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Quoc-Anh Do, Bang Dang Nguyen, Raghavendra- University of Cambridge,  
Cambridge Judge Business School) Rau

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## **Sugar and Spice and Everything Nice: What Are Good Directors Made of?**

Quoc-Anh Do  
Sciences Po

Bang Dang Nguyen  
University of Cambridge

P. Raghavendra Rau<sup>\*</sup>  
University of Cambridge

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### **Abstract**

This paper analyzes the career paths followed by non-executive directors in a large sample of 40,585 unique directors associated with 5,246 unique US listed firms between 1999 and 2011. We document four types of characteristics that significantly influence the probability that a director will be successful in obtaining a second concurrent directorship. These include personal characteristics (belonging to large social networks, holding an MBA degree, having experience as a top executive in a large firm), macro-economic indicators (obtaining the first directorship in a recession, or after the passing of the Sarbanes-Oxley act of 2002), firm characteristics and firm performance (holding a directorship in large firms, firms with better valuations, or firms with higher return volatility) and firm reputation (announcing accounting restatements or being hit by class-action suits). Our paper documents characteristics of successful non-executive directors and sheds light on the determinants of their career paths.

**Keywords:** Board of directors, corporate governance, career concerns, board composition

**JEL Classification codes:** G34; J64

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<sup>\*</sup> Do: Department of Economics & LIEPP, Sciences Po, Paris 75007, France. (+33) 1 4549 8358; quocanh.do@sciences-po.org; Nguyen and Rau: Finance and Accounting Group, Judge Business School, University of Cambridge, Cambridge CB2 1AG, U.K. Nguyen: (+44) 1223 760 740; Fax: (+44) 1223 339 701; b.nguyen@jbs.cam.ac.uk; Rau: (+44) 1223 761 079; Fax: (+44) 1223 339 701; r.rau@jbs.cam.ac.uk. We would like to thank Vijaya B. Marisetty, Grzegorz Trojanowski, and seminar participants at the 2012 CAF Summer Research Conference in Finance at the Indian School of Business and the Frontiers of Finance Conference 2012 at Warwick Business School for helpful comments and suggestions. All errors remain our own.

## 1. Introduction

The board of directors in a firm plays a critical role in controlling principal-agent conflicts between shareholders and managers. In particular, the non-executive independent directors on the board act on behalf of the shareholders in monitoring managers, forcing them to act on behalf of shareholders. There is however, very little research on what the characteristics of these directors are and how they obtain one or more professional directorships during their careers.

This is an important issue. Extant corporate governance studies typically use the composition of the board (for example, the number of independent non-executive directors on the board, the number of other outside board directorships that each director holds, or the gender of the director, among others) as proxies for corporate governance. In turn, these proxies have been shown to affect firm behavior, managerial behavior, and shareholder value. For example, Core, Holthausen, and Larcker (1999) find that CEO compensation is higher when the proportion of independent directors is lower and board size is larger. Conclusions drawn from these studies have also had significant policy implications with governments across the world typically mandating or suggesting that firms employ a significant proportion of independent non-executive directors. For example, in 1992, the Cadbury Committee in the United Kingdom (UK) issued a Code of Best Practice which recommended that boards of UK corporations include at least three outside directors. The underlying presumption was that this would lead to improved board oversight. Dahya, McConnell, and Travlos (2002) show that the negative relationship between CEO turnover and performance became stronger following the Code's issuance; and the increase in sensitivity of turnover to performance was concentrated among firms that adopted the Code. Despite this body of research and attendant policy recommendations, we still do not know much about what characterizes an effective non-executive director.

In this paper, we analyze the career paths followed by non-executive directors across their careers in a sample of 40,585 unique directors associated with 5,246 unique US firms listed on the BoardEx database. To the best of our knowledge, this is the largest sample of board members analyzed in the finance and economics literature. The majority of non-executive directors in our sample are aged between 40 and 70 years and hold only one directorship throughout their careers. A significant minority however, about 9% of our sample, go on to obtain concurrent directorships at multiple firms. Not surprisingly, they hold the highest number of concurrent directorships later

in their careers, typically in their 60s. In our sample, the maximum number of concurrent directorships held by any one director is 12.

Assuming that the number of directorships serves as a proxy for success as a director, what distinguishes these successful directors from the rest? It is important to note that the process of matching directors to firms is a two-sided process. While the firm may choose a highly accomplished director, it may be relatively unlikely for the director to choose to work for the firm (or even to want a second directorship at all). Similarly, while a director would like to sit on the board of a large profitable firm, the firm might not be willing to choose this director. Hence the *ex post* matched firm-director relationship may not be the *ex ante* most desired relationship. In addition, firms and directors may choose to match across multiple dimensions. Analyzing a multi-dimensional matching problem is computationally challenging for two reasons. First, there is a significant degree of heterogeneity along each dimension on both sides of the market, which fundamentally affects the surpluses from matching. Second, in equilibrium, individual matches cannot be considered independently as in standard market models (where a transaction takes place whenever a buyer and a seller agree on a price). Instead, a matched equilibrium is a function of the whole distribution of characteristics across multiple dimensions on both sides of the market, during which successful matches of a successful director with a profitable firm (say) may have strong externalities on the potential matches of an unsuccessful director with a unprofitable firm, and vice versa.

Hence we apply our methodology in two steps. Our initial analysis analyzes the *ex post* matched director-firm relationship without considering the *ex ante desired* matching process. We use this analysis to identify, across the sample of directors in the market, the characteristics of the directors that were matched to multiple firms (successful directors) relative to those that were matched to only a single firm. In the second stage of our analysis, we follow Choo and Siow (2006), in characterizing each side of the market by a single characteristic. The characteristics are the ones identified as important in our first-stage analysis.

For a single variable analysis, across all directors, we order the pool of the initial firms the successful directors are employed at and the pool of the subsequent firms they take employment at, by the variable in question. For each director, we calculate the corresponding percentile for the initial and subsequent firm. Regressing the subsequent firm's percentile on the initial firm's

percentile provides an estimate for the closeness of the match along this particular dimension. We also graph the non-parametrically smoothed density function of the matches between the first and second firms' percentiles. A perfectly assortative match on a particular characteristic will result in all observations evenly distributed on the diagonal of the graph. To put it another way, a director from a firm that ranks highly (poorly) on the characteristic in question is significantly more likely to be matched with a second firm that is also ranked highly (poorly) on the same characteristic. If size is the relevant characteristic for example, this would mean that directors from large firms join the boards of other large firms.

For multiple variables, we analyze the closeness of the match along each dimension after controlling for the other relevant variables from our first stage analysis in a step by step analysis. For example, suppose the first stage analysis identifies four variables as important in distinguishing successful directors from one-time directors: firm size, a variable that has been suggested as influential in matching CEOs and firms (Gabaix and Landier 2008), the proportion of independent directors on the board as a measure of corporate governance, the performance of the firm (as proxied by the cumulative returns) and its risk (as proxied by the volatility of stock returns). To analyze whether firm performance is an important factor in the matching process, we first regress the returns on the logarithm of firm size, the proportion of independent directors and the risk of the firm, and use the same methodology on its residual.

What distinguishes successful directors from one-time directors? We analyze four dimensions. First, directors are likely to be evaluated on the basis of personal characteristics. Directors who are likely to be experts in their areas, measured either in terms of their educational qualifications or prior work experience at other firms, may be more likely to be hired. Boards might prize gender diversity (Farrell and Hersch, 2005). Directors with corporate governance experience, in particular those who have served on important committees such as the compensation committee, the nomination committee or the compensation committee, may also be more likely to be hired. In addition, connected directors with large networks of social connections may also be more valuable.

Second, a prospective employer is also likely to value the performance of the director on the prior board. To measure the performance of directors, prospective employers have two options. They can measure the performance of the firm along quantitative dimensions, in terms of

operating and stock price performance. Alternatively, they can examine qualitative factors –firm reputation or how the board members interacted with the management of the firm. In this interaction, potential directors face a trade-off. They can choose to serve on “mean” boards - boards that focus on maximizing shareholder value. Alternatively, they can serve on “nice” boards – boards that are sympathetic to the chief executive officer’s (CEO) concerns, forgiving in case of errors, and generous in terms of compensation agreements. Shivdasani (1993) documents that when the CEO serves on the nominating committee to the board or when no nominating committee exists, firms appoint fewer independent outside directors and more gray outsiders with conflicts of interest. Stock price reactions to independent director appointments are significantly lower when the CEO is involved in director selection. Bebchuk and Fried (2004) argue that entrenched boards, presumably boards selected by or that are close to management, are insulated from shareholder concerns about performance. It is plausible therefore that mean board directors will be less likely to be hired by managers but might serve longer if they are seen to be committed to shareholder value. Similarly, it is plausible that nice board directors will be hired at a greater number of firms but if the firms destroy shareholder value, the director’s board tenure might be shorter. To measure the interaction between the board and the management, we analyze factors such as the pay granted to top management levels by the board and the entrenchment level of the management, among others.

Finally, the performance of a director may also be affected by changes in external macro-economic factors. Oyer (2008) shows that macro-economic factors such as the state of the economy play a significant role in determining whether an MBA graduate subsequently goes on to become an investment banker. It is plausible that market performance, industry performance, and other macroeconomic factors may also influence the perceived performance of a director in obtaining a subsequent directorship.

Hence in our first-stage analysis, we examine these four sets of factors – the director’s personal characteristics, the performance of the firm, the relationship between the board and the management, and macro-economic characteristics, to test what role they play in the career path of a typical non-executive director. We begin by comparing these four sets of factors at the first and the subsequent directorship. We also use Cox survival analyses to model the time to the second (and subsequent) concurrent directorship.

We find, first, that personal characteristics of non-executive directors, such as director age, qualifications, social network size, and prior experience are highly significant in determining the path of a director's career. Senior directors, with a MBA degree, are more likely to be successful in obtaining a second directorship. Belonging to large social networks, having experience in the government, as a CEO, a top executive, or an executive in a S&P500 firm also appear to enhance the chances of a second directorship.

Second, quantitative measures of firm performance also affect the likelihood of obtaining a second directorship. Having a directorship in a large firm, a more complex firm, a more visible firm (as proxied by the number of analysts following the firm), or a firm with more institutional shareholders all enhances the likelihood obtaining a second directorship, though oddly share performance does not appear to matter.

Third, consistent with Oyer (2008), macroeconomic economic factors, such as the state of the economy, around the time of the first directorship also shape the director's career. Directors who hold a first directorship during a recession are significantly less likely to be successful in achieving a second directorship. These results are consistent with the hypothesis that firms are unable to distinguish effectively between firm performance and director performance. Hence they are likely to attribute superior firm performance to director ability in good economic times. We also find a consistently negative and significant impact of the Sarbanes-Oxley Act. It is significantly more difficult for a non-executive director to obtain a second directorship after the Sarbanes-Oxley act was passed in 2002, though this may be due to a reluctance on the part of directors to expose themselves to increased liability after the passage of the Act.

Finally, we also document several firm characteristics and performance that impact the career success of directors. Directors in firms which experience accounting re-statements and encounter class-action suits are less likely to obtain a second concurrent directorship. Directors from firms with better valuation and higher return volatility seem to be more likely to succeed in the market for non-executive directorships. We find weak evidence that directors obtain multiple directorships by being "nice" to executives. Directors on boards that pay their CEO excess pay that is significantly above their peer firms, are significantly more likely to obtain second directorships when we examine only qualitative factors, and this relationship disappears when we add the other three dimensions to the mix.

In our second-stage analysis, we compare these characteristics for the new director with the average values for the second firm where the director is hired in order to analyze what the new firm might be looking for in a new director. We show that firms look for directors from older, larger, more complex, more transparent, better governed companies. They do not necessarily look for directors from a firm with higher valuations, better performance, or higher return volatility.

Finally, we use these variables to document whether firms and directors indeed match assortatively according to these characteristics. We find that they do. Directors from firms with high levels of these characteristics overwhelmingly match with firms with similarly high levels of these characteristics. Directors of large firms accept positions at similarly large firms. Similarly, directors at high performing firms match with other high performing firms for their second directorships. We also document the relative importance of these characteristics by measuring the reduction in surplus if the firm and director are mismatched on any of these characteristics.

The paper is organized as follows. Section 2 discusses extant literature on board careers. Section 3 discusses our data and methodology. Section 4 reports our empirical results on the determinants of career success of directors. First, we document the impact of each set of variables (board member characteristics, performance of directors' first employers, differences between the characteristics of the firms where they obtain their first and second directorships, macroeconomic circumstances and social networks between the board members and the executives of the boards they serve on). Subsequently, we exclude variables that are highly correlated and run pooled Cox survival analyses on the time to obtain a second directorship using the remaining variables from all the five sets of variables. Section 5 compares firm and board characteristics of firms associated with the first and the second subsequent directorships at the point when the director obtains a second directorship. Section 6 analyzes the assortative firm-director matching model using variables significant in section 4. Section 7 concludes.

## **2. Literature Review**

The career concerns literature typically relates firm performance or effort strategies to the agent's career concerns. This literature studies a wide variety of agents. For example, Fee and Hadlock (2003) document that executives who move to CEO positions at new employers come from firms that exhibit above average stock price performance and this relationship is more pronounced for more senior executives. Chevalier and Ellison (1999) show younger mutual fund



managers follow incentives to avoid unsystematic risk and to “herd” into popular sectors. Brown, Goetzmann, and Park (2001) document similar relationships for hedge fund managers. Wu and Zang (2009) show that analysts with greater experience and especially experienced stars are more likely to be promoted to research executive positions following mergers of their employing firms.

