

**CEO DIRECTORS ON BANKS' BOARDS; DOES FINANCIAL EXPERTISE
MATTER?**

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Abstract

Using the sample of 3423 directors' appointments at 496 U.S. banks from 2000-2014, we analyze the determinants of appointment and performance of outside CEOs on bank boards. Consistent with our expertise hypothesis we show that irrespective of executive position, the probability of CEO director appointment and their monitoring and advising quality on bank's board is largely associated with their working experience in related industry. Banks with low profitability and high systemic risk prefer financial sector CEO directors on board. Moreover, financial sector CEO directors appointment probability also increases during periods of financial distress and after changes in regulatory environment. Appointment of financial sector CEO director has a higher stock price reaction than the appointment of any other director. Compared to non-financial sector CEO director, post appointment effect of financial sector CEO director on bank risk profile and profitability is positive.

1 Introduction

The eruption of financial crises in the mid of 2007 ignites the debate on factors which played a role in the mismanagement of banks. Among other factors, a growing number of scholars and policy makers has put attention on the corporate governance of banking firms and in particular on the role played by banks' boards (Erkens, Hung, & Matos, 2012; Kirkpatrick, 2009; Mehran, Morrison, & Shapiro, 2011). Since then much work has been done by academics and regulators to examine which board structure might be more beneficial to enhance the monitoring and advising quality of banks' governance mechanism (Andres & Vallelado, 2008; Erkens et al. 2012; Anginer, Demirguc-Kunt, Huizinga, & Ma 2016). Nevertheless, still little is known about which type of directors are more likely to be appointed by the banks and how director specific characteristics contribute in making them better advisors to the top management.

In line with the emerging stream of research that investigate the effect of director specific characteristics on bank performance and risk taking (Fernandes & Fich, 2016; Minton et al., 2014), this paper aims to add to the sparse literature by examining the advising quality of sub-group of directors based on their executive position and industry related experience jointly. Specifically, we are interested in inspecting the determinants of directors' appointment and performance who hold the top executive position at their primary firms i.e. directors who are the CEOs.

Three specific facts motivate our study. First, according to Spencer and Stuart survey 2003, active CEOs are the most desirable candidates among independent directors as their extensive human and social capital make them a source of unique expertise (Booth & Deli, 1996; Horner, 2015; Perry & Peyer, 2005). However, the impact of CEO director's presence on bank's board is still unaddressed. Interestingly, our sample shows that on average 6% directors on bank boards are CEO of other firms, where 57% of the banks in our sample have at least 1 CEO director

present on their board². These preliminary facts raise a question that; what determines the appointment of CEO directors on bank boards and once appointed how their presence on board effect the overall advising quality of the board.

Second, the existing literature on CEO directors assumes that due their executive position, all CEO directors are supposed to outperform non-CEO directors (Faleye, 2011; Fich, 2005; Fich & White, 2005; Horner, 2015). However, the special business nature of banks which requires expertise in banking operations and knowledge of financial regulations, raises a question whether this assumption holds true for the CEO directors at banks' boards? Moreover, extent literature provides evidence of the fact that directors with having experience in related industry are more effective monitors and advisor to the top management (see Dass, Kini, Nanda, Onal, & Wang, 2014; Fahlenbrach, Minton, & Pan, 2011; Wang et al., 2015). Considering this, we incorporate financial expertise as a determinant of CEO director appointment and performance in our study. To empirically test the performance difference based on their expertise, we divide CEO directors into two categories based on their current industry association³; financial expert CEO director and non-financial expert CEO directors. We define director as *financial expert* if his firm fits in non-bank financial sector category and refer him as "*financial sector CEO director*"⁴, where we flag CEO

² For instance, C. Michael Armstrong during his tenure at AT&T as CEO, also served on the board of directors of CitiGroup in 2002, CEO of DOW Chemical Company Andrew N. Liveris was on the board of directors of Citigroup from 2006 – 2010. Similarly, CEO of Corn Product international*, INC. Samuel C Scott III was the member of board of directors of The Bank of New York Mellon during 2007 – 2009.

³ The intuition behind selecting directors based on their current industry association is that banking industry and financial environment has been through major regulatory and policy reforms over the course of our sample period (2000 – 2014) based on which we hypothesis that directors who are currently associated with the financial industry are supposedly more aware of the new policies and regulations thus more effective advisors compare to directors who had financial industry working experience in the past. Moreover, it strongly applies to CEO directors as after joining a particular sector they get more aware of the policies and regulations of industry where they currently serving as a CEO.

⁴ We exclude banks from financial sector category as regulations do not allow CEO of bank to on the board of other banks (see R. B. Adams & Mehran, 2012; Mehran & Adams, 2003; R. Adams, 2010)

director as *non-financial expert* director if his firm belongs to non-financial sector category and call him as “*non-financial sector CEO director*”⁵.

Third, policy review perspective; advising and monitoring quality of directors is significantly associated with their industry expertise and managerial experience (Dass et al., 2014; Minton et al., 2014; Wang et al., 2015). Consistent with this view, regulators in the last decade took several actions with an intention to improve the governance quality of listed firms. For instance, section 407 of Sarbanes-Oxley Act 2002 enacted with an implied assumption that “an understanding of generally accepted accounting principles and financial statements” will improve the advising and monitoring quality of the directors. Similarly, Dodd-Frank Act 2010 made necessary to have a financial expert director on audit and compensation committee. However, these policy reforms applies to all publically listed firms and enacted with an assumption that “one size fits all” Adams and Mehran (2011). Thus, it is still unclear that whether these policy reforms fulfilled the actual purpose of creating the robust governance structure, particularly for banks. As recently, Minton et al. (2014) claim that presence of financial expert director on bank boards, in fact, increased the bank risk in pre-financial crises era which eventually results in a poor performance during financial crises. Moreover, Adams et al. (2011) provide evidence that board independence is negatively related to bank performance. These contrary results indicate the importance of reconsidering the role of director specific characteristics on bank risk taking and performance, and urge academics and policy makers to look for directors with ideal characteristics that optimise their performance on banks’ board. In this context, studying performance of CEO directors on banks’ boards is interesting for two specific reasons. First, they have significant

⁵ Sectors are identified as financial and non-financial on basis of Standard Industrial Classification (SIC) system and include CEO director in financial sector category if his primary firm has SIC between 6000 – 6799 (excluding SIC 602, 609 which strictly belongs to banks), where we consider all other CEO directors as non-financial sector category CEO directors.

Note: Our additional check shows that non-financial sector CEO Directors in our sample do not have an experience working for a bank or financial firm at any level in the past other than their current bank directorship. We carried out this check to account for the effect of non-financial sector CEO director past financial experience.

reputation at stake, which motivate them to show risk averse behaviour (Perry and Peyer, 2005; Fich & Shivdasani, 2007). Second, CEO directors hold vast managerial experience which, potentially make them better advisors to top management (Booth and Deli, 1996; Harris and Raviv, 2008). These special characteristics of CEO directors apparently make them suitable directors for banks and motivate us to study if they actually are better performers.

Using data on 3423 director appointments at 496 U.S. banks from 2000-2014, we first explore the determinants that drive the appointment of CEO directors on bank boards. We find support for the fact that the appointment of CEO directors on banks' boards is largely based on the type of sector (financial/non-financial) in which director is serving as a CEO rather than his executive position. Moreover, our analysis shows that; i). The appointment probability of financial sector CEO director on less profitable banks is high compared to non-financial sector CEO directors. ii). Banks actively manage their board composition regarding directors' expertise, as banks appoint financial sector CEO directors in response to a change in regulatory environment and during periods of financial distress. iii). Directors network plays little or no role in the appointment of financial sector CEO directors rather their appointments are broadly based on their financial expertise. Furthermore, our results also complement the literature which claims that board structure is endogenous and determined by the cost and benefits associated with board composition and directors' expertise (see Adams et al., 2010; Pathan and Skully 2010).

Second, we study whether the stock market reaction is driven by the industry related expertise or structural position of the appointed CEO directors. Literature shows that appointment of director who hold specific expertise or have extensive managerial experience help investors to anticipate firms' future performance (Defond et al., 2005; Huang et al., 2008; Pathan and Faff, 2013; Francis et al., 2015). Our analysis shows that investor value directors' on the basis of their executive position and financial sector association jointly. We record highest abnormal return on the appointment of director who is CEO of the financial firm. Where, second highest

returns appear on the appointment of non-CEO financial sector director. However, no abnormal returns are recorded on the appointment of CEO and non-CEO director from non-financial firm. These results provide evidence for the fact that in specialised institutions investors value the appointment of director who is associated with the related industry more compared to a director who is CEO of but has no association with the related industry. Moreover, our results remain consistent after controlling for bank specific characteristics in a multivariate regression setting, which further suggest that the abnormal returns are likely due to the financial sector CEO directors' appointment and are not driven by bank specific characteristics.

Third, we ask whether the presence of CEO directors on bank's board improves bank performance, and risk profile. The existing literature provides mix evidence on CEO directors' performance as Fahlenbrach et al. (2010) suggests that the appointment of CEO director do not have any impact on firm's operating performance, where, Fich (2005) report an improvement in firm's performance after CEO director appointment. Our results suggest that CEO directors' performance on banks' boards do not only depends on their structural position rather it is necessary to account for the industry at which director has gained his experience. We estimate the performance effects after correcting for potential bias originating from three different sources, banks *endogenous choice* of specific type of directors, *reverse causation* and *self-selection*. In addition to controlling for firm and time fixed effects we also control for industry effects by industry adjusting our performance and risk dependent variables. In our 2SLS estimation, we use two instruments; i.) Number of financial firms to number of banks in a city, and ii.) Number of non-financial firms to number of banks in a city. The selection of instrumental variables is based on economic principals of supply and demand. As we assume that the supply of CEO financial sector directors on bank boards is directly proportional to the number of non-banking financial firms in the city where the bank's headquarter is located. Thus increases (decreases) the probability of industry related directors' appointment but should not have a direct impact on bank's performance, risk

taking. We find that the presence of financial expert CEO directors has a significant impact on bank performance. For instance, our analysis records an increase in bank profitability and risk profile after the appointment of financial sector CEO director.

In addition to the change in profitability measure, we also investigate the channel through which banks' profitability increases and we find that presence of financial expert CEO director has a significant impact on business model of the bank i.e. they help banks' top management in exploring the non-core banking sources of income as the ratio of non-interest income to net interest income increases after financial sector CEO director appointment.

