

Does It Pay To Hire A Friend?

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Abstract

We find that personal ties with a firm's board significantly increase a CEO candidate's probability of being hired by the firm. Consistent with shareholder value maximization, firm performance improves more after CEO turnovers at firms hiring connected CEOs than those hiring unconnected CEOs. The result is concentrated in firms with severe information asymmetry, high CEO termination risk, and large coordination costs. Connected CEOs also make better acquisitions, especially when coordination costs are high. Overall, our results suggest that connected hiring increases firm performance because it mitigates information asymmetry and facilitates coordination between the CEO and the board.

Keywords: CEO hiring, connections, firm performance, information asymmetry

JEL Classification: G30, G34, G39

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1 Introduction

In recent years, professional and social connections between corporate CEOs and their boards have attracted much academic attention. The common view is that CEO-board connections are costly to investors. For instance, prior literature finds that firms with such connections give the CEOs higher pay without adequate performance incentives, make value-destroying acquisitions, have ineffective board monitoring, and are more likely to engage in fraud (Hwang and Kim, 2009; Fracassi and Tate, 2012; Coles et al., 2014; Khanna et al., 2015). However, personal ties between CEOs and their boards could also benefit investors if such ties facilitate communication and coordination between them (e.g., Cohen et al., 2008, 2010; Cai and Sevilir, 2012).¹ We argue that prior literature either focuses on ties built by the CEO through director appointments or does not differentiate such ties from pre-existing connections. As a result, the documented negative consequences of CEO-board connections could be due to co-opted boards (Coles et al., 2014). In this paper, we study the communication and coordination benefits of CEO-board connections in the context of external CEO hiring. Because new external CEOs have not built up the power to influence director appointments, co-opted boards are not a concern and we can focus on pre-existing CEO-board connections.

We first investigate whether personal connections with a board influence a candidate's chance of being selected as CEO by the board. Using external CEO hiring events by S&P 1500 firms from 2000 to 2016, we find consistent evidence that professional ties between a CEO candidate and a hiring board are associated with a greater likelihood that the candidate is chosen as CEO by the board. In a sample considering all the new CEOs in a year as candidates for each hiring event during that year, a connection corresponds to a three

¹Consistent with this notion, Rogers and Bhowmik (1970) argue that relationship between individuals affects the nature of communication behavior between the individuals. Prior literature in banking and social networks also suggests that relationships are valuable (e.g. Petersen and Rajan, 1994; Hochberg et al., 2007; Cohen et al., 2008, 2010; Cai and Sevilir, 2012).

percentage point increase in the probability a candidate is chosen as CEO. This is a large effect given that the unconditional probability of CEO hiring is 2.1%.

Theoretically, a board’s decision to hire a connected CEO could be driven by two distinct motivations. The first motivation is to maximize firm value. Firms and candidates do not have perfect information about each other (e.g., [Jovanovic, 1979](#); [Gibbons and Murphy, 1992](#)). If a candidate has connections with the hiring board before the search, the board can gain soft information about the candidate’s quality, and the candidate can learn more about the firm and become less concerned about the job (e.g., [Rogers and Bhowmik, 1970](#); [Montgomery, 1991](#)). Board-CEO connections could also lead to smoother communication and coordination between the two parties after the new CEO joins the firm (e.g., [Adams et al., 2005](#); [Harris and Raviv, 2008](#)). The second motivation for hiring connected candidates is the board’s self-interest. The board may hire a connected candidate to help a friend ([Hwang and Kim, 2009](#)). Our finding that boards tend to choose CEO candidates they have personal connections with could result from either motivation.

In the main empirical analysis of the paper, we compare changes in firm performance around CEO turnovers between firms hiring connected CEOs and firms hiring unconnected CEOs. The two motivations for hiring a connected CEO have opposite predictions about the effect of connected CEO hires on firm performance. Connection-based hiring motivated by firm value maximization should boost firm performance, while connected hiring motivated by boards’ self-interest should hurt firm performance. We examine the variations in firm performance over the period beginning three years before and ending three years after the hiring event, following prior literature (e.g., [Parrino et al., 2003](#); [Huson et al., 2004](#); [He and Hirshleifer, 2022](#)). We find that both accounting and market firm performance increase significantly more for firms hiring connected CEOs than for firms hiring unconnected CEOs. On average, the post-turnover change in return-on-assets is 2.1 percentage points larger, and the change in Tobin’s Q is 4.5% greater for firms hiring connected CEOs. These results

suggest that it is valuable for a firm to hire a CEO with ties to its board, consistent with the hypothesis that connected hires are motivated by firm value maximization.

Because we study CEO-board connections built before each CEO hiring event, the connections are not influenced by the CEO hiring decision or an omitted factor. However, firms hiring connected CEOs could differ fundamentally from firms hiring unconnected CEOs. To parse out time-invariant cross-sectional variations in firm performance and firms' tendencies to hire connected CEOs, we include firm fixed effects in our performance regressions. We further include year fixed effects to control for common time trends. Common determinants of firm performance are included in the regression model as well. Under this setting, our remaining concern is that a factor other than connections may also lead to variations in firm performance changes following a CEO turnover. If the factor somehow correlates with a firm's propensity to hire a connected CEO, we have an omitted variable problem.

Forced CEO turnover, CEO industry expertise, CEO network size, and CEO talent could be such omitted variables. An outgoing CEO typically underperforms before a forced turnover (Jenter and Kanaan, 2015; Jenter and Lewellen, 2021). As such, a replacement is likely to result in performance improvement. After firing a CEO, a board is under pressure to find a replacement and would also rely on its network to identify the next CEO. A new CEO with experience in the same industry as a hiring firm could help the firm succeed (e.g., Huang, 2014; Gounopoulos and Pham, 2018). Meanwhile, the firm may also hire directors with experience in the same industry for a similar reason, and the directors and the CEO with overlapping industry experiences are likely to be connected. A CEO with a large network could improve firm performance (e.g., Hochberg et al., 2007; Engelberg et al., 2012; Faleye et al., 2014). Well-connected CEOs are also more likely to be hired through their networks. Finally, an incoming CEO more talented than the outgoing CEO should improve firm performance. A talented CEO may also have a larger network which helps him/her connect with hiring firms.

To address the concerns of these omitted variables, we include forced CEO turnover, a CEO’s overlapping industry expertise, CEO network size, or CEO talent as a control variable for connected hiring in the performance regressions. We continue to find significant differences in the post-turnover performance changes between connected and unconnected CEO hiring firms. The magnitude of the differences also remains similar to the baseline results. These results confirm that the difference in post-turnover performance changes between connected and unconnected hiring is not due to the confounding effects of forced CEO turnover, CEO-firm overlapping industries, CEO network size, or CEO talent. We also examine the performance difference between connected and unconnected hiring firms each year around the hiring event and find results supporting our interpretation that connections affect firm performance. There are common pre-trends in performance between firms hiring connected CEOs and firms hiring unconnected CEOs. Also, the divergence in firm performance starts after the hiring event, as we would expect.

We conduct further robustness tests based on observed differences between cases of connected hiring and unconnected hiring. While connected CEOs are similar to unconnected CEOs in talent, network size, gender, and education, they are older than unconnected CEOs. There is no difference in firm size, profitability, investment, valuation, or other financial characteristics between connected hiring firms and unconnected hiring firms, but connected hiring firms spend more on R&D, have lower fractions of busy directors, have a larger board network size, and their previous CEOs are more likely to be forced out. We do not have strong theoretical reasons to believe that these characteristics would lead to variations in firm performance changes following CEO turnovers (except forced CEO turnover we consider above). Consistent with this, we find none of these variables to be significantly related to post-turnover performance changes. More important, we continue to find robust results in connected hiring. Overall, the results from these additional tests lead us to conclude that the performance effect of connected CEO hiring is not likely a manifestation of other confounds

that both correlate with connected hiring and affect firm performance.²

CEO hiring is a two-sided matching process and we only observe firm performance when matching happens. If some unobservable factors correlate with both the probability of matching and firm performance, there is nonrandom missingness in the performance data and an OLS estimate of the effect of connections on firm performance could be biased. To avoid such biases, we identify the effect of connections through a two-step Heckman selection approach (Heckman, 1979). The first step is the CEO hiring decision model. An Inverse Mills Ratio (IMR) is obtained as the expected probability of matching from the first-step regression. The performance regressions are run in the second step, including the IMR as a control for selection bias. With this correction, our regressions should yield an unbiased estimator of the effect of CEO-board connections on firm performance. Among the variables excluded from the second-step regressions, LOCAL candidates is arguably exogenous. Boards tend to hire local candidates, but geographic proximity between a CEO candidate and a firm is not directly associated with firm performance (Yonker, 2017).³

Next, we investigate the channels through which connections matter. If firms hire connected CEOs to mitigate information asymmetry and facilitate board-CEO coordination, the benefit should be particularly salient when there is a large information asymmetry between the firm and the candidate. The benefit should also be significant when the candidate is worried about termination risk. Finally, the benefit should be large when it is difficult for the board and the CEO to coordinate. We measure information asymmetry using opacity and

²We also check the announcement returns of CEO appointments. If stock investors know the connection status of the incoming CEO with the board and its implications, there should be a significant announcement return on CEO appointments (positive under the value maximization motivation or negative under the self-interest motivation). However, we do not find a significant announcement return. The lack of results suggests that investors may not know whether a new CEO has connections with the board or fully understand how such connections affect firm value at the time of the announcements.

³While Yonker (2017) cannot rule out other theories of local hiring tendency, most of his results are consistent with CEOs' geographic preferences playing a role in local matching. The geographic preference theory predicts that there should be no difference in firm performance or value between firms run by locals and nonlocals. Consistent with the prediction, Yonker (2017) does not find a difference in performance between local and nonlocal CEOs.

dispersion of analysts' earnings forecast (Affleck-Graves et al., 2002; Billett and Yu, 2016; Xu and Yang, 2016); CEO termination risk using return volatility, past stock returns, and an indicator for whether the firm fired the previous CEO (Bushman et al., 2010; Xu and Yang, 2016); and coordination costs using board size (Jensen, 1993). We find that the result of a greater increase in firm performance for connected hires is concentrated in the subsamples with higher information asymmetry, CEO termination risk, and coordination costs. These results lend further support to the value maximization motivation of connected hiring that it helps mitigate information asymmetry and facilitate CEO-board coordination.

Mergers and acquisitions are major corporate decisions with substantial value implications (Houston et al., 2001). We hypothesize that CEO-board connections should increase acquisition returns by facilitating CEO-board coordination, because a coordinated team is better able to screen investment projects. Consistent with this hypothesis, we find that connected CEOs are associated with higher Cumulative Abnormal Returns (CARs) around the acquisition announcement. There is a statistically insignificant and economically small CAR (-0.5%) on acquisitions made by unconnected CEOs. By contrast, acquisitions made by connected CEOs earn a significantly positive CAR of 2.2%. Furthermore, the result is concentrated in the subsample of firms with larger boards where the coordination costs are higher.

We conclude our empirical analyses by examining CEO turnover outcomes and compensation. The value maximization motivation of connected hiring implies good matching quality in connected hiring and predicts a lower probability of forced CEO turnover. The self-interest motivation also predicts a lower probability of forced turnover as the board continues to be friendly to the new CEO. Consistent with the prediction, we find that connected CEOs are less likely to be forced out. The value maximization motivation does not make a clear prediction about the relationship between connected hires and compensation. On the one hand, connections may enable boards to hire the most talented CEOs and such CEOs

should be paid more. On the other hand, connections mitigate CEOs' concerns about termination risk and the CEOs should demand less pay for risk. By contrast, boards' self-interest predicts higher pay for connected hires than for unconnected hires. We find no significant difference in the first full year's CEO total pay or size and industry-adjusted excess pay between connected and unconnected CEOs. This lack of evidence for favorable pay toward connected CEOs casts further doubt on the self-interest motivation of connected hiring.

The main contribution of this paper is to enhance our understanding of the value effect of personal connections between a firm's CEO and its board of directors. Prior literature finds evidence that CEO-board social ties are costly to investors ([Hwang and Kim, 2009](#); [Fracassi and Tate, 2012](#); [Coles et al., 2014](#); [Khanna et al., 2015](#)), but the findings are mostly driven by ties built by powerful CEOs through director appointments. Using new CEO hiring as a testing ground that parses out the effects of CEO power and co-opted boards, we discover that newly hired CEOs connected with the hiring firms' boards improve the firms' operating performance and increase firm value. Our results suggest that board-candidate connections mitigate information asymmetry and facilitate CEO-board coordination. Our findings are consistent with prior literature documenting the benefits of personal connections in various settings (e.g., [Hochberg et al., 2007](#); [Cohen et al., 2008, 2010](#); [Cai and Sevilir, 2012](#); [Goldman et al., 2013](#); [Schmidt, 2015](#)).

Our paper also contributes to the literature on the roles of boards of directors based on their professional and social networks. More connected boards could possess more general knowledge as advisors, improve information flow and communications with other firms, or win business contracts using their relationships ([Cai and Sevilir, 2012](#); [Goldman et al., 2013](#); [Larcker et al., 2013](#)). However, boards' connections could also result in flawed decision-making based on weaker critical analysis, a lowering of standards, or missed opportunities ([Ishii and Xuan, 2014](#)). We find that boards' professional networks help them do a vital job, i.e., identify and attract talented CEOs who are a good fit with their firms.

Last but not least, this paper contributes to our understanding of boards’ CEO selection decisions. Much of the literature has searched for models of good matching quality between a firm and its CEO (e.g. [Rosen, 1982](#); [Sattinger, 1993](#); [Gabaix and Landier, 2008](#); [Terviö, 2008](#); [Pan, 2017](#); [Czirák and Jenter, 2022](#); [Wang, 2022](#)). We identify board-candidate connections as an important hiring criterion as such connections significantly improve the information flow between a hiring board and its new CEO. We further show that better information transmission and CEO-board cooperation benefit the firms by improving firm performance. As such, we also contribute to the literature that studies the impact of CEO hiring decisions (e.g., [Parrino and Srinivasan, 2011](#); [Kaplan et al., 2012](#); [Custódio and Metzger, 2014](#)).