Despite this large body of research on career concerns of agents in general, there is very little research on tying the career concerns of board directors in particular, to shareholder value. A few studies show that “mean” directors, who are committed to improving shareholder value at the expense of managerial comfort, perform well in the market for directorships. Coles and Hoi (2003) examine the relation between a board's decision to reject the anti-takeover provisions of Pennsylvania Senate Bill 1310 and the subsequent labor market opportunities of those board members. They show that directors rejecting all protective provisions of SB1310 are significantly more likely to gain additional external directorships and retain their internal slot on the board of that current firm. For external board seats, they also show that their results are driven by non-executive directors who are not members of the management team. Similarly, Ashraf, Chakrabarti, Fu, and Jayaraman (2010) test whether directors are valued more when they tailor the choice of antitakeover provision (ATP) levels to firm characteristics or whether CEOs seek directors with inclination for uniform and high ATP levels. They examine how changes in ATP levels and approval of value creating/destroying acquisitions affect the careers of nonexecutive directors and argue that directors who apply ATP provisions depending on whether they improve shareholder value are more likely to be rewarded. Wu (2004) finds that departing board members whose firms are publicly named as poorly governed by CalPER’s corporate governance program, are less likely to take up future directorships. Ertimur, Ferri, and Stubben (2010) show that directors on boards that implement non-binding majority vote shareholder proposals that they initially opposed are significantly less likely to lose their board seat and other directorships.

However, other papers show that mean directors are not necessarily rewarded by additional directorships. Marshall (2010) reports that directors who resign in dissent from their board, experience a net loss in board seats of 85% over the five year period following the dispute, suggesting that dissenting directors are not able to recover the seat they give up by obtaining additional board seats at other public firms. In addition, “nice” directors – directors on boards who are more inclined to give managers their freedom of action, may also be successful in that they sit on many boards. In particular, Fich and White (2005) document that among large companies in

1991, about one company in seven was in a relationship whereby the CEO of one company sat on a second company's board and the second company's CEO sat on the first company's board. They argue that these reciprocal CEO interlocks primarily benefit the CEOs rather than their shareholders. Nice directors may also be nice because they are distracted by other activities. Fich and Shivdasani (2006) show that firms with busy boards exhibit lower market-to-book ratios, weaker profitability, and lower sensitivity of CEO turnover to firm performance. Non-executive but busy boards display CEO turnover-performance sensitivities indistinguishable from those of inside-dominated boards. Similarly, Ferris, Jagannathan, and Pritchard (2003) argue that directors who serve larger firms and sit on larger boards are more likely to attract directorships but find no evidence that multiple directors are associated with a greater likelihood of securities fraud litigation.

Related to our research question on the characteristics of successful directors, a number of studies document the effect of board member personal characteristics, most notably gender, that affect their career prospects and performance on boards. Gul, Srinidhi, and Ng (2011) document that the stock prices of firms with gender-diverse boards reflect more firm-specific information. The relationship is stronger for firms with weak corporate governance leading them to argue that gender-diverse boards could act as a substitute mechanism for corporate governance. Farrell and Hersch (2005) show that the likelihood of a firm adding a woman to its board in a given year is negatively related to the number of women already on the board. The probability of adding a woman is materially increased when a female director departs the board. They also document insignificant abnormal returns on the announcement of a woman added to the board, which leads them to argue that the demand for women directors is not performance based, but a response to calls for diversity. Consistent with these results, Adams and Ferreira (2009) document that female directors have better attendance records than male directors in a sample of US firms, male directors have fewer attendance problems the more gender-diverse the board is, and women are more likely to join monitoring committees and argue that gender-diverse boards allocate more effort to monitoring. However, the average effect of gender diversity on firm performance is negative, a result driven by companies with fewer takeover defenses.

In addition to gender, a few other director-specific factors have been shown to affect their career prospects and performance on boards. Jeanjean and Stolowy (2009) report that firms with more independent boards, higher ownership concentration, and institutional ownership employ

directors with above average levels of financial expertise for a sample of French firms. Güner, Malmendier, and Tate (2008) show that this does not translate into improving shareholder value - when commercial bankers join boards, financing increases but goes to firms with good credit but poor investment opportunities. Similarly, investment bankers on boards are associated with larger bond issues but worse acquisitions. Maman (2000) reports that the social capital of the directors influences whether they will be asked to join additional boards for a sample of Israeli firms between 1974 and 1988.

Finally some studies examine how firm performance affects the career prospects of outside directors. For example, Kaplan and Reishaus (1990) examine the relation between a company's performance and its top executives' service on other boards of directors. They find that top executives of companies that reduce their dividends are significantly less likely to receive additional outside directorships than are top executives of companies that do not reduce their dividends. In addition, the probability that top executives resign from or lose outside directorships they already hold is negatively related to the performance of their own firms. Fich (2005) analyzes how the performance of the director's current employer affects the director's chances in getting other directorships. He finds that CEOs are more likely to obtain outside directorships when the companies they head perform well. In addition, well-performing CEOs are also more likely to gain directorships in organizations with growth opportunities. Fahlenbrach, Minton and Pan (2011) show that more successful and more powerful former CEOs are more likely to be reappointed to the board multiple times after they step down as CEOs.

### **3. Data and Methodology**

#### *3.1. Data*

Our sample consists of all non-executive directors serving on the boards of U.S. publicly and privately listed firms between 1999 and 2011. We obtain our data on corporate directors from the BoardEx database of Management Diagnostics Limited, which collects biographical information, past education, and employment history for directors and senior company officers. The database details the past roles of each official in a company with starting and ending dates (or years). Though BoardEx reports data only from 1999, the information on each individual's personal information and employment history date back to the 1900s. Essentially, Boardex collected information on surviving directors in 1999 and expanded the dataset backward to cover

their full employment history. Thus there are individuals in our sample who became non-executive directors before 1999. For instance, the director with the longest employment history in our sample is Theodore “Ted” Rosenberg who was born in 1908. His father, Morris Rosenbeg, was the founder of ABM Industries Inc. Theodore Rosenberg started his career in the firm in 1928, and was named the president of the firm at the age of 26 when his father died. He subsequently relinquished his executive role in 1989, but remained as a director in the firm until 2008.

Since only the extant directors in 1999 are included in the sample, this raises the issue of survivorship bias. However, this is not a major issue in our sample. Only a small proportion of firms (816 over a total of 53,748 firm-year observations) and directors (2,207 over 289,364 director-year observations) are included in Boardex before 2000. In addition, in a robustness check, we exclude directors who enter the sample before 2000 and find broadly comparable results to the ones reported in the paper.

In addition to the board data, we obtain financial and segment-level data from Compustat, executive compensation data from Execucomp, stock return data from the Center for Research in Security Prices (CRSP), institutional holdings data from CDA/Spectrum Institutional 13F Holdings, governance data from RiskMetrics, analyst coverage data from I/B/E/S, accounting restatement data from Audit Analytics, class action lawsuit data from the Stanford Securities Class Action Clearinghouse, and macroeconomic data from Bureau of Labor Statistics, Bureau of Economic Analysis, and the National Bureau of Economic Research. Our final sample consists of 40,585 unique directors associated with 5,246 unique firms.

We identify two distinct points in the career path of each director: the point when a director gets his first non-executive directorship and the point he accumulates an additional *concurrent* non-executive directorship (second or more)<sup>1</sup>. We track the directors’ personal traits (education, age, social contacts, gender, work experience), firm characteristics (average Tobin’s Q, average return on assets (ROA), ROA volatility, average return, return volatility), macroeconomic conditions (industry returns, unemployment rate, GDP growth) and governance characteristics (board size, excess pay awarded to managers, number of analysts following the firm, percentage of institutional holdings) associated with the firms where the directors acquire their first

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<sup>1</sup> The median director in our sample is male. In fact, as we show in the sample descriptive statistics, of the 40,585 directors in the sample, 91% are male. If a director has given up a directorship when he obtains a second one, we treat them as independent observations.

directorships, and then compare them to firms where directors subsequently accumulate second or more directorships. In addition, we track whether a director has served on the board of a firm that restates its financial statements or faces class action suits, and analyze whether this affects the probability that the manager obtains a second directorship. Our Cox survival analyses model the time to the second directorship based on the information associated with the first firm. In the Cox analysis, a director enters the dataset in year  $t$  and is tracked either till he obtains a second directorship or till the end of the sample period. The data is left-censored by construction, and it can be also right-censored in that the majority of directors never obtain a second concurrent directorship. Proportional hazards models have, however, the methodological advantage of dealing with censoring issues by incorporating a positive probability that the event might never occur for cross-sectional units.

### *3.2. The sample of non-executive directors*

We start our analysis by describing the sample of all non-executive independent directors in Tables 1 and 2. Panels A and B of Table 1 report descriptive characteristics of our sample of non-executive directors by calendar year and age group, respectively. The number of directors and firms are distributed almost evenly across years, with the exception of years before 2000 where, as we note, Boardex first started collecting data. The average number of directorships held by a non-executive director is 1.25 while the maximum number is 10. On average, 8.9% of directors hold multiple directorships. As we document, even at the 90<sup>th</sup> percentile, directors hold only two concurrent directorships which justifies our analyses of the time to the second (as opposed to the third or higher) directorship. Both the average and maximum number of directorships appear to increase steadily over time, with 10.17% of the directors holding concurrent directorships in 2011.

Panel B reports the number and proportion of directorships by age group. The majority of non-executive directors are between 50 and 70 years old (68.63% of the total director-year observations). Non-executive directors also start accumulating directorships in their 40s, and reach the pinnacles of their careers in their 60s – both the number of directorships and the proportion of directors with multiple directorships reach a director’s lifetime maximum in this period. In their 60s, directors hold an average of 1.75 directorships, and 40.77% of them hold multiple directorships.

*[Insert Table 1 about Here]*

#### **4. Determinants of the Career Paths of Non-Executive Directors**

In the first-stage analysis, we first report the descriptive statistics of each set of variables (director characteristics, firm characteristics, macroeconomic circumstances, and firm performance.) Subsequently, we run Cox proportional hazard models to analyze the impact of each set of variables on the probability for a director to obtain a second and subsequent non-executive directorship. Finally, we exclude variables that are highly correlated and run pooled Cox survival analyses on the time to obtain a second directorship using the remaining statistically significant variables from all the four sets of variables.

##### *4.1. Non-executive directors' characteristics*

Panel A of Table 2 provides descriptive statistics for our first set of variables - director characteristics (age, gender, education level, experience, and the number of connections in other directors and executives in BoardEx). In Panel A1, we report director characteristics at the point when directors obtain their first directorships, and in Panel A2, characteristics at the subsequent directorship.

At the time they obtain their first directorship, one third of non-executive directors have an MBA degree (32%), a minority holds a PhD degree (10%); and each of them holds 1.5 qualifications on average. The average non-executive director is aged 53.50 years, with 17 years of working experience and more than 5 years of experience as executive director. 91% of them are male. 36% of the directors in our sample have working experience at publicly listed firms, 50% in private firms, 7% work for the government, and 3% in universities. The average director is connected to 326 persons in the Boardex dataset, while the average number of school connections per educational institution is 1,600. 35% of non-executive directors have been executives of another firm, 18% of them have worked for an S&P500 firm and 10% are CEOs.

*[Insert Table 2 about Here]*

Panel A2 reports directors' characteristics at the time of their subsequent directorship. The last column reports a means test of the difference between variables associated with the first directorship, and the ones with the second and concurrent directorship. Directors who gain a second concurrent directorship have a significantly greater number of educational qualifications, longer professional experience than directors who stay with one directorship. They are more likely

to have an Ivy League degree, to be a CEO or an employee of an S&P500 firm. Similarly, the age is higher – on average, it takes a director 3.81 years more to obtain a second concurrent directorship. Once serving a first directorship, women are slightly more likely to obtain a second directorship. Second directors are also significantly more likely to be connected, both in terms of their network connections and school connections, than the average director.

There is some evidence in the extant literature that directors' personal characteristics affect their performance, risk-taking behavior, and their careers (see, for example, Adams and Ferreira (2009), Farrell et al. (2005) among others.) In our paper, we next explore whether and which director characteristics impact the likelihood they obtain a second directorship in a multivariate Cox regression that examines the complete set of variables from our univariate analyses in Panel A. Panel B summarizes our results.

Column 1 tests whether director personal characteristics such as age and gender impact their career path. We find a negative and significant coefficient on the age of the director. This indicates that it takes a senior director less time to achieve a second and concurrent non-executive directorship. Non-executive directors appear thus to be more likely to obtain a second directorship when they are already senior directors. This result is consistent with Table 1 which shows that the number of cumulated non-executive directorships peaks when directors are around 63-66 year old. Similarly, the coefficient on our (male) director dummy is negative and significant at the 1% level. This result indicates that female directors are significantly more likely to obtain a second directorship once they obtained one, relatively to male directors. We note however, that this result is unlikely to be economically important, since only 9.3% of the directors with one directorship and 11.5% with two directorships are women.

Column 2 reports our results on director educational backgrounds. Our control variables are indicators for whether a director has an Ivy League university, a law, a MBA, or a PhD degree, and the number of professional qualifications. We find that having an Ivy League university degree or a MBA significantly increases the probability that a director obtains a second concurrent directorship, while a law or a PhD degree has a negative impact. We obtain a positive and highly significant estimate coefficient on the number of qualifications, indicating that a higher number of qualifications such as CFA and CPA improve the chances of obtaining more outside directorships.

Column 3 reports results on the impact of prior director experience. Our independent variables include the length of director's work experience in years, and indicator variables for whether a director has prior work experience in a government body, in a university, in a private firm, and indicator for whether a director has prior experience as a CEO, and in an S&P500 firm. We find that coefficients on all these variables are positive and significant at the 1% level. It is interesting to note that working for the government significantly reduces the time to a second directorship, perhaps due to these directors being valued for their political connections. Being a CEO of another firm, or working for a large S&P 500 firm all increase the likelihood for a director of obtaining a second and concurrent directorship. We also find positive and highly significant coefficients on variables representing the total number of years of experience. Experienced directors are thus more likely to obtain a second directorship.