Our study offers several contributions to the existing corporate governance literature. First, our work extends the broader literature on corporate governance by analysing the determinants of CEO directors' appointment and performance on bank boards. In contrast to previous studies on CEO directors appointment and performance (Fahlenbrach et al., 2010; Fich, 2005), we provide a direct evidence that irrespective of directors' executive position, the industry to which CEO is associated matters most on boards of US banks both in terms of the probability of their appointment and post appointment effect on bank performance. Moreover, recently few studies also address the impact of financial expertise of directors on bank's and non-financial firms' boards (see e.g. Dass, Kini, Nanda, Onal, & Wang, 2014; Minton et al., 2014; Wang, Xie, & Zhu, 2013; Burak Güner et al., 2008). However, the key distinction of our study is that we focus on directors' industry specific expertise and their executive position jointly, whereas the above mentioned papers focus on financial expertise or structural position of directors separately. Similarly, scarce literature is available that specifically study the impact of industry related expertise of directors on bank performance and risk taking. For example (Minton et al., 2014) study the impact of financial expert directors' on bank's performance however their study sample is limited to financial crises period. In contrast to this our study covers longer time period which help us to examine the directors' performance over the extensive time horizon.

Second, we specifically contribute to the ongoing debate on finding appropriate directors for banks (Andres & Vallelado, 2008; Elyasiani & Zhang, 2015; N. Fernandes & Fi, 2013; N. G. Fernandes & Fich, 2016; Mehran & Adams, 2003; Minton et al., 2014; Vallascas et al., 2014). Our results imply that independent directors with a significant reputation at stake and have working experience in financial sector are appropriate directors for banks as they have risk averse attitude and are better advisors to the bank's top management.

Third, our paper reveals the dynamic nature of banks' boards by providing a direct evidence for the fact that banks actively manage their corporate boards' composition in terms of directors' expertise by appointing financial sector directors compared to non-financial directors during the periods of financial distress and regulatory changes. The dynamic nature of boards also complements the literature which claims that board structure is endogenous and determined by the cost and benefits associated with board composition and directors' expertise (see e.g. Adams et al., 2010; Pathan and Skully 2010).

The rest of the paper advances as follow; Section 2, presents the review of existing studies on CEO directors and illustrate hypothesis. Section 3, describes our sample selection procedure and provides appointment distribution of directors on bank boards. Section 4, provide summary statistics, definition and intuition behind variables used in the study. Section 5, discuss empirical results on sector specific CEO directors' appointments. Section 6, provide results on investors reaction to appointment announcement. Section 7, discusses results on CEO directors advising quality on boards. Section 8, offers conclusion and discussion.

2 Related literature and hypothesis development

2.1 CEOs as outside directors; what we know

The literature on directors' capital identifies human and social capital of directors as the key determinants of their advising and monitoring quality. Human capital is defined as the knowledge

and expertise gained through experience working in industry. Where Social capital is the defined as the directors' access to resources through their personal contacts and people in their network within industry. Thus, directors who possess greater human and social capital are considered as more valuable in directors' labor market. Given this, CEO directors are deemed to hold an unusual amount of social and human capital due to which they are expected to outperform non-CEO independent directors on corporate boards (Booth & Deli, 1996; Fich & White, 2005; Horner, 2015; Perry & Peyer, 2005). Earlier studies (Fama, 1980; Fama & Jensen, 1983; Mintzberg, 1988) do not particularly examine the performance of CEO directors, rather claim that executives (in general) of well-performing firms are the most valued candidates in director labour market. Gilson (1990) later confirmed this and report that executives of financially distressed firms are less likely to receive outside directorship.

More recently, a limited number of studies specifically focus on the determinants of CEO directors' appointment on the boards of non-financial firms, their monitoring and advising quality and on how their appointment impacts the appointing firm stock price (Fahlenbrach et al., 2010; Fich, 2005)⁶.

In particular, the above-mentioned studies examine the demand and supply side of CEO director appointment and document that the likelihood of CEO accepting external directorship increases when CEO's firm performs well, where, firms with greater growth opportunities appoint CEO directors to take benefits from their managerial experience. Fahlenbrach et al. (2010) suggest that CEO directors prefer to join firms which are geographically close to their firms and have similar corporate governance and business policies. Furthermore, Fich (2005) argue that the probability of CEO directors joining the board that already has a CEO director is less as firms restrain from appointing directors with similar skills to avoid duplication of resources. Contrary to

⁶ (Faleye, 2011; H. Li & Qian, 2011) are also among the group of scholars who examine the performance of CEO directors on boards.

this, Fahlenbrach et al. (2010) show that CEO directors cluster on boards of large and established firms that provide them reputational security.

There is little consensus, however, on the advising and monitoring quality of CEO directors. Fich (2005) report a positive impact of CEO director appointment on long-term firm performance while Fahlenbrach et al. (2010) claim that appointment of CEO directors do not improve the firm performance. The appointment effect of CEO directors on appointing firm's stock price was examined by Fich (2005), who report a higher abnormal return on the appointment of CEO directors compared to the appointment of any other director. Fahlenbrach et al. (2010) report similar results. However, they show that appointment of first CEO director on board results in abnormal returns where subsequent CEO director appointment does not result in any abnormal market reaction.

Nevertheless, above reviewed studies estimate their results on the basis of the executive position of CEO directors alone and overlooked the industry in which they have gained the experience. We argue that the exclusion of CEO directors' industry related experience from the estimation could potentially bias the results. Considering this, we specifically address this potential issue, by studying the CEO directors' performance and appointment determinants on the basis of their executive position and current industry experience jointly.

It is widely believed that the complex nature of banks' business and regulatory environment makes them specialised institutions. Thus, banks can best be overseen by the board of directors who hold significant knowledge about their; operations, nature of transactions and potential risk associated with them (see Adams & Mehran, 2011; Evanoff, Jagtiani, & Nakata, 2011; Minton et al., 2014; Sironi, 2003).

Given this, in the following sections, we describe why industry related experience might matter for CEO directors' appointment and performance on banks' boards and develop several related testable hypotheses.

2.2 Appointment hypothesis (Board dynamics)

Several non-financial corporate governance studies have analysed the dynamics of corporate boards in terms of directors' appointments i.e. variation in the proportion of independent directors to inside directors. Hermalin & Weisbach (1988) show that board composition changes under three scenarios. First, *firm performance*, poor firm performance triggers the departure of inside directors and arrival of an independent director on board. Second, *CEO succession*, they find that as the firm CEO approaches retirement the likelihood of inside director joining the board increases who are the potential candidate to be appointed as next CEO, however, soon after the appointment of new CEO, ratio of independent directors on board decreases. Third, *existing product market*, board independence increases when a firm leaves the product market. In addition to these factors Denis & Sarin (1999) find that CEO stock ownership has a negative relation with board independence. However, scarce literature is available that study the dynamics of board composition in terms of directors' expertise. (see Gilson (1990))

Nevertheless, literature on banks' corporate governance never empirically study this transition process of appointing directors with particular expertise under different financial and regulatory scenarios. We assume that if hypothesis *H1a* and *H1b* hold true, then banks might show a change in preference in type of CEO director appointment i.e. by appointing more financial sector CEOs as an independent director than non-financial sector CEOs during periods of financial distress or in response to a change in regulatory environment. Given this conjecture, we put forward our hypothesis and assume that corporate boards are dynamic in nature as banks appoint directors on their boards which are most relevant to the current financial condition and regulatory environment. Consequently, we assume that appointment probability of financial sector

CEO directors is inversely proportional to bank profitability as banks with low profitability are more inclined towards appointing directors who are associated with financial industry to gain benefits from their financial industry experience. Moreover, to test our hypothesis for systemic market conditions and changes in regulations, we use financial crises 2007 - 2008 and Dodd-Frank Act 2010 as an exogenous shock to the financial and regulatory environment. Providing this, we develop the following hypothesis

H1a. Appointment of financial sector CEO director is inversely proportional to bank profitability.

H1b. Banks prefer to appoint more financial sector CEO directors during the period of financial crises, and in response to change in regulatory environment.

2.3 Expertise hypothesis

The extent literature shows that there exists a performance variation within different types of independent directors in the boardroom (Byrd & Mizruchi, 2005; S. Huang, 2014; Wang et al., 2015; White, Woitke, Black, & Schweitzer, 2014). Specifically, the appointment of the industry expert independent director not only increase the advising and monitoring quality but also proves to be beneficial for overall firm performance (Dass, Kini, Nanda, Onal, & Wang, 2014; Fahlenbrach, Minton, & Pan, 2011; Wang et al., 2015). Likewise, Güner, Malmendier, & Tate (2008) show that appointment of financial expert independent director improves non-financial firm performance, where the appointment of banking sector independent director decreases the cash flow sensitivity of the firm Kroszner & Strahan (2001). Specifically, studies also provide evidence of the fact that directors who have a working experience in related industries are better monitors and advisors to the top management. For instance Tian, Haleblan, & Rajagopalan, (2011) show that investor show positive reaction if the CEO is appointed by the directors with expertise in related industry. Kroll, Walters, & Wright, (2008) concluded that boards with vigilant directors who have appropriate knowledge about the industry provide superior advise on deals related to acquisitions. Similarly, studies on bank corporate governance also suggest that financial

expertise of directors have a significant impact on bank performance and risk taking (Fernandes & Fich, 2016; Minton et al., 2014).

Nevertheless, despite the fact that directors' performance and strategic decision making mirror their professional experiences (see e.g. Dearborn & Simon, 1958; Fligstein, 1987; Michael Jensen & Zajac, 2004), previous studies (Fahlenbrach et al., 2010; Fich, 2005) do not account for CEO directors expertise rather estimate their performance based on executive position alone.

Based on this, we claim that rather than arguing the relative merits of structural position alone, it is necessary to acknowledge the relevance of both expertise and structural position of the director. Moreover, we believe that this relevance will be more significant in the case of specialised institutions e.g. banks which require financial expertise and knowledge about the current regulatory environment.

We conjecture that even if CEO directors share same executive position, their performance and risk taking attitude is contingent to their professional expertise's and primary industry to which they belong. Given this we put forward our hypothesis:

H2a. Financial sector CEO directors perform better on bank boards as compared to non-financial sector CEO directors.

