Finance and Economics Discussion Series
Divisions of Research & Statistics and Monetary Affairs
Federal Reserve Board, Washington, D.C.

CEO Successions and Firm Performance in the US Financial Industry

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2012-79

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November 2012

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Abstract

This paper examines the labor market for CEOs in the financial sector from 1988 to 2007, using a new hand-collected sample of 1,655 CEO successions. We document that there is a significant role of outside successions, as about one out of two successions involves an outside hire. In addition, using difference-in-differences estimates, we study the link between the labor market for finance CEOs and firm performance. We document that (1) there is a large performance gap between inside and outside successions, as outside successions are followed by significantly larger improvements in firm performance; (2) the performance gap between outside and inside successions is larger for firms with an insider dominated board of directors; (3) the performance gap widened after an important deregulation event (the 1999 Gramm-Leach-Bliley Act). These results are robust to using a battery of firm performance measures (short-run and long-run stock market returns, and several long-run operating performance measures) and a matched sample approach to address selection issues. Overall, our findings suggest that managerial human capital is very valuable in the financial industry, and weak internal governance hurts firm performance by limiting the scope of labor market competition.

1 Introduction

Internal governance mechanisms and managerial labor market in the US financial industry have recently received considerable attention in the wake of highly publicized CEO successions at the top financial institutions in the US such as Bank of America, Citigroup, and Wells Fargo. In addition, the debate on the causes and cures of the 2007 financial crisis has highlighted the key economic role played by top corporate managers at financial institutions and generated a great deal of interest in the consequences of CEO successions for financial firm performance. However, while recent work has started to study the role of skill differentials for non-executive employees (see Philippon and Reshef (2008)), there is surprisingly little evidence on the role of an arguably important input, human capital at the top of the executive ladder in the US financial industry.[1]

In order to fill this gap in the literature, we examine the labor market for CEOs in a new hand-collected sample of 1,655 CEO successions in the US financial sector from 1988 to 2007. In particular, we examine whether CEO succession decisions matter for firm performance. This question has implications for three broad issues. First, evidence for non-financial firms points to higher incidence of outside successions, which suggests that the importance of the external labor market for CEOs has increased over the last two decades. As confirmed by the evidence in Philippon and Reshef (2008), financial firms are relatively more complex and require specialized skills, which makes the question of the value of human capital at the top likely to be important. Second, a key challenge facing corporate boards of financial institutions is to identify and attract

[1] ALthough there is an extensive literature on CEO turnover, the literature is focused on relatively large industrial firms (Forbes, S&P 1500), with very limited coverage of financials.

superior replacement managers. Evidence on whether or not boards actually do so is necessary to address the effectiveness of internal monitoring. Finally, recent policy interventions have imposed heavy constraints on the ability of large financial institutions, such as, for example, Bank of America, to tap the external labor market for CEOs. Thus, it is important to document evidence on whether or not these constraints are likely to hurt financial firm performance.

Our sample consists of 1,655 nontakeover-related CEO successions in the US financial sector over the period 1988 to 2007. An important advantage is that we hand-collected our CEO succession data for the universe of US public financial firms reporting annual filings (Proxy or 10-K) with the Securities and Exchange Commission (SEC). Thus, we are able to offer a comprehensive picture of the CEO labor market in the US financial industry, which is in contrast to previous studies that focus on relative large (and mostly industrial) public firms in the S&P 500 or S&P1500 and, thus, include only a handful of the very largest US financial firms.

Our first set of findings is about the short-term and long-term stock market reaction to the announcement of CEO succession decisions. We find that investors expect outside CEOs in the financial industry to significantly outperform insiders, as both short-term announcement returns and average abnormal returns for the three-year post-succession period are significantly higher for outside CEO successions. In addition, we find evidence consistent with both a governance and a human-capital explanation of this finding. In particular, the return differential is higher for firms with insider-dominated boards of directors (defined as firms whose boards have 40 percent or more inside directors). This result is consistent with the hypothesis that insider-dominated boards of directors are expected to hurt firm performance by limiting the scope of

labor market competition and hiring 'bad' CEOs from inside the firm. In addition, we find that the return differential widens after deregulation in 1999 (Gramm-Leach-Bliley Act) that removed barriers separating traditional banking, insurance, and securities underwriting and thereby increased complexity of bank operations. This result suggests that there is a "skill-biased" effect of deregulation, in the sense that the increased complexity of financial firms led to a bigger return differential between inside and outside successions.

A well-known issue with event-study results is that their interpretation is difficult, since a management change may signal that firm performance is worse than expected, that firm performance will improve as a result of the management change, or that the firm is "in play" as a takeover target. Moreover, top management changes are likely to be partially anticipated due to the poor pre-turnover firm performance. Thus, in order to provide a more convincing assessment of the effect of CEO succession decisions on firm performance, we examine changes in several measures of firm performance (operating return on assets, operating returns on sales, and Tobin's Q) around management changes. We find that, on average, there is a significant performance gap between inside and outside successions. This overall result masks considerable differences between firms with different internal governance structures, as, again, the gap is larger for firms with insider-dominated boards. Moreover, the gap in operating performance widens after 1999. Finally, the gap remains significant even after 2003, suggesting that it is unlikely to be driven by outsiders taking in the expansion stage of the credit cycle aggressive risks that later materializd during the financial crisis.[2]

Although our results on changes in operating performance are akin to difference-in-differences,

[2]We thanks Steve Sharpe for suggesting this additional test.

in that we can estimate CEO impact in a setting that explicitly controls for time-invariant differences in firm characteristics that may affect performance (see Perez-Gonzalez (2006) for a similar approach in the context of family successions), there is an important selection issue we have to address. In fact, inside successions involve both observable differences in firm characteristics, which might by time-varying, and unobservable differences, making a direct comparison between inside and outside successions problematic. Ideally, we would like to compare the change in performance of an inside appointment firm to the same firm's performance change had the firm appointed an outside CEO. Since the counterfactual is not observed, we must find an empirical proxy for the hypothetical performance without succession type change. As our main identification strategy, we construct a nearest-neighbor matching estimator, following Abadie and Imbens (2007). We estimate a logit regression to identify observable firm characteristics that predict inside successions. We then match each inside CEO succession to the outside succession that, at the time of the succession, had the closest predicted probability of being an inside succession, or propensity score (Rosenbaum and Rubin 1983). CEO successions are a natural application for matching since the succession decisions are made by corporate boards who, like the econometrician, have to rely mostly on public information to assess outside CEO quality. Our results for performance changes around CEO successions relative to the matched control sample largely confirm and are somewhat stronger than our baseline results.