We next explore if the presence of social connections impacts a director's career. Column 4 reports positive and significant coefficients for our social network proxy – the logarithm of the number of social connections a director has through his school or university – implying that the number of social ties enhances the ability of a director to obtain a second directorship.

In column 5, we run regressions including all the variables in the prior four columns. Column 6 repeats the regression in Column 5 on a sample of firms for the post-1999 period. We exclude similar or highly correlated variables to avoid multi-collinearity issues. Our results stay broadly similar. Among the education variables, the MBA and the Ivy League dummies, and the number of qualification effects remain positive and significant, whereas law and PhD degrees show are negatively related. It is thus more likely for a non-executive director to achieve a second board seat if he/she is a MBA or an Ivy League graduate, has a significant number of qualifications, or belongs to large social networks. Age and gender (male) remain significantly and negatively related to the probability of obtaining a second directorship. In addition, the magnitude of the coefficients is very similar to what we find in column 1. Non-executive directors are thus more likely to have a second directorship if they are relatively at an advanced age or a female director. Many of the positive coefficients of director professional experience and board experience we find in prior columns also remain significant in the pooled regressions in columns 5 and 6. Being a CEO, or being an executive in a S&P500 firm, and having long work experience significantly reduces the time to a second directorship.



In summary, Table 2 shows that a number of personal characteristics of directors determine the likelihood and speed of obtaining a second directorship. Having a law or PhD degree does not seem to increase this probability. In contrast, being relatively senior in age, graduating with a MBA degree or from an Ivy League university, belonging to large social networks, or having experience as a CEO, or as an executive in a large firm appears to facilitate the director's career.

#### *4.2. Firm Characteristics*

The second set of variables we analyze are quantitative firm characteristics, including firm performance. Panel A of Table 3 reports descriptive statistics for firms associated with a director's first directorship and for firms associated with his subsequent directorship.

Panel A1 reports a set of characteristics for firms associated with a director's first directorship: firm age and size (market capitalization), industry-adjusted leverage, industry-adjusted Tobin's Q, industry-adjusted asset tangibility, prior performance (cumulative stock returns and operating income growth), industry competition (Herfindahl index based on industry assets), firm complexity (the total number of segments), firm uncertainty (stock return volatility and ROA volatility), firm visibility (total number of analyst following), and quantitative corporate governance characteristics (average institutional ownership, fraction of outside directors, and board size). Panel A1 provides some stylized facts on the governance of firms associated with the first directorship. For example, the average board size is 9.30, lower than the average board size of 12.3 and 10.4, reported in Yermack (1996) for Forbes 500 firms and in Coles, Daniel, and Naveen (2008) for firms covered by the Execucomp database, respectively. The average number of analysts following is 6.9.

*[Insert Table 3 about Here]*

Panel A2 reports similar variables for the director's subsequent directorship. The last column reports a means test of the difference between variables associated with the first directorship, and the ones with the second and concurrent directorship. In comparison to firms associated with a non-executive director's first directorship, firms that offer a director a second concurrent non-executive directorship appear to be older (5.35 years older), and larger (\$3.4 billion larger in market capitalization). They are more levered and more complex. Firms associated with a director's second directorship are followed by more analysts. They experience a higher degree of volatility of stock and accounting returns. Finally, the second firms have larger

boards, greater institutional ownership levels, and larger fractions of independent directors. These results are consistent with the hypothesis that successful directors are more likely to join larger and more visible firms later in their careers. We formally test this conjecture below.

Similar to our set-up in Table 2, we investigate whether the initial firm's characteristics impact the likelihood the director obtains a second and concurrent non-executive directorship in a multivariate framework using the above mentioned variables. Panel B of Table 3 reports our results.

Column 1 reports regression results on firm size (logarithm of total assets), industry-adjusted market leverage ratio, asset tangibility, and valuation (industry-adjusted Tobin's Q). We find that the estimated coefficients on firm size and leverage are positive and significant. Larger firms or firms with high levels of leverage provide their outside directors with better career prospects. Column 2 reports a positive and slightly significant relationship between prior stock performance and the probability of obtaining a second directorship, though the coefficient on prior operating performance is insignificant. We report results on market competition and firm complexity in columns 3 and 4 by including Herfindahl indices based on asset value and the number of firm segments, respectively. We find positive and significant coefficients on the Herfindahl index and on the number of firm segments. This indicates that a non-executive director holding a seat in a more complex firm and in a firm operating in a less competitive industry is more likely to have better career prospects. We investigate the impact of stock return and accounting result volatility in column 5. We find a negative and significant relationship between the stock return and accounting result volatility of firms associated with the first directorship and the probability of obtaining a second directorship. Columns 6 and 7 study the impact of firm visibility and governance. Our governance variables include the number of analysts following the firm, the percentage of institutional holdings, the fraction of non-executive directors over the board size, and board size. The coefficient on board size is negative and significant at the 1% level, suggesting that serving on a small board offers better career prospects for directors. The estimated coefficients on the number of analysts following and the percentage of institutional shareholding are positive and highly significant. It is thus more likely for non-executive directors to succeed in firms that are more transparent and more followed by the market. Not surprisingly, these firms tend to be large and in important industries. None of the other governance variables are consistently significant.

In columns 7 and 8 of Panel B of Table 3, we run pooled regressions that include the above mentioned variables (if they are not strongly correlated). As before, most of our results continue to hold. Firm size and leverage, stock return volatility, firm complexity, institutional shareholding, board size, and number of analysts following the firm are all positively and significantly associated with the probability of obtaining a second directorship.

#### *4.3. Macroeconomic factors*

A director might enjoy a more successful career, not because of his/her performance, but because of luck. To put it differently, macroeconomic conditions might impact the directors' career path. To our knowledge, there have been no studies on how macroeconomic impact the labor market for non-executive directors. We draw on Oyer (2008) who shows that macroeconomic factors determine whether a MBA graduate become an investment banker, and extend our analysis to potential macroeconomic determinants of the director's career. We investigate the impact on macroeconomic factors on the career paths of outside directors and report results in Table 4.

Panel A of Table 4 reports descriptive statistics of macroeconomic factors that might impact directors' career path associated with a director's first directorship and with his second one directorship. Panel A1 reports macroeconomic factors associated with a director's first directorship: market returns prior to the first directorship, industry peer market returns prior to the first directorship, market and industry volatility prior to the first directorship, a dummy for recession based on the NBER index, and a dummy for the post-Sarbanes-Oxley period. Panel A2 reports the same macroeconomic factors associated with a director's second directorship.

The macroeconomic conditions surrounding the first and the subsequent directorship are quite different. For the second directorship, market returns are and market volatility is higher, while peer return and volatility are lower. The fraction of directors gaining a second directorship during a recession is higher than the fraction of directors obtaining their first directorship during a recession (28.4% against 24%). The fraction of directors gaining a second directorship in the post-Sarbanes-Oxley period is higher than the fraction of directors obtaining their first directorship in the period before (61.51% against 54.64%).

*[Insert Table 4 about here]*

In panel B of Table 4, we replicate our Cox proportional hazard models in Table 3 on the set of variables that represent market and industry conditions (returns and volatility) and macroeconomic factors (recession, and indicator for the post Sarbanes-Oxley period) as described in Panel A.

Columns 1 and 2 show that two-year lagged-cumulative market and industry returns are positively related to the probability of directors to obtain a second directorship at the 1% level, respectively. Columns 3 and 4 report results on prior return volatility. Similarly, we find a positive and significant impact of two-year lagged-industry return returns, while the impact of the market return volatility is insignificant. Being a director in an industry with highly volatile returns thus enhances the director's career path, perhaps because in industries with highly volatile returns, it is relatively more difficult for an external firm to disentangle the director's performance from the firm's performance. Columns 5 and 6 report the impact of other macroeconomic indices. The coefficient on the recession dummy is negative and significant at the 1% level. An economic recession appears to reduce the likelihood a director will obtain a second directorship. Similarly, we obtain a negative and significant (at the 1% level) coefficient on the post Sarbanes-Oxley indicator. This indicates that it is more difficult for outside directors to obtain second directorships after the Sarbanes-Oxley act of 2002.

In columns 7 and 8, we report results from pooled regressions that include all the above mentioned variables. We find that many of our variables persist in significance. Specifically, market return and industry stock return volatility are positively related to the probability of a second directorship, while the event of recession and the period post-SOX appear to negatively reduce the probability of second directorship.

In sum, Table 4 shows that macroeconomic factors related to the first directorship impacts the chance that a director will accumulate a second directorship. A non-executive director is less likely to obtain a second directorship after the SOX, or if the economy was in recession when he first becomes a non-executive director. In contrast, a director is more likely to accumulate a second directorship if his first directorship is obtained when the market returns are good or when the industry return volatility is high.

#### *4.4. Firm reputation*

Another set of variables that might determine a director's success in career is the reputation of the firms they serve. Jensen (1993) hypothesizes that reputation matters for non-executive directors incentivizing them to manage the firm on behalf of shareholders. If this reputational effect holds, non-executive directors from firms that perform well should have better director career paths. We investigate the relation between firm reputation and second directorship accumulation in this sub-section.

Our reputation variables include a dummy for whether a firm announces an accounting re-statement between the first and second directorship, and a dummy for whether the firm is faced with a class-action lawsuit between the first and second directorship. A little over half the directors serve on the audit committee during their first directorship, 46% on the compensation committee, 39% on nomination committee, and 37% on the governance committee. In addition, since reputation is also related to its financial performance, which in turn drives the willingness of investors to buy its shares, we include the logarithm of average raw stock return from the first to the second (or to the exit) directorship, average industry-adjusted return on asset from the first to the second (or to the exit) directorship, and average industry-adjusted Tobin's Q the first to the second (or to the exit) directorship, stock return and ROA volatility from the first to the second (or to the exit) directorship. We also add proxies for the governance quality such as a dummy for whether the firm's compensation is beyond industry's median and the ratio of CEO pay over the next best executive pay. Table 5 reports our results.

*[Insert Table 5 about Here]*

Column 1 reports the relationship between an accounting re-statement and the probability that one of its non-executive directors obtains a second concurrent directorship. We find negative and highly significant coefficients on the indicator for whether the non-executive director's firm has an accounting re-statement between his first and second directorships. Column 2 relates the event of class-action against a firm to the likelihood that one of its non-executive directors obtains a second concurrent directorship. Again, we find a negative and highly significant coefficient on the dummy for whether a class-action occurs between the first and second directorships. Results in columns 1 to 2 appear to confirm Jensen (1993) reputation hypothesis: a non-executive director

in a firm that is involved in either an accounting re-statement or a class-action law suit is less likely to succeed in his career.

We next relate several measures of average firm performance from the year of first directorship to the year of second directorship, or the year when the director exits our sample (average industry-adjusted return on assets, average industry-adjusted Tobin's Q, and logarithm of average raw stock return) to the likelihood of obtaining a second directorship in column 3. We find positive and significant estimate coefficients on average industry-adjusted ROA, Tobin's Q, and annual stock return. These results indicate that better firm performance and valuation improve the chances of non-executive directors obtaining a second and subsequent directorship.

Column 4 studies the impact of board experience of a director on the likelihood of obtaining a second directorship. We find a positive and significant impact of experience in the governance committee, and a negative and significant impact of experience in the nomination committee. Column 5 shows that a director serving a board that pays the CEO beyond the median industry level is more likely to obtain a second concurrent directorship, while the one that pays the CEO more relative to the next executive is less likely to obtain a second directorship.

Columns 6 and 7 report regressions in which we pool all these variables together, except variables that are highly correlated. We find a consistently negative and significant impact of accounting re-statements, class-actions, and nomination committee, and consistently positive and significant impact of industry-adjusted Tobin's Q and excess CEO pay.

#### *4.5. Overall determinants of multiple directorships*

Tables 2 to 5 document several variables - director characteristics, firm characteristics, macroeconomic factors, and firm performance - that in isolation, appear significant determinants of the probability of obtaining multiple directorships. In this sub-section, we empirically test whether these determinants of the career path of non-executive directors remain consistent in pooled regressions. We exclude only variables that are strongly correlated with other variables. We use the same Cox proportional model framework as in previous tables. Table 6 summarizes our combined results.

Among the proxies for personal characteristics of non-executive directors, columns 1 to 4 show a consistent and positive effect of a director's number of professional qualifications. By

contrast, directors with a PhD degree are significantly less likely to obtain other directorships. Most of the other director characteristic variables are insignificant. In particular, the gender effect in Table 2 loses significance in our pooled regression (not reported in table).

*[Insert Table 6 about Here]*

Related to director experience, the impact of work experience in years, in a CEO position, or in an S&P500 firm remains consistently positive and significant. In other words, having longer experience, experience as a CEO, and as an executive in a large firm appear to boost a director's career. Moving on to firm characteristics, the most consistent effects we find are related to firm leverage, stock return volatility, and firm visibility.

Among the macroeconomic factors, we find a consistently negative and significant impact of the 2002 Sarbanes-Oxley act on the career of non-executive directors. The estimate coefficient on post Sarbanes-Oxley period is negative and highly significant. This result suggests that it has been more difficult for a non-executive director to obtain a second directorship after the Sarbanes-Oxley act was passed. This might be explained by the fact that Sarbanes-Oxley act requires more qualifications and experience in finance and accounting from non-executive directors. It is thus more difficult to be employed as a non-executive director after the passage of the act. We also document a significant negative impact of a recession on the careers of non-executive directors. The estimated coefficient is negative and highly significant across different specifications. Thus, directors who hold a first directorship during a recession are significantly less likely to be successful in achieving a second directorship. Our results are similar to findings by Oyer (2008) who shows that MBA graduating during a crisis period are less likely to be an investment banker. Industry stock return volatility appears not to determine a director's career path – the coefficients on prior industry volatility are positive but not significant across all specifications. Other proxies for macroeconomic conditions such as market and industry returns and volatility are also insignificant.