Executive position of CEO directors plays a significant role in their attitude towards risk taking. CEO directors' reputation theory⁷ suggest that because of their position at primary firms, CEO directors are not only concerned about their reputation in directors' labour market but at their primary firms as well Fich & Shivdasani (2007). Moreover, arguably financial expert directors have lower cost linked to acquiring information on the quality of transaction and potential risk

⁷ Studies show that reputational theory holds true for all independent directors who hold significant reputational stack (see e.g. Fich & Shivdasani, 2007; Masulis & Mobbs, 2014, 2015; David Yermack, 2004)

associated with it, which make them potentially better monitors and can prevent managers from taking excessive risk Harris & Raviv (2008).

Based on this, we develop our argument that because of their financial expertise, financial sector CEO directors are better in evaluating potential risk. Consequently, they are better at protecting their reputation by showing more risk averse attitude compared to the non-financial sector CEO directors. We hypothesise that

H2b. Financial sector CEO directors are more risk averse compared to non-financial sector CEO directors.

3 Sample selection

Our analysis is based on a sample of US banks selected for the period 2000-2014. We construct our sample using three different databases. We collect board level information from BoardEx that provides detail data on board structure and director level employment information for public and private firms, covering such items as board size, director age, and directors' current and historic employment⁸. We retrieve accounting data from COMPUSTAT and stock price information from CRSP database.

To construct our final sample, we start from the population of banks in BoardEx and match them with COMPUSTAT and CRSP to collect accounting and market data, respectively. We only retained banks which are available in all three databases. Since we need to ascertain if the director is also an active CEO of his firm we match BoardEx board summary data with BoardEx director's current primary employment database by director ID⁹ and date of appointment to verify if the

⁸ Several recent corporate governance studies use BoardEx For example Cohen et al., 2008; Fernandes & Fich, 2016; Fich & Fernandes, 2009; Minton et al., 2014). BoardEx database on directors and firms board structure provided in excel sheets. We extracted relevant data from three different files; Board Summary, director employment, and company news.

⁹ BoardEx offers easy way of matching data across its different datasets by providing unique IDs for individual companies and directors.

director is currently acting as a CEO at his primary firm during his appointment on the board.

Furthermore, BoardEx holds information on a limited number of banks pre 2004 period while the sample size significantly increases from 2004. Accordingly, to reduce missing data and the risk of a potential sample selection bias, we hand-collected information on directors and bank board structure from DEF-14A reports for all banks that are present in the dataset from 2004 but missing in the initial part of our sample period. This exercise makes our dataset unique and extensive both in terms of number of banks and study period compared to existing bank specific corporate governance studies on US banks (see for instance Adams & Mehran, 2005, 2012; Elyasiani & Zhang, 2015; Minton et al., 2014). Overall our final sample comprises of 496 banks over the period 2000 – 2014.

Within the selected sample of banks, we identify 3423 first time appointed directors. Notably as Fich (2005) we exclude reappointed directors from the sample of appointments.

3.1 CEO Directors' appointment distribution by sector

We classify the appointed directors in several categories. We start by defining an independent CEO Director as those directors who are currently being appointed as CEO at their primary firm and also indicated as an independent director in BoardEx¹⁰. This group excludes CEO Directors who are sitting on the board of both the parent bank and its subsidiary as it is common to appoint CEO of the subsidiary bank on parent bank's board or vice-versa (see R. B. Adams & Mehran, 2012; Mehran & Adams, 2003; R. Adams, 2010).¹¹ We further distinguish CEO directors depending on the sector of their primary company. Accordingly, we separate directors from non-bank financial institutions from directors whose primary firms is a non-financial sector. Similarly, we distinguish the remaining independent directors on the basis of whether or not they have

¹⁰ Recent studies use the similar approach to define independent CEO director see e.g. Fahlenbrach et al., 2010; Faleye, 2011; Fich, 2005)

¹¹ As mentioned by Fahlenbrach et al., (2010) using this approach, we cannot determine the appointment of directors in the first year a bank appear in our sample.

experience in non-bank financial firms. More generally, we classify the remaining appointed directors in three categories: i) independent directors with current working experience in the non-bank financial industry (defined as above); ii) independent directors with no current working experience in the financial industry; iii) inside directors (defined as directors who are flagged as Executive directors (ED) in BoardEx).

To categorize independent directors as described above, we identify non-bank financial and non-financial firms on the basis of Standard Industrial Classification (SIC) codes and flag firms as non-bank financial firms if their SIC code falls between 6000-6799 (excluding SIC 602, 609 which strictly belongs to banks) where firms with SIC out of 6000-6799 range are define as non-financial firms.

Table 1 reports the yearly distribution of director appointments by director category. Of the 3423 appointments, 374 (11%) independent appointed directors are current CEOs, of which 151 appointed CEO directors are from non-financial firms and 223 CEO directors belongs to non-bank financial firms¹². 2315 (67.6%) appointed directors are independent non-CEO directors (with 1327 having working experience in the non-bank financial firm) and the remaining 734 (21%) directors are off inside/ gray directors.

Insert Table 1 here

In general, the distribution of independent directors by category shows that banks boards primarily appoint directors with working experience in the financial industry rather than CEO directors. Furthermore, the share of director's acting as a CEO in non-bank financial firms ranges from a minimum of 2% to a maximum of 9% of the yearly number of appointed directors and

¹² Moreover, analysis of their primary sector association shows that majority of financial sector CEO directors are associated with insurance, and investment companies, and diversified financial services. Where most of the non-financial sector CEO directors are associated with real estate, pharmaceutical companies, business services, construction and building firms, health and information technology companies.

tend to be generally higher than the share of directors acting as CEOs in non-financial firms. This latter share shows a declining trend after the global financial crises and the related adoption of the Dodd-Frank Act. A similar decreasing trend can be seen also in the share of independent directors without previous working experience in non-bank financial firms.

Overall, in the latest years of the sample period, banks seem to be in search of increasing the presence of directors in the boardroom with working experience in financial firms indicating that banks recognize to these directors valuable monitoring and advising skills¹³.

3.2 Modeling the director appointment probability

We use a multinomial logit model to analyse the determinants of director appointment by banks. Multinomial logit is a common technique to estimate the probabilities of occurrence when the dependent variable is categorical or have more than two categories. In our case the dependent variable has five categories. Specifically, we define our dependent variable “*Director appointment*” as a categorical variable that takes the following values: zero if inside/gray director are appointed on the board, one in the case of an appointment of a CEO of non-financial firm two for the appointment of a CEO of non-bank financial institutions, three in the case of the appointment of non-CEO independent director without working experience in financial firms and four those non-CEO independent director with working experience non-bank financial firms.

In our model we control for a number of potential drivers of the appointment probability that we summarize in Table 2. Specifically, we include three set of determinants which include variables on director specific characteristics, banks corporate governance structure and accounting measures of the bank.

Directors’ specific determinants include the ***Number of outside directorships*** held by the

¹³ Table 3 in appendix provide appointment distribution of directors of five different categories; i. Inside directors, ii. Independent financial expert directors, iii. Independent non-financial expert directors, iv. Independent CEO financial expert directors, and v. Independent CEO non-financial expert directors

appointed director. It is defined as the log of total number of boards on which director has served in the past. We use this variable to proxy directors' popularity and network effect on their appointments. As there exists a positive relationship between directors' popularity in directors labour market and the number of boards director has served in the past. In turn, this popularity might have an impact on their appointment probability Ferris et al. (2003).

Financial qualification, is a dummy variable taking a value of one when the appointed director has a financial qualification¹⁴. We specifically control for financial qualification of directors as we classify directors as financial and non-financial director based on their industry experience alone. However, previous studies have shown that directors and executives performance also depends on their qualification (see King, Srivastav, & Williams, 2016; C. Li, Sun, & Ettredge, 2010).

Directorship experience, is defined as the total number of years director has served on the boards of other firms. We use directors' experience to control for the fact that directors with greater experience may have greater probability of appointment due to a more extensive human and social capital.

Where bank corporate governance variable includes; **Board independence**, computed as a ratio of independent directors to total board members. Where the director is flagged as independent if he fulfils the regulatory conditions of being an independent director¹⁵. The literature on corporate governance provides extent evidence on better quality of independent directors' advisory and monitoring role (see Armstrong, Core, & Guay, 2014a; Ryan & Wiggins, 2004; Wagner, 2011). Specifically, industry expert independent directors are deemed to hold essential skills and knowledge that helps top management in decision making which increase firms' overall performance (see Dass et al., 2014; Wang et al., 2015). We assume that banks with less independent

¹⁴ We define director as financially qualified if he has a degree related to finance and accounting. We retrieved education data from BoardEx directors' education database.

¹⁵ According to which independent directors are those who i) are not internal to the company ii) are not involved in any direct or indirect business relationship with the bank

boards are more likely to appoint CEO directors from non-bank financial sector to improve the overall advising quality of the board.

The *Percentage of CEO directors* is a proxy for the possibility that CEO directors clustering on board and calculated as a ratio between the number of CEO directors on the board and total board members. Fahlenbrach et al. (2010) show that CEO directors cluster on prestigious boards. However, Fich (2005) report a contrary result and argue that firms do not appoint directors with similar skills to avoid duplication..

Board age is calculated as the average age of the board members. The literature suggests that younger boards due to their limited experience and social capital prefer to appoint/retain experienced directors to improve the overall advising and monitoring quality of the board. Vast managerial and business experience of CEO directors increases the probability of their appointment on younger boards Hermalin & Weisbach (1988).

Board size, is the log transformation of the number of total board members. The literature suggests that board size plays a significant role in monitoring and advising quality of the board (see e.g. R. B. Adams & Mehran, 2012; Andres & Vallelado, 2008; Pathan & Faff, 2013; Pathan & Skully, 2010). Studies on non-financial firms argue that larger board limits the communication across directors and increases the free-rider problem (Fama, 1980; Fama & Jensen, 1983). Contrary to this R. B. Adams & Mehran (2012) suggests that larger boards are directly proportional to bank performance. Moreover, Andres & Vallelado (2008) argue that bank performance has a U-shape relationship between board size and find that board comprises of 19 members is an optimal board size for banks. In our study, we expect to find a negative relationship between board size and the presence of CEO director on the board. As we expect that smaller boards prefer to appoint directors with extensive human and social skills to accommodate the missing resources.