To the best of our knowledge, our paper offers the first direct large sample evidence on the labor market for CEOs in the US financial industry. Our evidence broadly suggests that financial CEO selection decisions matter. Our results stand in sharp contrast to previous studies that focus on non-financials and tend to find mixed and at best weak evidence of performance

differentials between insiders and outsiders. The strong performance gap between inside and outside successions suggests the external labor market for CEOs has a special role in the US financial industry. This finding has two main implications for the literature.

First, our finding that differences among CEO successions are important for financial firms, especially after the 1999 deregulation, is consistent with the evidence for non-executive employees in Philippon and Reshef (2008), and supports the notion that the financial industry is relatively complex and skill-intensive. In addition, our evidence furthers the understanding of the role of the external labor market for CEOs. Existing work is limited to mostly non-financial firms (e.g. Warner, Watts, and Wruck (1988), Parrino (1997), and Huson, Parrino, and Starks (2001)). Our evidence shows that the external market for CEOs is an important source of value for financial firms. Given both the broad set of new variables we examine and the large cross-section of firms we include in our hand-collected dataset, our investigation represents to best of our knowledge the first large-sample study of the impact of the external labor market for CEOs on financial firm performance.

Our study is also complementary to the small but growing literature that attempts to identify the effect of CEOs on firm performance. Bertrand and Schoar (2003), Bennedsen, Perez-Gonzalez, and Wolfenzon (2006), and Bennedsen, Nielsen, Perez-Gonzalez, and Wolfenzon (2007) present evidence that CEOs matter for firm performance. However, the link between CEOs and firm performance in the financial industry has been surprisingly overlooked. Thus, our paper is the first to show that financial CEOs matter.

Second, our finding that the performance gap between inside and outside succession is larger for firms with insider-dominated boards has important implications for the recent governance

debate and the standard criticism of board of directors for not doing a good job at monitoring CEOs (see, for example, Bebchuk and Fried (2003)). Our evidence is complementary to the basic premise of this argument, and suggests that identifying and attracting superior CEO replacements is indeed an important, although often overlooked, function of boards of directors.

The remainder of the paper is organized as follows. In Section 2 , we discuss our sample selection procedure and describe our samples of CEO successions in the US financial industry. In Section 3, we present event-study results documenting announcement-period and long-term abnormal returns associated with our sample management changes. In Section 4, we document changes in accounting performance measures around management changes. Section 5 concludes.

2 Data

To explore the link between CEO successions and firm performance in the US financial industry, we construct a database of the finance CEO labor market that contains detailed information on CEO turnovers, as well as multiple empirical proxies for firm performance. This section details how we constructed the dataset and the collection process for each of our variables.

2.1 Sample selection

We hand-collected our CEO succession data for the universe of US public financial firms reporting annual filings (Proxy or 10-K) with the Securities and Exchange Commission (SEC) for the 1988 to 2007 period. To construct our sample, we start with the universe of all Compustat financial firms (SIC codes between 6000 and 6999) in existence during the years 1986 to 2007.

This is a sample of 31,583 firm-year observations. Next, for every firm-year observation in the Compustat financials universe, we match the observation to its respective Proxy or 10-K SEC filing that generates the Compustat data. Using these matches, we employ a text-search algorithm to search the filings for the full name and basic biographical characteristics of the CEO in office. We cross-check the results of our algorithm for accuracy with information from the same filings in Compact Disclosures. We recognize a CEO turnover for each year in which the CEO name changes (earlier studies for industrial firms, such as Parrino (1997), Huson, Parrino, and Stark (2001), Huson, Malatesta, and Parrino (2004), use Forbes surveys; Jenter and Kanaan (2006) use ExecuComp which only includes S&P 1500 firms). This gives us a first sample of 1,995 candidate CEO succession events. We then search the Factiva news database in order to collect information about the circumstances around each succession. We exclude 340 successions that are directly related to a takeover. The final sample contains 1,655 CEO succession events. Our sample is broadly representative of the US financial universe in Compustat: about 40 percent of our successions involve bank holding companies (BHC), about 25 percent are commercial banks, about 15 percent are insurance companies, and about 5 percent are broker dealers.

We classify each CEO turnover according to whether it was forced or voluntary and whether the incoming CEO is an insider or an outsider to the firm, following standard criteria in the literature (Parrino (1997), Huson, Malatesta, and Parrino (2004)). We classify successor CEOs who had been with their firms for one year or less at the time of their appointments as outsiders. All other new CEOs are classified as insiders. Finally, for each succession we determine exact announcement dates - which are the earliest dates of the news about incumbent CEO departure

and successor CEO appointment. Departures for which the press reports state that the CEO has been fired, forced out, or retired or resigned due to policy differences or pressure, are classified as forced. All other departures for CEOs above and including age 60 are classified as not forced. All departures for CEOs below age 60 are reviewed further and classified as forced if either the article does not report the reason as death, poor health, or the acceptance of another position (including the chairmanship of the board), or the article reports that the CEO is retiring, but does not announce the retirement at least six months before the succession.[3] This careful classification scheme is necessary since CEOs are rarely openly fired from their positions.

