

Who of the top five executives is more likely to be promoted to the CEO position and why?

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Abstract

The objective of this paper is to examine who of the top five executives is more likely to progress to the CEO position and why. Based on internal CEO appointments from 1992 to 2012, we find a negative association between being a CFO and the likelihood of becoming the next CEO. However, the passage of the Sarbanes-Oxley Act in 2002 increases the likelihood of a CFO being chosen as the next CEO. SOX requirement to certify annual reports implies that CEO have accounting expertise in fulfilling their duties, has resulted in a higher demand for executives with accounting expertise when choosing a new CEO. We also find a positive association between being a COO and the likelihood of becoming the next CEO. This paper extends the existing literature that focuses on internal versus external appointments following a CEO turnover, by focusing on who among the internal candidates becomes the next CEO and possible reasons why this might be the case.

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1.0 INTRODUCTION

The objective of this paper is to investigate who of the top 5 executives is more likely to be appointed to the position of Chief Executive Officer (CEO) and why. While numerous studies have contributed to our understanding of the determinants of CEO turnover (e.g., Warner *et al.* 1988; Weishbach 1988; Laux 2008), we know little on the choice of the new CEO. The only exceptions are studies like Parrino (1997) and Agrawal *et al.* (2000) which examine the preference for inside versus outside CEOs. However, we are not aware of any studies that have examined who of the top five executives are more likely to move to the CEO position given that a firm chooses to hire internally. We aim to fill this gap in the literature by going beyond the inside versus outside hiring distinction, and focusing on the choice of the new CEO from within the firm as well as the firm characteristics associated with that choice.

We focus on the Chief Financial Officer (CFO) and the Chief Operation Officer (COO) as potential candidates as the next CEO. We argue that the CFO is preferred as the next CEO due to his broad knowledge and skills acquired through his diverse role within the firm and his financial expertise (Mian 2001; Li *et al.* 2010). We also argue that the passage of the Sarbanes-Oxley Act (SOX) (2002) resulted in boards of directors preferring CFOs when selecting an insider for the position of CEO. In particular, the SOX requirement for CEOs to certify the financial statements entails that CEOs have financial expertise when performing their duties. This makes the CFO a perfect candidate when appointing a new CEO. Alternatively, it can also be argued that the COO is preferred as the next CEO. The COO is significantly involved in various parts of the day-to-day duties of the CEO, such as, directing, controlling and assigning resources. It is possible that the COO is appointed in anticipation of the retirement of the existing CEO (Mobbs and Raheja 2012). Therefore, we also analyse firm characteristics that are associated with the preference to appoint the CFO as the new CEO.

Our results are based on a sample of 694 firm-year observations from 1992 to 2012. We find that being a CFO decreases the likelihood of being appointed as the next CEO, while being a COO increases the likelihood of being appointed as the next CEO. In terms of the control variables, we find that being an executive director increases the likelihood of becoming the next CEO, as does joining the firm two years prior to the CEO turnover event. This is consistent with firms appointing and grooming an heir apparent (e.g., Mobbs and Raheja 2012). Pay rank, share ownership and age are negatively associated with the likelihood of being the next CEO. To test whether the passage of SOX impacted on the choice of the new CEO, we re-run the test for the pre- and post- SOX period. Our results are generally the same across the two periods. Finally we examine the factors that impact on the likelihood of a CFO being appointed to the CEO position. We find that more complex firms are less likely to appoint a CFO as the next CEO. We also find that the passage of SOX in 2002 increases the likelihood of a CFO becoming CEO.

Our paper contributes to the emerging literature on the role of CFOs which has received significant attention after the passage of SOX. In particular, the passage of SOX increased the accountability of CFOs (e.g., Indjejikian and Matejka 2009; Wang 2010). Numerous studies have documented evidence that there are both compensation (e.g., Indjejikian and Matejka, 2009; Hoitash *et al.* 2012) and employment (Desai *et al.* 2006; Collins *et al.* 2008; Li *et al.* 2010; Hennes *et al.* 2008; Mergenthaler *et al.* 2011) penalties placed on CFOs when they fail to perform their duties. This paper adds to this body of research by focusing on the employment prospect of the CFO and in particular whether the CFO is more likely than other executives to be promoted to the CEO position. We also add to the existing CFO literature by documenting that the likelihood of a CFO becoming the next CEO increased following the passage of SOX.

Our paper complements prior studies that examine the choice between an insider versus outsider as CEO (e.g., Parrino 1997; Agrawal *et al.* 2000; Murphy and Zbojnik 2004). The

findings of the paper go beyond the inside versus outside distinction and focus on how different characteristics and executive positions (i.e., COO, CFO) influence the choice of the new CEO.

Our paper also contributes to the understanding of the role of the COO. Because the role of the COO is not clearly defined, it has received very little attention from the academic literature. Limited empirical evidence suggests that CEOs who have COOs perform worse than those who do not (Hambrick and Cannella 2004). However, we still do not know whether the COO contributed to lower performance or whether the COO was appointment to help fix poor performance. Our results suggest that COOs are the preferred choice when selecting an internal CEO. Our results, however, are weak and more research is required to better understand the role of the COO. In addition, whether the choice of the new CEO (CFO versus COO) results in better firm performance has not been addressed in this paper and is an interesting research topic.