For our set of variables representing firm reputation, we find consistent effects of accounting re-statements and class-action law suits similar to results in our Table 5. The likelihood that a firm restates its earnings or a class-action lawsuit announced against the firm is significantly negatively related to the probability of obtaining a second concurrent directorship. Other proxies for the quality of a director's board service in the first firm, such as annual average return

volatility of stock raw returns, and Tobin's Q appear not to impact the chance of a second directorship. We also do not find a significant relationship between any of the governance proxies and the director's career. For example, the estimate coefficient on CEO excess pay is positive, but insignificant at conventional levels. While members of the audit committee are significantly more likely to obtain a second directorship, serving on important board committees such as compensation, nomination, and governance committees do not appear to impact the career path of directors.

## **5. Firm and Board Characteristics of the First and Second Directorships**

We have so far analyzed factors that might impact the career of an outside director from the perspective of the directors (his/her personal characteristics, and performance and characteristics of the firm associated with the first directorship) and macroeconomic factors. Our analysis has therefore been on the supply side of the labor market of outside directors. In this section, we begin our analysis by exploring the career paths of outside directors from the perspective of the firms that offer subsequent directorships to directors. Our analysis thus moves to the demand side of the market for outside directors.<sup>2</sup>

Our first step is to compare firm and board characteristics of firms associated with the first directorship and the second directorship at the time of the second directorship. In doing so, we attempt to analyze the ex post match between the two firms in which a non-executive director holds concurrent directorships. This match is likely to be informative about the demand for outside directors. Table 7 summarizes our results.

*[Insert Table 7 about Here]*

Panel A1 of Table 7 reports firm and board characteristics of the firms in which these directors serve their first non-executive directorship in the year of their second directorship. Panel A2 reports descriptive firm and board statistics for the average second firm in the year of second directorship. The last column reports a means test of the difference between variables associated with the first directorship, and the second and concurrent directorship in the year of second directorship.

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<sup>2</sup> There is little evidence on the demand side of the market for outside directors. Hermalin and Weisbach (1998) provide a model of an endogenous choice of a board of directors. Nguyen and Nielsen (2010) however report that it is costly to replace an independent director. Many firms simply do not replace directors following sudden deaths of independent directors.



Comparing firm characteristics of the new director's first and second firms reveals some interesting patterns. First, firms associated with the second directorship are younger (by around 2.5 years on average), smaller (in terms of market capitalization), more highly valued, having less tangible assets, lower stock returns, less complex (with around 4% fewer business segments), and less transparent (less followed by analysts) than firms associated with the first directorship. This indicates that firms tend to offer a second directorship to directors from more established, larger, more complex, and more transparent companies.

Second, it appears that firms look for directors from firms with better governance standards, for example firms that do not suffer from class-action suits, are not likely to over pay the CEO relative to the next executive, and have greater fraction of independent directors.

Third, companies seem to offer a second directorship to directors from firms which do not necessarily perform well. Indeed, we find that firms associated with the first directorship have a lower Tobin's Q, lower growth, and lower stock return volatility. In other words, it does not seem that firms are unable to distinguish between firm performance and director performance. In fact, the market seems to be able to distinguish between firm performance and director performance, and to reward good directors, even in poorly performing firms.

In summary, Table 7 provides some stylized facts on the demand side of the market for outside directors. Corporations look for directors who are better educated and networked, and who are from more established, larger, more complex, more transparent, and better governed companies. In the same time, they do not necessarily look for directors from a firm with higher valuations, better performance, or higher return volatility.

## **6. The Matching Between Directors and Firms**

### *6.1. Literature and methodology*

As noted before, decisions on second directorships are made by both sides of the market, namely by both firms and directors. In order to analyze the match, we rely on a theoretical model of markets for selective observably heterogeneous buyers and sellers, based on the economic theory of matched markets.

The problem of matching directors to firms is akin to a marriage market. Both sexes are trying to maximize the surplus they obtain during the matching process by matching with the

highest possible match across all dimensions the choice depends on. Unfortunately, a multi-dimensional matching process is analytically not very tractable. First, there is a considerable degree of heterogeneity across each dimension on both sides of the market, and such heterogeneity fundamentally affects the surpluses from matching. Second, in equilibrium, individual matches cannot be considered in isolation as in standard market models where a transaction takes place whenever a buyer and a seller agree on a price. Instead, a matched equilibrium is a function of the whole distribution of characteristics from both sides of the market, by which successful matches of two high types may have strong externalities on the potential matches of two low types, and vice versa. In the context of a marriage market, an attractive female matching with an unattractive male significantly affects the matching possibilities of all the remaining males and females in the market.

In our analysis therefore, we choose to focus on a single-dimension, transferable utility matching problem, and leave the highly technical problem of multiple-dimension matching for future research. We draw on Becker (1973, 1974) to argue that when both sides' characteristics are complementary in producing a match's surplus, then the matched equilibrium is assortative. In other words, firms and directors match according to their rank along the single dimension on their side.

To practically implement this argument, we follow Choo and Siow (2006, henceforth CS), who propose a simple, tractable model of matching with transferable utility. Each side of the market is categorized by a single characteristic, and draws utility from fundamental characteristics, a potential transfer from/to the partner, and an unobservable component that is independently and identically distributed according to a type-I extreme-value distribution (based on McFadden, 1974.) It follows that in equilibrium, the surplus of the match between type  $i$  and type  $j$ ,  $\Pi_{ij}$ , must satisfy:

$$\Pi_{ij} = \frac{\mu_{ij}}{\sqrt{\mu_{0j} \mu_{i0}}} \quad (1)$$

where  $\mu_{ij}$  is the proportion of pairs of types  $i$ - $j$ , while  $\mu_{0j}$  and  $\mu_{i0}$  are the proportions of type  $j$  and type  $i$  who are not matched with anyone.

For a single variable analysis, across all directors, we order the pool of the initial firms the successful directors are employed at and the pool of the subsequent firms they take employment at, by the variable in question. For each director, we calculate the corresponding percentile for the initial and subsequent firm. Regressing the subsequent firm's percentile on the initial firm's percentile provides an estimate for the closeness of the match along this particular dimension.<sup>3</sup> We also graph the non-parametrically smoothed density function of the matches between the first and second firms' percentiles. A perfectly assortative match on a particular characteristic will result in all observations evenly distributed on the diagonal of the graph. For multiple variables, we analyze the closeness of the match along each dimension after controlling for the other relevant variables from our first stage analysis in a step by step analysis.

Computing the surplus also enables us to measure the importance of the matched percentile on each pair's surplus. From equation (1), we obtain:

$$\log \mu_{ij} = \log \Pi_{ij} + \frac{1}{2} \log \mu_{0j} + \frac{1}{2} \log \mu_{i0} \quad (2)$$

We are interested in the effect of the difference between two percentiles  $i$  and  $j$  on the log surplus function  $\log \Pi_{ij}$ . The difference between the first firm's percentile rank and the second firm's percentile rank could be thought of as a measure of mismatch. To identify its effect on surplus in a sample of all possible pairs  $(i,j)$ , from equation (2), we simply regress  $\log \mu_{ij}$  on the difference between two percentiles, controlling for the fixed effects of percentile  $i$  and a fixed effect of percentile  $j$ . The sample size is the product of the number of types  $i$  and the number of types  $j$ .

We make certain simplifying assumptions in interpreting our results. In particular, we study the firm-director complementarity in producing the surplus of matching, and abstract from the complementarity between different directors on the same board (one such complementarity comes from the limitation of board size.) We ignore the market for debutant directors, because it contains too many characteristics unobservable to the econometrician. This exercise serves thus as an initial study of the matching problem between directors and firms, one that should be further enhanced with more technically elaborate methods in the future.

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<sup>3</sup> This is very similar to the correlation coefficient between the two percentile measures since their variances ought to be very close (they will be the same for a large enough sample).

## 6.2. Results

Panel A of Table 8 reports coefficients of how a director's first firm's percentile predicts the second firm's percentile. Column (1) shows the benchmark case where the logarithm of market capitalization<sup>4</sup> is used as the matching variable. The first firm's percentile is highly significant in predicting the second firm's percentile, with a coefficient of 0.45 (standard deviation less than 0.01). A difference of 50 in the first firm's percentile (i.e. a jump of 2 quartiles) thus translates into a difference of 23 in the second firm's percentile (i.e. almost one quartile.) (The distribution of percentiles is uniform by definition, with a standard deviation of  $100/\sqrt{12}$ , or about 29 percentiles.) In a perfectly assortatively matched sample, the coefficient would be exactly one. In presence of many unobservable characteristics, we certainly expect the coefficient to be far below one.

*[Insert Table 8 around Here]*

In column (2), the matching variable is the residual of the share of independent directors in the board, after controlling for the logarithm of market capitalization. The predictability is still sizable at 0.23, but smaller than that of market capitalization. Column (3) and (4) show the predictability respectively for cumulative returns and return volatility (both over three years prior to the second directorship start date), controlling for market capitalization and share of independent directors. The coefficient of 0.46 is particularly strong for return volatility, while it is still sizable for cumulative returns at 0.29. Both are estimated with a considerable degree of precision since standard errors are less than 0.02.

Columns (5) to (7) show the results for three other key characteristics, namely Tobin Q, leverage (based on book value) and the share of institutional holdings, all controlling for market capitalization and share of independent directors. The coefficient is respectively 0.26, 0.19 and 0.22, all estimated with standard errors less than 0.02.

*[Insert Figure 1 around Here]*

The match between the first and second firms' market cap is also illustrated more intuitively in Figure I. Figure I draws the non-parametrically smoothed density function of all matches by the first and second firms' percentiles in market cap, using a 3D plot (I.A) and a

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<sup>4</sup> Since we only rank the firms based on market capitalization, taking the logarithm makes no difference.

contour plot (I.B).<sup>5</sup> We observe a clear pattern of much higher density along the main diagonal on the contour map, suggesting that directorships indeed match the first and second firms of very similar sizes. The matches are particularly concentrated among the smallest and the largest firms, as seen on two outstanding spikes at both ends of the range. Heavily mismatched cases (bottom right and top left corners) are very rare. Overall, the graphic evidence strongly corroborates the evidence from the coefficient of prediction from the first to the second firm.

In Panel B, we utilize Choo and Siow's (2006) model to study the impact of mismatch on the log surplus of each match. We measure the mismatch as the difference between the first firm's and the second firm's percentile rankings. Column (1) shows a large coefficient of -0.023. To interpret this variable, if we move a firm-director pair from no gap to a gap of 50 percentile points, the surplus is reduced by 68%. The same calculation produces a reduction of 39% for a 50-percentile change in percentage of independent directors in column (2), and similar reductions of 47% for cumulative returns in column (3), 63% for return volatility in column (4), 44% for Tobin Q in column (5), 35% for leverage in column (6), and 40% for institutional holdings proportion in column (7). These coefficients are all highly precise (very low standard errors). Together, they show that those dimensions play a key role in the matching of directors to their 2nd firms. It is worth noticing that we do not undertake a multidimensional matching exercise, so the coefficients come from different, non-nested estimation equations (each with a separate matching variable), and their sizes cannot be easily combined.

*[Insert Figure 2 around Here]*

Figure II illustrates the relationship between mismatch and surplus across different cases. Figure II.A shows the case of matching by log market capitalization, where log of density is plotted against the mismatch (difference in percentile rankings between the initial and subsequent firms), including a nonparametric fitted line. There is a clear, homogenous, almost linear relationship between mismatch and log density as proxy for log of surplus. The difference in surplus between both ends of the range of mismatch is huge.

Similarly, figures II.B, C and D replicate the same plot for share of independent directors, cumulative returns and return volatility. The previous regression analysis is reconfirmed in graphic

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<sup>5</sup> The density is estimated using a bivariate kernel regression with a Gaussian kernel using an optimally data-determined bandwidth (Stata procedure by Baum, 2012)

details: across the board, match surplus goes down sharply when mismatch increases. Although the relationships are somewhat less stark than for log market capitalization, the impact on surplus is always of economically large magnitudes.

Finally, the framework also allows us to examine the effects of a change in policy. How has the Sarbanes-Oxley Act affected the matching between the director's initial firm and the subsequent one. In columns (8) and (9), we use the same methodology used in column (1) of Panels A and B on the sample of second directorships that started before 2002 or after 2002. It appears that after Sarbanes-Oxley, the matching by market cap has become significantly more important. The predictability of the first firm's market cap has increased from 0.43 to 0.47 (the difference is significant at 99%). On the other hand, mismatch also plays a strong role in the match surplus function. Its impact on the log surplus changes from -0.020 to -0.022. To interpret this change, when the mismatch rises from 0 to 50 percentiles, the surplus is reduced by 63% before Sarbanes-Oxley, and by 66% after Sarbanes-Oxley. While this change is significant, its magnitude is small compared to the overall effect of mismatch on the total surplus.

## **7. Conclusions**

This paper analyzes the career paths of non-executive using a large sample of 40,585 unique directors associated with 5,246 unique US listed firms in the BoardEx database. To analyze the match between directors and firms using an assortative matching model, we first document firm and director characteristics that appear important in distinguishing between successful directors who hold more than one directorship and one-time directors. The majority of non-executive directors hold an undergraduate degree, with almost one-third of them going on to obtain an MBA degree. Each director typically holds more than one qualification. The average non-executive director is aged 53 years, with 17 years of working experience and 5 years of experience as executive director. Nearly all of them are male. Social connections are important - the average director is connected to 326 persons in the Boardex dataset, while the average number of school connections per educational institution is over 2,000.

