Director Characteristics and the Advisory Role of Boards' Effect on Performance: Evidence from Real Estate Investment Trusts

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Abstract

Using REITs as a laboratory to isolate the advisory role of the board of directors, we determine that directors with executive or governance experience in finance and accounting create significant value. Adding "high-value" directors is associated with an increase in monthly returns of between 1.1% and 2%, along with a 50-basis point increase in risk-adjusted return. CARs indicate that high-value directors are added to underperforming REITs, and results hold when controlling for endogeneity. High-value board members increase capital use efficiency, sell underperforming properties, and focus future investments on outperforming submarkets, while having higher pay-to-performance sensitivity and shorter tenure than average directors.

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1. Introduction

Fama and Jensen (1983) describe boards of directors as "the apex of decision control systems", whereby a firm's board is expected to act as a watchdog for shareholders. In practice, however, there is substantial variation in the quality of directors. This raises a crucial question: What characteristics define a high-quality director? While many studies address this question[4], their conclusions often differ due to the challenging identification issue in the dual role of boards as both advisors and monitors (Adams and Ferreira, 2007; Adams, Hermalin, and Weisbach, 2010). For example, a trait that enhances monitoring may not necessarily improve advisory functions, raising questions about tradeoffs and how directors' characteristics influence performance.

These complexities are highlighted by studies such as Faleye et al. (2011), who show that improved monitoring can weaken strategic advising, and Masulis et al. (2012), who find that foreign independent directors' advisory services come at the expense of worse monitoring. Further, Brickley and Zimmerman (2010) and Dass et al. (2014) directly address the difficulty of disentangling the dual role of boards. Given these challenges, we propose leveraging the unique tax structure of Real Estate Investment Trusts (REITs) to isolate the advisory role of boards and address this lingering empirical issue.

REITs provide a unique laboratory to study the advisory role of boards of directors due to their distinct taxation and incentive structures. Unlike traditional firms, REITs operate under strict regulatory constraints, including mandatory income distributions and limits on retained earnings, which significantly reduce the need for monitoring. These features shift the primary responsibility of REIT directors toward providing strategic advice to management.

[4] For example, while Drobetz et al. (2018), Dass et al. (2014), and Faleye et al. (2018) find that directors' industry experience adds value, while Kang et al. (2017) find that the effect of industry experience is insignificant. Fich (2005) finds that shareholders seem to value Chief Executive Officer (CEO) experience of directors, while Fahlenbrach et al. (2010) find that CEO directors do not add value.

This emphasis on advising is supported by the "Theory of the REIT" by Oh and Vernstein (2024), which argues that the regulatory structure efficiently resolves tax-induced lock-ins and investor conflicts inherent in real estate markets. By alleviating agency costs through payout requirements and governance constraints, REITs create a natural experiment for isolating the advisory role of boards. Using this setting, we provide the first empirical evidence linking director characteristics to firm performance specifically through their advisory function.

To identify specific director characteristics, we hand-collect biographies of board members from January 2000 to December 2022 for all publicly traded equity REITs in the NAREIT index. Using machine learning, we classify director biographies into ten background groups. Firms with a greater proportion of directors with finance or accounting expertise experience significantly higher returns over control firms. Monthly returns increase by 1.8% to 2%, representing a 64% increase over the average sample return of 1.1%. Results are robust across various empirical specifications, including two-stage least squares and generalized difference-in-differences to account for potential endogeneity issues.

Through an event study framework, we show that REITs typically add high-value directors when underperforming relative to a broad real estate benchmark. Following the addition of high-value directors, REITs demonstrate improved performance through greater operational efficiency and better property submarket selection. In terms of economic magnitude, adding a high-value director will increase firm risk-adjusted returns by 50 bps per month. This relationship is mutually beneficial for REIT management and the directors, as directors receive reputational benefits leading to enhanced career opportunities and more prestigious directorships in the future.

These findings suggest that governance through skilled directors can have large and persistent effects on firm performance, particularly in less liquid asset classes such as real estate. Talented directors exploit their expertise to improve strategic decision-making, benefiting the firms they govern and their own professional trajectories.

The remainder of the study is organized as follows: Section 2 outlines the place and contribution, section 3 provides background information on REITs and topic modeling, section 4 connects director background with REIT performance, section 5 explores when firms add high-value directors, section 6 documents how high-value directors affect returns, and section 7 concludes.

2. Place and Contribution

This study contributes to the governance literature by examining how director characteristics influence firm performance, with a focus on their advisory function. Prior research has struggled to disentangle the dual roles of boards as advisors and monitors (Adams and Ferreira, 2007; Adams, Hermalin, and Weisbach, 2010). By leveraging the unique structure of REITs, where monitoring demands are mitigated by regulatory constraints, we isolate the advisory role of boards and demonstrate a significant impact of director characteristics on firm performance.