The remainder of the paper is organized as follows. In Section 2, we develop the hypotheses to be tested. In Section 3, we provides a description of the sample selection and outlines the research design. Our results are presented in Section 4. Section 5 outlines the additional tests and Section 6 concludes.

2.0 THEORY DEVELOPMENT

2.1 The selection of a new CEO

The selection of a new CEO is an important decision that the board of directors have to make as it has long-term implications for a firm's investment, operating and financing decisions (Parrino 1997). The existing literature has been very informative on whether the board of directors prefer to promote CEOs internally or to hire from outside (e.g., Parrino 1997; Agrawal *et al.* 2000; Murphy and Zbojnik 2004). Interestingly, however, the literature does not go beyond considering the CEO

attributes other than the insider versus outsider distinction. While the literature acknowledges that not all CEOs are the same, little empirical work has been undertaken to examine who of the top five executives is more likely to rise to the CEO position and why.

2.1.1 Preference for the CFO

Prior studies suggest that the attributes found in CFOs make them the perfect candidate for the next CEO. First, increasing regulations and penalties placed on CEOs for reporting accounting errors suggest that accounting knowledge is important for CEOs. The enactment of SOX (2002) in the U.S. imposes considerably greater penalties on CEOs who submit financial reports containing errors. Under the new regulation, both CEOs and CFOs are required to certify that the financial statements present a true and fair view of the financial position and performance of the firm. Therefore, despite the fact that the management of financial reporting is the duty of the CFO, the CEO also bears penalties (fines as much as \$5 million and 20 years jail) associated with financial misreporting (e.g., Section 906 of SOX). Moreover, certification implies that the CEO has sufficient accounting knowledge to fulfil his duties.

Findings from prior empirical studies suggest that there are severe penalties placed on the CEOs and firms involved in accounting misreporting. For example, Desai *et al.* (2006) document a positive association between management turnover (chairperson and CEO) and earnings restatements. Moreover the retire rate of the displaced managers of restating firms are half the rate of non-restating firms. They also document that the quality of the new employment of the displaced managers of restating firms is poorer relative to the employment quality of non-restating firms. In a more detailed analysis Hennes *et al.* (2008) distinguishes accounting restatements between accounting irregularities and unintentional accounting errors to investigate the association between CEO turnover and restatements. While their results suggest that the turnover rate of CEO is greater for firms involved in accounting irregularities versus firms involved in accounting errors, the fact is

that an employment penalty is placed on CEOs even if the accounting errors were unintentional. This entails that CEOs have adequate accounting expertise when performing their duties.

Financial reporting concerns also impacts on the credibility of the firm. For example, extant studies show that indicators of financial reporting problems such as accounting restatements, earnings quality, and internal control weaknesses are associated with negative share price reactions (e.g., Dechow *et al.* 1996 and Beneish *et al.* 2008), higher costs of capital (e.g. Francis *et al.* 2004; Hribar and Jenkins 2004; Dechow *et al.* 2006), increased cost of debt (Francis *et al.* 2005) and increased litigation risks (Palmrose and Scholz 2004) amongst others. Therefore, it makes sense that given these severe penalties placed on the CEOs and the firm, the board of directors would have a greater demand for accounting expertise when appointing a new CEO. This makes the CFO the perfect candidate for the position because the CFO has both the experience and the expertise in regards to accounting matters.

Second, while the role of the CFO was once limited to financial record keeping, the CFO is now one of the top decision makers in the modern organisation. The traditional role of the CFO requires him to maintain the accounting records for tax authorities, internal decision making and external shareholders. The CFO is also in charge of communicating the firm's financial result with the tax authorities, internal management and auditors, and often the CFO accompanies the CEO to shareholders' presentations. Apart from the traditional accounting role, the CFO is also responsible for capital structure decisions and obtaining finance for the firm. The CFO has also become more active in strategic planning, merger and acquisitions, implementing information technology initiatives and managing associations with financial analysts and investors (Aier *et al.* 2005). The involvement of the CFO in a vast array of activities and top level decision making, suggests that the CFO may be the single executive most knowledgeable about the firm and its businesses, outside of the CEO.

Given the above arguments, it is our contention, that when selecting a new CEO, the board of directors have preference for the CFO over other executives in the firm. Accordingly, we predict:

H₁: CFOs are more likely to be promoted to the CEO position

2.1.2 Preference for the COO

The role of the COO has received less attention in academic research. The role of the COO is not clearly defined, differs across firms and can change across time within firms as this function is defined primarily in relation to the needs of the current CEO (Bennett and Miles 2006). For example, employing a COO may suggest future succession plans are in place and that the board has already chosen the next CEO (Marcel 2009). The COO has generally been viewed as second-in-command and is a natural choice when appointing the next CEO (Bennett and Miles 2006). The COO is usually assigned a significant part of the CEO's responsibilities. These responsibilities vary and include directing, coordinating and allocating resources, marketing, sales, etc. (Bennet and Miles 2006; Marcel 2009). The COO is responsible mainly for internal operations while the CEO focuses on external and long term corporate activities.

However, a COO might not always proceed to CEO position (Cannella and Shen 2002). For example, a COO could be hired to mentor the current CEO who is inexperienced, where the COO has no intent of becoming the next CEO. In other cases, the board may hire a COO to complement the skills of the existing CEO.