CEO duality is a dummy variable that equals to one if a bank CEO is also a chairman of the

board. We expect that when bank CEO is also a chairman of the board, the appointment of CEO directors with potentially strong monitoring and advising abilities would be less likely as incumbent CEOs avoid appointing directors with strong voices on board that eventually diminish their power (Fahlenbrach et al., 2010; B. Hermalin & Weisbach, 1998; Shivdasani & Yermack, 1999).

Another group of variables capture bank fundamentals. Which includes, **Bank Charter**, calculated as a log of the market to book value of equity. Previous studies shows that directors are naturally attractive to firms with greater growth opportunities as they provide them reputational security as well as enhances their demand in directors labor market (Fahlenbrach et al., 2010; Masulis & Mobbs, 2014). A further additional control is bank profitability (**ROA**) measured by this calculated as bank earnings before interest and tax divided by total assets. Banks with low ROA hunt more knowledgeable directors (specifically financial sector CEO directors) to improve the advising quality of the board in the attempt to increase future bank performance. Consistent with the evidence Masulis & Mobbs (2015) more profitable banks are expected to attract more CEO directors as they provide them more reputational security and improve their profile in directors' labour market.

The existing literature provides evidence that directors avoid risky firms (De Maere, Jorissen, & Uhlaner, 2014; Fich & Shivdasani, 2006; Masulis & Mobbs, 2014). We use two measures of bank risk, i. **tail risk**, that measures a bank expected equity return in lowest α - percentile of the daily stock return distribution (see Acharya, Pedersen, Philippon, & Richardson (2010)). Specifically, in a given year, we define tail risk as the negative of average returns on bank's stock over the 5% worst days for the bank's stocks. ii. **Tier 1 leverage ratio**, computed as Tier 1 capital ratio divided by total assets, where Tier 1 capital is calculated according to BASEL rules. Tier 1 leverage ratio can be seen as capital adequacy of a bank funds which are raised through equity holders and bank use them as a buffer to accommodate any losses. It represents bank risk, as smaller the tier 1 capital ratio the more the bank will be exposed to bankruptcy during periods of

financial distress. Both variables are included to capture how bank risk effects the appointment choice of directors based on their sector association.

We use a dummy variable **TARP** that take value of 1 when the bank name appears on the bailout list and when the year is 2009 (i.e. the most immediate proxy season). TARP indicator help us analyzing the banks financial health during 2007 – 2008 financial crises by identifying if bank was declared troubled and received bailout¹⁶. Moreover, we interact tarp dummy with immediate proxy season year 2009 this approach gives us the opportunity to capture the instantaneous effect of TARP on banks' appointment preferences in terms of directors' expertise¹⁷

We further control for bank size that we measure via the log transformation of bank total assets (**Size**). The literature on non-financial firms shows that CEO directors are more likely to join large firms as they provide directors with greater benefits and reputational security (see Fahlenbrach et al., 2010; Masulis & Mobbs, 2014; Yermack, 2004) to control for bank size effect on appointment probability we use log of total bank assets.

The last two explanatory variables are two dummies **Financial Crises** and **Post Dodd-Frank Act 2010**. Crises dummy, capture the effect of 2007 – 2008 financial crises on banks' choice of directors from specific sector. We assume that during periods of distress and regulatory changes banks are more inclined to appoint directors with working experience in financial industry to increases the overall advising quality of the board.

Insert table 2 here

Table 2 report summary statistics on for the variables described above. The mean percentage

¹⁶ One of the major events that occurred during our sample period that distinguishes financially stable banks from the rest was TARP (Troubled Assets Relief Program) announcement. To alleviate the systematic crises from the financial system during the financial crises 2007-2008, the U.S. government passed the law under which Treasury department was able to purchase the troubled/illiquid assets from the needed banks.

¹⁷ List of TARP receiving banks retrieved from <https://projects.propublica.org/bailout/list>. We able to identify 115 banks that received TARP in our sample of banks.

of CEO directors in our study is 6.8% which is less than reported by (Booth & Deli, 1999; Faleye, 2011; Fich, 2005) but greater than recent study on CEO directors Fahlenbrach et al. (2010) who report 5.62% CEO directors on non-financial firms' boards during 1996. Board composition is fairly independent with 74% independent directors, where on average 47% banks' CEOs are also the chairman of the board¹⁸. 7.4% directors are financially qualified where the average years of experience directors have on other boards is 2.3 years¹⁹.

4 Empirical analysis

4.1 Determinants of director appointments

Insert Table 3 here

Table 3 presents the results of the multinomial regression model where we use as a base category inside directors. We find that the determinants of the appointment decision tend to differ across categories of directors.

Specifically, column 1 shows that CEO from non-bank financial firms are appointed as directors primarily by banks with smaller and less independent boards. Furthermore, the appointment is positively linked to CEO duality. The latter result indicates that banks where CEO has more power are more likely to appoint directors with strong voices to account for misalignment of managerial incentives which is consistent with (B. Hermalin & Weisbach, 1998; Shivdasani & Yermack, 1999).

CEOs of non-bank financial firms are also less likely to be appointed on bank boards that already have a high proportion of CEO directors from the financial industry. This finding suggests that banks avoid appointing directors with similar skills to evade the issue of duplication of skills on board Fich (2005). Furthermore, we find that CEOs of non-bank financial firms are more likely

¹⁸ Board structure statistics of our sample are close to previous studies on bank corporate governance (Renee B. Adams & Mehran, 2012; Berger, Clarke, Cull, Klapper, & Udell, 2005; N. G. Fernandes & Fich, 2016; Minton et al., 2014).

¹⁹ Additionally, 57% of the banks in our sample have at least one CEO director present on their board

to be appointed in less profitable banks and during the financial crisis period. All in all, these results support the idea that banks actively manage their board expertise in response to systemic shocks by appointing directors from non-bank financial firms during periods of financial distress or when they are in need of industry expertise to stabilise their profitability. The probability to appoint a CEO from non-bank financial firms in bank boards is also higher after the adoption of the Dodd-Frank Act. This might reflect the more general request to enhance financial industry expertise within the boardroom (see Kirkpatrick 2009; Walker 2009).

The results are substantially different when we focus on the appointment of CEO directors from non-financial firms. As shown in column 2, differently from the results discussed above, we do not find that the appointment probability of these directors have been significantly influenced by the financial crisis or by the adoption of the Dodd-Frank Act. This type of directors seems instead to cluster in banks that might lead to lower reputation damages having lower tail risk, higher charter value and having not received Tarp funding. Furthermore, while governance characteristics do not seem to influence the appointment of these directors, a critical role is played by their social capital as expressed by the *Number of outside directorships*.

Moving onto the analysis of the appointment of directors that do not currently hold a CEO position in a firm, we observe some similarities with CEO director appointments based on their working experience. For instance, similarly to CEO directors from non-bank financial firms, we find that the likelihood to appoint an independent director with working experience in financial firms is higher during the financial crisis and after the adoption of the Dodd Frank Act. In the case of independent directors with no-working experience in financial firms, we find that similarly to CEOs appointed from non-financial firms their social capital appears to play a significant positive influence on the likelihood of the appointment while a higher tail risk seems to discourage the appointment. However, some similarities emerge also between (non-CEO) independent directors independently from their previous working experience. In both categories of non-CEO

directors, a significant and positive effect on the appointment likelihood is played by the financial qualification and by the years of experience in the boardroom. Furthermore, in both case the appointment is more likely in older boards and in better capitalized banks.

In terms of bank governance, the key difference between the two groups of directors is related to board size (duality) that negatively (positively) affects the appointment probability only for non-CEO directors without working experience in financial firms. In terms of bank characteristics, the key elements that differentiate these two groups of directors are related to bank size, with larger banks more likely to appoint non-CEO directors with working experience in financial firms.

4.2 Investor reaction to CEO director appointment

The results of the previous section demonstrate that there are significant differences in the determinants of the appointment of different types of directors. In particular, we find that CEO directors from non-bank financial institutions are more likely to be appointed by poor performing banks and when the degree of board independence is low; namely when boards are expected to have lower monitoring and advising quality. Taken together, these findings confirm our prior that bank shareholders should recognize CEO directors from non-bank financial institutions peculiar valuable skills within the boardroom that differentiate them not only from CEO directors from non-financial firms but also from other independent directors having working experience in financial firms. We provide further support to this argument by studying the market reaction to the appointment of different types of directors and assess whether any differential effect specifically emerges when a bank appoints CEO director from non-bank financial institutions compared to other types of directors.

An extent literature is available that provide evidence that market shows abnormal returns on the appointment of directors with specific characteristics (Defond et al., 2005; Francis et al., 2015; H.-H. Huang et al., 2008; Lin et al., 2003; Pathan & Faff, 2013). The intuition behind abnormal

market returns is that investors perceive appointment of a director with certain characteristics as beneficial for a firm's future performance. Along these lines, the literature shows that CEO director appointments on the board of non-financial firms lead to higher abnormal returns than the appointment of other directors (Fahlenbrach et al., 2010; Fich, 2005).

To conduct our analysis we use standard event study methodology (Brown & Warner, 1985; Dodd & Warner, 1983). From the sample of 3423 appointments we can identify the appointment date for 1987 events from BoardEx²⁰ and DEF 14-A reports. Following (Fahlenbrach et al., 2010; Fich, 2005) we exclude appointments whose announcement dates occur at the same time as the announcement of other company events such as mergers and acquisitions, dates with multiple directors' appointment announcements and other restructuring events. This filter leaves us with 230 CEO director appointment announcements (172 referring to CEOs from non-bank financial institutions and 58 to CEOs from non-financial firms) and 1277 other directors' appointment announcements of which 379 appointed directors are inside directors', and 898 are independent director announcements of which 536 are financial sector directors and 362 from non-financial sector.

Following literature on CAR event study (see Brown & Warner, 1985; Fich, 2005; S. Huang, 2014). We use the equal-weighted CRSP market index in the market model estimated to generate abnormal returns, where the model parameters α and β are calculated over an estimation window of 300 days to 61 days prior to the event date. Abnormal returns are calculated for a three-day event window [-1 day, 0 = Event day, +1 day]²¹.

²⁰ We use BoardEx "Company News" dataset for announcement dates and identification of confounding events.