Table 1 presents an overview of our CEO succession data set for the US financial industry with descriptive statistics on total CEO successions, and successor type (inside vs. outside) for each year (Panel A) and for two sub-periods (first and second half of the sample) covered by our sample (Panel B). We are able to give a significantly more comprehensive picture of the CEO labor market in the US financial industry than previous studies since our sample includes a more detailed collection and considerably larger cross-section of firms (Compustat universe) than S&P500, S&P 1500, or Forbes sub-samples, which have been the standard focus of the literature on industrial firms.[4] Our statistics confirm results for non-financials suggesting that the nature of the CEO labor market has changed significantly in the last two decades with respect to the 1970s and 1980s. The likelihood that the new CEO comes from outside the firm

[3]The cases classified as forced can be reclassified as voluntary if the press reports convincingly explain the departure as due to previously undisclosed personal or business reasons that are unrelated to the firm's activities.

[4]Studies covering earlier periods use Forbes Compensation Surveys, which roughly include S&P 500 and S&P MidCap 400 firms. Denis and Denis (1995) covers a sample of 908 CEO successions between 1985 and 1988. Huson, Parrino, and Starks (2001) and Huson, Malatesta, and Parrino (2004) have 1,316 and 1,344 CEO successions, respectively, between 1971 and 1994. Murphy and Zabojnik (2007) have 2,783 appointments between 1970 and 2005, which is a larger, but less detailed dataset than ours.

are much higher than what it had been documented in previous decades.

Both Panels in Table 1 show that, as it has been documented for non-financial firms, the financial industry was also subject to an important recent trend in the CEO labor market: there is an increased prevalence of filling CEO openings through external hires rather than through internal promotions, suggesting that there has been a material change in the CEO selection process in the 1990s. About fifty percent of the departing CEOs in the last two decades are replaced by executives who have been employed at the firm for one year or less. This frequency of outside appointments is about in line with recent studies of industrial firms, although somewhat higher. In fact, studies that focus on non-financials have figure that range between 35 and 40 percent. This difference is due not only to possible differences between financials and non-financials, but also to the fact that the samples typically used in previous studies only includes relatively larger firms, which tend to rely more on inside hires. Finally, these figures are striking if contrasted against earlier decades. For example, Murphy and Zabojnik (2007) and Huson, Parrino, and Starks (2001) report that during the 1970s and 1980s outside hires accounted for only 15% to 17% of all CEO replacements, only half as large as our figures since 1998.

2.2 Firm Performance and Firm-Level Controls

We supplement our data with several measures of firm stock market and operating performance, as well as a variety of firm-level controls whose importance in the CEO labor market has been documented in the literature. All measures are at calendar year-end.

Our stock market-based measure of performance is based on stock returns from CRSP

(Parrino (1997), Warner, Watts, and Wruck (1988), and Huson, Parrino, and Starks (2001)). We use three measures of firm operating performance from Compustat: (1) operating return on assets (OROA), defined as the ratio of operating income to the book value of assets (2) return on assets (ROA), defined as the ratio of net income to the book value of assets; (3) operating return on sales (OROS), defined as the ratio of operating income to sales. For each of these measures, we define its industry-adjusted counterpart by subtracting the median of the relevant industry (2-digit SIC) and year, and its industry and performance-adjusted counterpart by subtracting the median of the relevant variable of a control group of firms with similar industry-adjusted performance. The control groups are created by dividing COMPUSTAT firms into deciles sorted by the relevant variable (e.g. industry-adjusted OROA) the year prior to transition. The yearly median of the relevant group of firms (ex-event) is then used as the control for each firm-year observation (see Barber and Lyon (1996) for more details on the construction of the performance-adjusted variables).

Our main set of controls includes firm size (logarithm of total assets), and CEO age. The role of firm size in the CEO labor market is an important implication of competitive models such as ours (see Gabaix and Landier (2008) and Tervio (2007)). Previous research suggests that CEO pay and turnover rates are a function of CEO age (see, for example, Milbourn (2003) and Chevalier and Ellison (1999)'s study of the sensitivity of mutual funds manager turnover to performance).

Finally, we include in our data set several measures of firm internal governance. In particular, we include the size and independence of the board of directors (see Weisbach (1988) and Kaplan and Minton (2006) for evidence on boards and CEO successions). Our main variable for

board independence is a dummy that takes the value of one if the board is insider-dominated (top quartile of the distribution of board independence in our sample, which correspons to a proportion of insiders of 40 percent or more).

3 Event-Study Results

Our research setting allows us to implement direct tests of the relation between CEO successions and firm performance. In this section, we offer event-study evidence of the impact of CEO succession decisions on performance for firms in the US financial industry.

3.1 Short-Term and Long-Term Event Studies of CEO Succession Decisions

Before moving on to our main analysis, we examine announcement and long-term abnormal stock returns around CEO successions. Investor perception is an informative and intuitive indicator of anticipated future performance conditional on all relevant information (Warner, Watts, and Wruck (1988), Denis and Denis (1995), Huson, Malatesta, and Parrino (2004), Perez-Gonzalez (2006)). Thus, for example, we expect to see positive abnormal returns for outside hires at the time of the hiring announcement, if the market expects them to outperform inside hires. Table 2 shows evidence that indeed investors expect a positive impact of CEOs hired from outside the firm on performance. In particular, we present mean abnormal returns for a two-day event window around CEO succession announcements for all successions, and for successions when management changes are broken down by internal and external successions

(top panel), and by insider-dominated board and post-1999 deregulation period (lower panel).[5]

Column 1 of Table 2 shows that on average CEO successions are associated with a statistically significant (albeit small at 0.8%) abnormal return. The positive average return is in contrast to previous studies that use earlier samples of larger and non-financial firms and tend to find insignificant returns on average (see, for example, Huson, Malatesta, and Parrino (2004)). However, as shown in Column 2 of Table 2, this difference is likely explained by the fact that internal appointments, which constitute a much larger fraction of the total sample in earlier studies, are associated with abnormal returns that are not different from zero. By contrast, investors react positively to appointments of outside CEOs, which constitute a larger fraction of our sample and on average are associated with a significant 1.7% return. Overall, outside successions carry a statistically significant 1.8% excess return with respect to inside successions, consistent with the market's anticipation that outside hires will outperform inside hires. This performance differential is much larger than documented in studies of CEO successions for non-financial firms, which is consistent with the notion that managerial human capital is relatively more valuable in the financial industry (see Philippon and Reshef (2008)), but also with the idea that governance issue might be more severe.