Our paper is related to [Czirák and Jenter \(2022\)](#) who show that 90% of new CEOs are either insiders or former colleagues of the hiring firms’ directors. However, [Czirák and Jenter \(2022\)](#) do not control for other determinants of CEO hiring decisions, nor do they study the consequences of the connection-based hiring strategy. [Wang \(2022\)](#) studies the determinants of CEO selection and conducts some auxiliary analysis on post-succession firm operating performance. Different from [Wang \(2022\)](#), our paper focuses on the performance effects of connection-based CEO hiring. We examine both operating and market performance using panel regressions that control for purely cross-firm variations, common time trends, potential selection biases, and omitted factors. We also study the channels through which connections matter.

The remainder of this paper is organized as follows: Section 2 discusses our empirical hypotheses. Section 3 describes data sources and sample construction. In Section 4, we examine whether the CEO hiring decision depends on candidate-director connections. Section 5 analyzes the impact of connected CEO hiring on firm performance. Sections 6 and 7 investigate the effects of connected CEO hiring on forced CEO turnovers and CEO pay, respectively. Section 8 concludes.

2 Hypothesis Development

In the event of new CEO hiring, firms and CEO candidates often do not have perfect information about each other. Such information frictions in managerial labor markets can lead to low firm-CEO match quality (Jovanovic, 1979; Gibbons and Murphy, 1992). Personal connections between a firm’s directors and a CEO candidate can alleviate the concern over information asymmetry for both parties (e.g., Rogers and Bhowmik, 1970; Montgomery, 1991). If the candidate is connected to the hiring board, the board can better assess the candidate’s quality and fit with the firm based on soft information. Also, connections can help the candidate gain more knowledge of the firm, making him/her more willing to join the firm. Connections can also help smooth the communication and the coordination between a board and a new CEO after the CEO joins the firm (e.g., Adams et al., 2005; Harris and Raviv, 2008).⁴ Therefore, boards could hire connected candidates to improve firm-CEO match quality and facilitate the coordination between the CEO and the board, which should ultimately increase firm value.⁵ We refer to this as the firm value maximization motivation of connected hiring.

Boards may also prefer hiring acquaintances out of their self-interest. They may hire connected candidates to help a friend (Hwang and Kim, 2009). We refer to this as the self-interest motivation of connected hiring. Both the firm value maximization and the self-interest motivations lead to our first empirical hypothesis:

Hypothesis 1 (H1). *Firms are more likely to hire candidates who have pre-existing connections with the hiring boards than candidates who do not.*

While both firm value maximization and self-interest could motivate a board to hire a

⁴In Adams et al. (2005)’s model, a board can execute its advising role better when executives are more willing to communicate private information with the board. A similar argument is presented in Harris and Raviv (2008).

⁵In various settings, smooth information flow facilitated by networks is shown to be beneficial. See, for example, Hochberg et al. (2007), Cohen et al. (2008) and Cohen et al. (2010).

connected candidate, they predict opposite firm performance effects of connected hiring. If a board’s decision to hire a connected CEO stems from a value maximization consideration, that is to improve firm-CEO match quality and facilitate board-CEO coordination, then we should observe a positive performance effect of connection-based hiring. By contrast, if a board selects a connected CEO out of the directors’ self-interest, such a decision will hurt the firm performance.⁶ We thus formulate our second hypothesis and its alternative hypothesis as follows:

Hypothesis 2 (H2). *Firms hiring connected CEOs have greater performance improvement than firms hiring unconnected CEOs.*

Hypothesis 2a (H2a). *Firms hiring connected CEOs have less performance improvement than firms hiring unconnected CEOs.*

The firm value maximization motivation suggests that firms hire CEO candidates with pre-existing connections to their boards to mitigate the concerns of both the boards and the candidates due to information asymmetry, as well as to facilitate board-CEO coordination after hiring. Hence, when there is a large information asymmetry between the hiring firm and the candidate, the benefit of hiring a connected CEO should be particularly significant. The benefit should also be significant when the candidate is worried about termination risk, in which case connections can help reduce such concerns. Additionally, the benefit should be large when it is difficult for the board and the CEO to coordinate as connections can lead to smoother communication and coordination between the CEO and the board. These arguments lead to our third hypothesis:

⁶Hallock (1997) shows that CEOs sitting on each other’s boards receive more compensation. Hwang and Kim (2009) find that CEOs that are connected to the company board receive higher compensation, achieve lower pay-performance sensitivity, and exhibit lower turnover-performance sensitivity. Fracassi and Tate (2012) show that CEOs connected to boards destroy firm value and are involved in more value-destroying acquisition deals. Kramarz and Thesmar (2013), using French data, confirm that connected CEOs are paid more, are less likely to be replaced when the firm underperforms, and are less likely to engage in value-creating acquisitions.

Hypothesis 3 (H3). *Stronger performance improvement after connected CEO hiring is concentrated in firms with higher information asymmetry, greater CEO termination risk, and larger coordination costs.*

Mergers and acquisitions are major corporate decisions that tend to have large value impacts on firms (e.g. [Houston et al., 2001](#)). We posit that an acquisition decision requires close cooperation between directors and the CEO because a coordinated team is better able to screen investment projects. Because CEO-board connections can facilitate coordination between the CEO and the board, and such facilitation is likely to be particularly beneficial in firms with high coordination costs, we have the following two hypotheses:

Hypothesis 4 (H4). *Firms hiring connected CEOs make more value-enhancing acquisitions than firms hiring unconnected CEOs.*

Hypothesis 5 (H5). *The higher acquisition performance at firms hiring connected CEOs is concentrated among firms with larger coordination costs.*

The firm value maximization motivation implies that the match quality between connected CEOs and firms is likely to be better than that between unconnected CEOs and firms. A good match then reduces the probability of forced CEO turnover ([Allgood and Farrell, 2003](#)). The self-interest motivation also predicts a lower probability of forced turnover as the board behaves friendly to the new CEO. Hence, we have the following hypothesis:

Hypothesis 6 (H6). *Connected CEOs are less likely to be forced out.*

There is no clear prediction about the relationship between connected hiring and compensation if boards hire connected CEOs to boost shareholder value. Connections may enable boards to hire the most talented CEOs and such CEOs should be paid more (see, e.g. [Gabaix and Landier, 2008](#); [Albuquerque et al., 2013](#); [Cremers and Grinstein, 2014](#); [Jung and Subramanian, 2017](#)). Alternatively, CEO candidates risk their reputation and careers by

joining unfamiliar companies, and hence require a premium in their compensation (Gibbons and Murphy, 1992; Peters and Wagner, 2014). If connections can mitigate the uncertainty for the connected CEOs, then they will demand lower pay than unconnected CEOs. By contrast, if a board hires a connected CEO to help a friend, the CEO is likely to be paid more (see, e.g. Hallock, 1997; Hwang and Kim, 2009). Hence, we have the following null hypothesis and alternative hypothesis:

Hypothesis 7 (H7). *Connected CEOs receive the same total compensation and abnormal compensation as unconnected CEOs.*

Hypothesis 7a (H7a). *Connected CEOs receive higher total compensation and abnormal compensation than unconnected CEOs.*

3 Data and Sample

3.1 Data Sources

We use multiple data sources for our empirical analyses. We collect the name and pay information of CEOs from the Execucomp database. The CEO names are used to define CEO turnover events (see more detail in Section 3.2). We use BoardEx to obtain board information, director characteristics, and CEO/candidate characteristics. BoardEx records individual profiles such as educational background and employment histories. Information about individuals' networks (e.g., overlapping organizations, overlapping starting year and ending year, roles of individuals at overlapping firms) are also from BoardEx. To identify external CEO appointments, we use a combination of CEO replacement data from Eisfeldt and Kuhnen (2013), BoardEx employment history file, and Factiva news database. Company financial information and stock return data are from Compustat and CRSP. Lastly, we obtain earnings forecast data from I/B/E/S.

3.2 CEO Appointments

In this paper, we examine external CEO appointments because we want to focus on CEO-board connections outside the hiring firm so that CEO power and a co-opted board is not a confounding factor. Excluding internal promotion events also avoids potential biases in our empirical analysis. First, all internal candidates, by definition, are connected to the board of directors prior to CEO hire. Prior literature suggests that firms with specific characteristics are more likely to select CEOs from internal candidates (e.g., [Datta and Guthrie, 1994](#); [Naveen, 2006](#); [Czirák and Jenter, 2022](#)). As noted by [Harrell \(2016\)](#), an internal promotion takes years to prepare but costs less than external hiring. As a result, firms promoting internal candidates will likely not consider external candidates and the internal promotion process is very different from the external hiring process. Therefore, including internal promotions would lead to a bias in the estimated importance of connections in the CEO hiring decision.

Second, excluding internal CEO appointments helps us compare performance changes around CEO turnovers between connected and unconnected CEOs without the confounding effects of any differences between internally promoting firms and externally hiring firms. This is because, if the decision between an internal and an external search is performance related, including internal promotions could bias our conclusions about the effect of connections on firm performance.

To construct the CEO appointment sample, we start with all external new CEO appointments by S&P 1500 firms from 2000 to 2016.⁷ Following [Eisfeldt and Kuhnen \(2013\)](#), we identify a new CEO appointment by observing a change in the name of the CEO (based on the CEOANN variable from Execucomp) from the previous year. There are 1,119 external

⁷We define internally promoted CEOs as individuals who have been employed at the firm for more than one year before the CEO appointment, following [Parrino \(1997\)](#). Under this definition, an individual who is hired as a senior executive (e.g., COO) and then promoted to CEO within a year is considered an external hire. Our results are robust to excluding such cases.

new CEO appointments during 2000-2016, excluding interim CEOs.⁸ Among these appointments, we drop 54 appointments for which we cannot find information about the firm or the CEO in BoardEx and 137 appointments with missing board characteristics. Because we study firm performance changes around CEO turnovers, we require the firms to have financial and stock return data in Compustat and CRSP for the three years before the hiring events. This requirement reduces our sample by 47 appointments. We also require firms to have data in Compustat and CRSP for the three years after the hiring events, which further reduces the sample by 85 appointments.⁹ Finally, we remove 122 appointments in which the new CEO does not stay for the entire post-turnover period.¹⁰ Our final sample consists of 674 external CEO appointments.

One might worry about a survival bias because we require a new CEO to stay with the firm for at least three years. This restriction could bias our results when connected CEOs are more likely than unconnected CEOs to be fired for bad performance in the first three years. To alleviate this concern, we compare the propensity of performance-related turnover between connected and unconnected CEOs among the 122 dropped appointments. We find that out of the 26 connected CEOs who leave in the first three years, 7 are fired for performance reasons (26.9%). By contrast, out of the 96 unconnected CEOs who leave in the first three years, 43 of them are forced out (44.8%). The t -statistic of the difference between the two forced termination probabilities is -1.75 which is significant at the 10% level. These statistics suggest that connected CEOs are less likely than unconnected CEOs to be fired for poor performance in the first three years. Hence, excluding CEOs that depart in less than

⁸Following [Cremers and Grinstein \(2014\)](#), we define interim CEOs as those who have been employed at the firm for one year or less. 84 interim CEO appointments were excluded.

⁹This number represents a roughly 4.7% annual attrition rate. We check and confirm that such an attrition rate is no more than that in the CRSP-Compustat universe. We find that, in an average fiscal year between 1993 and 2018 and after applying standard sample filters from the literature, about 6.6% of the CRSP-Compustat firms drop out of the sample each year.

¹⁰This number implies an annual CEO turnover rate of 7.4% after the first year the new CEO assumes office, which is similar to that documented in prior literature (e.g. [Fee et al., 2013](#)).

three years should make it harder for us to find a positive relation between connections and post-turnover performance change.

3.3 *CEO/Candidate-Board Connections*

We create an indicator variable to capture the connection between a CEO candidate and the hiring firm’s board. The indicator variable, `CONNECT`, equals one if a CEO candidate shared employment experience with at least one board member of the hiring firm prior to the hiring event, and zero otherwise. There are many types of shared experiences (e.g., education, clubs, societies, non-profit organizations) but we consider only shared employment experiences in public firms and private firms. This is because shared experiences through other channels are not common in our context.¹¹ Our connection definition counts the relationships between a CEO and a board member, between managers including the CEO, and between board members, but it does not count the relationship between a non-CEO manager and a director. We do not consider non-CEO manager-director connections because board members usually do not interact with non-CEO managers (Khanna et al., 2015; Cziráki and Jenter, 2022). We exclude connections established within the hiring firms to focus on truly external hires.¹² Among the 674 turnover events in our sample, 190 new CEOs have pre-existing connections with the hiring firm’s board (28.2%). The fraction of connected new CEOs is comparable to that in Khanna et al. (2015) and Cziráki and Jenter (2022).

¹¹Among new CEOs who do not share employment experiences with the hiring firm’s board, only 6 of them share experiences with the board through education and the remaining (11) CEOs share experiences with the board through other channels. Our results are robust to including all types of shared experiences.

¹²There is one exception, an independent director on the hiring firm’s board is appointed CEO. This independent director is an outsider but he/she is also on the hiring firm’s board, so he/she is “connected” to other directors on the board.

3.4 Potential CEO Candidates

To empirically test firm’s preference for connected candidates, we must obtain the pool of potential candidates considered by each hiring firm. Unfortunately, the “true” candidate pools are unobservable to researchers.¹³ Hence, we include in our candidate pool individuals that change jobs during the year of a CEO turnover event. Such individuals are on the job market that year and therefore, are more likely to be considered by the hiring firm for the open CEO position. In our main analysis, we consider all the newly hired CEOs in a given year in our CEO turnover sample as potential candidates for each of the hiring events in that year. In auxiliary analyses, we also expand the potential candidate set and check the robustness of our results. See Appendix B.

4 Connections and CEO Hiring Decisions

In this section, we study the role of candidate-director connections in CEO hiring decisions. The sample consists of all external CEO hiring events by S&P 1500 firms during 2000–2016 and potential candidates. For each hiring event, the candidates include both the new CEO hired by this firm and CEOs hired by other firms this year. In Section 4.1, we briefly summarize the hiring event-candidate sample. In Section 4.2, we discuss the results of a Probit model examining the determinants of CEO hiring decisions.

4.1 Characteristics of the Hiring Event-Candidate Sample

In addition to connections, we consider three dimensions of candidate-firm matching motivated by Pan (2017). Candidates with work experience in conglomerates are matched with complex, diversified firms, talented candidates are matched with large firms, and candidates with doctoral degrees are matched with innovative firms. We define complex firms based on

¹³Exceptions are Kaplan et al. (2012) and Kaplan and Sorensen (2021) who use data provided by a consulting firm that assesses job candidates for hiring firms.

the number of business domains the firms operate in and candidates with conglomerate experiences based on whether the candidates’ prior employers were conglomerates. Candidate talent is defined based on whether the candidate attended an Ivy League school, following Custódio et al. (2013) and He and Hirshleifer (2022). We define LOCAL candidates based on the location of their most recent employment. A candidate is local if the headquarters of his most recent employer is in the same state as the hiring firm’s headquarters. Detailed variable definitions are listed in Appendix A1.