²¹ As a robustness test we calculate abnormal returns for the event window [-3 days, +3 days] our results remain consistent with our main analysis.

Insert Table 4 here

Table 4 shows the univariate results from the event study.

To offer a preliminary overview and to specifically capture the effect of directors' executive position on stock returns, we start by comparing in Panel A the abnormal returns for the full sample of CEO directors' appointments (independently of the sector of their company) and for the sample of all non CEO independent directors' appointments. We find there is a significant difference between the mean and median CARs of the two groups indicating that investors value CEO directors comparatively more than other independent directors. This finding is in line with the evidence reported in previous studies claiming that investors particularly value directors with an extensive managerial experience (Booth and Deli, 1999; Perry and Peyer, 2005; Warner, Watts and Wruck, 1988).

We next present in Panel B the difference in mean and median CAR generated by the appointment of CEO directors from the non-bank financial firms and of CEO directors from non-financial firms. This test allows to understand whether, in addition to the managerial leadership experience, the market assigns value to whether this experience has been gained. The analysis shows that investor value appointment of CEO director from non-bank financial firms more than other CEO directors. Investors, therefore, not only value the executive position of the appointed directors but also they consider the financial industry of the directors as well.

We finally report in Panel C the difference in mean and median of CARs for CEO directors from non-bank financial firms and non-CEO independent directors with working experience in financial firms. This additional test is important to understand if the result above is simply driven by the industry expertise of the CEO directors but rather by the fact that the market assigns relevance to the overall set of skills of these directors. The univariate analysis provide evidence that investor value the appointment of CEO director from non-bank financial firms more than

the appointment of directors with working experience in financial firms but that lack managerial leadership position at the time of the appointment. Taken together the results of this section indicates that the human capital of a director consisting of his/her managerial leadership skills and industry expertise are extremely valuable resources in a bank boardroom.

4.2.1 Cross-sectional analysis

We next examine cross-sectional differences in the CAR produced by the appointments of directors on bank boards. To this end we estimate multivariate regressions that include a set of dummy variables that identify the different types of director appointments as in the multinomial regression and a number of control variables. These controls aim at capturing determinants other than directors' appointments that might affect the estimated CARs. Specifically, we control for bank size, charter value, profitability, and tail risk. Following extant literature (see Yermack, 1996; Fich, 2005; Hermalin & Weisbach, 1988; Shivdasani, 1993) we further account for the possibility if the stock-returns are influenced by board structure and control for board size, board average age and bank CEO power. Furthermore, we also control for director specific characteristics such as total number of directorships, directors experience in years and financial qualification.

Insert Table 5 here

The results of the multivariate analysis, reported in Table 5, confirm the evidence shown by the univariate tests. More precisely we start with a baseline model without industry categorization presented in column 1 which include the full sample of inside directors, CEO directors and non-CEO independent directors' appointments. The coefficient of the CEO directors appointment dummy variable is positive and significant representing a 0.8% abnormal returns on their appointments where the coefficient for the appointments of non-CEO independent directors shows stock returns of 0.7%. These results shows that investor perceives the appointment of CEO director slightly better than non-CEO directors' appointments.

In model 2 we further categorize directors based on their industry association. The coefficient of the dummy variable identifying CEO director appointment from non-bank financial firms is positive and significant at customary levels. Similarly, there is a positive and significant coefficient also for the dummy related to the appointment of non-CEO independent director with working experience in financial firms. This latter coefficient is however significantly smaller than the one observed for the appointment of CEO-director from non-bank financial firms at the 5% significance level. This provides evidence of the fact that while the market recognizes generally assign importance to director working experience in financial firms, this experience is especially appreciated when associated with managerial leadership skills. The variables identifying instead of CEO directors from non-financial firms and independent directors with no working experience in financial firms do not enter the model with a significant coefficient.

In terms of control variables, we observe significantly higher abnormal returns when banks have with larger boards, and when the CEO is also the chairman of the board (see Hermalin & Weisbach, 1988; Shivdasani, 1993; Yermack, 1996). Furthermore, we find that the appointment generate higher returns when banks show higher tail risk

In column 3 and 4 we repeat the analysis for the sub-samples of CEO director appointments and of directors (CEOs and non-CEOs) having working experience in financial firms, respectively. In both cases we find that the dummy identifying the appointment of CEO directors from non-bank financial firms enter the model with a positive and highly significant coefficient. More precisely, the coefficient for this dummy variable indicates a 1.4% higher return on the appointment of financial sector CEO director appointment in column 2 and a higher abnormal return of 0.6% in column 3).

All in all, the analysis discussed above provides direct evidence of the fact that bank shareholders assign relevance to the working experience of directors in the financial industry

especially when it is combined with managerial leadership skills as highlighted by the director holding a CEO position.

5 Directors' post appointment effect on bank performance and risk

5.1 Bank performance and risk-taking post CEO and non-CEO independent directors' appointment: difference-in-difference approach

In this section we test whether the appointment of a CEO director from non-bank financial institution generates a significant shift in bank performance, and risk. We use return on assets (ROA) as a measure of bank performance while bank risk is proxy by Tier 1 leverage ratio and tail risk as in the case of the multinomial analysis. Furthermore, as an extant literature suggest that directors with financial experience background are better at firm income diversification and acquisition (Fligstein, 1987; Michael Jensen & Zajac, 2004; Fligstein, 1987; Michael Jensen & Zajac, 2004; Dearborn & Simon, 1958). Following this we also evaluate whether the appointment results in a different bank business mix that we capture with the ratio between non-interest income-to-net interest incomes.

To control for industry and time-invariant fixed effects we industry adjusted our variables and follow Fahlenbrach et al., (2010) to measure performance, risk and business mix before and after the appointment. More precisely, industry adjusted measures of the dependent variables are obtained by subtracting from the bank level variable the industry means. To assess the impact of the appointment of banks we compute the changes in these industry adjusted measures following the appointment; namely we compute the difference between the average industry adjusted variable from t_{+1} to t_{+3} and over the period t_{-2} , t_{-3} where t_0 is the appointment year.

Measuring change in banks' risk and performance around the appointment of director gives estimates of the effect of director appointment on the dependent variables which is not influenced by firm fixed effects. However, this approach does not account for a change in performance due

to different types of director appointments, so it might be the case that the effect on performance, risk and business mix might be related to other director appointment and not CEO director appointment. To overcome this issue, we initially use a difference-in-difference methodology as in Fahlenbrach et al., (2010). We define CEO director appointments from non-bank financial firms as treated group and the other CEO director appointments as a control group. We next repeat the same analysis by independent directors with working experience in the financial industry and employ the appointments of other non-CEO independent directors as a control group. In short, this approach provides us with an opportunity to compare the change in performance and risk before and after the appointment of directors in treated and control group.

Insert Table 6 here

Table 6 column 1 reports the results from difference in difference analysis when the control group is all other independent director appointments. Four sets of results are reported in panel A through D covering impact of the appointment on bank ROA, tier 1 leverage ratio, tail risk, and bank business mix respectively.

We initiate our analysis by comparing the performance of non-bank financial CEO directors with all other independent directors. Overall, results show that directors in treated group produces significantly different outcomes compared to all other directors. For instance, panel A reports that less profitable banks are more likely to appoint CEO director from non-bank financial firms and bank profitability increases after their appointment. Moreover, in post appointment era of CEO directors from non-bank financial firms indicate a greater risk aversion and shift in business model as Panel B, C and D reports an increase in tier1 leverage ratio, decline in tail risk, and significant increase in non-interest income to net interest income ratio.

In column 2 we define non-financial CEO directors and all other independent directors as treated and control group respectively. Results in indicate a positive and significant change in tier

1 leverage ratio after the appointment of directors in treated group. However, there is no significant effect on bank performance, business model and tail risk has been recorded after the appointment if non-financial CEO director appointment

Column 3 reports that in general, the appointment as a director of a CEO from non-bank financial firms produces significant different outcomes compared to the appointment of other CEO directors. For instance, Panel A shows that while CEO directors from non-bank financial institutions are appointed at less profitable banks, after appointment they contribute to improving bank performance significantly more than other CEO directors. Furthermore, as reported in Panel B, C and D following the appointment, banks that appoint CEOs from non-bank financial institution show a relative increase in their capital adequacy, a decline in tail risk and more diversified business mix compared to the banks in the control group. Overall these results are in line with the evidence reported in the extant literature (see Fich & Shivdasani, 2007; Masulis & Mobbs, 2014; David Yermack, 2004) on a risk averse attitude of directors with greater reputational stock.

In column 4 of Table 6, we report the difference-in-difference analysis for non-CEO independent directors. The results suggest that compared to the appointment of other non-CEO directors, independent directors with working experience in the financial industry lead to an improvement in bank ROA (Panel A) that is, however, associated with a decline in bank capital strength (Panel B) and an increase in bank tail risk (Panel C). This latter findings are consistent with recent studies analysis that claims that presence of financial expert director on banks' boards increases the bank risk Minton et al., (2014). Furthermore, as reported in Panel D, post-appointment there is a significant shift in business model with bank moving onto business lines that produce non-interest income.

Overall the analysis reported above suggests that the appointment of both CEO directors and non-CEO directors with working experience in financial firms produces significant different

corporate outcomes compared to directors lacking a similar working experience. Nevertheless, they also imply important differences depending on whether this working experience is associated with managerial leadership position. This is clearly highlighted in column 3 where we test for statistical differences between non-bank financial CEO and non-CEO directors on bank performance, risk and business mix. Overall these tests show that CEO Directors from non-financial firms have a lower impact on bank ROA but they also privilege less aggressive risk-taking and a more diversified business model.

5.2 Bank performance and risk-taking post CEO director appointment: multivariate analysis

To further corroborate the findings that director appointments result in significant changes in bank performance, risk and business mix, in this section we conduct additional tests under a multivariate setting. This allows us to control for other potential determinants of the observed changes in bank characteristics that we have identified in the previous section. We start by comparing the impact produced by the appointment of different types of CEO directors.