The lower panel of Table 2 explores the merit of two main explanations for the performance gap between insiders and outsides, differences in the value of human capital and internal governance issues. To explore the role of internal governance issues, we ask whether the performance gap is larger among firms with insider-dominated boards (defined as firms where more than 40

[5] Abnormal returns are calculated using the capital asset pricing model (CAPM) and standard event study methodology (see MacKinlay (1997) for a detailed review). We use the market model and CRSP equally-weighted return as the market return to estimate the market model parameters from event day -210 to event day -11.

percent of the members of the board of directors are insiders), which would be consistent with the hypothesis that insider-dominated boards of directors are expected to hurt firm performance by hiring underperforming insiders. Consistent with this hypothesis, we see a somewhat larger 2.1% excess return for outsiders.

Finally, in order to evaluate the hypothesis that differences in the value of human capital are driving the gap between insiders and outsiders, we ask whether the gap widens after deregulation in 1999 (Gramm-Leach-Bliley Act) that increased complexity of bank operations by removing barriers separating traditional banking, insurance, and securities underwriting. Consistent with differences in the value of human capital between insiders and outsiders, the bottom panel of Table 2 shows that outside CEOs' excess returns is higher (2.6%) after 1999.

In summary, our short-term event study shows that investors expect outside CEOs in the financial industry to significantly outperform insiders, and more so for CEO succession decisions made by insider-dominated boards and after 1999., which is consistent with both human capital and governance factors potentially driving the expected performance differential.

3.1.1 Long-Term Event Study

A potential concern with shot-term announcement returns is that, as emphasized by Khurana (2002), an anticipated positive impact of CEOs does not necessarily imply a realized positive impact since investors (and board of directors themselves) might simply irrationally over-react to the appointment of a popular and charismatic CEO and thus lead to a positive stock market reaction that is unrelated to actual CEO performance. In order to partially addresses this over-reaction concern, we consider long-term abnormal returns, which are more likely to capture

subsequent information on the value of CEO human capital that is revealed slowly over time. As it is standard in the literature (see, for example, Huson, Malatesta, and Parrino (2004) and Perez-Gonzalez (2006)), we calculate monthly calendar-time portfolio returns for portfolios that buy shares in firms subject to a CEO transition within the following 36 months, as well as for portfolios invested in firms that underwent a succession in the preceding 36 months. We estimate abnormal returns using the four-factor market-model (see Fama and French (1993); and Jegadeesh and Titman (1993)).

Table 3 reports the resulting average abnormal returns for the three-year pre-succession period (Panel A) and the three-year post-succession period (Panel B).[6] Before CEO transitions, firms tend to earn significant negative abnormal returns, which is in line with the standard finding in the literature that underperforming firms are more likely to replace their CEO. Pre-succession underperformance tends to be more pronounced for outside successions, consistent with another standard result in the literature that firms are more likely to appoint an outsider when they are relatively more underperforming.

Turning to Panel B of Table 3, the portfolio of post-CEO transition firms earned on average statistically significant abnormal returns of about 5%, significant at the five-percent level.

[6] Abnormal returns are estimated using calendar-time portfolio regressions. In each month t, all firms subject to a CEO succession within the next (prior) 36 months are included in that month's pre (post) transition portfolio. Mean portfolio returns, rp_t are used to estimate abnormal returns using the following regression: $(rp_t - rf_t) = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$, where rf_t is the risk-free rate calculated using one-month Treasury-bill rates, $(rm_t - rf_t)$ is the market risk premium, calculated as the difference between the value-weighted return on all NYSE, AMEX, and NASDAQ stocks from CRSP less the risk-free rate, SMB_t is the return difference between portfolios of small stocks and big stocks, HML_t is the return difference between portfolios of high book-to-market stocks and low book-to-market stocks, and UMD_t is the return difference between portfolios of high prior-return stocks and low prior-return stocks. The reported abnormal returns are the intercept (α) estimated from the regression above. The implied one-year abnormal return is calculated as$[(1+\alpha)^{12} - 1]$. Data on the factors were obtained from Ken French's website: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french.

Consistent with our previous finding of a more positive short-term announcement return for outside appointments, portfolios of firms that appoint outside CEOs earn higher abnormal returns after transitions relative to firms that appoint inside CEOs. The performance gap between outsiders and insiders in terms of one-year excess returns is of about 4%. Thus, there is about 4% return premium earned by investors of firms that appoint outside CEOs. Finally, consistent with both governance and human capital factors driving the performance gap, the return premium is larger in the sub-sample of appointments by insider-dominated boards (about 7%) and for appointments made after 1999 (about 7%).

4 Main Results

Overall, both short-term and long-term abnormal returns support the view that outside CEOs are more likely to have a positive impact on firm performance. However, these results are only suggestive and do not establish that there is indeed a positive impact of outside CEOs on firm performance since the results might also be driven by anticipation effects, such as the fact that appointment decisions reveal information related to firms' prospects, irrespective of the value of CEO human capital. Moreover, lower significance might also be driven by the fact that inside transitions were expected and already incorporated into prices. In order to address these concerns, in our main analysis we pursue an alternative strategy based on using changes in operating performance. Thus, our strategy is testing whether there are significant differences in firm performance before and after CEO successions for firms that appoint inside vs. outside CEOs.