Table 1 summarizes the candidate and firm characteristics in the hiring event-candidate sample. Out of more than 30,000 event-candidate observations, about 2.1% are hired as CEOs and 18.7% of the candidates have pre-existing connections with the hiring board. 24.5% of candidates have conglomerate experiences, 2.4% of candidates are classified as talented, 7.3% of candidates have doctoral degrees, and 6.1% of candidates are local. The average candidate age is 52.6 years, 95.6% of the candidates are males, and 46.8% have an MBA degree.

4.2 Determinants of CEO Hiring

We specify a Probit model to test Hypothesis 1. The dependent variable, HIRED, is a dummy variable which equals one if a CEO candidate is hired by a firm in a given year and zero otherwise. The key independent variable is the CONNECT dummy indicating whether a candidate is connected to at least one board member of the hiring firm prior to the year of hiring. Three matching interactions are included in the model: CONGLOMERATE EXP \times COMPLEXITY, TALENT \times SIZE, and DOCTORAL DEGREE \times R&D, along with the six component variables as controls. The LOCAL dummy is included to capture a potential local hiring tendency (Yonker, 2017). We control for other candidate characteristics including AGE, GENDER, and MBA DEGREE, firm financial characteristics including operating performance (ROA), log of Tobin’s Q, investment (CAPEX), stock return volatility (VOL),

and governance quality measures including BOARD SIZE, BOARD INDEPENDENCE, and BOARD BUSYNESS. Standard errors are clustered by firm.

The regression results are reported in Table 2. Column (1) presents the result of the Probit model with CONNECT being the only independent variable. The estimated coefficient on CONNECT is positive and statistically significant, suggesting that pre-existing connections are associated with increases in a candidate’s probability of being hired as a CEO. In Column (2), we add the three matching interactions, the six component variables, the LOCAL dummy, and the aforementioned firm and candidate characteristics to the model. The estimated coefficient on CONNECT remains positive and significant. The model reported in Column (3) further includes firm and year fixed effects to control for unobserved time-invariant firm effects and common time trends. The result remains robust. The coefficient estimate increases substantially from the first two columns, suggesting that cross-firm variations and common time trends have biased against a positive correlation between connections and hiring probability. The magnitude of the effect is economically meaningful. Connected candidates are 3% more likely to be hired than unconnected candidates. Compared with the unconditional probability of CEO hiring (2.14%), this effect is large and equivalent to a 140% increase (i.e., $3/2.14 = 1.40$) in the probability a candidate is chosen as CEO. The results in Table 2 support Hypothesis 1.

The results in Table 2 also suggest that candidate-firm matching matters in CEO hiring decisions, at least along two of the three matching dimensions we consider. Consistent with the finding in Yonker (2017), the coefficient on LOCAL is positive and significant, implying that firms are more likely to hire local candidates. Candidates with doctoral degrees are less likely to be hired, except by high R&D firms. Firm characteristics do not seem to have reliable associations with CEO hiring probability across different regression specifications.

5 Firm Performance

In this section, we investigate the impact of connected CEOs on firm performance in a sample built upon all external CEO hiring events by S&P 1500 firms during 2000–2016. In Section 5.1, we perform a univariate comparison of CEO and firm characteristics between connected and unconnected hiring events to check if there are any *ex-ante* differences between the two groups. In Section 5.2, we present the results of panel regressions in which the dependent variables are firm performance metrics. We use a Heckman correction approach to address potential selection biases. Section 5.3 discusses robustness tests tackling omitted variable concerns. In Section 5.4, we present subsample comparison results to shed light on the channels through which connected CEOs could impact firm performance. In Section 5.5, we present the results on acquisition performance, which is another performance measure we consider.

5.1 Comparison Between Firms Hiring Connected and Unconnected CEOs

We compare the CEO and firm characteristics between connected and unconnected hiring events in the year before the events and report the results in Table 3. The first three columns present the number of observations, mean, and standard deviation of each characteristic for connected CEO hires. The next three columns present the same statistics for unconnected CEO hires. We report the differences in the means between the two groups and the standard errors of the differences in the last two columns. A *t*-test of the difference in means is conducted for each characteristic and asterisks are added beside the difference in the means when it is statistically significant (* for 10%, ** for 5%, and *** for 1%).

When comparing the CEO characteristics between the two groups, we find no difference in their talent, network size, gender, and education. The fraction of connected CEOs with conglomerate experiences or with experience of working in the same industry as the hiring

firm is also comparable to that of unconnected CEOs. However, connected CEOs are, on average, 2.25 years older than unconnected CEOs.

When we compare the characteristics of firms that select connected CEOs with those that select unconnected CEOs before the hiring events, we find that they are similar in size, profitability (ROA), investment (CAPX), and valuation (LN(Q)). Additionally, we find no difference in variations in abnormal current accruals (OPACITY), analysts' forecast dispersion (DISPERSION), stock return volatilities (VOL), and past stock returns (PAST RET) between them. The two groups also have similar board sizes and fractions of independent directors. However, firms hiring connected CEOs invest more in R&D, have lower fractions of busy directors, their boards have a larger network size, and their previous CEOs are more likely to be forced out. We acknowledge these differences and conduct additional robustness tests controlling for CEO age, R&D, board busyness, board network size, and forced CEO turnover.

5.2 *Connected Hiring and Firm Performance*

In this subsection, we analyze how firm performance changes around CEO turnovers, correcting for potential selection biases. Hypothesis 2 states that firms hiring connected CEOs have greater performance improvement than firms hiring unconnected CEOs, while Hypothesis 2a predicts less performance improvement. Our panel dataset consists of the six years around each hiring event for the hiring firm. We include firm fixed effects and year fixed effects in the regressions. Firm fixed effects allow us to interpret our results as within-firm variations around CEO turnovers and hence, our results are not driven by purely cross-sectional differences between firms with connected CEOs and those without. Year fixed effects parse out common time trends due to macroeconomic factors. The summary statistics of the panel dataset are presented in Appendix A4.

CEO hiring is a two-sided matching process (e.g., Kaplan and Minton, 2012) but re-

searchers only observe firm performance data when matching happens. If some unobservable factors correlate with both the probability of matching and firm performance, there is nonrandom missingness in the performance data and OLS estimates of the effect of CEO-board connections on firm performance can be biased. To address this concern, we adopt a Heckman selection approach running in two steps. In the first step, we utilize the results from the CEO hiring decision regression as reported in Column (3) of Table 2. We obtain the Inverse Mills Ratio (IMR) as the expected probability of matching from this regression. Firm performance regressions are then estimated in the second step, including the IMR as a control for selection bias. With this correction, the performance regressions should yield unbiased estimators of the effect of CEO-board connections on firm performance (Heckman, 1979).

A requirement for the Heckman model is that the first stage regression should include at least one exogenous variable that is excluded from the second stage regression. Among the explanatory variables excluded from the second-step firm performance regressions, the LOCAL dummy is a plausibly exogenous variable. Local candidates have been shown to have a greater tendency of being hired (e.g., Yonker, 2017). Also, as our Table 2 shows, LOCAL candidates are significantly and positively associated with the probability of CEO hiring.¹⁴ On the other hand, local candidates are unlikely to have a direct association with firm performance. Among various theories explaining the local hiring tendency, Yonker (2017) finds empirical results that are most consistent with a geographic preference theory and he does not find a reliable result that local hiring affects firm value. The geographic preference theory posits that local hiring tendency occurs because CEOs may have a preference for living and working close to home. According to this theory, “there should be no difference in

¹⁴The t -statistics of the estimated coefficients on LOCAL imply F -statistics of 185.78 (13.63^2 , Column (2)) and 163.07 (12.77^2 , Column (3)) for the test of the null hypothesis that the coefficient on the explanatory variable is zero. These F -statistics are large and suggest that the explanatory variable is strong (Stock and Yogo, 2005).

firm performance or value between firms run by locals and nonlocals” (p.610, [Yonker, 2017](#)).

The performance regression model is the follows:

$$Y_{i,t} = \beta \text{CONNECT}_i \times \text{POST}_{i,t} + \gamma \text{POST}_{i,t} + \psi' X_{i,t-1} + \phi \text{IMR}_i \times \text{POST}_{i,t} + \lambda_i + \alpha_t + \varepsilon_{i,t} \quad (1)$$

where i indexes firm and t indexes fiscal year. The dependent variable is a performance metric. We consider two performance metrics: accounting profitability (measured by ROA) and market value (measured by log of Tobin’s Q). The key independent variable is $\text{CONNECT} \times \text{POST}$. CONNECT equals one if a firm hires a connected CEO and zero otherwise. POST is an indicator for post-turnover years. X is a vector of firm- and board-level controls in year $t-1$ including SIZE , CAPX , R\&D , VOL , BOARD SIZE , $\text{BOARD INDEPENDENCE}$, and BOARD BUSYNESS . IMR is the Inverse Mills Ratio. λ_i denotes firm fixed effects and α_t denotes year fixed effects. We do not separately control for CONNECT and IMR since firm fixed effects are already included in the model.¹⁵ Standard errors are clustered by industry (2-digit SIC) to control for potential within-industry correlations in firm performance and connected hiring. Due to some missing values of the control variables, the total number of observations used in the regressions is 3,719, implying about 5.5 years of observations per hiring event.

The regression results are reported in Table 4. In Column (1), the dependent variable is ROA. The coefficient on $\text{CONNECT} \times \text{POST}$ is positive and significant at the 5% level. This suggests that, relative to unconnected hiring firms, connected hiring firms improve their ROA by an additional 2.1 percentage points. This effect is economically meaningful compared with the sample mean ROA (1.8%). The dependent variable in Column (2) is the logarithm of Tobin’s Q. The coefficient on the interaction is also positive and statistically significant. The improvement in Tobin’s Q after the new CEO joins the firm is 4.5% [= $(e^{0.044} - 1) \times 100\%$]

¹⁵We realize there can be a difference between firm fixed effects and event fixed effects when a firm experiences multiple hiring events. We find there are 91 firms with more than one hiring event. We check and verify that our results are robust if we replace firm fixed effects by event fixed effects.

higher for connected hiring firms than unconnected hiring firms. Interestingly, the coefficient on $\text{IMR} \times \text{POST}$ is not significant for either ROA or $\text{LN}(\text{Q})$, suggesting that selection may not be a serious issue in the observed data after all.

To assess the confounding possibility that connected hiring firms and unconnected hiring firms have different time trends in performance before hiring, we conduct parallel pre-trend tests on firm performance. Specifically, we check the performance difference between connected hiring firms and unconnected hiring firms in each year relative to the new CEO appointment. BEFORE_1 , one year before a new CEO’s first year in office, is omitted from the regression model as a reference point. The results are reported in Appendix A5. We find insignificant coefficients on the two interactions of $\text{CONNECT} \times \text{BEFORE}_3$ and $\text{CONNECT} \times \text{BEFORE}_2$, suggesting common pre-trends in performance between connected hiring firms and unconnected hiring firms. Moreover, there are positive and significant coefficients on the interaction of $\text{CONNECT} \times \text{AFTER}_3$ in the ROA regression and on the interactions of CONNECT times all three AFTER dummies in the $\text{LN}(\text{Q})$ regression. These results suggest that the divergence in firm performance starts after the hiring event. While the effect on accounting performance starts in three years, the effect on Q appears in just a year. Overall, after correcting for potential selection biases, our panel regression results suggest that connected hiring has a positive impact on firm performance, consistent with Hypothesis 2 while inconsistent with Hypothesis 2a.¹⁶

We also analyze an alternative measure of firm performance, i.e., the announcement returns of new CEO appointments. The test is a joint test of three hypotheses. First, investors know whether the new CEO has pre-existing connections with the board. Second, investors understand the benefits such connections bring to the firm. Third, connected CEOs

¹⁶Callaway and Sant’Anna (2021) argue that staggered difference-in-differences (DiD) models can lead to biased estimators when some control firms become treatment firms later in the sample. Our empirical setting is less likely affected by this because we use tight windows around the hiring events and most firms only appear once. We estimate the average treatment effect following Callaway and Sant’Anna (2021) and find robust results.

outperform (or underperform) unconnected CEOs. We do not find a significant difference in the CARs between connected and unconnected hiring firms. While the results do not offer support to either the value maximization or the self-interest motivation of connected hiring, they are also consistent with the possibility that investors either do not know about the pre-existing connections between the CEO and the board or are not fully aware of the benefits of connected CEO hires. The results are not reported for brevity.

5.3 Omitted Variable Concerns

A concern with a causal interpretation of our main results in subsection 5.2 is that some firm or CEO characteristics may lead to variations in firm performance changes following a CEO turnover. If such characteristics also correlate with a firm’s propensity to hire a connected CEO, we have an omitted variable problem. Theoretically, forced CEO turnover, CEO industry expertise, CEO network size, and CEO talent could be such omitted factors.

In a forced CEO turnover, the outgoing CEO typically underperforms (Jenter and Kanaan, 2015; Jenter and Lewellen, 2021). As such, the change to the new CEO is likely to result in performance improvement. Also, we find in Table 3 that, in connected hiring firms, their previous CEOs are more likely to be forced out. It is possible that, after firing a CEO, a board is under pressure to find a replacement and has to rely on its network to identify the next CEO. Hence, it is important to rule out forced turnovers as an alternative explanation to our main finding. To do so, we repeat the analyses in Table 4, controlling for the interaction between forced CEO turnover and the post dummy ($\text{FORCED TURNOVER} \times \text{POST}$). FORCED TURNOVER equals one if the previous CEO was forced out of the company, and zero otherwise.¹⁷ The results are reported in Columns (1) and (2) of Table 5, Panel A. The dependent variables are ROA and $\text{LN}(Q)$, respectively. We still find positive and significant coefficients on $\text{CONNECT} \times \text{POST}$. The magnitude of the effects is similar to that in Table

¹⁷Forced CEO turnover data are from Peters and Wagner (2014) and Jenter and Kanaan (2015).