Using Cox survival analyses to model the time to the second (and subsequent) concurrent directorship, we investigate whether individual director characteristics, firm performance, firm characteristics, macroeconomic circumstances, and the size of director social networks between the first and the subsequent directorship impact director careers. We find, first, that personal

characteristics of non-executive directors, such as director age, MBA degree, social network size, and prior experience, determine their career path. Belonging to large social networks, holding a MBA degree, having experience in the government, as a CEO, a top executive, or an executive in a S&P firm appear to enhance the chance of a successful director career. Second, macroeconomic economic factors surrounding the first directorship and a few years later also shape a director career. It is less likely for an non-executive director to obtain a second directorship after the Sarbanes-Oxley act of 2002, or when he obtains his first directorship during a recession. Third, a few firm characteristics and firm performance impact the career success of directors. Holding a directorship in large firms, firms with better valuation, or firms with higher return volatility enhance the chance to obtain a second directorship in another firm. Directors in firms which experience accounting re-statements and encounter class-action suits are less likely to obtain a second concurrent directorship. In addition, being “nice” to management does not appear to influence the probability of obtaining a second board seat – being a director of a firm that pays its CEO above average pay for example, is not consistently related to the probability of obtaining a second board seat.

In our second stage analysis, we use these variables to document whether firms and directors indeed match assortatively according to these characteristics. We find that they do. Directors from firms with high levels of these characteristics overwhelmingly match with firms with similarly high levels of these characteristics. For example, directors of large firms accept positions at similarly large firms. Similarly, directors at high performing firms match with other high performing firms for their second directorships.

Our paper provides some stylized facts on the demand of the market for outside directors. We find that corporations look for directors who are better educated and networked, and who are from more established, larger, more complex, more transparent, better governed companies. In the same time, they do not necessarily look for directors from a firm with higher valuation, better performance, or higher return volatility. Overall, our paper contributes to our understanding of the characteristics of non-executive directors and sheds light on the determinants of their career paths.

## References

- Adams, Renée B., and Daniel Ferreira, 2009, Women in the boardroom and their impact on governance and performance, *Journal of Financial Economics* 94, 291-309.
- Ahern, Kenneth R., and Amy K. Dittmar, 2012, The changing of the boards: The impact on firm valuation of mandated female board representation, *Quarterly Journal of Economics* 127, 137-197.
- Ashraf, Rasha, Rajesh Chakrabarti, Richard Fu, and Narayanan Jayaraman, 2010, Takeover immunity, takeovers, and the market for nonexecutive directors, *Financial Management* 39, 83-127.
- Bebchuk, Lucian, and Jesse Fried, 2004. Pay without performance: The unfulfilled promise of executive compensation (Harvard University Press, Cambridge).
- Becker, Gary S., 1973, A Theory of Marriage: Part I, *Journal of Political Economy* 81, 813-46.
- Becker, Gary S., 1974, A Theory of Marriage: Part II, *Journal of Political Economy* 82, S11-S26.
- Bouwman, Christa H. S., 2011, Corporate governance propagation through overlapping directors, *Review of Financial Studies* 24, 2358-2394.
- Brown, Stephen J., William N. Goetzmann, and James Park, 2001, Careers and survival: Competition and risk in the hedge fund and CTA industry, *Journal of Finance* 56, 1869-1886.
- Burke, Ronald J., 1997, Women directors: Selection, acceptance and benefits of board membership, *Corporate Governance* 5, 118-125.
- Chevalier, Judith, and Glenn Ellison, 1999, Career concerns of mutual fund managers, *Quarterly Journal of Economics* 114, 389-432.
- Choo, Eugene and Aloysius Siow, 2006, Who marries whom and why, *Journal of Political Economy* 114, 175-201.



Coles, J.L., Daniel, N., and Naveen, L., 2008, Boards: does one size fit all?, *Journal of Financial Economics* 87, 329–356.

Coles, Jeffrey L., and Chun Keung Hoi, 2003, New evidence on the market for directors: Board membership and Pennsylvania senate bill 1310, *Journal of Finance* 58, 197-230.

Core, John E., Robert W. Holthausen, and David F. Larcker, 1999, Corporate governance, chief executive officer compensation, and firm performance, *Journal of Financial Economics* 51, 371-406.

Dahya, Jay, John J. McConnell, and Nickolaos G. Travlos, 2002, The Cadbury committee, corporate performance, and top management turnover, *Journal of Finance* 57, 461-483.

Ertimur, Yonca, Fabrizio Ferri, and Stephen R. Stubben, 2010, Board of directors' responsiveness to shareholders: Evidence from shareholder proposals, *Journal of Corporate Finance* 16, 53-72.

Fahlenbrach, Rüdiger, Bernadette A. Minton, and Carrie H. Pan, 2011, Former CEO directors: Lingering CEOs or valuable resources?, *Review of Financial Studies* 24, 3486-3518.

Farrell, Kathleen A., and Philip L. Hersch, 2005, Additions to corporate boards: The effect of gender, *Journal of Corporate Finance* 11, 85-106.

Fee, C. Edward, and Charles J. Hadlock, 2003, Raids, rewards, and reputations in the market for managerial talent, *Review of Financial Studies* 16, 1315-1357.

Ferris, Stephen P., Murali Jagannathan, and A.C. Pritchard, 2003, Too busy to mind the business? Monitoring by directors with multiple board appointments, *Journal of Finance* 58, 1087-1111.

Fich, Eliezer M., 2005, Are some outside directors better than others? Evidence from director appointments by Fortune 1000 firms, *Journal of Business* 78, 1943-1972.

Fich, Eliezer M., and Lawrence J. White, 2005, Why do CEOs reciprocally sit on each other's boards?, *Journal of Corporate Finance* 11, 175-195.

Fich, Eliezer M., and Anil Shivdasani, 2006, Are busy boards effective monitors?, *Journal of Finance* 61, 689-724.

Gabaix, Xavier and Augustin Landier, 2008, Why has CEO pay increased so much, *Quarterly Journal of Economics* 123(1), 49-100.

Gul, Ferdinand A., Bin Srinidhi, and Anthony C. Ng, 2011, Does board gender diversity improve the informativeness of stock prices?, *Journal of Accounting and Economics* 51, 314-338.

Güner, A. Burak, Ulrike Malmendier, and Geoffrey Tate, 2008, Financial expertise of directors, *Journal of Financial Economics* 88, 323-354.

Hermalin, Benjamin E. and Weisbach, Michael S., 1998, Endogenously chosen boards of directors and their monitoring of the CEO, *American Economic Review* 88, 96-118.

Jeanjean, Thomas, and Hervé Stolowy, 2009, Determinants of board members' financial expertise - Empirical evidence from France, *International Journal of Accounting* 44, 378-402.

Jensen, Michael C., 1993, The modern industrial revolution, exit, and the failure of internal control systems, *Journal of Finance* 48, 831-880.

Kaplan, Steven N., and D. Reishaus, 1990, Outside directorships and corporate performance, *Journal of Financial Economics* 27, 389-410.

Maman, Daniel, 2000, Who accumulates directorships of big business firms in Israel? Organizational structure, social capital, and human capital, *Human Relations* 53, 603-629.

Marshall, Cassandra D., 2010, Are dissenting directors rewarded?, unpublished working paper, University of Richmond.

McFadden, Daniel, 1974, Conditional logit analysis of qualitative choice behavior. In *Frontiers in Econometrics*, edited by Paul Zarembka (New York: Academic Press.)

Nelson, Teresa, and Laurie L. Levesque, 2007, The status of women in corporate governance in high-growth, high-potential firms, *Entrepreneurship: Theory and Practice* 31, 209-232.

Nguyen, Bang Dang, and Kasper Nielsen, 2010, The value of independent directors: Evidence

from sudden death, *Journal of Financial Economics* 98, 550-567.

Oyer, Paul, 2008, The making of an investment banker: Macroeconomic shocks, career choice, and lifetime income, *Journal of Finance* 63, 2601-2628.

Shivdasani, Anil, 1993, Board composition, ownership structure and hostile takeovers, *Journal of Accounting and Economics* 16, 167-198.

Singh, Val, Siri Terjesen, and Susan Vinnicombe, 2008, Newly appointed directors in the boardroom: How do women and men differ?, *European Management Journal* 26, 48-58.

Wu, Joanna Shuang, and Amy Y. Zang, 2009, What determine financial analysts' career outcomes during mergers?, *Journal of Accounting and Economics* 47, 59-86.

Wu, YiLin, 2004, The impact of public opinion on board structure changes, director career progression, and CEO turnover: Evidence from CalPERS' corporate governance program, *Journal of Corporate Finance* 10, 199-227.

Yermack, D., 1996, Higher market valuation of companies with a small board of directors, *Journal of Financial Economics* 40, 185-211.

**Table 1: Summary Statistics**

This table reports characteristics of our sample of non-executive directors. Panel A shows the distribution of non-executive directors by year. Panel B reports the distribution of non-executive directors by age. All non-executive directors are from the BoardEx dataset for the period before and after 2000.

**Panel A: Number and Proportion of Directorship by Calendar Year**

Year	Firms	Number of Directorships	Number of Directors	% Directors with Multiple Directorships	Number of Directorships per Director			
					Mean	90pct	99pct	Maximum
<2000	47,347	150,497	128,006	12.8%	1.18	2.00	3.00	10.00
2000	3,934	22,270	17,881	16.8%	1.25	2.00	4.00	9.00
2001	4,059	24,549	19,708	16.8%	1.25	2.00	4.00	10.00
2002	4,182	26,303	21,168	16.6%	1.24	2.00	4.00	10.00
2003	4,291	28,552	22,984	16.5%	1.24	2.00	4.00	10.00
2004	4,458	31,192	24,985	16.9%	1.25	2.00	4.00	10.00
2005	4,592	33,030	26,262	17.4%	1.26	2.00	4.00	11.00
2006	4,718	34,520	27,307	17.7%	1.26	2.00	4.00	11.00
2007	4,887	36,059	28,305	18.3%	1.27	2.00	4.00	11.00
2008	4,858	35,924	27,985	19.2%	1.28	2.00	4.00	12.00
2009	4,561	32,843	25,732	18.9%	1.28	2.00	4.00	12.00
2010	4,348	30,314	23,594	19.6%	1.28	2.00	4.00	11.00
2011	4,044	26,996	21,246	19.2%	1.27	2.00	4.00	11.00
All	100,279	513,049	415,163	0.16	1.24	2.00	4.00	12.00
Unique	5,246	59,744	40,585	23.4%	1.47	3.00	6.00	20.00

**Panel B: Number and Proportion of Directorship by Age Group**

Age	Number of Directorships	Number of Directors	% Directors with Multiple Directorships	Number of Directorships per Director			
				Mean	90pct	99pct	Maximum
<20s	10	10	0.00%	1.00	1.00	1.00	1.00
20s	1,211	1,162	3.87%	1.04	1.00	2.00	3.00
30s	16,948	15,369	8.00%	1.10	1.00	3.00	6.00
40s	76,499	67,482	10.15%	1.13	2.00	3.00	10.00
50s	167,307	138,259	15.20%	1.21	2.00	4.00	11.00
60s	184,196	138,924	21.56%	1.33	2.00	4.00	12.00
70s	59,430	47,329	17.10%	1.26	2.00	4.00	11.00
80s	7,044	6,265	9.11%	1.12	1.00	3.00	6.00
>80s	404	363	9.64%	1.11	1.00	3.00	4.00
All	513,049	415,163	16.3%	1.24	2.00	4.00	12.00

**Table 2: Non-Executive Directors' Characteristics****Panel A: Descriptive Statistics**

This panel reports descriptive statistics of the evolution of the careers of non-executive directors. Panel A1 reports directors' characteristics when they first become a director: age, gender, education level, work experience (in years), and their work experience before they become a director, total number of school connections. Panel A2 reports directors' characteristics when they accumulate their second directorship: age, gender, education level, work experience (in years), and their work experience before they become a director, total number of school connections. The last column reports the parametric t-test and non-parametric Wilcoxon test of the difference between variables associated with the first directorship, and the ones with the second and concurrent directorship. Our dataset include all directors from public firms provided by BoardEx of Management Diagnostics.