The advantage of this approach, which is akin to difference-in-differences, is that we can estimate CEO impact in a setting that explicitly controls for time-invariant differences in firm characteristics that may affect performance (see Perez-Gonzalez (2006) for a similar approach in the context of family successions). We use three different measures of operating performance which are standard in the CEO turnover literature: (1) operating return on assets (OROA), (2) operating return on sales (OROS), and (3) valuation ratios (Tobin's Q), which addresses the concern that, while effective at addressing anticipation issues, one potential limitation of operating performance measures is that they only capture current profitability. We report results for the difference between these measures three years after and one year prior to CEO appointment. We consider industry-adjusted and industry- and prior performance-adjusted versions of the three measures to address potential concerns with the results being driven by industry-wide trends or simply mean-reversion with respect to prior performance.[7]

The results are reported in Table 4, which reports mean differences in firm performance before and after CEO transitions. Consistently across our three different measure of performance, the average difference in performance three-year after CEO successions minus performance one-year before transitions for the entire sample is not statistically different from zero. This result is in line with studies of CEO successions for non-financial firms (see, for example, Huson, Malatesta, and Parrino (2004)). However, again consistently across our three different measure of performance, when we classify firms by succession type (inside vs. outside succession), we

[7]To construct control-group adjusted performance,we follow Barber and Lyon (1996) matching method. In particular, each sample firm is matched to comparison firms with the same two-digit Compustat SIC code whose performance measures over the year before the turnover are within 10% of the sample firm's performance. Each sample firm's performance is adjusted by subtracting the median performance of its control group.Changes over time in adjusted performance are then calculated.

find large differences-in-differences between inside and outside successions. In economic terms, our estimates indicates a gap in performance between insiders and outsiders ranging from 25 to 50 percent of the pre-transition unadjusted level of performance. Finally, consistent with both governance and human capital factors driving the performance gap, the gap is significantly larger in the sub-sample of appointments by insider-dominated boards and for appointments made after 1999.

Firm Decisions and Risk Our finding of a significant positive impact of CEO succession decisions on firm performance opens the intriguing question of what it is exactly that outside CEOs manage to do better than insiders. This question is related to the evidence in Bertrand and Schoar (2003) that there are significant differences in firm policies across CEOs. In addition, the build up of risk in the US financial sector prior to the financial crisis raises another important question: does the positive impact of outside successions on firm performance simply reflect outside CEOs' higher propensity to take risks in the expansion stage of the credit cycle which later materialized into sub-par performance once the financial crisis hit? Thus, we next ask whether succession decisions have explanatory power for changes in firm policies and risk profile around CEO successions.

Table 5 reports results that are aimed at answering this question. In particular, we now use our difference-in-differences strategy to consider a variety of financial, operating, and risk taking firm policies (these firm decisions are analogous to the ones studied in Bertrand and Schoar (2003)). Our results on the impact of CEO talent on firm decisions paint a picture that fits remarkably well anecdotal accounts of outside CEOs as aggressive professional turnaround

specialists. In particular, outside CEOs are more likely to cut leverage, to increase internal financing (cash - not reported), and to generate higher cash flows. In addition, and perhaps surprisingly, outside CEOs do not appear to improve performance by increasing firm risk. In fact, appointments of outside CEOs lead to larger reductions in firm total risk (as measured by total return volatility) compared to appointments of inside CEOs. Finally, confirming our results on the performance gap, differences in firm policies between inside and outside CEOs are more pronounced for appointments by insider-dominated boards and for appointments made after 1999, which lends further support to the idea that both governance and human capital factors are important.

A potential concern with this evidence is that although outside CEOs took more risks, these risks need not necessarily have materialized within three years from their appointments. In order to address this concern, we consider the sub-set of post-1999 appointments starting from 2003. Since we track performance up to three years subsequent to these appoitments, this sub-sample includes CEO successions for which we observe at least one one of subsequent performance overlaps with the financial crisis since 2006. In unreported results available upon request, we have repeated our analysis in Panel B of Table 4 for this post-2003 subsample. In summary, the results confirm our findings for the post-1999 period of strong outperformance by outside CEOs. In particular, we find a statistically significant performance differential of 0.208 when performance is measured based on Tobin's Q, 0.015 based on OROA, and 0.054 based on OROS. Overall, these results are inconsistent with the hypothesis that outside CEOs outperformed insiders by taking more aggressive risks.

4.1 Identification

An important concern with our main results on inside vs. outside successions is that, even though we control for pre-succession performance, there are other variables that can effect differential firm performance around CEO successions, including, for example, firm size. Thus, part of our estimated impact of CEO succession decisions might be attributed to these variables rather than type of succession itself. For example, since large firms are more likely to hire insiders, it might be that part of the subsequent performance improvement is simply due to outside CEOs being chosen to run smaller firms that are easier to turn around.

In the ideal empirical experiment, we would compare the performance of an inside appointment firm to the same firm's performance had the firm appointed an outside CEO. Since the counterfactual is not observed, we must find an empirical proxy for the hypothetical performance without succession type change. Our approach is a natural starting point since we compare average ex-post changes in performance of firms that appoint inside CEOs to the ex-post change in performance of firms that appoint outside CEOs. This difference-in-differences approach would provide a valid estimate of the treatment effect of the treated if assignment to the treatment group were random. However, basic theoretical considerations and previous evidence on CEO successions suggest that this assumption is not likely to hold in the data. In fact, when we test differences in pre-succession firm characteristics across the two groups (inside vs outside appointments), we find significant differences in firm size and performance, with inside appointments associated with larger and relatively less underperforming firms. Economically, these differences reflect the endogeneity of CEO succession decisions.