4. This suggests that our results are not driven by forced CEO turnovers. Incidentally, $\text{FORCED TURNOVER} \times \text{POST}$ does not have a significant regression coefficient for ROA while it has a marginally negative coefficient for $\text{LN}(Q)$.¹⁸

A new CEO with experiences in the same industry as a hiring firm could help the firm succeed (Huang, 2014; Gounopoulos and Pham, 2018). Meanwhile, the firm may also hire directors with overlapping industry experiences for a similar reason, and the directors and the CEO with same industry experiences are likely to be connected. To partial out such a confounding effect, we include in the performance regression model the interaction between CEO overlapping industry expertise and the post dummy ($\text{CEO INDUSTRY EXP} \times \text{POST}$). CEO INDUSTRY EXP equals one if the new CEO has worked in the same industry as the hiring firm previously, and zero otherwise. The results are reported in Columns (3) and (4) of Table 5, Panel A. We find that our main results are robust to considering overlapping industry experiences as a confounding factor, as the coefficients on $\text{CONNECT} \times \text{POST}$ for both ROA and $\text{LN}(Q)$ remain statistically significant and similar in magnitude as before. To our surprise, overlapping industry experiences are not associated with performance improvement post turnovers.

If a CEO is well connected, he/she may be able to improve firm performance through enhanced information sharing or lower cost of capital (e.g., Hochberg et al., 2007; Engelberg et al., 2012; Faleye et al., 2014). A well-connected CEO candidate is also more likely to be hired through personal connections. To delineate our findings from a CEO network effect, we additionally control for the interaction between CEOs' network size and the post dummy ($\text{CEO NETWORK SIZE} \times \text{POST}$) in our model. CEO NETWORK SIZE counts the total number of connections a CEO has built with people at other companies before being hired by a firm. The results are reported in Columns (5) and (6) of Table 5, Panel A. We find

¹⁸One could worry about performance mean reversion around CEO turnovers. However, Table 3 shows no correlation between pre-turnover stock return and connected CEO hiring. Also, when we consider pre-turnover stock return as an additional control for connections, we find our baseline results to be robust.

that CEO network size is associated with greater ROA increases after hiring, as expected, while it is not related to $\text{LN}(\text{Q})$ changes. More important, we continue to find positive and significant coefficients on $\text{CONNECT} \times \text{POST}$ for both ROA and $\text{LN}(\text{Q})$ that are of almost identical economic magnitudes as in the base case (Table 4). Hence, our main findings are not driven by a CEO network effect.

The observed difference in performance changes between connected hiring firms and unconnected hiring firms could also result from differences in CEO talent. If connections somehow reflect CEO talent, our main findings may again be subject to an alternative explanation that the incoming CEO is more talented than the outgoing CEO and this results in performance increases. For example, a talented CEO could have a larger social network and is therefore more likely hired through connections. To assess this confounding possibility, we explicitly control for $\text{CEO TALENT} \times \text{POST}$ in our model and present the results in Columns (7) and (8) of Table 5, Panel A. As before, talent is measured based on whether the CEO attended an Ivy League school. Our results on $\text{CONNECT} \times \text{POST}$ remain statistically and economically robust. On the other hand, $\text{CEO TALENT} \times \text{POST}$ is not significantly associated with firm performance. We thus rule out CEO talent as an omitted variable.

In addition to the above theoretically-motivated omitted variables, we conduct further robustness tests based on observed differences between connected and unconnected CEOs and between connected and unconnected hiring firms. The univariate comparisons of CEO and firm characteristics between connected and unconnected hiring events in Table 3 show that while connected CEOs and unconnected CEOs are similar in talent, network size, gender, education, conglomerate experience and industry expertise, connected CEOs are older than unconnected CEOs. Also, while connected hiring firms are similar to unconnected hiring firms in firm size, profitability, investment, valuation, and other financial characteristics, connected hiring firms spend more in R&D, have lower fractions of busy directors, their boards have a larger network size, and their previous CEOs are more likely to be forced out.

Hence, we additionally consider CEO AGE, R&D, BOARD BUSYNESS, and BOARD NETWORK SIZE as potential confounding factors. We add as controls CEO AGE, R&D, BOARD BUSYNESS, or BOARD NETWORK SIZE, interacted with POST, in the baseline regressions from Table 4. We report the results in Table 5, Panel B. Ex ante, we do not have a strong reason to believe any of the four factors will cause variations in the post-turnover firm performance changes. As expected, none of the additional interaction terms have a significant coefficient. Most importantly, we find that the estimated coefficients on $\text{CONNECT} \times \text{POST}$ remain positive, significant, and in similar magnitudes as the base case for both ROA and $\text{LN}(\text{Q})$ across all the models. Our results are also robust to including all the confounding possibilities in Table 5 in the same model. The results are not reported for brevity.

Overall, our results in this subsection suggest that the effects of connected CEO hires on firm performance are not driven by an array of omitted factors we consider. Although one can never control for all possible omitted factors, we believe the probability is quite low that a factor other than those we consider both causes variations in post-turnover performance changes and correlates with connected hiring. Furthermore, we next examine heterogeneity in the effects of connected hiring based on theoretical predictions from the value maximization hypothesis. Results consistent with such predictions should further corroborate a causal interpretation of our main results.

5.4 Channels for the Effects of Connected Hiring on Firm Performance

In this subsection, we investigate the channels through which connection-based hiring affects firm performance. Under the firm value maximization motivation, firms hire connected CEOs to mitigate the board's and the candidates' concerns about fit due to information asymmetry and facilitate CEO-board coordination. This hypothesis predicts that the benefit of hiring a connected CEO should be concentrated in firms with higher information asymmetry, CEO

termination risk, and CEO-board coordination costs (Hypothesis 3).

We form subsamples based on measures of information asymmetry, CEO termination risk, and coordination costs. The cutoff points we use to form subsamples are the sample median for all measures. Then, we re-estimate the model in Equation (1) in each subsample, and compare the coefficient estimates of $\text{CONNECT} \times \text{POST}$ between each pair of subsamples. The results are reported in Table 6. Columns (1) and (2) show the effects of connected CEO hires on changes in ROA and log of Tobin’s Q around CEO turnovers in the high subsample, and Columns (3) and (4) present the results in the low subsample. In Columns (5) and (6), we compare the differences in the effects between the high and the low subsamples.

Panel A presents the results for subsamples based on measures of information asymmetry. We consider two measures: opacity and dispersion of analysts’ earnings forecast (Affleck-Graves et al., 2002; Billett and Yu, 2016; Xu and Yang, 2016). Opacity captures the variation in abnormal total current accruals over the past five years. A detailed definition is presented in Appendix A1. Greater opacity and larger dispersion of analysts’ forecast correspond to greater information asymmetry. We find that the effects of connected CEO hires on firm performance exist only in the high information asymmetry subsamples (Columns (1) and (2)). In particular, the effects of connected CEO hires on performance changes are statistically significant in the subsamples with greater opacity and larger dispersion of earnings forecast, and they are economically meaningful (ranging from 3.2% to 3.9% for ROA and 7.0% to 7.1% for Tobin’s Q). By contrast, there are no significant associations between connections and post-hiring performance changes in the low information asymmetry subsamples. Overall, these results are consistent with an information asymmetry mitigation channel of connected CEO hiring.

In Panel B of Table 6, we present the results for subsamples based on measures of CEO termination risk. For measures of termination risk, we use stock return volatility, past stock returns, and an indicator for whether the firm fired the previous CEO (e.g., Bushman

et al., 2010; Xu and Yang, 2016). When a firm has higher stock return volatility, lower past returns, or fired the previous CEO, it implies that the firm has higher CEO termination risk. We find that the result of a greater increase in firm performance for connected CEO hires than unconnected CEO hires exists only in subsamples of higher CEO termination risk. By contrast, such effects are not observed in the subsamples of lower CEO termination risk. The results support a termination risk reduction channel of connected CEO hiring.

Lastly, in Panel C of Table 6, we show the results for subsamples based on a measure of CEO-board coordination costs. When there are more board members sitting on the board, it is usually more difficult for executives and directors to cooperate (Jensen, 1993). Hence, larger boards correspond to higher CEO-board coordination costs. We find that the effects of connected CEO hires on firm performance exist only in the subsample with higher coordination costs. Such effects are not observed in the subsample with lower coordination costs. The results are in harmony with a coordination cost reduction channel of connected CEO hiring.

The difference in the coefficient on $\text{CONNECT} \times \text{POST}$ between each pair of subsamples is statistically significant only in two cases. However, the coefficient estimates of $\text{CONNECT} \times \text{POST}$ in the high asymmetry/risk/cost subsamples are always larger in magnitude than those in the low asymmetry/risk/cost subsamples. The coefficients in the low subsamples are always statistically insignificant and they are negative in two cases. Even when they are positive, the coefficients in the high asymmetry/risk/cost subsamples are 2 to 8 times larger than those in the low asymmetry/risk/cost subsample. Overall, our results suggest that the benefit of hiring a connected CEO is concentrated in firms with higher information asymmetry, higher CEO termination risk, and higher CEO-board coordination costs, in support of Hypothesis 3. The results are consistent with the idea that firms hire connected CEOs to mitigate both the board's and the candidate's concerns about fit due to information asymmetry, as well as to facilitate good firm-CEO matches and board-CEO coordination.

5.5 *Connected Hiring and Acquisition Performance*

In this subsection, we look for additional evidence of the benefit of connected hiring by investigating acquisition performance. This test is motivated by the view that mergers and acquisitions (M&A) are major, complex corporate events that require the board’s approval, and a coordinated CEO-director team is better able to screen investment projects.

We collect all M&A deals announced by the CEOs in our sample where the target firms are US public firms. We exclude small deals (i.e., deal value less than \$5 million). We focus on domestic transactions because cross-border transactions can be motivated by many considerations, some of which may not be directly related to value maximization.¹⁹ We exclude deals where target firms are private because those deals are shown to have better acquisition performance (e.g., [Chang, 1998](#); [Fuller et al., 2002](#); [Faccio et al., 2006](#)). There could be less need for board advising and monitoring in such cases.²⁰

We calculate the acquirer’s 5-day (-2, +2) cumulative abnormal returns (CARs) around the acquisition announcement date following [Cai and Sevilir \(2012\)](#). CARs are calculated relative to the market model and estimated using the return of the 200 trading days ending two months before the acquisition announcement. Panel A of Table 7 presents the univariate comparison of CARs between connected CEO hirings and unconnected CEO hirings. In our M&A sample, 77 (26.3%) announcements are made by connected CEOs, and 216 (73.7%) are made by unconnected CEOs. The mean CARs is 2.2% for acquisitions made by connected CEOs, and -0.5% for those made by unconnected CEOs. A t-test between the means indicates that acquisitions made by connected CEOs have significantly higher CARs than those made

¹⁹These other considerations include economic condition of target country ([Erel et al., 2012](#)), geographic proximity ([Erel et al., 2012](#)), corporate governance ([Rossi and Volpin, 2007](#)), culture ([Xu, 2017](#)), market development ([Boateng et al., 2008](#)), investor protection ([Bris and Cabolis, 2008](#)), and corporate social responsibilities ([Li and Wang, 2022](#)).

²⁰Consistent with this notion, when comparing acquisition performance between connected CEO hires and unconnected CEO hires where target firms are private firms, we find an insignificant difference in the acquirer’s acquisition return between the two groups.

by unconnected CEOs.

We then estimate the following regression model:

$$CAR_{i,t} = \beta \text{CONNECT}_i + \psi' X_{i,t-1} + \phi \text{IMR}_i + \gamma_j + \alpha_t + \varepsilon_{i,t} \quad (2)$$

where i indexes M&A deal, j indexes industry of the acquirer and t indexes calendar year. The dependent variable is CAR, the acquirer’s cumulative abnormal return. The independent variable of interest is CONNECT. X is a vector of control variables that are plausibly correlated with M&A announcement returns. Our choice of control variables is motivated by [Cai and Sevilir \(2012\)](#). We control for deal characteristics (STOCK DEAL, DIVERSIFYING ACQUISITION, RELATIVE DEAL SIZE, TENDER OFFER, HOSTILE, TOE-HOLD), acquirer characteristics, target characteristics, and CEO characteristics (TALENT, NETWORK SIZE). We also control for the Inverse Mills Ratio from the first step of the Heckman model. Detailed definitions of these variables are provided in [Appendix A1](#). γ_j represents industry fixed effects, and α_t represents calendar year fixed effects. Standard errors are clustered at the industry level.

The regression results are reported in Panel B of [Table 7](#). Column (1) presents the result of the regression model with CONNECT, controlling for IMR and industry and year fixed effects. The estimated coefficient on CONNECT is positive and significant at the 5% level, which suggests that, controlling for time-invariant industry effects and common time trends, acquisitions made by connected CEOs have superior performance than those made by unconnected CEOs. The magnitude of the effect is also economically significant. CARs in transactions made by connected CEOs are, on average, 2.7% higher than those in transactions made by unconnected CEOs. The estimate is the same as the univariate comparison result. In Column (2), we include deal characteristics as additional controls. The estimated coefficient on CONNECT is still positive and significant. We additionally control for acquirer characteristics in Column (3) and target characteristics in Column (4). The

results on CONNECT remain robust. The estimated coefficient on CONNECT increases in magnitude and statistical significance when there are more controls. Overall, the results are consistent with Hypothesis 4 that firms hiring connected CEOs make more value-enhancing acquisitions.

Because CEO-board connections can facilitate coordination between the two parties, they are likely to be particularly beneficial to firms with high coordination costs. Hence, we check whether the result we observe above is concentrated among firms with larger coordination costs (Hypothesis 5). We split the sample into two parts based on the sample median board size and report the subsample regression results in Columns (5) and (6). We find that CONNECT is significantly associated with acquisition announcement CARs only in the high coordination cost (large board) subsample, but not in the low coordination cost (small board) subsample. Although the t -test is not statistically significant (t -statistic=0.86), the regression coefficient on CONNECT is four times as large in the high coordination cost subsample than in the low coordination cost subsample. The results support Hypothesis 5 and suggest that connected CEOs make more profitable acquisitions due to better CEO-board coordination. Our results are complementary to Schmidt (2015), which shows that CEO-board social ties within merger acquirers are associated with higher bidder announcement returns when the potential value of board advice is high. While Schmidt (2015) focuses primarily on social ties, we focus on employment connections. Different from Schmidt (2015), our results reveal a coordination channel for the better acquisition performance: directors and the CEO work together to better screen investment projects.