To uncover performance effects, we hand-collect rich biographical data on REIT directors from 2000 to 2022, capturing a detailed, self-reported view of their backgrounds. This approach offers greater depth and reliability than traditional datasets, which often lack the granularity needed to assess directors' full skill sets. Using this data, we employ Latent Dirichlet Allocation (LDA), a machine learning algorithm that allows us to classify directors into ten distinct background categories. This innovative method ensures systematic and reproducible classification, reducing the risk of researcher imparted bias and addressing concerns of endogeneity that have challenged prior studies.

Our findings highlight the importance of director expertise in finance and accounting, which we show is strongly correlated with improved firm performance. Unlike studies that emphasize the multidimensional nature of director skill sets (Adams, Akyol, and Verwijmeren, 2018), our results suggest that uniform expertise can provide measurable economic benefits, particularly in industries where strategic advising is critical, and contribute to the expansive literature on director characteristics, including but not limited to: the effect of financial expertise on corporate decisions (Güner, Malmendier, and Tate, 2008),

industry expertise and monitoring effectiveness (Wang, Xie, and Zhu, 2015), the importance of board expertise from related industries (Dass et al., 2014), foreign experience in international firms (Giannetti, Liao, Yu, 2015), board composition (Adams, Mansi, Nishikawa, 2010), political connections (Goldman, Rochell, and So, 2009), executive experience in related industries (Kang, Kim, Lu, 2018), director bankruptcy experience and risk tolerance (Gopley, Gorman, Kalda, 2021), and demographic factors (Adams and Ferreira, 2009). The use of LDA enables us to quantify these characteristics more systematically, providing new insights into how board composition influences firm outcomes.

REITs also provide an ideal setting to explore the role of skilled directors due to the illiquidity and information asymmetries inherent in real estate markets. Prior studies (Hochberg and Mühlhofer, 2017; Ling, Naranjo, and Scheick, 2021) have emphasized the value of director specialized expertise in driving real estate investment decisions. Our research builds on this by demonstrating how directors leverage their specialized knowledge to enhance operational efficiency, improve property submarket selection, and increase firm returns. These results underscore the broader significance of governance structures in industries characterized by less liquid assets and localized information.

3. Background Information

This section provides the foundational context for our study. First, we explain why REITs, with their unique regulatory and structural characteristics, serve as a natural laboratory for isolating the advisory role of directors. Second, we detail the methods used to collect and classify biographical data of REIT directors, highlighting the use of Latent Dirichlet Allocation (LDA) to systematically analyze director backgrounds.

3.1 Using REITs to study the Advisory Role of Boards

REITs provide a unique opportunity to study the advisory role of boards due to their distinct regulatory and governance structures. Tax regulations require that REITs allocate at least 75% of their assets to real estate-related investments and derive 95% of income from passive sources such as rents or dividends. Additionally, REITs must distribute 90% of their taxable income annually, significantly limiting their ability to grow

through retained earnings. In exchange, REITs benefit from special tax treatment, allowing them to deduct dividends from taxable income, resulting in minimal or no corporate taxes.

These constraints, along with prohibitions against concentrated ownership, create a governance environment distinct from regular firms. The "Theory of the REIT" (Oh and Vernstein, 2024) argues that such structures efficiently resolve tax-induced lock-ins and conflicts between property contributors and cash investors. By requiring substantial payouts and limiting managerial discretion, REITs naturally reduce agency costs. As Jensen (1987) suggests, regular payouts shift oversight to the capital markets, enabling boards to focus less on monitoring and more on providing strategic advice.

Empirical studies of REIT governance frequently find relationships that deviate from conventional corporate finance theory[5], highlighting the distinct nature of their governance environment. These findings suggest that traditional governance mechanisms, such as board independence or composition, may be less relevant in REITs, where regulatory constraints naturally mitigate agency problems. Instead, REIT boards appear to prioritize advisory functions over monitoring, aligning their governance practices with the operational and strategic needs of the firm.

Beyond their unique governance structure, REITs have grown into a vital segment of the broader market. As shown in Figure 1, REITs have experienced remarkable growth in market capitalization, now exceeding $1.4 trillion and representing over 5% of the S&P 500[6]. This growth not only underscores the importance of REITs in the investment landscape but also highlights widespread investor confidence in their structure. The increasing prominence of REITs speaks to the relevance of understanding how governance and board composition influence performance in this asset class. By studying REITs, we uncover insights that are novel and practically significant for the broader market.