In order to isolate the real effects of CEO succession type on corporate performance from

selection effects, our main strategy is to construct a nearest-neighbor matching estimator, following Rosenbaum and Rubin (1983) and Abadie and Imbens (2007). While we do not observe the criteria used to select inside vs. outside CEOs, the matching procedure reconstructs this information using observable characteristics. We construct the control sample in two steps. First, we run a logit regression to predict succession type (inside vs. outside CEO) based on firm characteristics. We set the binary dependent variable to 1 if the firm appoints an inside CEO. We then regress the inside CEO indicator on controls for firm characteristics. Based on the results in the existing literature for non-financials, we include firm size (the natural logarithm of market capitalization at the beginning of the year before the appointment), firm performance (as measured by our three proxies at the beginning of the year before the appointment), and firm board characteristics (size and insider-dominated dummy). We also include dummies for years. In unreported results available upon request, we find a weak relation between pre-transition firm performance and the likelihood of observing an inside appointment (with underperforming firms being less likely to appoint an insider), which is consistent with previous studies. Also consistent with previous studies, we find that larger firms and firms with insider-dominated boards are significantly more likely to appoint inside CEOs (see Weisbach (1988) for similar evidence)

Next, we use the predicted values from the logit regression (propensity scores) to construct a nearest-neighbor matched sample for inside CEO appointments. In each year, we choose, with replacement, the outside CEO appointments with propensity scores closest to those of each inside appointment. We use the propensity score as the match variable to reduce the

dimensionality of the matching problem.[8]

Table 6 contains the results. For each performance measure, the first column shows the difference-in-differences estimates from Table 4 (Panel A), while the second column reports the difference with respect to the matched sample. Clearly, robustly across the three performance measures, we continue to find a significant impact of CEO succession decisions on firm performance and a large performance gap between inside and outside CEO successions. Finally, confirming our previous results, the performance gap of insiders with respect to the matched sample is more pronounced for appointments by insider-dominated boards.

5 Conclusion

CEO successions are important instances when managerial human capital is in play. We argue that focusing on the labor market for CEOs in the US financial industry can augment our understanding of the role of managerial human capital and firm internal governance as determinants of financial firm performance. In a large hand-collected sample of CEO turnovers over the last two decades, we find robust evidence that outside CEOs performed significantly better than inside hires. Moreover, this result is stronger for CEOs hired by insider-dominated boards and after an important financial deregulation event in 1999. Our results cannot be explained by temporary over-reaction or anticipation effects as they are derived using long-term

[8] We also use the procedure of Abadie and Imbens (2007) to correct for remaining bias due to (ex ante) differences between the treatment and control samples. The procedure estimates an auxiliary OLS regression of the effect of the match variables on the outcome variable (in the control sample) and uses the estimates to adjust for differences in the match variables between the treatment and control samples. This correction ensures, for example, that an outlier insider with a propensity score too high to closely match does not drive our results. In unreported results available upon request, we find that this adjustment has a very small effect on our result, which are essentially unchanged.

measures of operating performance and are robust to addressing selection on observable size or pre-transition performance. Finally, we offer suggestive evidence that the impact of outside CEO successions is related to classical turnaround skills.

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Table 1: Sample Distribution by Year

The sample consists of 1,655 CEO successions between 1988 and 2007 for firms in the financial industry (SIC 6000-6999). This table presents an overview of the data set by showing the number and the frequency of internal successions in the sample. Successions are classified as internal when incoming CEOs were hired by the firm earlier than a year before succession, and external otherwise. Successions due to mergers and spin-offs are excluded.

Panel A: Sample Distribution by Year

Year	Number of successions	Number of insiders appointed	Percent Firms with successions
1988	39	23 (57.9%)	3.6%
1989	61	30 (48.8%)	5.8%
1990	91	52 (56.7%)	8.6%
1991	81	36 (44.4%)	7.5%
1992	86	50 (57.7%)	7.7%
1993	83	45 (54.2%)	4.6%
1994	96	50 (51.8%)	5.2%
1995	94	54 (57.1%)	5.1%
1996	70	38 (53.6%)	3.9%
1997	88	55 (62.5%)	5.1%
1998	105	57 (54.2%)	6.0%
1999	116	56 (48.5%)	6.4%
2000	142	65 (45.9%)	8.2%
2001	91	43 (47.5%)	5.4%
2002	87	39 (45.0%)	5.3%
2003	73	34 (46.7%)	4.4%
2004	74	32 (42.9%)	4.7%
2005	53	23 (43.2%)	3.5%
2006	57	23 (41.1%)	4.0%
2007	68	29 (42.6%)	5.2%
Total	1655	832 (52.0%)	5.2%

Panel B: Annual Averages by Sub-Period

Period	Number of successions	Number of insiders appointed	Percent Firms with successions
1987-97	789	431 (54.6%)	5.5%
1998-07	866	402 (46.4%)	5.4%

Table 2: Short-Run Cumulative Abnormal Returns around Succession Announcements

This table reports short-run cumulative abnormal returns around CEO successions for firms in the financial industry (SIC 6000-6999) during the period from 1988 to 2007. Abnormal returns are calculated using the capital asset pricing model (CAPM). The (0,+1) window of analysis is relative to actual announcement dates of CEO appointments (in days), where t=0 is the day of the announcement. Stock returns data are from CRSP. Row [1] reports results for all sample, Row [2] restricts the sample to firms with 40% or more insiders on the board (upper quartile of the distribution), and Row [3] restricts the sample to years after the 1999 Gramm-Leach-Bliley Act. Robust standard errors are in parentheses. Levels of significance are denoted by ***, **, and * for statistical significance at the 1%, 5%, and 10% level, respectively.