Given the above arguments, it is our contention that when selecting a new CEO, the board of directors have preference for the COO over the other executives. Thus our second prediction is that:

H₂: COOs are more likely to be promoted to the CEO position

3.0 RESEARCH DESIGN

3.1 *Sample selection and variable descriptions*

We use the Compustat's Execucomp database to identify firm-years in which a CEO was hired from the existing executives in the firm. To do so we use the 'CEOANN' data item and compare the CEO appointment date (BECAMECEO) to the date the CEO first joined the company (JOINED_CO). To address our research question we require data for the year prior to CEO turnover, which results in an initial sample of 722 firm-year observations and 3,977 non-CEO executives.¹ Of these, 28 firm-years (a total of 133 non-CEO executives) appoint an executive from outside their top ranks and as such there is no data available for those particular executives in the year prior to their appointment as CEO.² This results in a final sample of 694 firm-year observations (3,844 non-CEO executives) within the period 1992-2012. Firm financial data is obtained from Compustat Fundamentals and corporate governance data from GMI Ratings. There are a number of missing data items for many executives in Execucomp (particularly for early years in the database), and thus we fill in blanks from the firms' proxy statements and other data sources where available.³ Table 1 shows the sample breakdown by year (Panel A) and industry (Panel B).

{Table 1 about here}

Looking at Panel A, the number of observations reduces towards the end of the sample period which is consistent with the increasing trend to hire CEO from outside the firm. Panel B shows that the Consumer Discretionary and I.T. industries contain the largest number of firms in the sample (21% and 18%, respectively) and Telecommunications the least (1%). Out of the

¹ We also run tests that do not focus on only the top five executives because many firms report more than five executives which signals the importance of those executives to those firms. Therefore, not restricting our analysis to only the top five executives as the CEO successor may be chosen from one of the many executives within the firm (and not just the five highest paid).

² The SEC requires firms to report the compensation of their CEO, CFO and highest five paid executives.

³ E.g. if an executive is the CEO or CFO in that particular year (CEOANN and CFOANN), the date the executive joined the company (JOINED_CO), age (AGE) among others.

internal appointments (Panel C), 37 firms chose their CFO as the next CEO, 287 chose their COO, and 370 chose an executive other than the CFO or CEO.

3.1.2 Factors affecting the likelihood of being chosen as the next CEO

Gender

We control for gender because of research showing that females account for roughly 2% of CEOs in U.S. listed firms (Bugeja *et al.* 2013) and make up only 14.6% of executive officers in Fortune 500 firms (Warner 2014). Hence, we expect female executives to be less likely to be appointed to the CEO position. An indicator variable (*Female*) is set equal to one if the executive is female and zero otherwise.

Pay Rank

Prior research has shown that the higher an executive's compensation level, the higher the executive's ranking is within the firm hierarchy (Murphy 1985; Leonard 1990; Baker *et al.* 1994; Gibbs 1995; Wulf 2007; Mobbs and Raheja 2012). Bognanno (2001) finds that in 80% of cases, executives that become CEO are the highest paid non-CEO executives. Therefore, we include executives' pay rank (*Pay_rank*) based on total compensation (which is the sum of salary, bonus, restricted stock granted and options granted).⁴ We expect *Pay_rank* to be negatively associated with the likelihood of being chosen as CEO (because the lower the rank, the higher the compensation, with 1 being the highest).

Shares held

Executives can use stock ownership to signal their desire to become CEO (Mobbs and Raheja 2012; Boyer and Ortiz-Molina 2008). Furthermore, appointing an executive to the CEO

⁴ Prior to 2006 options granted are valued using Black-Scholes (OPTION_AWARDS_BLK_VALUE) and restricted stock are recorded as Execucomp's RSTKGRNT. Following FAS123 these items changed to the fair value method and are recorded under Execucomp's OPTION_AWARDS_FV and STOCK_AWARDS_FV, respectively.

position who already holds a significant portion of the firm's shares may be less costly as firms avoid having to make large equity issues to incentivise the newly appointed CEO. Therefore, we control for the percentage of the firm's shares held by executives (*SharesPCT*) and expect a positive relation with the likelihood of becoming the next CEO.

Executive Directors

Consistent with Hermalin and Weishbach (1988) we include an indicator variable equal to one if the executive has a seat on the board of directors (*ExecDir*) and zero otherwise. Executives who are also directors in the firm have greater decision making authority than executives who are not directors, and possess the related skills that are advantageous to the CEO position. Therefore, we expect *ExecDir* to be positively associated with being chosen as the next CEO.

Tenure

Following Harris *et al.* (2006) and Breugh (2011) we also control for an executive's tenure, which is the number of years the executive has been appointed in the firm. We expect a negative association between tenure and the likelihood of being promoted to the executive position. First, longer tenure may signal that longer time is required to master a given job and less likely to be viewed as fast track. Second, longer tenured executives tend to be older.

Recent Hire

We include an indicator variable equal to one if the executive joined the firm within two years of the CEO turnover event (*Succession*). Some firms may hire the succeeding CEO in anticipation of the existing CEO's retirement (heir apparent) (Mobbs and Raheja 2012). Therefore, we expect a positive relation between *Succession* and becoming the next CEO.