Insert Table 7 here

To this end we estimate via OLS a set of regression model where the dependent variable are the changes in the industry adjusted measures we have employed in the difference-in-difference setting. Our key explanatory variables are two dummy variables. The first takes a value equal to one when a bank has appointed a CEO director from non-bank financial firms and the second takes a value of one when the CEO director come from a non-financial firm. In addition, we include a number of control variables. Following Fahlenbrach et al., (2010) we account for bank size (log total assets) as it has a direct and significant impact on banks' performance. Additionally, literature on corporate governance also provide evidence on relationship between board structure and bank performance given this we control for board structure by including board size,

independence, and CEO duality (see Renee B. Adams & Mehran, 2012; Bhagat & Bolton, 2008; Pathan & Faff, 2013)

Panel A Table 7 reports the results. While a number of control variables enter the models with a significant coefficient, the results are generally in line with the evidence offered by the univariate tests. Specifically, we find that only the appointment of a CEO director from non-bank financial firms leads to an increase in performance, a decline in bank tail and an increase in non-interest income business lines. The only difference compared to the univariate tests is the both types of CEO directors seems to lead to a similar increase in capital strength.

One possible concerns with the OLS specifications discussed above is, however, endogeneity. Essentially, directors are not randomly appointed on boards, rather the appointment takes place with the consent of both firm and director. This sort of matching may attract competitive CEO directors to better-performing banks that have greater growth potential. The intuition is that the higher demand of CEO directors in directorship labour market gives them an opportunity to select directorships of their choice. This selection process gives rise to selection bias which increases the risk of spurious results.

To overcome the endogeneity issue we employ a 2SLS approach. Specifically, we use two instrumental variables - the ratio between the number of non-bank financial firms and the number of banks in the city where a bank headquarter is located, and ratio between number of non-financial firms and the number of banks in the city where bank headquarter is located. Our selection of instrument variables is based on economic theory of supply and demand of independent directors and on recent evidence suggesting that firms recruit directors especially in the local market and CEO directors opt for directorship for firms which are closer to their own firms to save travel time (Fahlenbrach et al., 2010; Knyazeva, Knyazeva, & Masulis, 2013). Essentially we assume that availability of greater number of financial firms (non-financial firms) per bank increases the probability to appoint financial (non-financial) firm CEO director

appointment. In contrast there is not a priori motivation to motivate an impact of these two instruments of the changes in bank characteristics that we employ as dependent variables.

To estimate the 2SLS model we first model the probability to appoint CEO directors from non-bank financial firms and from non-financial by using as key predictors the instrument described above²². We then employ the predicted values from the first stage regression in modelling the effect of CEO director appointments on performance, risk and business mix.

The first stage results are presented in the Table 9 of appendix A. The instruments enter the first-stage regression with a positive and highly significant coefficient. We also assure the joint relevancy of the instrumental variables by verifying the statistical significance of the *F-statistics* associated with all endogenous variables and use Durbin Wu-Hausman test of exogeneity. Furthermore, the lack of significance of the Hansen's *J-statistics* assure us that our instruments are uncorrelated with the error term of the second stage. Finally, we use Sargan *C-statistics* to verify if the 2SLS approach is appropriate by checking the bias arising due to omitted variables is close to OLS approach.

After controlling for potential endogeneity results from second stage regression presented in panel B of Table 7 panel B remain similar to those offered by the univariate tests and by the OLS specification especially in the case of CEO directors coming from non-bank financial firms.

5.3 Additional Tests

For an additional robustness check we follow (Fahlenbrach et al., 2011; Minton et al., 2014) and use propensity score matching (PSM) technique to overcome the potential issue of reverse causality. Propensity Score matching algorithm was developed by Rosenbaum & Rubin (1983), Heckman & Robb (1985) and Heckman, Ichimura, & Todd (1998). PSM has widely been used in

²²Even though our endogenous variable is a dummy variable we use simple OLS regression methodology in the first stage of the 2SLS regression (see Angrist and Krueger (2001) for the explanation of efficiency of this approach)

recent governance studies to control biasness occurring from reverse causation and endogeneity (see e.g. Francis, Hasan, & Wu, 2015; Ivashina, Nair, Saunders, Massoud, & Stover, 2009; Armstrong, Core, & Guay, 2014; Minton et al., 2014). To employ propensity score matching technique, we estimate a probit model and calculate propensity scores for each bank based on their accounting and corporate governance characteristics. To remain consistent, we use control variables similar to the multinomial regression in table 3. By considering non-bank financial sector CEO directors as a treated group and non-financial sector directors as a control group we match banks in treated and control group on the basis of their propensity scores.

Insert Table 8 here

Results in row 3 table 8 show that banks with at least one financial sector CEO director appointed on their board have a higher Tier 1 leverage ratio, and return on assets but less tail risk. However, our robustness test fails to confirm that non-financial sector CEO directors' presence on board is positively associated with banks' business mix as the difference between the estimates of financial and non-financial sector CEO directors is insignificant.

6 Conclusion and discussion

Existing literature on CEO directors is limited to non-financial firms and study their advising quality from the single aspect i.e. executive position (see Fich, 2005; Fahlenbrach et al., 2010). This paper highlights the fact that CEO directors' executive position alone is not enough to make them a better advisor especially, in case of specialized institutes e.g. banks that requires extensive financial and regulatory knowledge, rather their functional background and sector association plays more important role both in the probability of their appointment on board and their overall advising quality.

We show that appointment determinant of CEO directors on bank board largely depends on directors' sector association, and banks appoint directors based on their current needs as our

results suggest that financial sector CEO directors are appointed by banks which are in need of financial experts to increase their profitability or risk profile. Moreover, banks also appear to appoint financial sector CEO directors during financial crises and in response to changes in regulatory environment. Furthermore, we report that investors value the appointment of financial sector CEO director more compared to all other directors' appointments. After controlling for endogeneity and reverse causation our results show that appointment of financial sector CEO director has a positive and significant impact on bank profitability, risk, and business model.

Furthermore, by doing a direct comparison between non-bank financial CEO and non-CEO independent directors we show that financial sector CEO directors are more valued on bank boards, which also complements the Bank of international settlement (BIS) 2006 report "Enhancing corporate governance for banking organisations" in which it is stressed that bank should have more independent boards, and directors should have sufficient knowledge about bank business. However, this study further strengthens the fact that having a financial expert independent director on board does not completely mitigate the independent directors' risk shifting behaviour rather directors' reputation plays an important role in making them better advisors.

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Table 1.

Appointment distribution of all director appointments from 2000 – 2014 for the sample of 3423 director appointments based on their sector association (non-bank financial and non-financial sector) and type i.e. inside and independent director. The percentage is calculated as the ratio of total number of appointments in each category to total appointments in a given year. The initial year 2000 is missing as all banks appeared first time in that year thus following Fahlenbrach et al., (2010) we cannot determine the appointment of directors in the first year a bank appear in our sample.

Appointed Directors							
Year	Number of banks	CEO of non-bank financial firms	CEO of non-financial firms	Independent directors with working experience in non-bank financial firms	Independent Directors without working experience in non-bank financial firms	Inside director	Total
2001	106	5%	5%	30%	17%	43%	100%
2002	115	4%	7%	34%	29%	26%	100%
2003	116	2%	5%	33%	38%	23%	100%
2004	170	8%	8%	33%	32%	19%	100%
2005	167	5%	7%	33%	36%	19%	100%
2006	190	6%	6%	35%	33%	20%	100%
2007	161	9%	5%	35%	27%	24%	100%
2008	119	9%	5%	34%	29%	24%	100%
2009	141	5%	1%	42%	28%	23%	100%
2010	144	7%	5%	39%	30%	19%	100%
2011	169	6%	2%	46%	29%	17%	100%
2012	134	6%	4%	41%	27%	22%	100%
2013	165	7%	1%	46%	26%	20%	100%
2014	173	8%	1%	57%	17%	17%	100%
Total		6%	4%	38%	28%	23%	100%

Table 2
Summary statistics

The table shows summary statistics of for the full sample appointments. Number of outside directorship is the total number of boards directors served in the past. Financial qualification is a dummy variable take value of one if director has a financial qualification. Directorship experience is the total number of years directors has served on the boards. % independent directors on board represents board independence and calculated as total number of independent directors on board divided by total board size. % CEO directors on board is calculated as total number of directors who are active CEOs of their primary firms divided by total board size. CEO duality is a dummy variable equal to one if CEO is also a chairman of the board otherwise remains zero. Board age is the average age of all directors present on the board. Board size is the total number of directors' present in the board. Tail risk is calculated as of Acharya et al. (2010) and represents banks returns during periods when bank stock is performing at its lost 5% percentile level. Charter value is the log of the market to book value of bank's equity. Business-Mix is the ratio of non-interest income to net interest income. ROA is the ratio of earnings before interest and tax to total assets. Tier 1 leverage ratio is calculated as tier 1 regulatory capital ratio divided by total assets.

Variables	N	Mean	Median	Standard Deviation	p1	p99
<i>Panel A: Board Structure</i>						
Number of outside directorship	2886	5.983	4.745	5.555	2	25
Directors with financial qualification	2886	0.072	0	0.240	0	1
Directorship experience (years)	2886	2.379	0	3.968	0	17.90
% independent directors on board	2886	74.100	75.000	13.200	37.500	93.300
% CEO directors on board	2886	6.800	5.300	7.100	0.000	41.700
Board Average age	2838	60.537	60.500	4.015	50.167	71.000
Board Size	2886	10.908	10.000	3.323	5.000	21.000
CEO duality	2886	0.470	0.000	0.499	0.000	1.000
Bank CEO age	2886	56.451	56.000	7.230	40.000	75.000
<i>Panel B: Bank specific variables</i>						
ROA	2886	0.017	0.018	0.011	-0.025	0.051
Charter Value	2886	0.166	0.245	0.613	-1.826	1.355
Tail risk	2885	0.052	0.0401	0.0360	0.0166	0.183
Tier 1 leverage ratio	2886	0.014	0.008	0.018	0.000	0.103
Size	2886	4.075	3.124	4.684	2.119	5.610

Table 3

Sector wise CEO director appointment and bank characteristics Board Matching

The table report estimates from multinomial logit regression for determinants for sectors CEO director appointments. We define our dependent variable “*Director appointment*” as a categorical variable that is equal to zero if inside/gray director appointed on the board, equal to one in the case of CEO non-financial independent director appointment, equal to two if financial sector CEO independent director is appointed, three in the case of non-financial non-CEO independent director appointment and four if financial sector non-CEO independent director is appointed. The base outcome is zero an insider director appointment. All board level and accounting variables are lagged one one year. All accounting variables are winsorized at 1 – 99 level. Standard error reported in parentheses are robust and clustered at the firm level. Where *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ represents statistical significance.