6 Forced CEO Turnovers

In this section, we investigate the effect of connected CEO hiring on forced CEO turnover. Both the firm value maximization and the self-interest motivations of connected hiring pre-

dict a lower probability of forced turnover for connected CEOs than for unconnected CEOs (Hypothesis 6). To test this prediction, we construct a sample that is built upon the 674 external CEO hiring events and contains the entire observable tenure of those newly hired CEOs.

We present the univariate comparison of forced turnover rates between connected CEOs and unconnected CEOs in Panel A of Table 8. Out of the 190 connected CEOs, 27 are forced out, implying a forced turnover rate of 14.2%. By contrast, out of the 484 unconnected CEOs, 101 are fired for poor performance, which suggests a forced turnover rate of 20.9%. The difference between the two forced turnover probabilities is -6.7% . The t -statistic of the difference is -1.99 , significant at the 5% level. The result suggests that connected CEOs are significantly less likely than unconnected CEOs to be forced out.

We then formally test whether connected CEOs are less likely than unconnected CEOs to be fired. We estimate a regression model in which the dependent variable is FORCED TURNOVER, which equals one if the CEO is fired for bad performance in a given year and zero otherwise. The independent variable of interest is CONNECT, an indicator for pre-existing CEO-board connections. We include firm- and CEO-level controls and the Inverse Mills Ratio (IMR) from the Heckman model. Firm and year fixed effects are included to control for firm-specific and time-invariant omitted factors and common time trends in the data.

Panel B presents the regression results. Three models with fixed effects and IMR are estimated: no control, firm controls, and firm and CEO controls. In all three columns, the coefficients on CONNECT are negative and statistically significant at the 1% level. Connected CEOs are 6.6% or 6.9% less likely than unconnected CEOs to be forced out. The results are consistent with Hypothesis 6 that connected CEOs have a lower probability of forced turnover than unconnected CEOs. Among the control variables, lower accounting and stock performance correspond to a higher probability of forced turnover. Less talented

CEOs are more likely to be forced out, as we would expect.

7 CEO Compensation

Lastly, we investigate how connected CEOs are compensated. We estimate the following regression model:

$$Y_{i,t} = \beta \text{CONNECT}_i + \psi' X_{i,t-1} + \phi \text{IMR}_i + \gamma_j + \alpha_t + \varepsilon_{i,t} \quad (3)$$

The dependent variable is the logarithm of CEO’s total pay or excess pay in the first full year the new CEO takes office at the firm ([Czirák and Jenter, 2022](#)). Total pay is the TDC1 variable from ExecuComp. Excess pay is the residual from a regression of CEO’s total pay on firm size, industry fixed effects, and interactions between firm size and industry fixed effects. The independent variable of interest is CONNECT. X is a vector of firm and board characteristics, including SIZE, ROA, PAST RET, LN(Q), CAPX, R&D, VOL, BOARD SIZE, BOARD INDEPENDENCE, and BOARD BUSYNESS. We also include the Inverse Mills Ratio as a control. Detailed definitions of variables are listed in [Appendix A1](#). γ_j and α_t represent industry and year fixed effects, respectively.

[Table 9](#) reports the regression results. The dependent variable in Column (1) is LN(TOTAL PAY). The coefficient on CONNECT is insignificant, suggesting that there is no significant difference between the total pay of connected CEOs and that of unconnected CEOs. In Column (2), the dependent variable is LN(EXCESS PAY). We find an insignificant coefficient on CONNECT, which suggests that connected CEOs and unconnected CEOs receive similar excess pay. Overall, the results in this table suggest that connected CEOs do not receive significantly higher pay than unconnected CEOs, consistent with [Hypothesis 7](#) while inconsistent with [Hypothesis 7a](#). Thus, it does not seem that boards render favors to their friends when hiring new CEOs ([Hwang and Kim, 2009](#)).

8 Conclusion

In this paper, we study the net benefit for a firm to hire a CEO who has pre-existing professional ties with its board of directors. We first show that a CEO candidate’s board connections are associated with a higher probability that the candidate is selected by the firm. We then examine changes in firm operating performance and market value around CEO turnovers and find that the performance improvements are significantly higher when the new CEOs are connected with the boards than when they are unconnected. We consider an array of confounding factors but none of them can weaken these results. These findings support the hypothesis that boards select CEO candidates they are acquainted with and that this practice is in the best interest of the shareholders. Moreover, the performance effect of connected hiring is concentrated in the subsample of firms with greater information asymmetry, higher CEO termination risk, or larger board-CEO coordination costs, suggesting that connections mitigate information asymmetry and facilitate board-CEO coordination.

Our paper contributes to three strands of literature by providing novel evidence on how social network could impact CEO labor market outcomes and firm performance. First, we contribute to the discussion about the benefit and cost of professional and social connections between corporate CEOs and boards (e.g., [Hwang and Kim, 2009](#); [Fracassi and Tate, 2012](#); [Coles et al., 2014](#)). Second, we add to the literature studying boards’ roles based on social connections (e.g., [Cai and Sevilir, 2012](#); [Goldman et al., 2013](#); [Ishii and Xuan, 2014](#)). Finally, we contribute to research on the determinants and impacts of CEO selection decisions (e.g. [Gabaix and Landier, 2008](#); [Custódio and Metzger, 2014](#); [Pan, 2017](#)).

References

- Adams, R. B., Almeida, H., Ferreira, D., 2005. Powerful CEOs and Their Impact on Corporate Performance. *Review of Financial Studies* 18, 1403–1432.
- Affleck-Graves, J., Callahan, C. M., Chipalkatti, N., 2002. Earnings Predictability, Information Asymmetry, and Market Liquidity. *Journal of Accounting Research* 40, 561–583.
- Albuquerque, A. M., De Franco, G., Verdi, R. S., 2013. Peer Choice in CEO Compensation. *Journal of Financial Economics* 108, 160–181.
- Allgood, S., Farrell, K. A., 2003. The Match between CEO and Firm. *The Journal of Business* 76, 317–341.
- Billett, M. T., Yu, M., 2016. Asymmetric Information, Financial Reporting, and Open-Market Share Repurchases. *Journal of Financial and Quantitative Analysis* 51, 1165–1192.
- Boateng, A., Qian, W., Tianle, Y., 2008. Cross-Border M&As by Chinese Firms: An Analysis of Strategic Motives and Performance. *Thunderbird International Business Review* 50, 259–270.
- Bris, A., Cabolis, C., 2008. The Value of Investor Protection: Firm Evidence From Cross-Border Mergers. *Review of Financial Studies* 21, 605–648.
- Bushman, R., Dai, Z., Wang, X., 2010. Risk and CEO Turnover. *Journal of Financial Economics* 96, 381–398.
- Cai, Y., Sevilir, M., 2012. Board Connections and M&A Transactions. *Journal of Financial Economics* 103, 327–349.
- Callaway, B., Sant’Anna, P. H., 2021. Difference-in-differences with multiple time periods. *Journal of Econometrics* 225, 200–230, themed Issue: Treatment Effect 1.
- Chang, S., 1998. Takeovers of Privately Held Targets, Methods of Payment, and Bidder Returns. *The Journal of Finance* 53, 773–784.
- Cohen, L., Frazzini, A., Malloy, C., 2008. The Small World of Investing: Board Connections and Mutual Fund Returns. *Journal of Political Economy* 116, 951–979.
- Cohen, L., Frazzini, A., Malloy, C., 2010. Sell-Side School Ties. *The Journal of Finance* 65, 1409–1437.
- Coles, J. L., Daniel, N. D., Naveen, L., 2014. Co-opted Boards. *Review of Financial Studies* 27, 1751–1796.
- Cremers, K., Grinstein, Y., 2014. Does the Market for CEO Talent Explain Controversial CEO Pay Practices. *Review of Finance* 18, 921–960.

- Custódio, C., Metzger, D., 2014. Financial Expert CEOs: CEO's Work Experience and Firm's Financial Policies. *Journal of Financial Economics* 114, 125–154.
- Custódio, C., Ferreira, M. A., Matos, P., 2013. Generalists versus specialists: Lifetime work experience and chief executive officer pay. *Journal of Financial Economics* 108, 471–492.
- Cziráki, P., Jenter, D., 2022. The Market for CEOs. Working Paper.
- Datta, D. K., Guthrie, J. P., 1994. Executive Succession: Organizational Antecedents of CEO Characteristics. *Strategic Management Journal* 15, 569–577.
- Eisfeldt, A. L., Kuhnen, C. M., 2013. CEO Turnover in a Competitive Assignment Framework. *Journal of Financial Economics* 109, 351–372.
- Engelberg, J., Gao, P., Parsons, C. A., 2012. Friends with money. *Journal of Financial Economics* 103, 169–188.
- Erel, I., Liao, R. C., Weisbach, M. S., 2012. Determinants of Cross-Border Mergers and Acquisitions. *The Journal of Finance* 67, 1045–1082.
- Faccio, M., McConnell, J. J., Stolin, D., 2006. Returns to Acquirers of Listed and Unlisted Targets. *Journal of Financial and Quantitative Analysis* 41, 197–220.
- Faleye, O., Kovacs, T., Venkateswaran, A., 2014. Do better-connected ceos innovate more? *Journal of Financial and Quantitative Analysis* 49, 1201–1225.
- Fee, C. E., Hadlock, C. J., Pierce, J. R., 2013. Managers With and Without Style: Evidence Using Exogenous Variation. *Review of Financial Studies* 26, 567–601.
- Fracassi, C., Tate, G., 2012. External Networking and Internal Firm Governance. *The Journal of Finance* 67, 153–194.
- Fuller, K., Netter, J., Stegemoller, M., 2002. What Do Returns to Acquiring Firms Tell Us? Evidence from Firms That Make Many Acquisitions. *The Journal of Finance* 57, 1763–1793.
- Gabaix, X., Landier, A., 2008. Why Has CEO Pay Increased So Much? *The Quarterly Journal of Economics* 123, 49–100.
- Gibbons, R., Murphy, K. J., 1992. Optimal Incentive Contracts in the Presence of Career Concerns: Theory and Evidence. *Journal of Political Economy* 100, 468–505.
- Goldman, E., Rocholl, J., So, J., 2013. Politically Connected Boards of Directors and the Allocation of Procurement Contracts. *Review of Finance* 17, 1617–1648.
- Gounopoulos, D., Pham, H., 2018. Specialist ceos and ipo survival. *Journal of Corporate Finance* 48, 217–243.

- Hallock, K. F., 1997. Reciprocally Interlocking Boards of Directors and Executive Compensation. *Journal of Financial and Quantitative Analysis* 32, 331–344.
- Harrell, E., 2016. Succession Planning: What the Research Says. *Harvard Business Review* (December).
- Harris, M., Raviv, A., 2008. A Theory of Board Control and Size. *Review of Financial Studies* 21, 1797–1832.
- He, Z., Hirshleifer, D., 2022. The Exploratory Mindset and Corporate Innovation. *Journal of Financial and Quantitative Analysis* 57, 127–169.
- Heckman, J. J., 1979. Sample Selection Bias as a Specification Error. *Econometrica* 47, 153–161.
- Hochberg, Y. V., Ljungqvist, A., Lu, Y., 2007. Whom You Know Matters: Venture Capital Networks and Investment Performance. *The Journal of Finance* 62, 251–301.
- Houston, J. F., James, C. M., Ryngaert, M. D., 2001. Where Do Merger Gains Come From? Bank Mergers From the Perspective of Insiders and Outsiders. *Journal of Financial Economics* 60, 285–331.
- Huang, S., 2014. Managerial expertise, corporate decisions and firm value: Evidence from corporate refocusing. *Journal of Financial Intermediation* 23, 348–375.
- Hund, J., Monk, D., Tice, S., 2010. Uncertainty About Average Profitability and the Diversification Discount. *Journal of Financial Economics* 96, 463 – 484.
- Huson, M. R., Malatesta, P. H., Parrino, R., 2004. Managerial Succession and Firm Performance. *Journal of Financial Economics* 74, 237–275.
- Hwang, B.-H., Kim, S., 2009. It Pays to Have Friends. *Journal of Financial Economics* 93, 138 – 158.
- Ishii, J., Xuan, Y., 2014. Acquirer-Target Social Ties and Merger Outcomes. *Journal of Financial Economics* 112, 344–363.
- Jensen, M. C., 1993. The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. *The Journal of Finance* 48, 831–880.
- Jenter, D., Kanaan, F., 2015. Ceo turnover and relative performance evaluation. *The Journal of Finance* 70, 2155–2184.
- Jenter, D., Lewellen, K., 2021. Performance-Induced CEO Turnover. *The Review of Financial Studies* 34, 569–617.
- Jovanovic, B., 1979. Job Matching and the Theory of Turnover. *Journal of Political Economy* 87, 972–990.

- Jung, H., Subramanian, A., 2017. CEO Talent, CEO Compensation, and Product Market Competition. *Journal of Financial Economics* 125, 48–71.
- Kaplan, S. N., Klebanov, M. M., Sorensen, M., 2012. Which CEO Characteristics and Abilities Matter? *The Journal of Finance* 67, 973–1007.
- Kaplan, S. N., Minton, B. A., 2012. How Has CEO Turnover Changed? *International Review of Finance* 12, 57–87.
- Kaplan, S. N., Sorensen, M., 2021. Are CEOs Different? *The Journal of Finance* 76, 1773–1811.
- Khanna, V., Kim, E. H., Lu, Y., 2015. CEO Connectedness and Corporate Fraud. *The Journal of Finance* 70, 1203–1252.
- Kramarz, F., Thesmar, D., 2013. Social Networks in the Boardroom. *Journal of the European Economic Association* 11, 780–807.
- Larcker, D. F., So, E. C., Wang, C. C., 2013. Boardroom Centrality and Firm Performance. *Journal of Accounting and Economics* 55, 225–250.
- Li, Z., Wang, P., 2022. Cross-border mergers and acquisitions and corporate social responsibility: Evidence from chinese listed firms. *Journal of Business Finance & Accounting* 00, 1–42.
- Montgomery, J. D., 1991. Social Networks and Labor-Market Outcomes: Toward an Economic Analysis. *American Economic Review* 81, 1408–1418.
- Naveen, L., 2006. Organizational Complexity and Succession Planning. *Journal of Financial and Quantitative Analysis* 41, 661–683.
- Pan, Y., 2017. The Determinants and Impact of Executive-Firm Matches. *Management Science* 63, 185–200.
- Parrino, R., 1997. CEO Turnover and Outside Succession: A Cross-Sectional Analysis. *Journal of Financial Economics* 46, 165–197.
- Parrino, R., Sias, R. W., Starks, L. T., 2003. Voting With Their Feet: Institutional Ownership Changes Around Forced CEO Turnover. *Journal of Financial Economics* 68, 3–46.
- Parrino, R., Srinivasan, R., 2011. CEOs with Marketing Backgrounds: When Are They Appointed and How Well Do Their Firms Perform? Working Paper.
- Peters, F. S., Wagner, A. F., 2014. The Executive Turnover Risk Premium. *The Journal of Finance* 69, 1529–1563.
- Petersen, M. A., Rajan, R. G., 1994. The Benefits of Lending Relationships: Evidence from Small Business Data. *The Journal of Finance* 49, 3–37.