3.1.2 Determinants of choosing the CFO as the next CEO

To examine our second research question we include a number of firm characteristics that may be associated with a greater probability of choose the CFO as the next CEO. First we include firm growth (*growth*) measured as the growth in market value from year $t-2$ to $t-1$. Where t is the year of CEO turnover. Second, we include an accounting (*ROA*) and market measure (*RET*) of firm performance. Firms that are experience lower performance may appoint the CFO as the next CEO hoping that a turnaround strategy can be implemented. The accounting measure is return on assets, measured as EBIT divided by average total assets. The market measure is the annual buy and hold stock return adjusted for stock splits and dividends. Third we control for firm size and complexity using sales (*lnSale*) which is measured as the natural logarithm of the firm's net sales. Fourth, we include indicator variables equal to one if the firm operates in the financial or regulated industries (*Financial* and *Regulated*, respectively). Last we include an indicator variable equal to one if the firm-year is post SOX implementation in 2002, and zero otherwise (*PostSOX*). We believe that following the implementation of SOX which impacted the role and the responsibilities of the CFO, firms were more likely to respond by appointed their CFOs as their CEO successors.

3.2 Research Method

To investigate the factors affecting which executive is chosen as the next CEO, we estimate the following logistic model:

$$P(CEO)_{t+1} = \alpha + \beta_2 Female_t + \beta_3 COO_t + \beta_4 CFO_t + \beta_5 Pay_Rank_t + \beta_6 SharesPCT_t + \beta_7 ExecDir_t + \beta_8 Tenure_t + \beta_9 Age_t + \beta_{10} Succession_t + \varepsilon \quad (1)$$

Where CEO is an indicator variable equal to one if the executive was appointed as CEO the following year. All variables are as previously defined.

To investigate the determinants of choosing the CFO as the next CEO, we estimate the following logistic model:⁵

$$P(CEOCFO)_{t+1} = \alpha + \beta_2 Growth_t + \beta_3 ROA_t + \beta_4 RET_t + \beta_5 LnSale_t + \beta_6 Debttoequity_t + B_7 TotalExecsRpt_t + \beta_8 Regulated_t + \beta_9 Financial_t + \beta_{10} PostSOX_t + \varepsilon \quad (2)$$

Where CEOCFO is an indicator variable equal to one if the executive appointed as CEO the following year is currently the CFO of the firm. All variables are as previously defined.

4. PRELIMINARY RESULTS

4.1 Descriptive statistics

Table 2 presents descriptive statistics between all non-CEO executives and Executives chosen as the next CEO. A Wilcoxon-Mann-Whitney test of differences of the means and medians is also presented.

{Table 2 about here}

On average the executives chosen as the next CEO are female 3% of the time, held the title of COO 51% of the time, and CFO 7% of the time. The mean total compensation (Totalcomp) of the CEO successors is roughly 2.75 million dollars, which is significantly greater than the other executives' of 1.28 million dollars. The average pay rank (Pay_rank) of the CEO successors is also significantly greater (1 being the highest paid) at 2.27, whereas the other executives' is 4.57. Salary, Bonus and Equity are also larger for the CEO successors with a mean of 462.38, 368.93 and 1,933.79, respectively (compared to 318.19, 208.03 and 748.89 for other executives). On average 78% of CEO-successors were executive directors in the firm (*ExecDir*). The mean tenure of CEO

⁵ We also ran a similar model for COOs, however the model is insignificant. We believe this may be due to the fact that the COO's role is diverse and different among firms, hence no relation is found between firm characteristics and the likelihood of choosing the COO as the next CEO. We plan to re-run this test for COOs when we collect more data.

successors is 10.70 and for other executives it is 9.70, which is not statistically different. Age is also not different between the two groups (a mean of 50.50 for other executives and 50.41 for CEO successors). Last, a greater proportion of CEO successors were hired within two years of the CEO turnover event (*Successor*) (mean of 21% compared to 17% for other executives).

Table 3 shows the correlation matrix.

{Table 3 about here}

4.2 Preliminary findings from estimating model (1)

Table 4 presents the main findings of estimating model (1) which examines the probability of being chosen as CEO in $t+1$.

{Table 4 about here}

Column (1) reports results for the pooled sample of executives. Of the included determinants, being COO increases the chances of being chosen as the next CEO (1.77, $x < 0.01$). Interestingly, being CFO decreases the likelihood of being chosen as the next CEO (-0.52, $x < 0.05$). Pay rank is negative and significant (-0.52, $x < 0.01$) which is expected, meaning the greater an executive is paid compared to the other non-CEO executives (e.g. rank 1) then the more likely he is chosen as the next CEO. This finding is consistent with prior research which finds that the highest paid executives are more likely to become CEO (Bognanno 2001). Interestingly, the greater the percentage of firm shares held by an executive (*SharesPCT*), the less likely they are to be chosen as CEO (-0.38, $x < 0.01$). Executives that are also a director in the firm are more likely to be chosen as CEO (2.27, $x < 0.01$) which is consistent with prior studies that document a positive relation between executive directors and talent/leadership skills (Hermalin and Weishbach 1988). Age is negative and significant (-0.04, $x < 0.01$) which is consistent with horizon concerns of firms. For example, the older the executive the higher the probability that he is considering retirement in the near future

which may present additional agency concerns. Last, succession is positive and significant (0.56, $x < 0.05$) which suggests that firms may be hiring external candidates for the CEO position prior to the current CEO actually retiring.