VARIABLES	Non-bank Financial sector CEO director vs. insider	Non-Financial Sector CEO director vs. insider	Independent financial director vs. insider	Independent non-financial director vs. insider
Number of outside directorships	0.010 (0.020)	0.039*** (0.014)	-0.001 (0.013)	0.020*** (0.012)
Financial qualification	-0.331 (0.473)	-0.740 (0.623)	0.567** (0.248)	0.631** (0.247)
Directorship experience (years)	0.076 (0.046)	0.050 (0.058)	0.100*** (0.029)	0.130*** (0.044)
% independent director	-0.015* (0.008)	-0.008 (0.008)	-0.007 (0.005)	-0.004 (0.005)
% CEO director on board	-2.053** (0.812)	-0.131 (0.787)	-0.728 (0.480)	-0.725 (0.484)
Board age	0.019 (0.013)	0.005 (0.014)	0.050*** (0.008)	0.040*** (0.008)
Board size	-0.164** (0.194)	0.535** (0.216)	-0.175 (0.116)	-0.246** (0.123)
CEO duality	0.327* (0.185)	0.002 (0.211)	0.164 (0.121)	0.231* (0.120)
Tail risk	-3.650 (3.473)	-1.449** (4.315)	-3.564 (2.327)	-7.981*** (2.363)
Charter	0.072 (0.171)	1.103*** (0.242)	0.281*** (0.109)	0.077 (0.119)
ROA	-21.547*** (7.180)	4.767 (8.433)	-2.882 (5.047)	3.413 (4.825)
Tier 1 leverage ratio	9.126 (7.968)	0.506 (8.303)	12.914*** (4.476)	11.123** (4.602)
Size	-0.039 (0.045)	0.014 (0.073)	0.075** (0.037)	0.044 (0.035)
TARP recipient banks	-0.144 (0.199)	-0.164** (0.215)	0.184 (0.133)	0.241 (0.132)
Financial crises dummy	1.901*** (0.616)	1.989 (0.711)	0.946*** (0.388)	1.461 (0.424)
Dodd-Frank Act dummy	1.015*** (0.523)	0.614 (0.841)	0.463*** (0.309)	0.682 (0.386)
Observations	2,838			
Pseudo R ²	0.0448			
year fixed effects	Yes			

Table 4

Stock price reaction on CEO director appointments.

The table reports abnormal returns on the appointment of Non-bank financial and non-financial sector CEO independent directors and non-CEO directors (insider and independent directors). A total number of appointments including CEO and non-CEO directors after filtering for appointments with multiple announcements is 1507 of which 230 are CEO director appointments (Financial sector CEO director appointments is 172 and non-financial sector CEO director appointments = 58), non-CEO independent director appointments = 898 (Non-bank financial sector independent directors' appointments = 536 and non-financial sector independent directors appointments = 362) and insider appointments = 379. We calculated abnormal returns based on market model using equal-weighted CRSP market portfolio, where the model parameters α and β are calculated overestimation window 1 year prior to event date. Abnormal returns are calculated for three days' event window [-1 day, 0 = Event day, +1 day] where 0 is the directors' appointment announcement day. Three sets of results are reported. Panel A reports the difference in CARs on appointment All CEO director irrespective of the industry and all Independent director appointments. Panel B shows CAR difference between Non-bank financial sector CEO director appointment versus Non-bank financial sector non-CEO directors' appointment. Panel C report abnormal returns difference between Non-bank financial sector CEO director Appointments and Non-bank financial sector non-CEO director appointments. Significance in difference between the mean and median values of two groups is determined by two sample t-test and Wilcoxon signed rank test respectively. Where *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ represents statistical significance.

<i>Panel A</i> All CEO director Appointment	N = 230	All Independent director appointments	N = 898	
Mean	0.6026	Mean	0.4366	0.1660***
Median	0.4139	Median	0.00	-
				Difference
<i>Panel B</i> Non-bank Financial CEO director Appointment	N = 172	Non-financial sector CEO director appointment	N = 58	
Mean	0.5196	Mean	0.0830	0.4366**
Median	0.4732	Median	0.0	-
<i>Panel C</i> Non-bank financial sector CEO director Appointments	N = 172	Non-bank financial sector non-CEO director appointments	N = 536	
Mean	0.5196	Mean	0.2749	0.2447***
Median	0.4732	Median	0.0000	-

Table 5

Multivariate analysis abnormal returns on directors' appointments

The table reports abnormal returns on the appointment of different type of directors in a multivariate setting. Model 1 is a baseline specification where the independent variable for directors' appointments is a categorical variable ranging from (0-2). When insider is appointed it takes value of zero, on independent director appointment value is 1 and takes value of 2 on the appointment of CEO director. The independent variable in model 2 is a categorical variable which is similar to the variable used in multinomial logit approach. The base-outcome in the first model is the appointment of inside director. Model in column 2 represents abnormal returns on the appointment of financial sector CEO appointment vs. non-financial sector CEO director appointment. We use a dummy variable "Financial vs. non-financial sector CEO appointment" that takes value of one if financial sector CEO director is appointed otherwise remains zero. Model 3 analyze the returns on the appointment of financial sector CEO director vs financial sector non-CEO director. The dummy variable "Financial sector CEO vs Non-Financial sector CEO appointments" equals to one if financial sector CEO is appointed else remains zero. Standard error reported in parentheses are robust. . Where *** p<0.01, ** p<0.05, * p<0.1 represents statistical significance.

VARIABLES	(1)	(2)	(3)	(4)
All CEO appointments	0.008*** (0.004)			
All independent director appointments	0.007** (0.005)			
Non-bank Financial sector CEO appointment		0.012** (0.005)		
Non-financial sector CEO appointment		0.004 (0.008)		
Non-bank Financial sector non-CEO appointment		0.007** (0.004)		
Non-financial sector non-CEO appointment		0.006 (0.004)		
Non-bank Financial vs. non-financial sector CEO appointment			0.014** (0.010)	
Non-bank Financial sector non-CEO vs Non-Financial sector non-CEO				0.006*** (0.004)
Number of outside directorships	0.000 (0.000)	0.000 (0.000)	0.000 (0.001)	0.000 (0.000)
Directorship Experience (years)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.002)	0.000 (0.000)
Financial qualification	-0.005 (0.005)	-0.005 (0.602)	-0.003 (0.006)	0.028 (0.255)
% independent directors	0.000 (0.000)	0.006 (0.011)	-0.006 (0.046)	-0.008 (0.017)
Board age	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.000)
Board size	0.018*** (0.006)	0.019*** (0.006)	0.016*** (0.018)	0.017*** (0.008)
CEO duality	0.000 (0.003)	-0.006* (0.003)	-0.006* (0.007)	-0.006* (0.003)
Tail risk	0.248*** (0.083)	0.249*** (0.083)	0.475* (0.281)	0.298*** (0.112)
Charter	-0.007*** (0.003)	0.007 (0.003)	0.006 (0.009)	0.006 (0.004)
ROA	0.185* (0.101)	-0.178 (0.101)	-0.180 (0.267)	-0.177 (0.144)
Tier 1 leverage ratio	0.125 (0.164)	-0.119 (0.162)	-0.911 (0.645)	-0.153 (0.223)
Size	-0.001** (0.001)	-0.001** (0.001)	-0.000 (0.002)	-0.002** (0.001)
TARP	0.000 (0.002)	0.000 (0.002)	-0.005 (0.007)	-0.002 (0.003)
Financial crises dummy	0.012 (0.005)	0.010 (0.008)	0.016 (0.028)	0.013 (0.011)
Dodd-Frank Act dummy	-0.009* (0.006)	-0.009 (0.005)	-0.027 (0.017)	-0.009* (0.005)
Constant	-0.030* (0.018)	-0.029* (0.017)	0.001 (0.050)	-0.015 (0.022)
Observations	1503	1503	230	708
R-squared	0.043	0.043	0.199	0.056
year fixed effects	Yes	Yes	Yes	Yes

Table 6

Post appointment effect on Bank performance, risk and business mix - difference-in-difference

The table report changes in bank risk (proxy by tier 1 leverage ratio and tail risk), performance (proxy by ROA) and business mix (proxy by non-interest income to net interest income) around financial and non-financial sector CEO and non-CEO Directors' appointment using the difference in difference methodology. The treated group include banks that appointed at least one non-bank financial sector CEO (non-CEO) director where control group include banks that appointed at least one non-financial CEO (non-CEO) director. Performance and risk before the appointment are calculated as the average over recent years -2 and -3 where performance and risk after the appointment are calculated as the average over recent years +1 through +3. The third row of each panel gives the difference in risk and performance measure before and after the appointment of different types of CEO Directors. Third row of each panel presents difference in two groups of directors' performance and validate if the difference is statistically significant. Two sample t-test is used to determine whether means of different types of CEO directors are significantly different from zero. Where *** p<0.01, ** p<0.05, * p<0.1 represents statistical significance.

	CEO non-bank financial vs. all other directors (1)	CEO non-financial vs. all other directors (2)	CEO director Non-bank Financial vs. nonfinancial sector (3)	Non-CEO independent directors Non-bank Financial vs. nonfinancial sector (4)	CEO vs other independent directors Non-bank financials (5)
<i>Panel A</i>					
Δ Industry adjusted ROA					
Before (Treated vs. Control)	-0.0015***	-0.0070***	-0.004***	-0.011*	-0.0032*
After (Treated vs. Control)	0.0069*	0.00537*	0.006*	0.0092***	0.0038***
Difference (Treated vs. Control)	0.022*	0.01237	0.019***	0.0202***	0.007***
<i>Panel B</i>					
Δ Industry adjusted Tier 1 Leverage ratio					
Before (Treated vs. Control)	-0.0402**	-0.0049***	-0.0039	0.0033**	-0.00405
After (Treated vs. Control)	-0.035***	-0.0021***	0.0031	0.000	0.0010
Difference (Treated vs. Control)	0.0047***	0.0028***	0.0071***	-0.0033***	0.0050***
<i>Panel C</i>					
Δ Tail risk					
Before (Treated vs. Control)	0.0522***	0.0063	-0.0069	-0.0012***	0.0052*
After (Treated vs. Control)	0.0424***	0.0031	-0.0676	0.0020***	-0.00441***
Difference (Treated vs. Control)	-0.0012*	-0.0032	-0.060***	0.0032***	-0.00961**
<i>Panel D</i>					
Δ Business Mix					
Before (Treated vs. Control)	0.0371***	0.0441	0.052**	0.018***	0.0265***
After (Treated vs. Control)	0.0396	0.0820	0.091	0.026***	0.0495***
Difference (Treated vs. Control)	0.0025*	0.0378	0.039***	0.008***	0.0231***

Table 7

Multivariate analysis of change in bank risk, performance and business mix.