- Rogers, E., Bhowmik, D., 1970. Homophily-Heterophily : Relational Concepts for Communication Research. *Public Opinion Quarterly* 34, 523–538.
- Rosen, S., 1982. Authority, Control, and the Distribution of Earnings. *The Bell Journal of Economics* 13, 311–323.
- Rossi, S., Volpin, P., 2007. The Governance Motive in Cross-Border Mergers and Acquisitions. In: Gregoriou, G. N., Renneboog, L. (eds.), *Corporate Governance and Regulatory Impact on Mergers and Acquisitions*, Academic Press, Boston, Quantitative Finance, pp. 43–69.
- Sattinger, M., 1993. Assignment Models of the Distribution of Earnings. *Journal of Economic Literature* 31, 831–880.
- Schmidt, B., 2015. Costs and Benefits of Friendly Boards During Mergers and Acquisitions. *Journal of Financial Economics* 117, 424–447.
- Stock, J., Yogo, M., 2005. Testing for Weak Instruments in Linear IV Regression, Cambridge University Press, New York, pp. 80–108.
- Terviö, M., 2008. The Difference That CEOs Make: An Assignment Model Approach. *American Economic Review* 98, 642–668.
- Wang, J. X., 2022. Board Connections and CEO Successions. Working Paper.
- Xu, E. Q., 2017. Cross-Border Merger Waves. *Journal of Corporate Finance* 46, 207–231.
- Xu, J., Yang, J., 2016. Golden Hellos: Signing Bonuses for New Top Executives. *Journal of Financial Economics* 122, 175–195.
- Yonker, S. E., 2017. Geography and the Market for CEOs. *Management Science* 63, 609–630.

Table 1: Summary Statistics of Hiring Event-Candidate Sample

This table summarizes the candidate and hiring firm characteristics in the hiring event-candidate sample. All the newly hired CEOs in a given year in our CEO turnover sample are considered as potential candidates for each of the hiring events in that year. Detailed variable definitions are in Appendix A1.

	# Obs	Mean	St. Dev.	P25	P50	P75
HIRED \times 100	30,375	2.140	14.471	0.000	0.000	0.000
CONNECT	30,375	0.187	0.390	0.000	0.000	0.000
CONGLOMERATE EXP	30,375	0.245	0.274	0.031	0.214	0.327
TALENT	30,375	0.024	0.154	0.000	0.000	0.000
DOCTORAL DEGREE	30,375	0.073	0.260	0.000	0.000	0.000
LOCAL	30,375	0.061	0.240	0.000	0.000	0.000
AGE	30,375	52.553	6.157	49.000	52.655	56.000
GENDER	30,375	0.956	0.205	1.000	1.000	1.000
MBA DEGREE	30,375	0.468	0.499	0.000	0.000	1.000
COMPLEXITY	30,375	0.169	0.280	0.000	0.000	0.161
SIZE	30,375	7.566	1.617	6.429	7.467	8.547
R&D	30,375	0.037	0.075	0.000	0.002	0.045
ROA	30,375	0.014	0.132	-0.013	0.027	0.071
LN(Q)	30,375	0.956	0.297	0.732	0.881	1.104
CAPEX	30,375	0.043	0.058	0.015	0.028	0.051
VOL	30,375	0.128	0.070	0.084	0.113	0.152
BOARD SIZE	30,375	8.978	2.222	8.000	9.000	10.000
BOARD INDEPENDENCE	30,375	0.781	0.147	0.714	0.833	0.889
BOARD BUSYNESS	30,375	0.273	0.227	0.111	0.250	0.400

Table 2: Determinants of CEO Hiring

This table presents regression results of a Probit model using the hiring event-candidate sample. The dependent variable equals one if a candidate is newly hired by a firm in a given year, and zero otherwise. The key independent variable is CONNECT, an indicator for pre-existing candidate-board connections. Column (1) reports the result of a Probit model with CONNECT being the only independent variable. In Column (2), we add three matching interactions (CONGLOMERATE EXP \times COMPLEXITY, TALENT \times SIZE, and DOCTORAL DEGREE \times R&D) from [Pan \(2017\)](#), the six component variables, the LOCAL dummy, and AGE, GENDER, MBA DEGREE, ROA, LN(Q), CAPEX, VOL, BOARD SIZE, BOARD INDEPENDENCE, BOARD BUSYNESS. In Column (3) we further include firm and year fixed effects. Variable definitions are in [Appendix A1](#). Standard errors are clustered at the hiring firm level. T-stats are reported in parentheses. Average marginal effects are reported in brackets below t-stats. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	HIRED (1)	HIRED (2)	HIRED (3)
CONNECT	0.218*** (7.02) [0.011]	0.215*** (6.61) [0.010]	0.703*** (8.57) [0.030]
CONGLOMERATE EXP \times COMPLEXITY		0.787*** (4.69)	0.826*** (4.30)
TALENT \times SIZE		0.025 (0.41)	0.015 (0.24)
DOCTORAL DEGREE \times R&D		2.503*** (3.30)	2.420*** (2.93)
CONGLOMERATE EXP		-0.074 (-1.07)	-0.112 (-1.49)
TALENT		-0.185 (0.39)	-0.138 (0.29)
DOCTORAL DEGREE		-0.179** (-2.35)	-0.153* (-1.93)
LOCAL		0.620*** (13.63)	0.698*** (12.77)
AGE		-0.004* (-1.68)	-0.004 (-1.57)
GENDER		-0.007 (-0.08)	-0.033 (-0.37)
MBA DEGREE		0.008 (0.23)	0.007 (0.19)
COMPLEXITY		-0.222*** (-3.47)	-0.143 (-0.79)
SIZE		0.000 (0.05)	0.076 (1.13)
R&D		-0.562*** (-3.14)	1.989** (2.55)
ROA		0.053 (0.99)	0.039 (0.20)
LN(Q)		-0.002 (-0.07)	-0.271* (-1.91)
CAPEX		-0.011 (-0.09)	-3.699** (-2.42)
VOL		0.150* (1.66)	-0.087 (-0.22)
BOARD SIZE		0.005* (1.79)	-0.034** (-2.00)
BOARD INDEPENDENCE		-0.158*** (-3.86)	-0.340 (-1.16)
BOARD BUSYNESS		0.083*** (3.01)	0.081 (0.49)
Year Fixed Effects	No	No	Yes
Firm Fixed Effects	No	No	Yes
<i>Pseudo R</i> ²	0.005	0.037	0.057
# Obs	30,375	30,375	30,375

Table 3: Comparison between Connected and Unconnected CEOs Hires

This table shows univariate comparison of CEO and firm characteristics between connected and unconnected hiring events. The columns labeled “N” report the number of observations. The columns labeled “MEAN” and “S. D.” report the means and standard deviations of characteristics. The column labeled “DIFF” presents the differences between the means of the two groups, and the column labeled “S. E.” reports the standard errors of the differences. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	CONNECTED			UNCONNECTED			COMPARISON	
	N	MEAN	S. D.	N	MEAN	S. D.	DIFF	S. E.
<i>CEO Characteristics</i>								
TALENT	188	0.154	0.362	484	0.118	0.323	0.036	0.029
NETWORK SIZE	190	758.900	979.922	484	661.523	873.677	97.377	77.463
AGE	189	54.143	6.122	481	51.894	5.671	2.249***	0.498
GENDER	190	0.968	0.175	484	0.955	0.209	0.014	0.017
MBA DEGREE	189	1.804	1.050	479	1.746	1.032	0.058	0.089
DOCTORAL DEGREE	180	0.067	0.250	470	0.064	0.245	0.003	0.022
CONGLOMERATE EXP	188	0.280	0.314	484	0.257	0.277	0.023	0.025
INDUSTRY EXP	190	0.400	0.491	484	0.469	0.500	-0.069	0.043
<i>Firm Characteristics</i>								
SIZE	190	7.432	1.677	478	7.517	1.614	-0.085	0.140
ROA	190	0.007	0.144	478	0.007	0.135	-0.000	0.012
R&D	190	0.042	0.075	478	0.033	0.072	0.010*	0.006
CAPX	188	0.047	0.057	474	0.049	0.063	-0.002	0.005
LN(Q)	190	0.939	0.307	478	0.954	0.305	-0.015	0.026
OPACITY	172	0.056	0.060	420	0.050	0.041	0.007	0.004
DISPERSION	190	0.082	0.172	484	0.151	1.127	-0.069	0.082
VOL	189	0.134	0.067	476	0.130	0.072	0.004	0.006
PAST RET	190	0.042	0.554	477	0.007	0.460	0.035	0.042
BOARD SIZE	190	9.079	2.251	484	8.992	2.349	0.087	0.199
BOARD INDEPENDENCE	190	0.846	0.093	484	0.846	0.103	-0.000	0.009
BOARD BUSYNESS	190	0.248	0.207	484	0.280	0.223	-0.032*	0.019
BOARD NETWORK SIZE	190	3434.800	3357.943	484	2751.674	2645.439	683.126***	245.174
FORCED TURNOVER	190	0.353	0.479	484	0.267	0.443	0.086**	0.039

Table 4: Connected CEO Hiring and Firm Performance

This table presents the regression results on firm performance outcomes around CEO turnovers using a sample of firms hiring new CEOs. The panel consists of 3 years before and 3 years after the new CEO appointment. The dependent variable is a performance metric. We consider two performance metrics: ROA and log of Tobin's Q. The independent variable of interest is $\text{CONNECT} \times \text{POST}$. CONNECT equals one if a firm hires a connected CEO, and zero otherwise. POST equals one for post-turnover years, and zero otherwise. We include firm- and board-level controls including SIZE , CAPX , R\&D , VOL , BOARD SIZE , $\text{BOARD INDEPENDENCE}$ and BOARD BUSYNESS . We also control for the Inverse Mills Ratio from the Heckman selection model. Variable definitions are in Appendix A1. T-stats are reported in parentheses. Standard errors are clustered at the 2-digit SIC level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	ROA (1)	LN(Q) (2)
$\text{CONNECT} \times \text{POST}$	0.021** (2.30)	0.044** (2.14)
POST	-0.039 (-0.97)	-0.043 (-0.56)
SIZE	-0.066*** (-4.18)	-0.160*** (-5.71)
CAPX	0.121* (1.79)	0.017 (0.12)
R\&D	-0.286*** (-3.25)	0.312*** (2.99)
VOL	0.022 (0.44)	0.111 (1.12)
BOARD SIZE	-0.002 (-0.90)	-0.004 (-1.34)
$\text{BOARD INDEPENDENCE}$	0.034 (1.02)	-0.072 (-1.04)
BOARD BUSYNESS	0.001 (0.05)	0.003 (0.16)
$\text{IMR} \times \text{POST}$	0.017 (0.97)	0.018 (0.58)
Year Fixed Effects	Yes	Yes
Firm Fixed Effects	Yes	Yes
R^2	0.588	0.787
# Obs	3,719	3,719

Table 5: Connected CEO Hiring and Firm Performance, Robustness Tests

This table presents results of robustness tests on firm performance outcomes around CEO turnovers. We repeat the analyses in Table 4, controlling for omitted factors that may correlate with connected hiring and cause variations in post-turnover performance changes. Panel A reports results of robustness tests, controlling for theoretically motivated omitted factors including forced CEO turnover, CEO industry expertise, CEO network size, and CEO talent (interacted with POST). Panel B presents results of additional robustness tests, controlling for omitted factors that are motivated by our univariate comparison of CEO and firm characteristics between connected and unconnected hiring events (i.e., CEO AGE, R&D, BOARD BUSYNESS, and BOARD NETWORK SIZE). Variable definitions are in Appendix A1. T-stats are reported in the parentheses. Standard errors are clustered at the 2-digit SIC level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Theoretically Motivated Robustness Tests

[illegible]

Panel B: Empirically Motivated Robustness Tests

	ROA (1)	LN(Q) (2)	ROA (3)	LN(Q) (4)	ROA (5)	LN(Q) (6)	ROA (7)	LN(Q) (8)
CONNECT \times POST	0.024** (2.27)	0.048** (2.27)	0.021** (2.25)	0.043** (2.14)	0.021** (2.32)	0.044** (2.11)	0.021** (2.32)	0.043** (2.13)
CEO AGE \times POST	-0.001 (-0.89)	-0.002 (-1.24)						
R&D \times POST			-0.002 (-0.70)	-0.002 (-0.52)				
BOARD BUSYNESS \times POST					0.002 (0.10)	0.000 (0.01)		
BOARD NETWORK SIZE \times POST							0.000 (0.66)	0.000 (0.14)
POST	0.003 (0.06)	0.035 (0.42)	-0.023 (-0.47)	-0.023 (-0.30)	-0.042 (-1.02)	-0.042 (-0.55)	-0.042 (-1.03)	-0.043 (-0.55)
IMR \times POST	0.019 (1.05)	0.021 (0.66)	0.017 (0.96)	0.017 (0.56)	0.018 (1.01)	0.018 (0.57)	0.018 (1.00)	0.018 (0.57)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.591	0.787	0.591	0.787	0.591	0.787	0.591	0.787
# Obs	3,719	3,719	3,719	3,719	3,719	3,719	3,719	3,719

Table 6: Connected CEO Hiring and Firm Performance, Subsample Evidence

This table investigates the channels through which connected-based hiring affects firm performance. We form subsamples based on measures of information asymmetry, CEO termination risk, and CEO-board coordination costs. The cutoff points we use to form subsamples are the sample median for all measures. We estimate the model in Equation (1) in each subsample and compare the coefficient estimates of $\text{CONNECT} \times \text{POST}$ between each pair of subsamples. Columns (1) and (2) show the effects of connected-based hiring on firm performance (measured by ROA and log of Tobin's Q) in the high subsample. Columns (3) and (4) show the results in the low subsample. Columns (5) and (6) show the differences in the effects between the high and the low subsamples. Panel A presents the results for subsamples based on measures of information asymmetry (OPACITY and DISPERSION). Panel B presents the results for subsamples based on measures of CEO termination risk (VOL, PAST RET, FORCED TURNOVER = 1). Lastly, Panel C shows the results for subsamples based on a measure of CEO-board coordination costs (BOARD SIZE). Variable definitions are in Appendix A1. T-stats are reported in the parentheses. Standard errors are clustered at the 2-digit SIC level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Subsamples by information asymmetry