Columns (2) and (3) repeat column (1) on pre- and post-SOX subsamples. Column (1) reports results on the subsample prior to 2002 and column (3) reports results for the post-SOX subsample (year greater than or equal to 2002). Looking across all columns, the results do not differ from the main findings in column (1) apart from the CFO indicator variable in the post-SOX period (column 3), which is now insignificant.

4.3 Preliminary findings from estimating model (2)

Table 5 presents the main findings of estimating model (2) which examines the probability of the CFO being chosen as the CEO in $t+1$.

{Table 5 about here}

Model (2) is a firm-level analysis which reduces the sample to 539 firm-year observations for which we have the required data. Of the included determinants only *lnSale* and *PostSOX* are significant. *LnSale* is negative ($x < 0.01$) which suggests that larger more complex firms are unlikely to choose their CFO as the next CEO. These firms perhaps rely more on the COO who works closely with CEOs in a large majority of firms (Marcel 2009), alternatively they may have a much larger pool of executives from which to choose a CEO successor. While we included a control for the number of executives reported (*TotalExecsRpt*), firms are only required to disclose their top 5 executives and thus we cannot accurately identify firms with larger executive teams. *PostSOX* is positive (17.78, $x < 0.05$) which indicates that following the introduction of SOX in 2002, firms were more likely to choose their CFOs as their next CEO.

5. ADDITIONAL TESTS

There are a number of additional analyses we would like to conduct as we collect more data. First, we would like to investigate whether the former position of the current CEO affects firms' choice as to who they appoint as the succeeding CEO. For example, if the current CEO had previously held a CFO position, then perhaps the firm is more likely to appoint a CFO as the next CEO (rather than another executive). Second, we would like to investigate if governance factors impact firms' decision as to who they appoint as CEO from the internal candidates. Though governance factors are endogenous (Armstrong *et al.* 2010; Linck *et al.* 2008; Hermalin and Weisbach 2003), some characteristics may impact the CEO succession decision (such as large institutional or governance ownership which may favour CEOs with CFO experience). Third, we would like to examine if forced CEO departure or CEO retirement affects the choice of which internal candidate becomes the next CEO. Finally, we would like to examine firm performance after the appointment to CEO position, as well as examine the firm characteristics for the subsample of firms that appointed a CEO from the executive pool below the top five.

6.0 CONCLUSION

This paper investigates who of the top five executives are more likely to be appointed to the CEO position when the board of directors decides to appoint internally. We argue that the board of directors have a preference to appoint an executive with financial expertise and with broad knowledge of the firm's financing and operating activities. i.e., the CFO. Alternatively, we argue that the board appoints the CEO's successor to the position of COO and grooms the COO to become the next CEO by having him share the various responsibilities of the CEO. We also examine whether this decision changes after the passage of SOX in 2002.

We find a negative association between being CFO and the likelihood of being appointed to the CEO position. This is inconsistent with our hypothesis. However, our results show a positive association between the passage of SOX and the likelihood that a CFO becomes the next CEO. This is consistent with the view that the passage of SOX, has increased the demand for accounting expertise when choosing a new CEO. In particular, SOX requires that CEOs personally acknowledge that the annual reports are accurate and complete which entails that CEOs have accounting expertise when fulfilling their duties. These findings extend prior findings on penalties placed after the passage of SOX (e.g., Desai *et al.* 2006; Collins *et al.* 2008; Li *et al.* 2010; Hennes *et al.* 2008; Mergenthaler *et al.* 2011) by documenting evidence on the career prospects of the CFO after the passage of SOX.

In terms on the evidence on COO, our results show a positive association between being a COO and the likelihood of being appointed to the CEO position. This is consistent with the view that the reason firms appoint a COO is to groom the COO in anticipation of the existing CEO's departure. Our findings, however, are limited as we are unable to explain why this is the case and is an area for future research. Our model on the factors influencing the choice of the COO as the next CFO is weak (not tabled). There is currently little academic research regarding the role of the COO and why they are appointed in that position. The fact that anecdotal evidence suggest that the role of the COO varies across firms and across time (Bennett and Miles 2006) represents a challenge to future research in this area.