Variable	A1: First Directorship		A2: Second Directorship		Difference		
	Obs=42,599		Obs=9,536		(B) - (A)	T-Test	Wilcoxon
	(A) Mean	Median	(B) Mean	Median			
<b>Personal characteristics</b>							
Director Age	53.50	54.00	57.31	58.00	3.810	***	***
Male Director (Indicator)	0.907	1.000	0.885	1.00	-0.022	***	***
<b>Education</b>							
Ivy League Degree (Indicator)	0.187	0.000	0.278	0.000	0.091	***	***
Law Degree (Indicator)	0.142	0.000	0.150	0.000	0.008	**	**
MBA (Indicator)	0.322	0.000	0.387	0.000	0.065	***	***
PhD (Indicator)	0.103	0.000	0.112	0.000	0.009	**	***
Number of Qualifications	1.525	2.000	1.904	2.000	0.379	***	***
<b>Work experience</b>							
Work Experience (Years)	17.08	16.00	23.57	23.00	6.490	***	***
Government (Indicator)	0.073	0.000	0.113	0.000	0.040	***	***
Universities (Indicator)	0.029	0.000	0.035	0.000	0.006	***	***
Private Firm (Indicator)	0.501	1.000	0.454	0.000	-0.047	***	***
CEO (Indicator)	0.099	0.000	0.156	0.000	0.057	***	***
S&P500 (Indicator)	0.180	0.000	0.289	0.000	0.109	***	***
<b>Connections</b>							
School Connection Size	1,600	717	1,895	966	295	***	***

## Panel B: Cox Proportional Hazard Models

This table reports results from Cox proportional hazards regressions for the probability that a non-executive director obtains a second outside directorship based on director personal characteristics. Our sample includes all individuals in the BoardEx dataset with at least a non-executive directorship. Director characteristics include directors' age, gender, education, work experience, and career backgrounds. Column (1) reports results on director age, and male director indicator. Column (2) studies the impact of education with indicator variables for various degrees (Ivy League, Law, MBA, and PhD), and the total number of qualifications. Column (3) shows regression results on director career backgrounds with indicator variables for whether a director worked for the government, a university, a private company, as a CEO of another firm, or as an executive in a S&P500 firm. Column (4) studies the impact of the logarithm of the number of education social ties. Column (5) reports the regression in which we pool all these variables together. Column (6) examines the subsample of first directorships acquired from 2000 onwards. Robust standard errors are estimated following Lin and Wei (1989). T-statistics are reported in brackets. \*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All	All	All	All	All	Post-1999
<b>Personal Characteristics</b>						
Director Age	-0.015*** (0.001)				-0.012*** (0.002)	-0.006** (0.003)
Male Director (Indicator)	-0.187*** (0.041)				-0.258*** (0.043)	-0.220*** (0.061)
<b>Education</b>						
Ivy League Degree (Indicator)		0.248*** (0.031)			0.149*** (0.033)	0.122** (0.052)
Law Degree (Indicator)		-0.284*** (0.044)			-0.207*** (0.045)	-0.112 (0.070)
MBA (Indicator)		0.146*** (0.036)			0.106*** (0.035)	0.024 (0.052)
PhD (Indicator)		-0.399*** (0.064)			-0.245*** (0.069)	-0.503*** (0.110)
Number of Qualifications		0.210*** (0.021)			0.140*** (0.023)	0.199*** (0.035)
<b>Work Experience</b>						
Work Experience (Years)			0.003** (0.001)		0.008*** (0.001)	0.007*** (0.002)
Government (Indicator)			0.551*** (0.050)		0.280*** (0.053)	0.169* (0.088)
Universities (Indicator)			0.421*** (0.073)		0.040 (0.078)	-0.063 (0.136)
Private Firm (Indicator)			0.218*** (0.030)		0.082*** (0.032)	-0.007 (0.048)
CEO (Indicator)			0.737*** (0.038)		0.665*** (0.039)	0.574*** (0.058)
S&P500 (Indicator)			0.891*** (0.033)		0.610*** (0.035)	0.595*** (0.051)
<b>Connections</b>						
Log(School Connection Size)				0.101*** (0.008)	0.045*** (0.009)	0.046*** (0.014)
Wald Chi-Square	176.1	406.7	1,857	164.5	1,555	620.1
Prob. > Chi-Square	0.000	0.000	0.000	0.000	0.000	0.000
Observations	36,563	28,988	36,556	28,670	28,670	18,972

**Table 3: Firm Characteristics****Panel A: Descriptive Statistics**

This panel reports descriptive statistics of firms associated with a director's first directorship and of firms associated with the second directorship. Panel A1 reports firm characteristics associated with a director's first directorship: firm age, market capitalization (in million), industry-adjusted leverage, industry-adjusted Tobin's Q, industry-adjusted asset tangibility, firm prior performance (stock returns and operating performance), industry competition (Herfindahl index based on industry market capitalization), firm complexity (the total number of business segments), firm uncertainty (stock return volatility and ROA volatility), firm visibility (total number of analyst following), and corporate governance characteristics (average institutional ownership, fraction of independent directors, and board size). Panel A2 reports the same set of firm characteristics associated with a director's second directorship. The last column reports the parametric t-test and non-parametric Wilcoxon test of the difference between variables associated with the first directorship, and the ones with the second and concurrent directorship. Our dataset include all directors from public firms provided by BoardEx of Management Diagnostics.

Variable	A1: First Directorship Obs=42,599		A2: Second Directorship Obs=9,536		Difference		
	(A) Mean	Median	(B) Mean	Median	(B) - (A)	T-Test	Wilcoxon
<b>Firm Characteristics</b>							
Firm Age (Years)	10.95	6.00	16.30	11.00	5.35	***	***
Market Capitalization	2597.12	266.69	6001.03	695.72	3403.91	***	***
Industry-adjusted Leverage	0.029	-0.001	0.085	0.015	0.06	***	***
Industry-adjusted Tobin's Q	0.55	0.02	0.57	0.04	0.02		***
Industry-adjusted Tangibility	0.01	0.00	0.00	0.00	0.00		**
<b>Firm Performance</b>							
Past 3-Yr Cumulative Return	0.48	0.23	0.39	0.16	-0.09	***	***
Past 3-Yr Growth in Operating Income	1.00	0.31	0.90	0.29	-0.10	***	
<b>Competition</b>							
Industry HHI	0.1	0.1	0.1	0.1	0.00		***
<b>Complexity</b>							
Number of Business Segments	2.4	1.0	2.9	2.0	0.48	***	***
<b>Uncertainty</b>							
Past 3-Yr Return Volatility	0.027	0.013	0.023	0.011	0.00	***	***
Past 3-Yr ROA Volatility	0.019	0.001	0.016	0.001	0.00	**	***
<b>Firm Visibility</b>							
Analyst Following	6.9	5.0	9.2	7.0	2.32	***	***
<b>Corporate Governance</b>							
Institutional Holdings	0.391	0.333	0.522	0.556	0.13	***	***
% of Independent Directors	0.698	0.714	0.733	0.778	0.04	***	***
Board Size	9.3230	9.0000	9.5840	9.0000	0.26	***	***

## Panel B: Cox Proportional Hazard Models

This panel reports results from Cox proportional hazards regressions for the probability that a non-executive director obtains a second outside directorship based on first directorship's firm characteristics. Our sample includes all individuals in the BoardEx dataset with at least a non-executive directorship. Firm characteristics include firm prior performance, industry competition, firm complexity, firm uncertainty, firm visibility, and corporate governance characteristics. Column (1) reports results on firm reputation (market capitalization is above 90 percentile of its peers), leverage (industry-adjusted debt/asset ratio), and growth opportunities (industry-adjusted Tobin's Q and industry-adjusted asset tangibility). Column (2) reports results on prior stock market and operating performance. Column (3) and (4) studies the impact of industry competition (Herfindahl index based on industry market capitalization), and firm complexity (the number of business segments), respectively. Column (5) studies the impact of firm uncertainty (firm stock return volatility and ROA volatility). Column (6) studies the impact of firm visibility and governance, which includes the number of analyst following, the percentage of institutional holdings, the fraction of independent directors, and board size. Columns (7) report the regression in which we pool all these variables together. Column (8) examines the subsample of first directorships acquired from 2000 onwards. Robust standard errors are estimated following Lin and Wei (1989). T-statistics are reported in brackets. \*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample	All	All	All	All	All	All	All	Post-1999
<b>Firm Characteristics</b>								
Reputation (Firm Size)	0.684*** (0.033)						0.195** (0.097)	0.188* (0.097)
Industry-adjusted Leverage	0.013*** (0.005)						0.084*** (0.022)	0.084*** (0.022)
Industry-adjusted Tobin's Q	-0.000 (0.005)						0.009 (0.025)	0.018 (0.026)
Industry-adjusted Tangibility	0.030 (0.093)						0.070 (0.248)	0.093 (0.249)
<b>Firm Performance</b>								
Past 3-Yr Cumulative Return		0.023* (0.013)					-0.033 (0.033)	-0.033 (0.033)
Past 3-Yr Growth in Operating Income		0.001 (0.006)					0.004 (0.013)	0.004 (0.013)
<b>Competition</b>								
Industry HHI			0.684*** (0.137)				-0.430 (0.379)	-0.420 (0.378)
<b>Complexity</b>								
Log(Segment Count)				0.185*** (0.019)			0.101** (0.048)	0.102** (0.048)
<b>Uncertainty</b>								
Past 3-Yr Return Volatility					-1.331** (0.545)		3.325*** (1.168)	3.338*** (1.166)
Past 3-Yr ROA Volatility					-0.503* (0.291)		-0.739 (0.603)	-0.761 (0.606)
<b>Firm Visibility</b>								
Analyst Following						0.041*** (0.004)	0.021*** (0.006)	0.020*** (0.006)
<b>Corporate Governance</b>								
Institutional Holdings						0.572*** (0.082)	0.338** (0.152)	0.362** (0.152)
% of Independent Directors						-0.219 (0.178)	0.255 (0.241)	0.259 (0.243)
Board Size						-0.021*** (0.008)	0.023* (0.013)	0.024* (0.013)
Wald Chi-Square	434.0	3.179	24.87	97.10	13.45	224.5	95.39	93.27
Prob. > Chi-Square	0	0.204	6.13e-07	0	0.00120	0	0	0
Observations	26,947	18,374	24,927	29,112	18,945	10,186	5,101	5,089



**Table 4: Macroeconomic Factors****Panel A: Descriptive Statistics**

This panel reports descriptive statistics of macroeconomic factors associated with a director's first directorship and second directorship. Panel A1 reports macroeconomic factors associated with a director's first directorship: cumulative stock market and peers' returns prior to the first directorship, stock market and peers' return volatility prior to the first directorship, indicator variable for recession based on the NBER, and indicator variable for post Sarbanes-Oxley period. Panel B reports the same macroeconomic factors associated with the director's second directorship. The last column reports the parametric t-test and non-parametric Wilcoxon test of the difference between variables associated with the first directorship, and the ones with the second and concurrent directorship. Our dataset include all directors from public firms provided by BoardEx of Management Diagnostics.

Variable	A1: First Directorship Obs=42,599		A2: Second Directorship Obs=9,536		Difference		
	(A) Mean	Median	(B) Mean	Median	(B) - (A)	T-Test	Wilcoxon
<b>Market and industry performance</b>							
Past 2-Yr Cumulative Market Return	0.3110	0.2730	0.3130	0.2640	0.0020		
Past 2-Yr Cumulative Peer's Return	0.3140	0.2440	0.3110	0.2270	-0.0030		**
Past 2-Yr Market Return Volatility	0.0030	0.0020	0.0030	0.0020	0.0000	***	*
Past 2-Yr Peer's Return Volatility	0.0300	0.0220	0.0290	0.0220	-0.0010	*	
<b>Macro-economic factors</b>							
Recession (Indicator)	0.2360	0.0000	0.2840	0.0000	0.0480	***	***
Post Sarbanes Oxley (Indicator)	0.5150	1.0000	0.6710	1.0000	0.1560	***	***

**Panel B: Cox Proportional Hazard Models**

This table reports results from Cox proportional hazards regressions for the probability that a non-executive director obtains a second non-executive directorship based on macroeconomic conditions associated with the director's first directorship. Our sample includes all individuals in the BoardEx dataset with at least a non-executive directorship. Macroeconomic conditions include variables that represent financial market conditions (returns and volatility), peer conditions (returns and volatility), and macroeconomic factors (indicator variable for recession year and for post Sarbanes-Oxley period, respectively). Columns (1) and (2) report the results on prior stock market returns and peer firms' stock returns, respectively. Columns (3) and (4) study the impact of market and peer firms' return volatility. Columns (5) and (6) show regression result on indicator variable for recession year and for post Sarbanes-Oxley period, respectively. Column (7) reports the regression in which we pool all these variables together. Column (8) examines the subsample of first directorships acquired from 2000 onwards. Robust standard errors are estimated following Lin and Wei (1989). T-statistics are reported in brackets. \*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample	All	All	All	All	All	All	All	Post-1999
Past 2-Yr Cumulative Market Return	0.190*** (0.043)						0.163*** (0.059)	0.179** (0.083)
Past 2-Yr Cumulative Peer's Return		0.078*** (0.028)					-0.016 (0.032)	0.054 (0.043)
Past 2-Yr Market Return Volatility			-5.548 (6.831)				-21.974** (8.693)	19.559 (12.341)
Past 2-Yr Peer's Return Volatility				3.938*** (0.422)			4.331*** (0.464)	4.244*** (0.605)
Recession (Indicator)					-0.060* (0.033)		-0.068* (0.041)	-0.217*** (0.060)
Post Sarbanes Oxley (Indicator)						-0.190*** (0.029)	-0.176*** (0.032)	-0.096* (0.058)
Wald Chi-Square	19.49	7.585	0.660	87.09	3.337	44.29	155.0	130.3
Prob. > Chi-Square	1.01e-05	0.00589	0.417	0	0.0677	0	0	0
Observations	36,433	28,385	36,433	28,382	36,563	36,563	28,321	18,466

**Table 5: Firm Reputation**

This table reports results from Cox proportional hazard regressions for the probability that a non-executive director obtains a second non-executive directorship based on the director's performance during the first directorship. Our sample includes all individuals in the BoardEx dataset with at least a non-executive directorship. Firm performance includes indicator variables for whether a firm has an accounting restatement, and whether the firm encounters a class action lawsuit between the first and second directorship or the year when the director exits the firm (or our sample), the average industry-adjusted return on asset, the average raw stock return, and average industry-adjusted Tobin's Q between the first and second directorship or the year when the director exits the firm (or our sample). Column (1) reports the relationship between the occurrence of an accounting restatement during the director's tenure in the first directorship and the probability that the director obtains a second concurrent directorship. Column (2) studies the impact of a class action lawsuit. In column (3), we examine several measures of average firm performance. Column (4) reports the results on indicator variables for whether the non-executive director serves on important board committees (audit, compensation, nomination, and governance). Column (5) examines several measures for managerial compensation, including indicator variable for whether a firm pays its CEO beyond the industry median, and the ratio of CEO pay over the next best executive pay. Column (6) reports the regression in which we pool all these variables together. Column (7) examines the subsample of first directorships acquired from 2000 onwards. Robust standard errors are estimated following Lin and Wei (1989). T-statistics are reported in brackets. \*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample	All	All	All	All	All	All	Post-1999
Accounting Restatement (Indicator)	-1.399*** (0.108)					-1.196*** (0.148)	-0.706*** (0.160)
Class Action Suit (Indicator)		-0.715*** (0.159)				-1.008*** (0.209)	-0.800*** (0.290)
Average Industry-adjusted ROA			0.455*** (0.094)			0.103 (0.259)	-0.001 (0.354)
Average Raw Return			9.542*** (1.011)			1.635 (2.206)	-0.255 (2.308)
Average Industry-adjusted Tobin's Q			0.076*** (0.011)			0.057*** (0.021)	0.003 (0.034)
Audit Committee (Indicator)				-0.044 (0.028)		0.030 (0.039)	0.280*** (0.059)
Compensation Committee (Indicator)				-0.026 (0.029)		0.043 (0.040)	0.118** (0.058)
Nomination Committee (Indicator)				-0.375*** (0.038)		-0.243*** (0.057)	-0.236** (0.097)
Governance Committee (Indicator)				0.411*** (0.037)		0.216*** (0.056)	0.180* (0.094)
Excess Pay					0.630*** (0.058)	0.592*** (0.061)	0.408*** (0.086)
Average CEO Pay/Next Best Pay					-0.034** (0.017)	-0.024 (0.018)	-0.011 (0.019)
Wald Chi-Square	167.5	20.18	225.6	140.7	116.2	235.4	81.08
Prob. > Chi-Square	0	7.06e-06	0	0	0	0	0
Observations	36,563	36,563	33,874	29,956	13,915	12,546	7,332