	CAR [0,+1]	All	By Type of Succession		
		(1)	Internal (2)	External (3)	Difference (4)
[1]	All Appointments	0.008**	-0.001	0.017***	0.018**
		(0.004)	(0.005)	(0.006)	(0.008)
	{t-stat}				{2.238}
	Board Independence:				
[2]	Insider Dominated Boards	0.005	-0.005	0.016**	0.021**
		(0.005)	(0.006)	(0.008)	(0.010)
	{t-stat}				{1.995}
	Deregulation:				
[3]	(Gramm-Leach-Bliley Act)				
	Post 1999	0.017**	0.002	0.029**	0.026*
		(0.008)	(0.011)	(0.012)	(0.014)
	{t-stat}				{1.857}

Table 3: Long-Run Abnormal Stock Returns Around CEO Transitions

This table reports long-run abnormal returns around CEO transitions for firms in the financial industry (SIC 6000-6999) during the period from 1988 to 2007. Abnormal returns are estimated using calendar-time portfolio regressions. In each month t, all firms subject to a CEO succession within the next (prior) 36 months are included in that month's pre (Panel A) and post (Panel B) transition portfolio. Mean portfolio returns, rp_t are used to estimate abnormal returns using the following regression: $(rp_t - rf_t) = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$, where rf_t is the risk-free rate calculated using one-month Treasury-bill rates, $(rm_t - rf_t)$ is the market risk premium, calculated as the difference between the value-weighted return on all NYSE, AMEX, and NASDAQ stocks from CRSP less the risk-free rate, SMB_t is the return difference between portfolios of small stocks and big stocks, HML_t is the return difference between portfolios of high book-to-market stocks and low book-to-market stocks, and UMD_t is the return difference between portfolios of high prior-return stocks and low prior-return stocks. The reported abnormal returns are the intercept (α) estimated from the regression above. In each panel, Row [1] reports results for all sample, Row [2] restricts the sample to firms with 40% or more insiders on the board (upper quartile of the distribution), and Row [3] restricts the sample to years after the 1999 Gramm-Leach-Bliley Act. Robust standard errors are in parentheses. Levels of significance are denoted by ***, **, and * for statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Pre-transition portfolio

		All	By Type of Succession	
			Internal	External
		(1)	(2)	(3)
[1]	All Appointments	-0.0063***	-0.0018	-0.0090***
		(0.0019)	(0.0019)	(0.0026)
	Implied 1-year abnormal return (%)	-7.83	-2.18	-11.35
	Board Independence:			
[2]	Insider Dominated Boards	-0.0108***	-0.0013	-0.0097***
		(0.0027)	(0.0026)	(0.0035)
	Implied 1-year abnormal return (%)	-13.76	-1.57	-12.28
	Deregulation:			
[3]	(Gramm-Leach-Bliley Act)			
	Post 1999	-0.0030	-0.0014	-0.0045
		(0.0032)	(0.0037)	(0.0042)
	Implied 1-year abnormal return (%)	-3.66	-1.69	-5.54

Panel B: Post-transition portfolio

		All	By Type of Succession	
			Internal	External
		(1)	(2)	(3)
[1]	All Appointments	0.0050**	0.0036	0.0064**
		(0.0024)	(0.0026)	(0.0030)
	Implied 1-year abnormal return (%)	6.17	4.41	7.96
	Board Independence:			
[2]	Insider Dominated Boards	0.0029	0.0022	0.0074***
		(0.0025)	(0.0024)	(0.0021)
	Implied 1-year abnormal return (%)	3.54	2.67	9.25
	Deregulation:			
[3]	(Gramm-Leach-Bliley Act)			
	Post 1999	0.0071*	0.0030	0.0086**
		(0.0038)	(0.0047)	(0.0030)
	Implied 1-year abnormal return (%)	8.86	3.66	10.82

Table 4: Firm Performance around CEO Successions

This table reports changes in firm performance for firms in the financial industry (SIC 6000-6999) during the period from 1988 to 2007 around CEO successions. The change in performance is calculated from one year before to three years after CEO succession. We report results for three performance measures: (1) operating return on assets (OROA); (2) operating return on sales (OROS); and (3) market to book value of assets (Tobin's Q). In Panel A these measures are industry-adjusted using the median performance measure of the relevant industry (two-digit SIC). In Panel B these measures are industry and performance-adjusted. Performance controls are created by dividing COMPUSTAT firms into deciles sorted by the relevant industry-adjusted variable in the year prior transition. The annual median of the relevant performance group of firms (ex-event) is then used as control. In each panel, Row [1] reports results for all sample, Row [2] restricts the sample to firms with 40% or more insiders on the board (upper quartile of the distribution), and Row [3] restricts the sample to years after the 1999 Gramm-Leach-Bliley Act. Robust standard errors are in parentheses. Levels of significance are denoted by ***, **, and * for statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Differential Firm Performance around CEO Successions, Industry-Adjusted Performance Measures

Performance [(t=+3)-(t=-1)]	Operating return on assets (OROA)				Operating return on sales (OROS)				Value (Tobin's Q)			
	All	By Type of Succession			All	By Type of Succession			All	By Type of Succession		
		Internal	External	Difference		Internal	External	Difference		Internal	External	Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
[1] All Appointments	0.004	-0.006	0.015*	0.021**	0.018	-0.008	0.049**	0.057**	0.018	-0.020	0.076**	0.097**
	(0.005)	(0.005)	(0.009)	(0.010)	(0.011)	(0.009)	(0.022)	(0.022)	(0.021)	(0.026)	(0.033)	(0.042)
{t-stat}				{2.161}				{2.571}				{2.313}
Board Independence:												
[2] Insider Dominated Boards	0.003	-0.012*	0.023*	0.035**	0.016	-0.017	0.063**	0.080***	0.051	-0.018	0.162***	0.180***
	(0.009)	(0.006)	(0.013)	(0.017)	(0.015)	(0.014)	(0.031)	(0.031)	(0.033)	(0.039)	(0.053)	(0.064)
{t-stat}				{2.046}				{2.597}				{2.790}
Deregulation:												
[3] (Gramm-Leach-Bliley Act)												
Post 1999	0.003	-0.014	0.019*	0.032**	0.029	-0.005	0.062*	0.067*	-0.021	-0.077**	0.060	0.137**
	(0.008)	(0.009)	(0.011)	(0.015)	(0.018)	(0.015)	(0.032)	(0.036)	(0.021)	(0.037)	(0.054)	(0.063)
{t-stat}				{2.157}				{1.842}				{2.161}