References

- Agrawal, A., C. Knoeber and T. Tsoulouhas. 2000. CEO succession: Insiders versus outsiders. *Working Paper*.
- Aiers, J., J. Comprix, M. Gunlock and D. Lee. 2005. The financial expertise of the CFOs and accounting restatements. *Accounting Horizon* 19(3): 123-135.
- Armstrong, C. S., W. R. Guay, and J. P. Weber. 2010. The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting and Economics* 50 (2-3):179-234.
- Bennet, N., and Miles, S. A. 2006. Second in command: the misunderstood role of the Chief Operating Officer. *Harvard Business Review* 84(5):70-8, 154.
- Beneish, M., M. Billings and L. Hodder. 2008. Internal control weaknesses and information uncertainty. *The Accounting Review* 74: 425-457
- Breaugh, J. 2011. Modeling the managerial promotion process. *Journal of Management Psychology* 26 (4): 264-277.
- Bugeja, M., Z. P. Matolcsy, and H. Spiropoulos. 2012. Is there a gender gap in CEO compensation? *Journal of Corporate Finance* 18 (4):849-859.
- Collins, D., A. L. Reitenga, and J. M. Sanchez. 2008. The impact of accounting restatements on CFO turnover and bonus compensation: Does securities litigation matter? *Advances in Accounting* 24: 162-71.
- Dechow, P., R. Sloan and A. Sweeney. 1996. Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research* 13: 1-36.
- Desai, H., C. Hogan and M. Wilkins. 2006. The reputational penalty for aggressive accounting: Earnings restatements and management turnover. *The Accounting Review* 81 (1): 83-112.
- Francis, J., R. LaFond, P. Olsson and K. Schipper. 2004. Cost of equity and earnings attributes. *The Accounting Review* 79: 967-1010.
- Francis, J., R. LaFond, P. Olsson and K. Schipper. 2005. The market pricing of accruals quality. *Journal of Accounting and Economics* 39: 295-327.
- Harris, K.J., K.M. Kacmar and D. W. Carlson. 2006. An examination of temporal variables and relationship quality on promotability ratings. *Group & Organization Management* 31: 677-699.
- Hennes, K., A. Leone and B. Miller. 2008. The importance of distinguishing errors from irregularities in restatements research: The case of restatements and CEO/CFO turnover. *The Accounting Review* 83 (6): 1487-1519.
- Hermalin, B. E., and M. S. Weisbach. 2003. Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature. *Economic Policy Review (19320426)* 9 (1):7.
- Hribar, P., and N. Jenkins. 2004. The effect of accounting restatements on earnings revisions and the estimated cost of capital. *Review of Accounting Studies* 9: 337-356
- Indjejikian, R., and M. Matejka. 2009. CFO fiduciary responsibilities and annual bonus incentives. *Journal of Accounting Research* 47: 1061-93.

- Li, C., Sun, L. and Ettredge, M. 2010. Financial executive qualifications, financial executive turnover and adverse SOX 404 opinions. *Journal of Accounting and Economics*. 50: 93-110.
- Linck, J. S., J. M. Netter, and T. Yang. 2008. The determinants of board structure. *Journal of Financial Economics* 87 (2):308-328.
- Marcel, J. J. 2009. Why Top Management Team Characteristics Matter When Employing a Chief Operating Officer: A Strategic Contingency Perspective. *Strategic Management Journal*. 30: 647-658.
- Mian, S. 2001. On the choice and replacement of chief financial officers. *Journal of Financial Economics*. 60: 143-175.
- Morck, R., A. Shleifer and R. Vishny. 1990. Do managerial objectives drive bad acquisitions. *The Journal of Finance* xlv: 31-48.
- Murphy, K., and J. Zabochnik. 2004. CEO pay and appointments: A market-based explanation for recent trends. *American Economic Review* 94(2): 192-196.
- Palmrose, Z., and S. Scholz. 2004. The circumstances and legal consequences of non-GAAP reporting: Evidence from restatements. *Contemporary Accounting Research* 21: 139-180.
- Parrino, R. 1997. CEO turnover and outside succession: A cross-sectional analysis. *Journal of Financial Economics* 46: 165-197.
- Wang, X. 2010. Increased disclosure requirements and corporate governance decisions: Evidence from chief financial officers in the pre- and post-Sarbanes–Oxley periods. *Journal of Accounting Research* 48: 885–920.
- Warner, J. 2014. Fact Sheet: the Women's Leadership Gap. Center for American Progress. Available at: <https://www.americanprogress.org/issues/women/report/2014/03/07/85457/fact-sheet-the-womens-leadership-gap/>
- Warner, J., R. Watts and K. Wruck. 1988. Stock prices and management changes. *Journal of Financial Economics* 20:
- Weisbach, M. 1988. Outside directors and CEO turnover. *Journal of Financial Economics* 20:431-460

Table 1: Total Sample Breakdown**Panel A: By Year**

	Non-CEO Executives	Firm-years
1992	219	37
1993	174	30
1994	186	35
1995	153	29
1996	163	31
1997	209	35
1998	252	44
1999	296	48
2000	252	45
2001	255	40
2002	222	38
2003	241	42
2004	280	55
2005	140	33
2006	204	36
2007	204	39
2008	144	25
2009	104	20
2010	66	16
2011	56	12
2012	24	4
Total	3,844	694

Panel B: By Industry (2-digit GICS)

	Non-CEO Executives	Firm-years
Energy	246	44
Materials	251	44
Industrials	487	92
Consumer Discretionary	804	147
Consumer Staples	207	37
Health Care	398	78
Financials	452	80
I.T.	722	123
Telecommunications	23	4
Utilities	254	45
Total	3,844	694