**Table 6: Cox Regression proportional hazard model across all characteristics**

This table reports results from Cox proportional hazard regressions for the probability that a non-executive director obtains a second non-executive directorship. Our sample includes all individuals in the BoardEx dataset with at least a non-executive directorship. We include variables representing director characteristics, firm characteristics, macroeconomic factors, and proxies for director's efforts in pooled regressions. These variables are measured when the director takes up the first directorship. Director characteristics include directors' education backgrounds, age, gender, work experience, connections, and board experience. Firm characteristics include firm size, firm growth opportunity, firm prior stock and operating performance, market competition, firm complexity, firm uncertainty, firm visibility, corporate governance. Macroeconomic conditions include variables that represent financial market conditions (market and industry past returns and volatility), and macroeconomic factors (recession and Sarbanes Oxley). Proxies for a director's efforts include indicator variable for accounting restatement and class action suit, average measures of firm performance and managerial compensation. These proxies are measured between the first and second directorship or the year when the director exits the firm (or our sample). Robust standard errors are estimated following Lin and Wei (1989). T-statistics are reported in brackets. \*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)
<b>Sample</b>	All	All	All	Post-1999
<b>Director Characteristics</b>				
Director Age	-0.001 (0.005)	0.000 (0.005)	0.007 (0.006)	0.007 (0.006)
Male Director (Indicator)	-0.136 (0.104)	-0.134 (0.104)	-0.112 (0.120)	-0.098 (0.121)
Ivy League Degree (Indicator)	-0.137 (0.098)	-0.138 (0.098)	-0.185 (0.114)	-0.181 (0.115)
Law Degree (Indicator)	0.058 (0.128)	0.087 (0.127)	0.107 (0.146)	0.110 (0.146)
MBA (Indicator)	0.042 (0.092)	0.063 (0.092)	0.026 (0.108)	0.027 (0.108)
PhD (Indicator)	-0.651*** (0.211)	-0.665*** (0.212)	-0.868*** (0.263)	-0.865*** (0.263)
Number of Qualifications	0.135** (0.063)	0.137** (0.063)	0.181** (0.073)	0.183** (0.073)
<b>Director Work Experience</b>				
Work Experience (Years)	0.007* (0.004)	0.007* (0.004)	0.008* (0.004)	0.008** (0.004)
Government (Indicator)	0.102 (0.145)	0.074 (0.144)	0.048 (0.164)	0.054 (0.163)
Universities (Indicator)	0.049 (0.255)	0.007 (0.253)	-0.044 (0.326)	-0.031 (0.325)
Log(sch. conn. size)	0.000 (0.084)	-0.005 (0.084)	0.031 (0.096)	0.034 (0.096)
CEO (Indicator)	0.298*** (0.098)	0.332*** (0.098)	0.379*** (0.108)	0.386*** (0.108)
S&P500 (Indicator)	0.250*** (0.086)	0.237*** (0.086)	0.249** (0.098)	0.252** (0.098)
Log(School Connection Size)	0.049* (0.025)	0.044* (0.025)	0.034 (0.029)	0.034 (0.029)
<b>Firm Characteristics</b>				
Market Capitalization (Above Industry's 90 Pct)	0.176* (0.099)	0.131 (0.103)	0.101 (0.115)	0.087 (0.115)
Industry-adjusted Leverage	0.067*** (0.024)	0.069*** (0.023)	0.084*** (0.025)	0.087*** (0.025)
Industry-adjusted Tobin's Q	0.000 (0.026)	-0.008 (0.026)	-0.110** (0.045)	-0.094** (0.046)
Industry-adjusted Tangibility	0.051 (0.259)	-0.004 (0.266)	0.281 (0.341)	0.308 (0.342)
Past 3-Yr Cumulative Return	-0.025 (0.033)	-0.042 (0.035)	-0.059 (0.051)	-0.059 (0.050)
Past 3-Yr Growth in Operating Income	0.006 (0.013)	0.011 (0.013)	0.021 (0.017)	0.020 (0.017)
<b>Competition</b>				
Industry HHI	-0.285 (0.388)	-0.219 (0.380)	-0.066 (0.442)	-0.073 (0.441)

<b>Con't</b>	(1)	(2)	(3)	(4)
<b>Sample</b>	All	All	All	Post-1999
<b>Complexity</b>				
Log(Segment Count)	0.078 (0.050)	0.063 (0.051)	0.057 (0.059)	0.064 (0.060)
<b>Uncertainty</b>				
Past 3-Yr Return Volatility	2.983** (1.171)	1.837 (1.338)	5.332*** (1.843)	5.360*** (1.838)
Past 3-Yr ROA Volatility	-0.733 (0.606)	-0.728 (0.591)	-3.413*** (1.308)	-3.450*** (1.317)
<b>Firm Visibility</b>				
Analyst Following	0.019*** (0.006)	0.013** (0.006)	0.013* (0.007)	0.014** (0.007)
<b>Corporate Governance</b>				
Institutional Holdings	0.185 (0.156)	0.329** (0.162)	-0.034 (0.232)	-0.002 (0.232)
% of Independent Directors	-0.126 (0.255)	0.432 (0.277)	0.154 (0.320)	0.128 (0.322)
Board Size	0.023 (0.014)	0.022 (0.015)	0.024 (0.018)	0.028 (0.018)
<b>Macroeconomic Conditions</b>				
Past 2-Yr Cumulative Market Return		0.065 (0.145)	0.012 (0.172)	0.001 (0.172)
Past 2-Yr Cumulative Peer's Return		-0.053 (0.077)	-0.058 (0.085)	-0.054 (0.085)
Past 2-Yr Market Return Volatility		-0.674 (22.082)	-16.452 (25.389)	-18.417 (25.536)
Past 2-Yr Peer's Return Volatility		2.589* (1.445)	1.857 (1.773)	2.034 (1.757)
Recession (Indicator)		-0.475*** (0.110)	-0.350*** (0.124)	-0.356*** (0.124)
Post Sarbanes Oxley (Indicator)		-0.551*** (0.117)	-0.329** (0.130)	-0.339*** (0.130)
<b>Firm Performance</b>				
Accounting Restatement (Indicator)			-0.774*** (0.243)	-0.772*** (0.243)
Class Action Suit (Indicator)			-40.065*** (0.210)	-35.078*** (0.211)
Average Industry-adjusted ROA			0.456 (0.548)	0.561 (0.567)
Average Raw Return			-4.114 (3.349)	-4.266 (3.360)
Average Industry-adjusted Tobin's Q			0.109 (0.072)	0.101 (0.072)
Audit Committee (Indicator)			0.226** (0.089)	0.232*** (0.089)
Compensation Committee (Indicator)			0.132 (0.087)	0.129 (0.087)
Nomination Committee (Indicator)			-0.003 (0.139)	0.005 (0.140)
Governance Committee (Indicator)			0.163 (0.135)	0.153 (0.137)
Excess Pay			0.150 (0.151)	0.136 (0.151)
Average CEO Pay/Next Best Pay			0.026 (0.024)	0.026 (0.024)
Wald Chi-Square	157.5	205.6	41543	31737
Prob. > Chi-Square	0	0	0	0
Observations	4,597	4,591	3,024	3,012

**Table 7: The differences in firm and board characteristics between the first and second directorship**

This table reports descriptive statistics of the differences in the firm and board characteristics between the first and second non-executive directorships when directors get their second non-executive directorships. Panel A1 reports the characteristics of the firms in which these directors serve their first non-executive directorship in the year of their second directorship. Panel A2 reports descriptive statistics for the characteristics of the firm of the second directorship in the year of second directorship. The last column reports the parametric t-test and non-parametric wilcoxon test of the difference between variables associated with the first directorship, and the ones with the second and concurrent directorship at the year of the second directorship. Our dataset include all directors from public firms provided by BoardEx of Management Diagnostics.

Variable	A1. First Directorship		A2. Second Directorship		Difference		
	Obs=9345		Obs=9536		(A) - (B)	T-test	Wilcoxon
	(A) Mean	Median	(B) Mean	Median			
Firm Age (Years)	18.841	14.000	16.301	11.000	2.540	***	***
Market Capitalization	6641	8200	6001	696	640	*	***
Industry-adjusted Leverage	0.101	0.021	0.085	0.015	0.016		
Industry-adjusted Tobin's Q	0.457	0.056	0.568	0.040	-0.111	***	
Industry-adjusted Tangibility	0.009	0.000	0.004	-0.001	0.005	**	***
Past 3-Yr Cumulative Return	0.470	0.218	0.390	0.164	0.080	***	***
Past 3-Yr Growth in Operating Income	0.861	0.000	0.868	0.000	-0.007		**
Industry HHI	0.087	0.058	0.084	0.056	0.003	*	*
Number of Business Segments	3.055	3.000	2.893	2.000	0.162	***	***
Past 3-Yr Return Volatility	0.022	0.011	0.023	0.011	-0.001	***	**
Past 3-Yr ROA Volatility	0.015	0.001	0.015	0.001	0.000		*
Analyst Following	9.770	8.000	9.222	7.000	0.548	***	***
Institutional Holdings	0.557	0.600	0.522	0.556	0.035	***	***
% of Independent Directors	0.739	0.778	0.733	0.778	0.006	*	
Board Size	9.569	9.000	9.584	9.000	-0.015		
Past 2-Yr Cumulative Market Return	0.310	0.264	0.314	0.264	-0.004		
Past 2-Yr Cumulative Peer's Return	0.300	0.226	0.311	0.227	-0.011		
Past 2-Yr Market Return Volatility	0.003	0.002	0.003	0.002	0.000		
Past 2-Yr Peer's Return Volatility	0.029	0.021	0.029	0.022	0.000	*	
Recession (Indicator)	0.280	0.000	0.284	0.000	-0.004		
Post Sarbanes Oxley (Indicator)	0.664	1.000	0.671	1.000	-0.007		
Past 3-Yr Accounting Restatement (Indicator)	0.177	0.000	0.179	0.000	-0.002		
Past 3-Yr Class Action Suit (Indicator)	0.089	0.000	0.102	0.000	-0.013	**	**
Audit Committee (Indicator)	0.517	1.000	0.522	1.000	-0.005		
Compensation Committee (Indicator)	0.454	0.000	0.453	0.000	0.001		
Nomination Committee (Indicator)	0.378	0.000	0.387	0.000	-0.009		
Governance Committee (Indicator)	0.431	0.000	0.434	0.000	-0.003		
CEO pay/next best pay	2.284	1.754	2.411	1.768	-0.127	*	
Excess Pay (Indicator)	0.300	0.000	0.259	0.000	0.041	***	***