Table reports estimates from OLS and 2SLS regressions, Compares the % change in Industry adjusted Tier leverage ratio, ROA, Non-interest income to total interest income (business income), and ES (expected shortfall) before and after the appointment of non-bank financial and non-financial sector CEO Directors on board. Before the appointment, variables are calculated as (t-2, and t-3). After the appointment, variables are calculated as (t+1, t+2, and t+3). Where change is calculated as an average difference between before and after CEO director appointment. We use two instrument variables to carry out 2SLS regression i. number of financial firms to number of banks in the city where the banks' headquarter is located, ii. number of non-financial firms to number of banks in the city where the banks headquarter is located. Standard errors reported in parentheses are robust and clustered at the bank level. Where *** p<0.01, ** p<0.05, * p<0.1 represents statistical significance.

VARIABLES	<i>Panel A OLS</i>				<i>Panel B 2SLS</i>			
	Δ ROA	Δ Leverage	Δ ES	Δ Business Mix	Δ ROA	Δ Leverage	Δ ES	Δ Business Mix
Non-bank Financial CEO appointment	0.083** (0.378)	0.014** (0.065)	-0.024*** (0.007)	0.018*** (0.005)	0.069** (3.347)	0.037*** (0.131)	-0.026*** (0.008)	0.060*** (0.443)
Non-Financial CEO appointment	-0.074 (0.458)	0.016*** (0.056)	0.001 (0.007)	0.005 (0.005)	-0.088 (2.127)	0.008 (0.083)	0.015** (0.007)	-0.018 (0.095)
Board size	-2.163*** (0.534)	0.338*** (0.052)	-0.042*** (0.011)	0.030*** (0.007)	0.166 (0.181)	0.017** (0.007)	-0.002*** (0.001)	0.041** (0.021)
% independent directors	0.012 (0.008)	0.006*** (0.001)	-0.002*** (0.000)	-0.000 (0.000)	-0.007 (0.004)	-0.000** (0.000)	0.000 (0.000)	-0.000 (0.000)
CEO Duality	0.291 (0.221)	0.203*** (0.027)	-0.011** (0.005)	-0.012*** (0.003)	-0.155* (0.094)	-0.008** (0.004)	0.000** (0.000)	-0.008*** (0.004)
Size	0.866*** (0.074)	0.082*** (0.012)	-0.006*** (0.001)	-0.008*** (0.001)	0.059*** (0.022)	0.003*** (0.001)	-0.000*** (0.000)	0.003 (0.002)
Financial crises dummy	-0.493*** (0.510)	-0.997*** (0.108)	0.119*** (0.034)	0.041*** (0.013)	-0.468*** (0.147)	-0.014** (0.006)	0.000 (0.001)	0.0172 (0.011)
Dodd-Frank Act dummy	-0.466*** (0.566)	-0.115*** (0.105)	0.076** (0.032)	0.066*** (0.014)	-0.166 (0.191)	0.006 (0.007)	-0.001 (0.001)	0.022*** (0.010)
Constant	0.737 (1.357)	-0.257 (0.188)	0.173*** (0.047)	-0.032 (0.033)	-0.584 (0.611)	-0.047** (0.024)	0.008*** (0.002)	-0.134* (0.071)
Observations	2,838	2,838	2,838	4,042	2,838	2,838	2,838	2,838
year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.017	0.071	0.013	0.056				
Hansen J (p-value)					0.758	0.439	0.865	0.271
Sargan-C statistics					0.008	0.005	0.001	0.001
Wu-Hausman test (chi-sq statistics)					0.110	0.100	0.100	0.150

Table 8

Propensity scores matching for endogeneity and reverse causality

The table shows the estimates of the average difference between % change in Industry adjusted Tier 1 capital ratio, ROA, MES and non-interest income to net interest income of banks around the appointment of at least 1 CEO director from Non-bank the financial and non-financial sector. Estimates have been obtained by taking the difference in bank performance measures between treated and control group. Propensity scores are calculated following Minton et al. (2014) through probit model and to keep consistency in our estimation we use similar control variables as of multinomial analysis presented in table 4. Non-bank financial sector CEO directors are considered as control group where non-financial sector CEO directors are in the control group. Robust standard errors are reported in parentheses. Where *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ represents statistical significance.

	Δ ROA	Δ Tier 1 leverage ratio	Δ Tail risk	Δ Business Mix
Non-bank Financial sector CEO director appointment (treated group)	0.002* (0.0211)	0.007* (0.0106)	-0.044** (0.0235)	0.016 (0.0232)
Nonfinancial sector CEO director (control group)	-0.013* (0.0197)	-0.001** (0.0190)	0.012 (0.0187)	0.002 (0.0182)
Difference	0.016***	0.0163**	-0.057*	0.0139
Controls		Yes		
Time fixed effects		Yes		
Observations		374		

Appendix A.

Figure 2.

Distribution of CEO director appointments from 2000 – 2014 for the sample of 374 CEO director appointments based on their sector association i.e. Non-bank financial and non-financial sector. The initial year 2000 is missing as all banks appeared first time in that year thus following Fahlenbrach et al., (2010) we cannot determine the appointment of directors in the first year a bank appear in our sample.

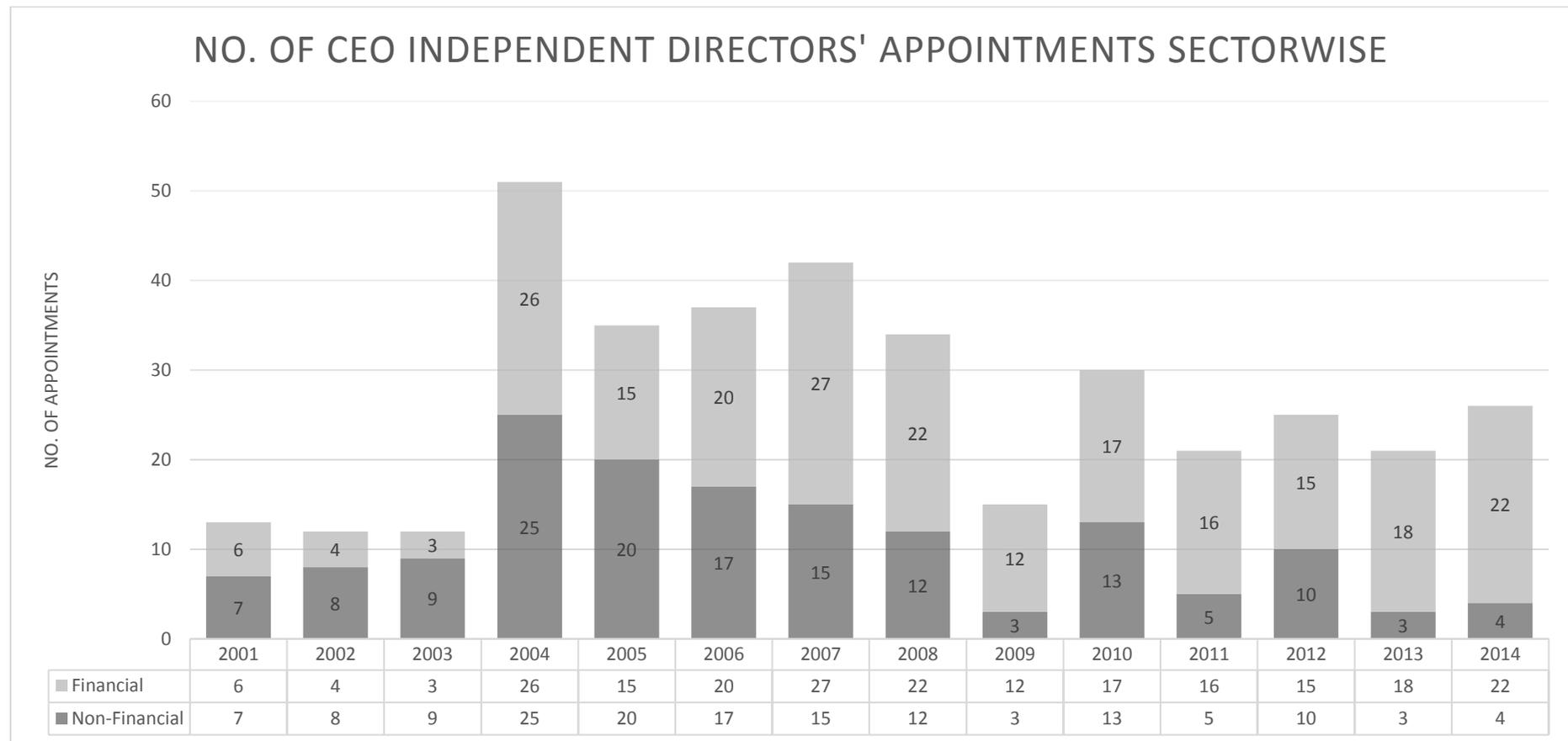


Table 9

2SLS-regression

VARIABLES	<i>First stage</i>	
	<i>Panel A</i>	
	Financial CEO	Non-Financial CEO
Non-bank Financial CEO appointment (instrumented)		
Non-Financial CEO appointment (instrumented)		
Non-financial firms to banks in city	0.202 (0.000)	0.160** (0.001)
Financial firms to banks in city	0.203*** (0.001)	0.127 (0.001)
Size	0.000 (0.001)	-0.005 (0.001)
Board size	0.027*** (0.007)	-0.037*** (0.007)
% independent directors	0.000*** (0.000)	0.001*** (0.000)
CEO on board	0.001 (0.003)	0.027*** (0.004)
Financial crises dummy	0.046*** (0.012)	0.010 (0.013)
Dodd-Frank Act dummy	-0.002 (0.011)	-0.046*** (0.013)
Constant	-0.085*** (0.024)	0.125*** (0.026)
Observations	2,838	2,838
year fixed effects	Yes	Yes