Panel C: CEO Appointments by Executive Title

CFO	COO	Other/Non-specified
37	287	370

Table 2: Pearson Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Female		-0.04	-0.01	-0.04	-0.07	0.12	-0.09	-0.04	-0.03	-0.03	0.11	-0.03	-0.11	-0.07	-0.13	0.03
(1)	(0.00)	(0.52)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.03)	(0.04)	(0.00)	(0.07)	(0.00)	(0.00)	(0.00)	(0.11)
COO			-0.11	0.06	0.15	-0.23	0.09	0.06	0.05	0.13	-0.14	-0.01	0.25	-0.02	-0.07	0.01
(2)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	0.46	(0.00)	0.26	(0.00)	(0.69)
CFO				-0.03	0.01	0.00	-0.07	-0.05	-0.02	0.08	0.00	-0.05	-0.15	-0.12	-0.12	0.02
(3)			(0.02)	(0.43)	(0.83)	(0.00)	(0.00)	(0.11)	(0.00)	(0.88)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.22)
Totalcomp					0.59	-0.28	0.43	0.37	0.98	0.42	-0.20	0.01	0.22	0.08	0.07	0.00
(4)				(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.60)	(0.00)	(0.00)	(0.00)	(0.82)
lnTotalcomp						-0.51	0.68	0.42	0.52	0.72	-0.37	-0.01	0.34	0.16	0.15	-0.10
(5)					(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.57)	(0.00)	(0.00)	(0.00)	(0.00)
Pay_rank							-0.44	-0.21	-0.24	-0.46	0.76	-0.11	-0.56	-0.20	-0.28	0.12
(6)						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Salary								0.41	0.32	0.36	-0.40	0.07	0.45	0.31	0.35	-0.18
(7)							(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Bonus									0.20	0.13	-0.18	0.03	0.22	0.15	0.15	-0.03
(8)								(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)	(0.09)
Equity										0.40	-0.16	0.00	0.17	0.04	0.03	0.01
(9)									(0.00)	(0.00)	(0.87)	(0.00)	0.02	(0.14)	(0.46)	
lnEquity											-0.33	-0.06	0.21	0.06	0.04	-0.05

(10)	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)
Share_rank		-0.20	-0.56	-0.31	-0.36	0.23
(11)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
SharePCT			0.21	0.17	0.13	-0.07
(12)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ExecDir				0.31	0.35	-0.14
(13)				(0.00)	(0.00)	(0.00)
Tenure					0.43	-0.44
(14)					(0.00)	(0.00)
Age						-0.16
(15)						(0.00)
Succession						
(16)						

Probability values are in parenthesis. Female is an indicator variable equal to 1 if the executive is female, 0 otherwise. COO is an indicator variable equal to 1 if the executive is the Chief Operating Officer of the company. CFO is an indicator variable equal to 1 if the executive is the Chief Financial Officer of the company. Totalcomp is the sum of salary, bonus, options and restricted stock granted to the executive during the fiscal year (in thousands). lnTotalcomp is the natural logarithm of 1 plus Totalcomp. Pay_rank is the executive's rank based on Totalcomp. Salary is the salary granted to the executive during the fiscal year (in thousands). Bonus is the bonus awarded to the executive during the fiscal year (in thousands). Equity is the sum of options and restricted stock granted to the executive for the fiscal year (in thousands). lnEquity is the natural logarithm of 1 plus Equity. Shares_rank is the executive's rank based on the number of shares held in the company. SharesPCT is the percentage of company shares held by the executive. ExecDir is an indicator variable equal to 1 if the executive is also a director. Tenure is the number of years of service of the executive. Age is the executive's age. Succession is an indicator variable equal to 1 if the executive was hire during the two years prior to CEO turnover.

Table 3: Comparison of non-CEO executives and CEO successors

Variable	Non-CEO Executives					Executives chosen as next year's CEO					Test of Difference	
	Min	Max	Mean	Median	Std Dev	Min	Max	Mean	Median	Std Dev	Mean	Median
Female	0.00	1.00	0.07	0.00	0.26	0.00	1.00	0.03	0.00	0.16	-3.99***	-3.99***
COO	0.00	1.00	0.05	0.00	0.22	0.00	1.00	0.51	1.00	0.50	31.89***	31.89***
CFO	0.00	1.00	0.16	0.00	0.37	0.00	1.00	0.07	0.00	0.25	-5.38***	-5.38 ***
Totalcomp	0.00	106,765.90	1,275.11	624.11	3,130.84	0.00	80,857.58	2,754.77	1,472.24	5,649.73	14.40***	11.56***
lnTotalcomp	0.00	11.58	6.50	6.44	1.08	0.00	11.30	7.27	7.30	1.13	14.39***	11.56***
Pay_rank	1.00	14.00	4.57	4.00	1.91	1.00	11.00	2.27	2.00	1.34	-25.92***	-22.39***
Salary	0.00	2,500.00	318.19	280.14	183.79	0.00	1,725.00	462.38	415.39	243.32	14.16***	11.61***
Bonus	0.00	9,500.00	208.03	100.00	383.15	0.00	11,008.22	368.93	181.90	683.20	5.48***	5.68***
Equity	0.00	105,853.78	748.89	132.95	2,989.35	0.00	79,180.39	1,933.79	651.07	5,426.79	12.23***	9.85***
lnEquity	0.00	11.57	3.84	4.90	3.11	0.00	11.28	5.55	6.48	2.94	12.23***	9.85***
Shares_rank	1.00	14.00	4.45	4.00	2.02	1.00	11.00	3.09	3.00	1.39	-15.52***	-15.47***
SharesPCT	0.00	39.32	0.23	0.01	1.58	0.00	12.41	0.22	0.04	0.84	11.66***	9.57***
ExecDir	0.00	1.00	0.13	0.00	0.34	0.00	1.00	0.78	1.00	0.42	32.53***	32.53***
Tenure	0.00	56.00	9.70	7.00	9.60	0.00	49.00	10.70	7.00	10.24	1.48	1.11
Age	31.00	86.00	50.50	50.00	7.64	34.00	72.00	50.41	51.00	5.88	-0.11	0.70***
Succession	0.00	1.00	0.17	0.00	0.38	0.00	1.00	0.21	0.00	0.41	1.74*	1.74*