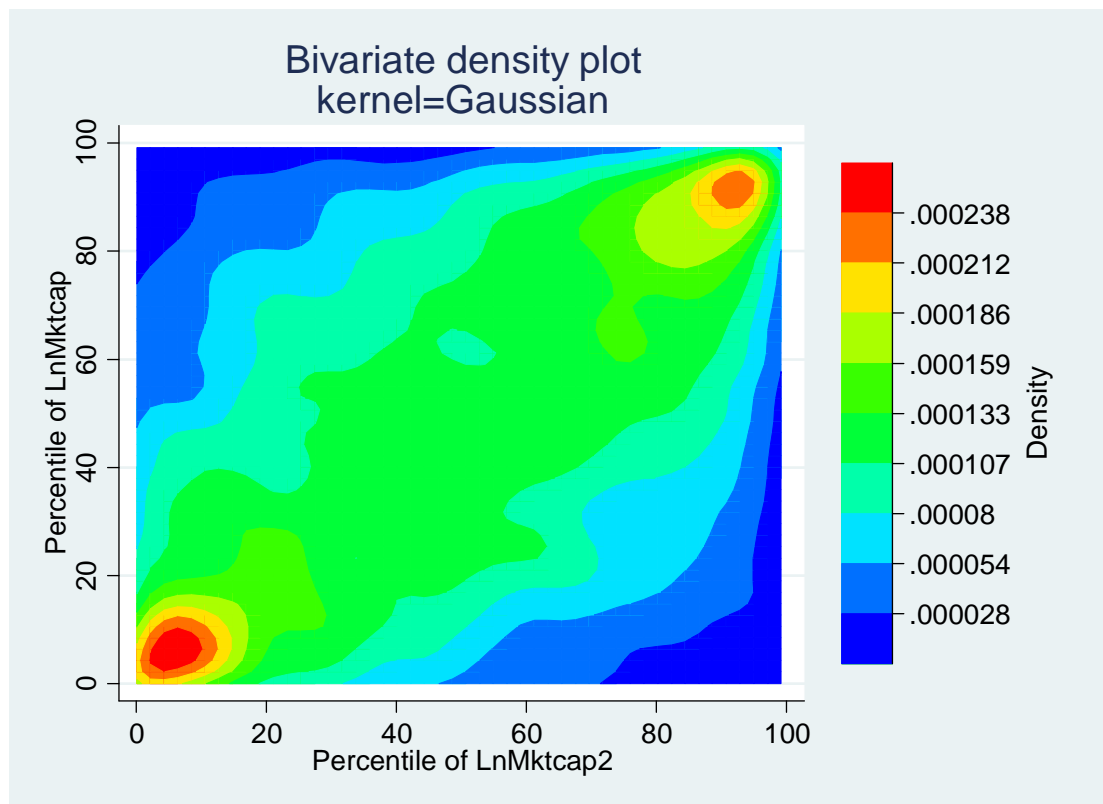
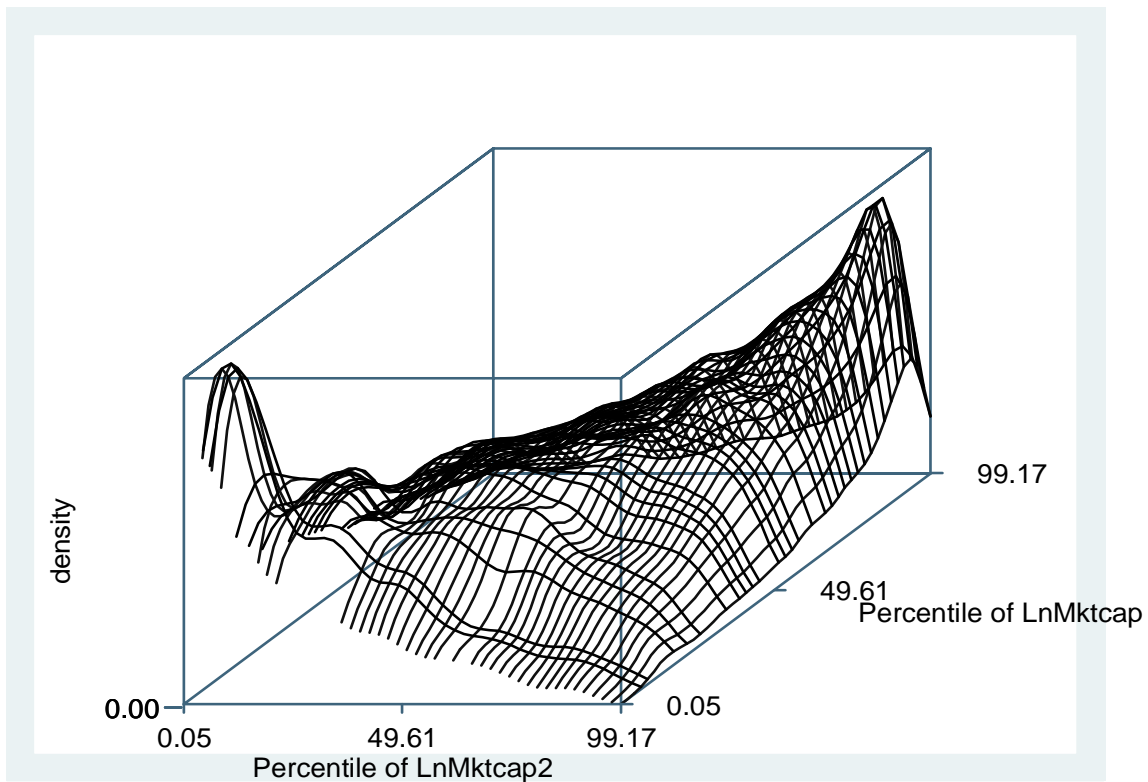


Figure I: Density of matches between a director's 1<sup>st</sup> and 2<sup>nd</sup> firm sizes: (A) 3D plot (B) Contour plot

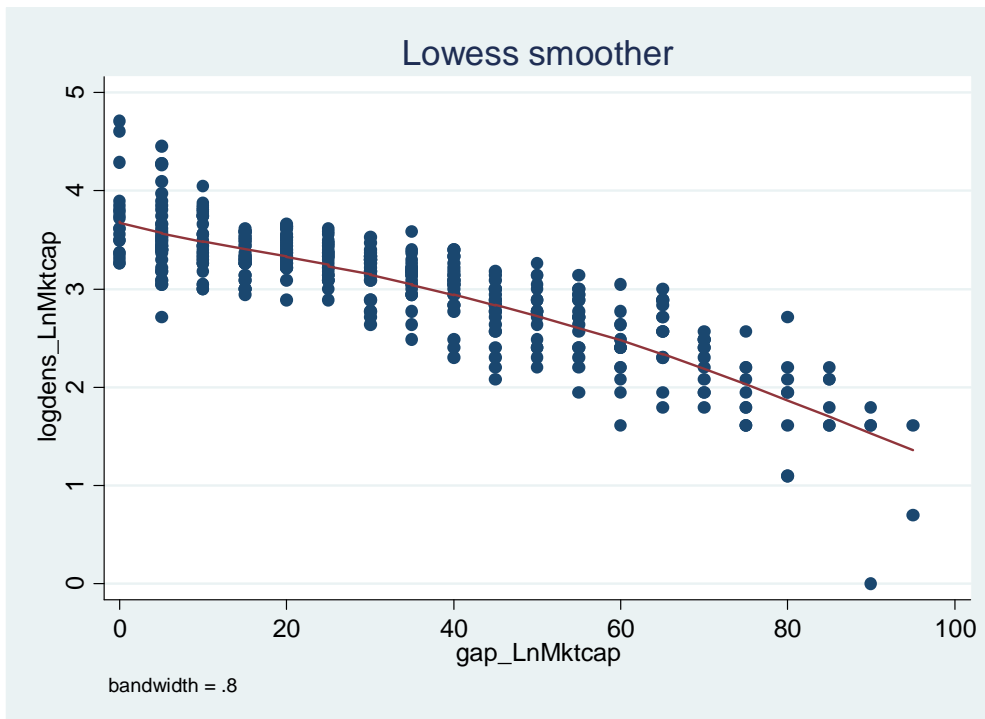


Figure II.A: LogDensity of matches vs. the gap between a director's 1<sup>st</sup> and 2<sup>nd</sup> firm size percentiles.

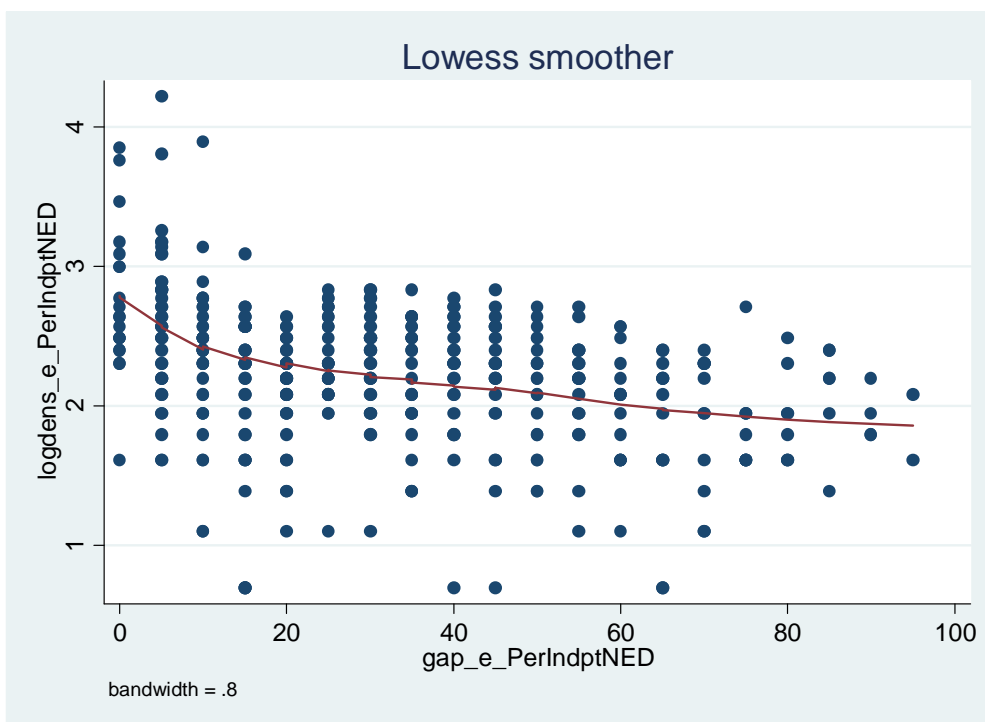


Figure II.B: LogDensity of matches vs. the gap between a director's 1<sup>st</sup> and 2<sup>nd</sup> firms' proportion of independent directors, after controlling for firm size



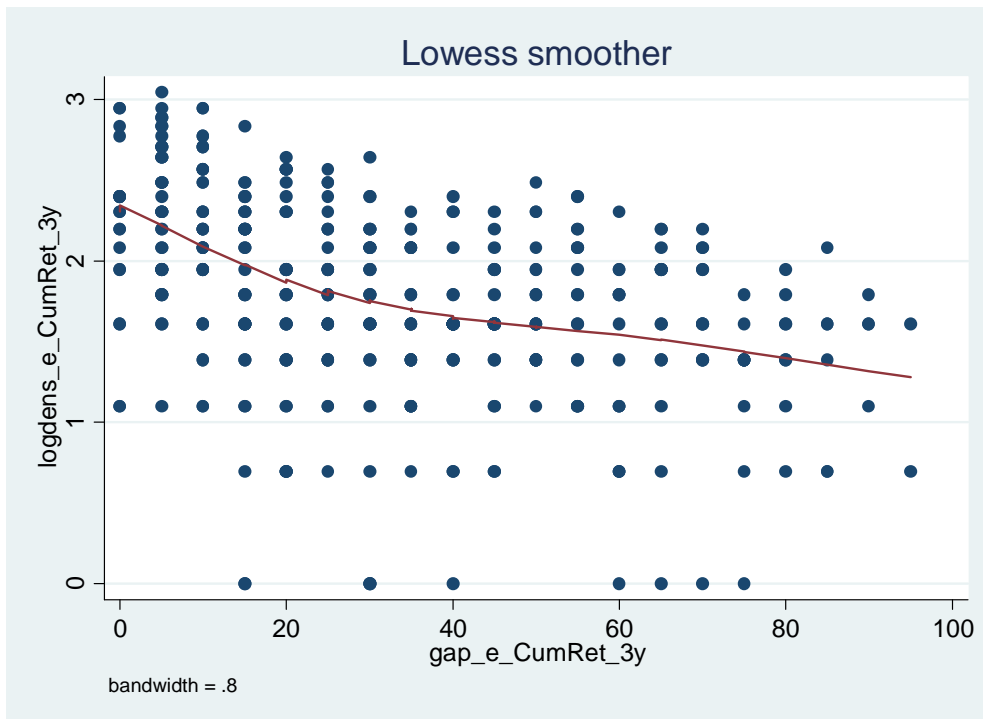


Figure II.C: LogDensity of matches vs. the gap between a director's 1<sup>st</sup> and 2<sup>nd</sup> firm cumulative returns over 3 previous years, after controlling for firm size and share of independent directors.

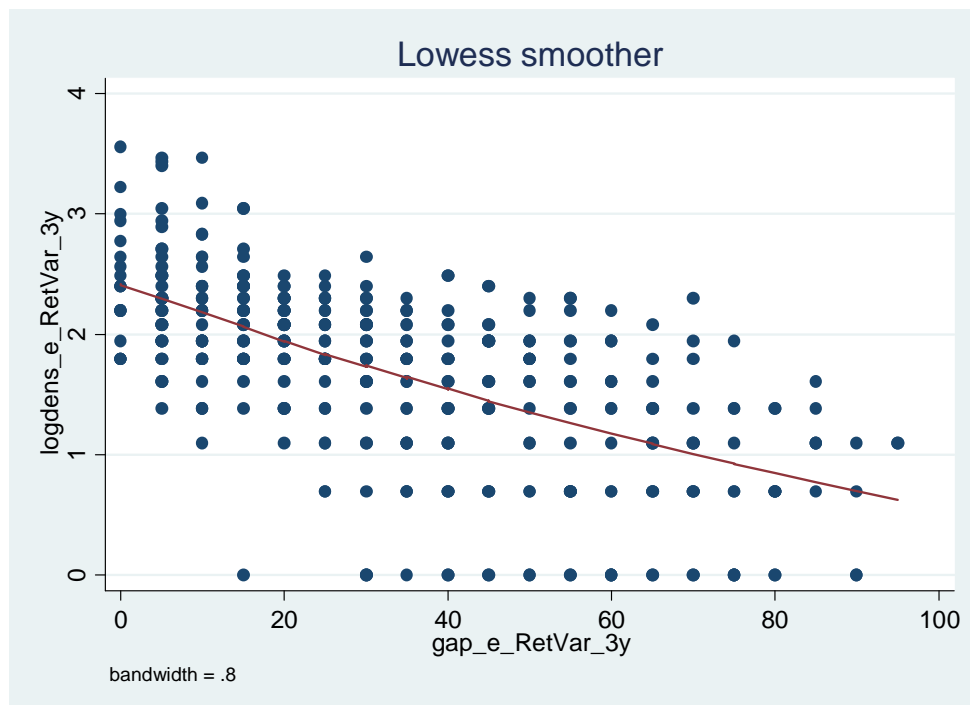


Figure II.D: LogDensity of matches vs. the gap between a director's 1<sup>st</sup> and 2<sup>nd</sup> firm cumulative returns over 3 previous years, after controlling for firm size and share of independent directors.