Panel B: Differential Firm Performance around CEO Successions, Industry and Performance Adjusted Performance Measures

Performance [(t=+3)-(t=-1)]	Operating return on assets (OROA)				Operating return on sales (OROS)				Value (Tobin's Q)			
	All	By Type of Succession			All	By Type of Succession			All	By Type of Succession		
		Internal	External	Difference		Internal	External	Difference		Internal	External	Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
[1] All Appointments	0.0004	-0.005	0.006	0.011**	0.011***	0.003	0.020***	0.017**	0.002	-0.040	0.062	0.102*
	(0.003)	(0.005)	(0.005)	(0.006)	(0.004)	(0.005)	(0.007)	(0.008)	(0.030)	(0.037)	(0.051)	(0.062)
{t-stat}				{1.731}				{2.059}				{1.656}
Board Independence:												
[2] Insider Dominated Boards	-0.006	-0.013**	0.002	0.015**	0.014**	0.003	0.027***	0.024**	0.051	-0.022	0.178*	0.199**
	(0.005)	(0.006)	(0.006)	(0.007)	(0.006)	(0.008)	(0.011)	(0.012)	(0.044)	(0.040)	(0.096)	(0.090)
{t-stat}				{2.055}				{1.985}				{2.205}
Deregulation:												
[3] (Gramm-Leach-Bliley Act)												
Post 1999	-0.004	-0.012	0.004	0.016*	0.012	-0.002	0.026**	0.027*	-0.057	-0.184*	0.119	0.304*
	(0.005)	(0.008)	(0.005)	(0.009)	(0.008)	(0.011)	(0.011)	(0.016)	(0.081)	(0.104)	(0.124)	(0.161)
{t-stat}				{1.748}				{1.742}				{1.883}

Table 5: Firm Decisions around CEO Successions

This table reports changes in firm policies for firms in the financial industry (SIC 6000-6999) during the period from 1988 to 2007 around CEO successions. The change in policies is calculated from one year before to three years after CEO succession. We report results for three firm policies: (1) market leverage; (2) cash flow; and (3) firm risk (total stock return volatility). Row [1] reports results for all sample, Row [2] restricts the sample to firms with 40% or more insiders on the board (upper quartile of the distribution), and Row [3] restricts the sample to years after the 1999 Gramm-Leach-Bliley Act. Robust standard errors are in parentheses. Levels of significance are denoted by ***, **, and * for statistical significance at the 1%, 5%, and 10% level, respectively.

	Policy [(t=+3)-(t=-1)]	Leverage				Cash Flow				Total Risk			
		All	By Type of Succession			All	By Type of Succession			All	By Type of Succession		
			Internal	External	Difference		Internal	External	Difference		Internal	External	Difference
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
[1]	All Appointments	0.003	0.012	-0.010	-0.023*	-0.001	-0.008*	0.008	0.016**	-0.150***	-0.076**	-0.234***	-0.157**
		(0.009)	(0.010)	(0.015)	(0.013)	(0.004)	(0.005)	(0.006)	(0.008)	(0.031)	(0.037)	(0.051)	(0.062)
	{t-stat}				{1.761}				{2.131}				{2.540}
	Board Independence:												
[2]	Insider Dominated Boards	0.006	0.024	-0.021	-0.045*	0.004	-0.006	0.021	0.027**	-0.110**	-0.022	-0.223***	-0.201**
		(0.015)	(0.016)	(0.027)	(0.024)	(0.007)	(0.005)	(0.018)	(0.012)	(0.053)	(0.066)	(0.087)	(0.092)
	{t-stat}				{1.876}				{2.176}				{2.188}
	Deregulation:												
[3]	(Gramm-Leach-Bliley Act)												
	Post 1999	-0.018	-0.002	-0.035*	-0.034*	0.004	-0.007	0.014**	0.020*	-0.342***	-0.249***	-0.435***	-0.185**
		(0.013)	(0.016)	(0.021)	(0.020)	(0.006)	(0.010)	(0.007)	(0.012)	(0.045)	(0.052)	(0.072)	(0.088)
	{t-stat}				{1.703}				{1.735}				{2.095}

Table 6: Differential Firm Performance around CEO Successions - Identification

This table reports changes in firm performance for firms in the financial industry (SIC 6000-6999) during the period from 1988 to 2007 around CEO successions. The change in performance is calculated from one year before to three years after CEO succession. We report results for three performance measures: (1) operating return on assets (OROA); (2) operating return on sales (OROS); and (3) market to book value of assets (Tobin's Q). These measures are industry-adjusted using the median performance measure of the relevant industry (two-digit SIC). For each performance measure, we report difference between internal and external CEO appointments in the first column ("Raw") and difference between internal CEO appointments and a nearest-neighbor propensity score matched sample of external CEO appointments in the second column ("Matched Sample"). Matching is done in each year of succession, with replacement. Row [1] reports results for all sample and Row [2] restricts the sample to firms with 40% or more insiders on the board (upper quartile of the distribution). Robust standard errors are in parentheses. Levels of significance are denoted by ***, **, and * for statistical significance at the 1%, 5%, and 10% level, respectively.

	Performance [(t=+3)-(t=-1)]	OROA		OROS		Tobin's Q	
		Raw (1)	Matched Sample (2)	Raw (3)	Matched Sample (4)	Raw (5)	Matched Sample (6)
[1]	All Appointments	0.021**	0.018**	0.057**	0.056**	0.097**	0.088**
		(0.010)	(0.008)	(0.022)	(0.022)	(0.042)	(0.043)
	{t-stat}	{2.161}	{2.097}	{2.571}	{2.537}	{2.313}	{2.037}
	Board Independence:						
[2]	Insider Dominated Boards	0.035**	0.041**	0.080***	0.073**	0.180***	0.191***
		(0.017)	(0.019)	(0.031)	(0.033)	(0.064)	(0.068)
	{t-stat}	{2.046}	{2.151}	{2.597}	{2.220}	{2.790}	{2.792}