Table 3: Comparison of non-CEO executives and CEO successors

Variable	Non-CEO Executives					Executives chosen as next year's CEO					Test of Difference	
	Min	Max	Mean	Median	Std Dev	Min	Max	Mean	Median	Std Dev	Mean	Median
<p>Female is an indicator variable equal to 1 if the executive is female, 0 otherwise. COO is an indicator variable equal to 1 if the executive is the Chief Operating Officer of the company. CFO is an indicator variable equal to 1 if the executive is the Chief Financial Officer of the company. Totalcomp is the sum of salary, bonus, options and restricted stock granted to the executive during the fiscal year (in thousands). lnTotalcomp is the natural logarithm of 1 plus Totalcomp. Pay_rank is the executive's rank based on Totalcomp. Salary is the salary granted to the executive during the fiscal year (in thousands). Bonus is the bonus awarded to the executive during the fiscal year (in thousands). Equity is the sum of options and restricted stock granted to the executive for the fiscal year (in thousands). lnEquity is the natural logarithm of 1 plus Equity. Shares_rank is the executive's rank based on the number of shares held in the company. SharesPCT is the percentage of company shares held by the executive. ExecDir is an indicator variable equal to 1 if the executive is also a director. Tenure is the number of years of service of the executive. Age is the executive's age. Succession is an indicator variable equal to 1 if the executive was hire during the two years prior to CEO turnover.</p>												

Table 4: Logistic regression of becoming the next CEO

Parameter	Pred.Sign	(1)	(2)	(3)
Intercept	?	0.89 (2.10)	0.53 (0.34)	1.22 (2.17)
Female	-	-0.62 (2.58)	-1.05 (2.32)	-0.43 (0.83)
COO	+	1.77*** (110.28)	1.98*** (58.07)	1.65*** (51.80)
CFO	+	-0.52** (5.11)	-0.91** (4.46)	-0.36 (1.71)
Pay_rank	-	-0.52*** (75.36)	-0.46*** (22.58)	-0.58*** (54.10)
SharesPCT	?	-0.38*** (8.05)	-0.28* (3.66)	-0.57** (6.46)
ExecDir	+	2.27*** (180.28)	1.95*** (39.92)	2.56*** (142.00)
Tenure	?	0.00 (0.08)	0.01 (0.31)	0.01 (0.31)
Age	-	-0.04*** (12.67)	-0.04** (4.30)	-0.05*** (9.02)
Succession	+	0.56** (5.70)	0.51 (1.97)	0.68* (4.85)
Likelihood Ratio		1114.33***	440.30***	649.79***
N		2,351	805	1,546

Wald Chi-Square in parenthesis. ***, **, * indicates significance at the 0.01, 0.05, and 0.10 level respectively. Female is an indicator variable equal to 1 if the executive is female, 0 otherwise. COO is an indicator variable equal to 1 if the executive is the Chief Operating Officer of the company. CFO is an indicator variable equal to 1 if the executive is the Chief Financial Officer of the company. Pay_rank is the executive's rank based on Totalcomp. SharesPCT is the percentage of company shares held by the executive. ExecDir is an indicator variable equal to 1 if the executive is also a director. Tenure is the number of years of service of the executive. Age is the executive's age. Succession is an indicator variable equal to 1 if the executive was hire during the two years prior to CEO turnover.

Table 5: Logistic Regression of the CFO becoming the next CEO

Parameter	Pred.Sign	Coefficient
Intercept	?	-0.28 (0.08)
Growth	?	-0.01 (0.00)
ROA	-	0.25 (0.05)
RET	-	-0.10 (0.48)
LnSale	-	-0.29*** (6.70)
Debttoequity	+	-0.01 (0.07)
TotalExecsRpt	-	-0.12 (0.83)
Regulated	+	0.14 (0.05)
Financials	+	0.00 (0.00)
PostSOX	+	0.79** (0.05)
Likelihood Ratio		17.78**
N		539

Wald Chi-Square in parenthesis. ***, **, * indicates significance at the 0.01, 0.05, and 0.10 level respectively. Growth is the increase in market value of the company from t-1 to t. ROA is the return on assets measured as EBIT/average total assets. RET is the annual buy and hold stock return adjusted for dividends and stock splits. LnSale is the natural logarithm of a firm's net sales. Debttoequity is average total liabilities divided by average common equity. Regulated is an indicator variable equal to 1 if the firm operates in a regulated industry (SIC 40, 41, 46, 47, 48, 49). Financials is an indicator variable equal to 1 if the firm operates in the financial sector (GICS 40). PostSOX is an indicator variable equal to one if the year is greater than or equal to 2002, and zero otherwise.