	ROA (1)	LN(Q) (2)	ROA (3)	LN(Q) (4)	ROA (5)	LN(Q) (6)
(a)	OPACITY \geq Median		OPACITY $<$ Median		DIFF	
CONNECT \times POST	0.039** (2.29)	0.070** (1.98)	-0.002 (-0.13)	0.025 (1.08)	0.041* (1.90)	0.045 (1.07)
R^2	0.557	0.781	0.699	0.822		
# Obs	1,631	1,631	1,657	1,657		
(b)	DISPERSION \geq Median		DISPERSION $<$ Median		DIFF	
CONNECT \times POST	0.032** (2.50)	0.071** (2.18)	0.008 (0.68)	0.017 (0.46)	0.024 (1.41)	0.054 (1.11)
R^2	0.592	0.764	0.591	0.826		
# Obs	1,864	1,864	1,855	1,854		

Panel B: Subsamples by termination risk

	ROA (1)	LN(Q) (2)	ROA (3)	LN(Q) (4)	ROA (5)	LN(Q) (6)
(c)	VOL \geq Median		VOL $<$ Median		DIFF	
CONNECT \times POST	0.033** (2.05)	0.085*** (3.22)	0.003 (0.29)	-0.010 (-0.33)	0.030 (1.62)	0.095** (2.39)
R^2	0.607	0.770	0.559	0.857		
# Obs	1,801	1,800	1,884	1,884		
(d)	PAST RET $<$ Median		PAST RET \geq Median		DIFF	
CONNECT \times POST	0.038** (2.49)	0.051* (1.87)	0.009 (0.68)	0.016 (0.66)	0.029 (1.43)	0.035 (0.98)
R^2	0.593	0.791	0.649	0.847		
# Obs	1,818	1,818	1,879	1,878		
(e)	FORCED TURNOVER = 1		FORCED TURNOVER = 0		DIFF	
CONNECT \times POST	0.030* (1.83)	0.065** (2.40)	0.014 (1.10)	0.038 (1.43)	0.016 (0.78)	0.027 (0.72)
R^2	0.555	0.806	0.628	0.809		
# Obs	1,074	1,074	2,645	2,644		

Panel C: Subsample by coordination costs

	ROA (1)	LN(Q) (2)	ROA (3)	LN(Q) (4)	ROA (5)	LN(Q) (6)
(f)	BOARD SIZE \geq Median		BOARD SIZE $<$ Median		DIFF	
CONNECT \times POST	0.033*** (3.15)	0.059** (2.27)	0.000 (0.02)	0.022 (0.51)	0.033 (1.57)	0.037 (0.72)
R^2	0.590	0.811	0.616	0.783		
# Obs	2,098	2,098	1,621	1,620		

Table 7: Connected CEO Hiring and Acquisition Returns

This table presents results on the cumulative abnormal returns (CARs) of M&A deals announced by CEOs in our sample where target firms are US public firms. The dependent variable is CAR, which is the acquirer's 5-day (-2,+2) cumulative abnormal returns around the acquisition announcement date. CONNECT equals one if the acquisition is announced by a connected CEO, and zero otherwise. Our choice of control variables is motivated by [Cai and Sevilir \(2012\)](#) and [Schmidt \(2015\)](#). Variable definitions are in Appendix A1. All models include year and industry (2-digit SIC) fixed effects. Panel A presents the univariate comparison of CARs between connected CEO hirings and unconnected CEO hirings. Panel B presents the regression results. T-stats are reported in the parentheses. Standard errors are clustered at the 2-digit SIC level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Univariate Comparison

CAR	# Obs	Mean	S. D.
Announcement by Connected CEO	77	0.022	0.066
Announcement by Unconnected CEO	216	-0.005	0.067
Difference between the Means		0.027*** (3.07)	

Panel B: Regression Results

	CAR	CAR	CAR	CAR	CAR BOARD SIZE	
					\geq Median	$<$ Median
	(1)	(2)	(3)	(4)	(5)	(6)
CONNECT	0.027** (2.27)	0.030** (2.71)	0.033*** (3.26)	0.033*** (2.94)	0.042** (2.27)	0.010 (0.39)
STOCK DEAL		-0.039** (-2.32)	-0.035* (-1.94)	-0.032* (-1.81)	-0.012 (-0.58)	-0.115** (-2.09)
DIVERSIFYING ACQUISITION		-0.023** (-2.16)	-0.023** (-1.97)	-0.025* (-2.01)	0.004 (0.18)	-0.033 (-1.35)
RELATIVE DEAL SIZE		-0.003 (-0.08)	-0.011 (-0.20)	-0.014 (-0.27)	0.005 (0.05)	0.058 (0.86)
TENDER OFFER		0.016 (1.29)	0.017* (1.72)	0.015 (1.36)	0.008 (0.56)	0.010 (0.48)
HOSTILE		0.037 (1.24)	0.037 (1.17)	0.089* (1.90)	-0.052 (-0.69)	0.000 (.)
TOEHOLD		0.005 (0.37)	0.003 (0.20)	0.006 (0.39)	-0.003 (-0.11)	0.010 (0.58)
ACQUIRER SIZE			-0.003 (-0.96)	-0.004 (-1.17)	0.001 (0.11)	-0.002 (-0.26)
ACQUIRER Q			0.004 (0.99)	0.007 (1.56)	-0.009 (-0.74)	-0.004 (-0.46)
ACQUIRER LEV			-0.010 (-0.36)	-0.012 (-0.30)	-0.071 (-1.23)	0.098 (1.29)
ACQUIRER OCF			0.003 (0.05)	0.035 (0.57)	-0.007 (-0.06)	0.152 (1.16)
ACQUIRER RUN-UP			-0.008* (-1.89)	-0.006 (-1.57)	-0.012 (-0.31)	-0.011 (-0.99)
ACQUIRER BOARD SIZE			0.003 (0.91)	0.002 (0.80)	0.004 (0.94)	0.005 (0.71)
ACQUIRER BOARD INDEPENDENCE			-0.007 (-0.31)	-0.011 (-0.49)	-0.016 (-0.51)	0.022 (0.77)
ACQUIRER BOARD BUSYNESS			0.009 (0.77)	0.009 (0.77)	0.006 (0.61)	0.003 (0.19)
TARGET Q				-0.006 (-1.49)	0.007 (0.74)	0.004 (0.52)
TARGET LEV				-0.003 (-0.07)	0.074 (1.41)	-0.050 (-0.72)
TARGET OCF				-0.038 (-1.15)	-0.018 (-0.60)	-0.096 (-1.10)
TARGET RUN-UP				-0.000 (-0.89)	-0.021 (-0.86)	-0.002** (-2.57)
TALENT		0.000 (0.94)	0.000 (0.78)	0.000 (0.93)	-0.000 (-0.44)	0.002** (2.46)
NETWORK SIZE		0.000 (1.33)	0.000 (1.52)	0.000 (1.66)	-0.000 (-0.78)	0.000 (1.53)
IMR	0.012 (0.83)	0.014 (0.94)	0.017 (1.13)	0.015 (1.01)	-0.002 (-0.05)	0.060 (1.67)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES
R^2	0.293	0.354	0.365	0.372	0.577	0.646
# Obs	293	293	293	293	148	145

Table 8: Connected CEO Hiring and Forced Turnover

This table investigates the effect of connected hires on forced CEO turnover decisions. The sample is built upon the 674 external CEO hiring events and contains the entire observable tenure of those newly hired CEOs. The dependent variable is FORCED TURNOVER, which equals one if a CEO is forced out of the firm in a given year, and zero otherwise. The key independent variable is CONNECT, an indicator for pre-existing CEO-board connections. We control for firm and CEO characteristics including SIZE, ROA, PAST RET, CAPX, R&D, VOL, BOARD SIZE, BOARD INDEPENDENCE, BOARD BUSYNESS, TALENT, NETWORK SIZE, and AGE. We also control for the Inverse Mills Ratio (IMR) from the Heckman selection model. Variable definitions are in Appendix A1. Panel A presents the univariate comparison of forced turnover rates between connected CEO hirings and unconnected CEO hirings. Panel B presents the regression results. T-stats reported in the parentheses are based on standard errors clustered at the 2-digit SIC level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Univariate Comparison

Forced Turnover = 1	# Obs	# Forced	% Forced	S. D.
Connected CEO	190	27	0.142	0.350
Unconnected CEO	484	101	0.209	0.407
Difference between the %			-0.067** (-1.99)	

Panel B: Regression Results

	FORCED TURNOVER (1)	FORCED TURNOVER (2)	FORCED TURNOVER (3)
CONNECT	-0.066*** (-3.33)	-0.069*** (-2.76)	-0.066*** (-2.59)
SIZE		-0.002 (-0.31)	-0.002 (-0.22)
ROA		-0.056 (-1.62)	-0.058* (-1.66)
PAST RET		-0.028*** (-3.72)	-0.028*** (-3.75)
CAPX		-0.117 (-1.15)	-0.130 (-1.28)
R&D		0.124 (1.24)	0.119 (1.18)
VOL		0.032 (0.40)	0.054 (0.68)
BOARD SIZE		0.002 (0.79)	0.002 (0.81)
BOARD BUSYNESS		0.007 (0.63)	0.007 (0.70)
BOARD INDEPENDENCE		-0.015 (-0.31)	-0.022 (-0.45)
TALENT			-0.171*** (-3.35)
NETWORK SIZE			-0.000 (-1.35)
AGE			0.000 (0.27)
IMR		0.001 (0.03)	0.003 (0.09)
Year Fixed Effects	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes
R^2	0.224	0.227	0.229
# Obs	4,715	4,715	4,715

Table 9: Connected CEO Hiring and Compensation

This table investigate how connected CEOs are compensated. The dependent variable is the logarithm of CEO's total pay or excess pay in the first full year the new CEO takes over the firm. TOTAL PAY is the TDC1 variable from ExecuComp. Excess pay is the residual from a regression of CEO's total pay on firm size (SIZE), industry fixed effects (3-digit SIC), and interactions between firm size and industry fixed effects estimated using all CEOs in ExecuComp from 2000 to 2018. The independent variable of interest is CONNECT, an indicator for pre-existing CEO-board connections. We include firm- and board-level controls including SIZE, ROA, PAST RET, LN(Q), CAPX, R&D, VOL, BOARD SIZE, BOARD INDEPENDENCE, and BOARD BUSYNESS in both models. We also control for the Inverse Mills Ratio from the Heckman selection model. Variable definitions are in Appendix A1. We further include industry and year fixed effects to control for the unobserved heterogeneity. T-stats reported in the parentheses are based on standard errors clustered at the 2-digit SIC level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	LN(TOTAL PAY) (1)	LN(EXCESS PAY) (2)
CONNECT	-0.027 (-0.37)	-0.052 (-0.70)
SIZE	0.457*** (24.04)	0.015 (0.73)
ROA	0.355 (1.41)	0.345 (1.21)
PAST RET	-0.044 (-0.61)	-0.043 (-0.58)
LN(Q)	0.525*** (6.05)	0.302*** (2.93)
CAPX	0.305 (0.75)	0.284 (0.70)
R&D	0.681** (2.44)	0.765*** (2.86)
VOL	1.087 (1.58)	1.379* (1.81)
BOARD SIZE	-0.014 (-0.77)	-0.014 (-0.86)
BOARD INDEPENDENCE	0.338 (1.25)	0.471 (1.64)
BOARD BUSYNESS	-0.017 (-0.19)	-0.051 (-0.51)
IMR	0.133 (0.91)	0.079 (0.57)
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
R^2	0.547	0.209
# Obs	657	654

Appendix A Variable Definitions

Table A1: Variable Definitions

Variable Name	Definition
<i>CEO/Candidate Characteristics</i>	
HIRED	Indicator variable equals one if a candidate is newly hired by a firm in a given year, and zero otherwise.
CONNECT	Indicator variable equals one if a CEO candidate shared employment experience with at least one board member of the hiring firm prior to the hiring event, zero otherwise. Our definition counts the relationships between a CEO and a board member, between managers including the CEO, and between board members, but does not count the relationship between a non-CEO manager and a board member.
TALENT	Indicator variable equals one if the candidate attended an Ivy League institution.
CEO NETWORK SIZE	The number of connections of a CEO established at other companies prior to hiring events.
AGE	Age of the candidate during the year of hiring.
GENDER	Indicator variable equals one if a candidate is male.
MBA DEGREE	Indicator variable equals one if a candidate holds an MBA degree.
DOCTORAL DEGREE	Indicator variable equals one if a candidate holds a doctoral degree.
CONGLOMERATE EXP	Candidate's past work experience in conglomerates. We measure the diversity and complexity of their past employers using the average COMPLEXITY of the firms the candidate had worked for.
INDUSTRY EXP	Indicator variable equals one if the new CEO previously worked in the same industry as the hiring firm.
LOCAL	Indicator variable equals one if a candidate's most recent available employment is in the same state as the hiring firm.
TOTAL PAY	Total annual compensation (TDC1 variable from Execucomp) in thousands. Prior to 2006, TDC1 is the sum of Salary, Bonus, Other Annual, Total Value of Restricted Stock Granted, Total Value of Options Granted, Long-Term Incentive Payouts, and All Other. Starting in 2006, TDC1 is the sum of Salary, Bonus, Non-Equity Incentive Plan Compensation, Grant-Date Fair Value of Stock Awards, Grant-Date Fair Value of Option Awards, Deferred Compensation Earnings Reported as Compensation, and Other Compensation.
EXCESS PAY	The residual from a regression of CEO TOTAL PAY on firm size (SIZE), industry fixed effects (3-digit SIC), and the interaction of the two, estimated using all CEOs in ExecuComp from 2000 to 2018.
<i>Firm Characteristics</i>	
SIZE	Logarithm of 1 plus book assets (AT).
ROA	Income Before Extraordinary Items (IB) scaled by beginning book assets (AT).
PAST RET	Stock return averaged over the fiscal year before CEO turnover.
R&D	R&D expenses (XRD) divided by beginning period total assets (AT). Missing values are set to zero.
CAPX	Capital expenditures (CAPX) divided by beginning period total assets (AT).

