(-0.08)	(-0.06)	(0.53)	(0.56)	(0.52)	(0.55)
Board male ratio	-0.242**	-0.231**	-0.363*	-0.350*	-0.525	-0.530
	(-2.18)	(-2.07)	(-1.84)	(-1.77)	(-1.28)	(-1.29)
Board foreign ratio	-0.033	-0.033	-0.117	-0.119	-0.586**	-0.595**
	(-0.23)	(-0.23)	(-1.20)	(-1.22)	(-1.98)	(-2.01)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,016	1,016	1,019	1,019	1,019	1,019
Adjusted R-squared	0.02	0.02	0.10	0.10	0.05	0.05

Appendix F: Corporate decision-making

Table F.1: Innovation

Multivariate analysis of R&D expenditures around director appointments

	Absolute change in R&D exp. from t-1 to t+3	
	(1)	(2)
CEO experience	0.012	
	(0.26)	
Current CEO		0.035
		(0.59)
Firm size	0.097	0.099
	(1.14)	(1.16)
CAPEX	1.691	1.668
	91.29)	(1.28)
Sales	-0.201**	-0.205**
	(-2.22)	(-2.25)
Leverage	0.100	0.103
	(0.31)	(0.32)
Female	0.148**	0.151**
	(2.22)	(2.24)
Director age	0.000	0.000
	(-0.11)	(-0.02)
MBA	-0.061	-0.062
	(-1.20)	(-1.21)
Total current directorships	-0.002	-0.002
	(-0.20)	(-0.19)
Board size	0.286	0.292
	(1.09)	(1.12)
Board male ratio	0.470	0.483
	(1.30)	(1.33)
Board foreign ratio	-0.182	-0.183
	(-1.09)	(-1.10)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	545	545
Adjusted R-squared	0.13	0.13

Table F.2: Leverage

Multivariate analysis of leverage around director appointments

	Absolute change in Leverage from t-1 to t+3	
	(1)	(2)
CEO experience	0.004	
	(0.52)	
Current CEO		0.000
		(0.01)
Firm size	0.006	0.006
	(0.59)	(0.59)
CAPEX	0.057	0.059
	(0.38)	(0.39)
Sales	0.001	0.002
	(0.15)	(0.18)
Female	0.004	0.003
	(0.41)	(0.35)
Director age	-0.001	-0.001
	(-1.24)	(-1.23)
MBA	-0.008	-0.008
	(-0.98)	(-0.97)
Total current directorships	-0.001	-0.001
	(-0.56)	(-0.50)
Board size	0.033	0.033
	(1.05)	(1.04)
Board male ratio	0.071	0.071
	(1.49)	(1.48)
Board foreign ratio	-0.009	-0.008
	(-0.28)	(-0.26)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	1,017	1,017
Adjusted R-squared	0.05	0.05