Name	Definition
DISPERSION	Standard deviation of analysts' forecasts of annual earnings.
LN(Q)	Logarithm of Tobin's Q. Tobin's Q is calculated as book assets (AT) minus book value of equity plus the market value of equity (ME), divided by book assets (AT).
OPACITY	Variation in abnormal total current accruals over the past five years. For each Fama-French 49 industry with at least 20 firms in a given year, we run five separate regressions for each of years t-4 to year t. In each regression, total current accruals of a firm is regressed on 1) lagged, contemporaneous, and leading cash flows from operations; 2) change in sales; and 3) property, plant, and equipment. Total current accruals equals change in current assets minus change in current liabilities minus change in cash and short-term investments plus change in current debt. For each firm-year, opacity is the standard deviation computed across the residuals of total current accruals from the five industry-year regressions. The definition follows Xu and Yang (2016) and Billett and Yu (2016) .
VOL	Standard deviation of monthly stock returns in the past 3 fiscal years.
COMPLEXITY	The complexity measure for firm i at year t is $\text{COMPLEXITY} = \sum_{s=1}^n P_{s,i,t} \ln \frac{1}{P_{s,i,t}}$ where n is the number of segments at the two-digit SIC level, and $P_{s,i,t}$ is the proportion of sales for segment s in firm i at year t . The definition follows Hund et al. (2010) and Pan (2017) .
BOARD SIZE	Total number of board members serving on the board of directors.
BOARD INDEPENDENCE	Percentage of board members who are independent.
BOARD BUSYNESS	Percentage of board members who serve on three or more boards.
BOARD NETWORK SIZE	Total number of connections of the hiring board members' prior to each hiring event.
FORCED TURNOVER	Indicator variable equals one if the previous CEO was forced out of the firm. Forced turnover data is from Peters and Wagner (2014) and Jenter and Kanaan (2015) .
IMR	The Inverse Mills Ratio derived from the determinants of CEO hiring regression (Table 2 Column (3)). It is calculated as the ratio of the value of standard normal density function divided by the value of standard normal cumulative distribution function.
<i>M&A Characteristics</i>	
STOCK DEAL	Indicator variable equals one for deals financed partially or fully with stock, zero otherwise.
DIVERSIFYING ACQUISITION	Indicator variable equals one if acquirer and target do not share the same 2-digit SIC code, zero otherwise.
RELATIVE DEAL SIZE	Deal value divided by acquirer's market value of equity.
TENDER OFFER	Indicator variable equals one for tender offers, zero otherwise.
HOSTILE	Indicator variable equals one if the bid is hostile, zero otherwise.
TOEHOLD	Indicator variable equals one if the acquirer owns a non-zero percentage of target's stock prior to announcement date, zero otherwise.
RUN-UP	Buy-and-hold abnormal return (BHAR) during the 200 trading days ending two months before each M&A announcement date with CRSP value-weighted return as the market index.

Appendix B Determinants of CEO Hiring, Alternative Candidate Pools

Our analysis in Section 4 of the main text considers all the new externally hired CEOs in a given year in our CEO turnover sample as potential candidates for each of the hiring events in that year. This candidate pool is potentially inaccurate for two reasons. First, a hiring firm probably considers candidates beyond the new CEOs hired by our sample firms this year. This measurement error could lead to a biased estimate of the importance of connections in the CEO hiring decision, although the direction of such bias is unclear. In an effort to capture as many actual candidates as possible, we construct two alternative candidate pools by including additional potential candidates. The first alternative candidate pool for each hiring event consists of all the newly hired CEOs and top executives of all public firms. We also construct a second alternative candidate pool that includes all the newly hired CEOs and top executives from all public firms, as well as all the newly hired CEOs from private firms. We will refer to the resulting hiring event-candidate sample based on the initial candidate pool as the “small sample”, and the samples based on the two alternative candidate pools as the “medium sample” and the “large sample”, respectively. As we move from the small sample to the large sample, the candidate pool is moving closer to the universe of talent supply and, therefore, it becomes more likely for us to capture all actual candidates considered by the hiring firms.

The second potential problem is that our pools include individuals that are not considered by the hiring firms (pseudo candidates). The larger the candidate pool we consider, the more pseudo candidates there are. However, we argue that, because the CEO hiring decision is essentially the combination of two decisions: (1) identifying candidates from the universe of talent supply and then (2) selecting the one best fitting the firm, the strategy of considering the universe of talent supply is economically meaningful. In other words, we believe that it remains interesting to examine the effect of connections on the probability of CEO hiring in the universe of talent supply.

Table A2 summarizes the two alternative hiring event-candidate samples. Panel A summarizes the characteristics of the medium sample. Panel B summarizes the characteristics of the large sample. The sample sizes differ vastly. Nevertheless, we observe very similar characteristics across each sample, despite the extreme variation in sample sizes. Table A3 presents regression results of the Probit model from Column (3) of Table 2 using the medium and large samples. The results are similar to those in Table 2. Overall, our results are robust to different candidate pools.

Table A2: Summary Statistics of Hiring Event-Candidate Samples, Alternative Candidate Pools

This table summarizes the candidate and hiring firm characteristics in two alternative hiring event-candidate samples. Panel A summarizes the characteristics in the “medium sample” in which all the newly hired CEOs and top executives of all public firms are candidates. Panel B summarizes the characteristics in the “large sample” in which all the newly hired CEOs and top executives from all public firms, as well as all the newly hired CEOs from private firms are candidates. Variable definitions are in Appendix A1.

	# Obs	Mean	St. Dev.	P25	P50	P75
<i>Medium Sample</i>						
HIRED \times 100	1,810,742	0.036	1.894	0.000	0.000	0.000
CONNECT	1,810,742	0.166	0.372	0.000	0.000	0.000
CONGLOMERATE EXP	1,810,742	0.168	0.229	0.000	0.151	0.151
TALENT	1,810,742	0.089	0.284	0.000	0.000	0.000
DOCTORAL DEGREE	1,810,742	0.059	0.236	0.000	0.000	0.000
LOCAL	1,810,742	0.008	0.089	0.000	0.000	0.000
AGE	1,810,742	51.259	8.883	45.000	51.544	57.000
GENDER	1,810,742	0.931	0.254	1.000	1.000	1.000
MBA DEGREE	1,810,742	0.382	0.486	0.000	0.000	1.000
COMPLEXITY	1,810,742	0.174	0.287	0.000	0.000	0.165
SIZE	1,810,742	7.589	1.618	6.441	7.467	8.565
R&D	1,810,742	0.037	0.074	0.000	0.004	0.042
ROA	1,810,742	0.015	0.132	-0.013	0.028	0.071
LN(Q)	1,810,742	1.019	0.715	0.738	0.891	1.120
CAPEX	1,810,742	0.044	0.060	0.015	0.028	0.052
VOL	1,810,742	0.130	0.070	0.084	0.114	0.153
BOARD SIZE	1,810,742	9.018	2.339	7.000	9.000	10.000
BOARD INDEPENDENCE	1,810,742	0.843	0.102	0.818	0.875	0.900
BOARD BUSYNESS	1,810,742	0.275	0.222	0.125	0.250	0.429
<i>Large Sample</i>						
HIRED \times 100	4,964,649	0.013	1.144	0.000	0.000	0.000
CONNECT	4,964,649	0.172	0.378	0.000	0.000	0.000
CONGLOMERATE EXP	4,964,649	0.167	0.189	0.123	0.157	0.157
TALENT	4,964,649	0.095	0.293	0.000	0.000	0.000
DOCTORAL DEGREE	4,964,649	0.081	0.273	0.000	0.000	0.000
LOCAL	4,964,649	0.007	0.083	0.000	0.000	0.000
AGE	4,964,649	50.424	7.911	47.000	50.559	54.000
GENDER	4,964,649	0.914	0.280	1.000	1.000	1.000
MBA DEGREE	4,964,649	0.341	0.474	0.000	0.000	1.000
COMPLEXITY	4,964,649	0.174	0.284	0.000	0.000	0.164
SIZE	4,964,649	7.573	1.621	6.435	7.454	8.548
R&D	4,964,649	0.037	0.075	0.000	0.003	0.041
ROA	4,964,649	0.015	0.131	-0.013	0.027	0.069
LN(Q)	4,964,649	1.017	0.717	0.737	0.890	1.119
CAPEX	4,964,649	0.044	0.061	0.015	0.028	0.052
VOL	4,964,649	0.129	0.070	0.084	0.113	0.153
BOARD SIZE	4,964,649	8.989	2.287	7.000	9.000	10.000
BOARD INDEPENDENCE	4,964,649	0.848	0.097	0.818	0.875	0.900
BOARD BUSYNESS	4,964,649	0.267	0.219	0.111	0.250	0.400

Table A3: Determinants of CEO Hiring, Alternative Candidate Pools

This table presents regression results of the Probit model from Column (3) of Table 2 using the medium and large samples. The dependent variable equals one if a candidate is newly hired by a firm in a given year, and zero otherwise. The key independent variable is CONNECT, an indicator for pre-existing candidate-board connections. Column (1) reports regression results for the medium sample. The medium sample includes all the newly hired CEOs and top executives of all public firms. Column (2) reports regression results for the large sample. The large sample includes all the newly hired CEOs and top executives from all public firms, as well as all the newly hired CEOs from private firms. We control three matching interactions (CONGLOMERATE EXP \times COMPLEXITY, TALENT \times SIZE, and DOCTORAL DEGREE \times R&D) from Pan (2017), the six component variables, the LOCAL dummy, and AGE, GENDER, MBA DEGREE, ROA, LN(Q), CAPEX, VOL, BOARD SIZE, BOARD INDEPENDENCE, BOARD BUSYNESS. Variable definitions are in appendix A1. We further include firm and year fixed effects to control for unobserved heterogeneity. Standard errors are clustered at the hiring firm level. T-stats are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	HIRED (1)	HIRED (2)
CONNECT	0.744*** (11.84)	0.658*** (11.81)
CONGLOMERATE EXP \times COMPLEXITY	0.526*** (4.75)	0.484*** (5.06)
TALENT \times SIZE	0.021 (1.05)	0.020 (1.07)
DOCTORAL DEGREE \times R&D	1.664*** (3.56)	1.513*** (3.42)
CONGLOMERATE EXP	0.170*** (3.69)	0.215*** (4.53)
TALENT	-0.063 (-0.41)	-0.079 (-0.55)
DOCTORAL DEGREE	-0.058 (-1.10)	-0.134*** (-2.82)
LOCAL	0.423*** (4.25)	0.475*** (5.06)
AGE	0.002* (1.83)	0.007*** (6.79)
GENDER	0.134** (2.45)	0.177*** (3.47)
MBA DEGREE	0.098*** (4.35)	0.133*** (6.32)
COMPLEXITY	-0.155 (-0.95)	-0.146 (-0.99)
SIZE	0.064 (1.02)	0.054 (0.95)
R&D	1.426* (1.77)	1.280* (1.72)
ROA	0.012 (0.07)	0.041 (0.28)
LN(Q)	-0.084*** (-2.65)	-0.075*** (-2.61)
CAPEX	-3.878*** (-2.90)	-3.429*** (-2.80)
VOL	-0.206 (-0.49)	-0.173 (-0.45)
BOARD SIZE	-0.030 (-1.42)	-0.026 (-1.36)
BOARD INDEPENDENCE	-0.694** (-2.12)	-0.608** (-2.04)
BOARD BUSYNESS	0.198 (1.16)	0.189 (1.23)
Year Fixed Effects	Yes	Yes
Firm Fixed Effects	Yes	Yes
<i>Pseudo R</i> ²	0.033	0.034
# Obs	1,781,135	4,879,530

Appendix C Hiring Event-Year Sample

Table A4: Summary Statistics of Hiring Event-Year Sample

This table summarizes the firm characteristics in the hiring event-year sample used in Table 4. This sample has hiring firms' performance measures and other characteristics three years before and three years after each new CEO appointment. The number of observations (# Obs), mean, standard deviation, 25th percentile, median, and 75th percentile are reported.

	# Obs	Mean	S. D.	P25	P50	P75
ROA	3,719	0.018	0.138	-0.006	0.033	0.074
LN(Q)	3,719	0.972	0.315	0.739	0.890	1.109
SIZE	3,719	7.490	1.618	6.354	7.384	8.470
CAPX	3,719	0.049	0.064	0.015	0.030	0.059
R&D	3,719	0.037	0.075	0.000	0.002	0.045
VOL	3,719	0.133	0.072	0.086	0.116	0.159
BOARD SIZE	3,719	9.080	2.181	8.000	9.000	10.000
BOARD INDEPENDENCE	3,719	0.770	0.148	0.700	0.800	0.889
BOARD BUSYNESS	3,719	0.331	0.325	0.125	0.286	0.455

Appendix D Trends in Performance Around the New CEO Appointment

Table A5: Connected CEO Hiring and Firm Performance, Parallel Trend

This table checks the pretrends in the panel regressions in Table 4. The dependent variable is ROA in Column (1) and LN(Q) in Column (2). The Key independent variables are CONNECT interacted with five time dummies. BEFORE₃ and BEFORE₂ represent three- and two-years before the new CEO appointment. AFTER₁, AFTER₂, and AFTER₃ represent one-, two-, and three-years after the new CEO appointment. BEFORE₁, the year before the CEO appointment, is omitted from the model as a reference point. CONNECT equals to one if a firm hires a connected CEO, and zero otherwise. We include firm- and board-level controls including SIZE, CAPX, R&D, VOL, BOARD SIZE, BOARD INDEPENDENCE and BOARD BUSYNESS. Firm and year fixed effects are included to control for unobserved heterogeneities. We also control for the Inverse Mills Ratio from the Heckman selection model. Standard errors are clustered at the 2-digit SIC level. Variable definitions are in Appendix A1.

	ROA (1)	LN(Q) (2)
CONNECT × BEFORE ₃	-0.003 (-0.17)	0.023 (0.93)
CONNECT × BEFORE ₂	-0.019 (-1.13)	0.016 (0.66)
CONNECT × AFTER ₁	0.016 (1.00)	0.048** (2.46)
CONNECT × AFTER ₂	0.007 (0.55)	0.045** (2.02)
CONNECT × AFTER ₃	0.026** (2.00)	0.059** (2.01)
Other Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Firm Fixed Effects	Yes	Yes
R ²	0.590	0.789
# Obs	3,719	3,719