[5] Ghosh and Sirmans (2005), Friday, Sirmans and Conover (1999), Ghosh, Giambona, Harding, Sezer, and Sirmans (2010), Friday and Sirmans (1998), Campbell, Ghosh, Petrova, and Sirmans (2011), and Hartzell, Sun, and Titman (2006).
[6] Source: NAREIT REIT Industry Financial Snapshot.

3.2. Biography Collection and Topic Modeling

A list of REITs for data collection was obtained from the National Association of Real Estate Investment Trusts (NAREIT). The NAREIT sample is comprehensive regarding publicly traded REITs in the United States. Director and top-listed executive biographies are hand-collected from firm websites or proxy statement filings.[7] This process is completed for 147 REITs and creates a sample of 1,722 individuals with matched biographies. There is no standard for the publication of biographies by firms. Therefore, the length and informativeness of the biographies vary significantly from firm to firm. The most common information discussed in biographies is the person's role, start dates, previous work experience within the firm or elsewhere, education experience, and any relevant certifications. When the information the firm report via its website is sparse, data is supplemented with LinkedIn profiles and other publicly available sources using an internet search.

Existing datasets like BoardEx and Execucomp, while widely used, provide standardized data points such as tenure or titles but lack the granularity needed to analyze multidimensional director backgrounds. Our hand-collected data, by contrast, includes self-reported details on education, professional experience, and certifications, offering a richer basis for assessing a director's expertise, and additional insight into what the director's themselves see as relevant information. An example of a standard biography from Mr. John Doe is as follows:

> "Mr. Doe currently serves as a Chief Executive Officer of GSI Capital Advisors, an investment manager focused on investment opportunities in publicly traded real estate securities, primarily REITs. Previously, he was with Green Street Advisors, Inc., a commercial real estate, news, data, analytics, and advisory services firm, for over 26 years, serving as its President and Chief Executive Officer for 13 years. Before Green Street Advisors, Mr. Doe worked as a real estate consultant at Kenneth Leventhal and

[7] Defined as the listed executives on the REIT website.

Company and as a commercial real estate lender at Union Bank of California. He received a bachelor's degree in management science from the University of California, San Diego, and an MBA in finance and real estate from Columbia Business School."

To classify the background of the directors reliably and reproducibly, we use a topic modeling procedure known as Latent Dirichlet Allocation (LDA). LDA is a commonly used algorithm in topic modeling literature. An in-depth description of the foundation and uses of LDA can be found in Blei, Ng, and Jordan (2003). For this study, LDA can be understood as being guided by two principles[8]:

1. Each biography is a mixture of topics: Each will contain words that will be identified with a particular topic in specific proportions. For example, in a two-topic model, a biography might be classified as 20% "finance" and 80% "real estate," based on word patterns. Common words for "finance" could include "investment" or "equity," while "real estate" might feature terms like "property" or "development." Words like "asset" might overlap between topics.

2. Each topic is a mixture of words: In a two-topic model, we could imagine topics we define broadly as "finance" and "real estate". These topics describe the primary background of the individual based on the firm-reported biography.

LDA then estimates both principles, finding the mixture of words associated with each topic and determining the mix of topics that make up a biography. It will assign each term with a beta representing the per-topic-per-word probabilities. It will then assign each document with a gamma representing the per-document-per-topic probability.

We selected LDA over alternative methods, such as PCA or manual classification, for several reasons. First, LDA is particularly suited for analyzing unstructured text data, allowing us to capture the nuanced patterns of word usage across biographies. Unlike PCA, which identifies orthogonal components

[8] See Silge, Julia, and Robinson, David. Text Mining with R. O'Reilly Media, 2017.

without explicit interpretability, LDA groups words into meaningful topics that align with intuitive classifications (e.g., "finance" or "real estate"). Second, manual classification, while feasible, risks introducing subjective bias and is impractical for large datasets. LDA mitigates these concerns by providing a systematic, scalable, and reproducible approach to classification.

Figures 2 and 3 display the top twenty words and bigrams, respectively, in the biographies of executives and directors after cleaning out names and stop words with low informational content[9]. One can quickly see how several of these words and bigrams contain informative content regarding the background of the individual in whose bio it appears. For example, a strong case is to be made that the word "finance" or the bigram "investment banking" will indicate an individual with finance experience. When conducting topic modeling, we subset the biographies to just those of directors.

We chose ten topics for LDA, as we believe this number will capture sufficient variation in backgrounds without becoming overly specific for any one topic (i.e., an investment banker with an accounting degree from a university in the South), thus increasing the applicability of our results and mitigating the risk of overfitting.[10] Table 1 reports the LDA topic numbers, their classifications, and the top terms by beta and uniqueness within each topic.[11] This approach ensures meaningful classifications, capturing distinct director attributes while avoiding excessive overlap between categories. We conduct robustness checks by randomly sampling biographies matching each topic and confirming the accuracy of topic characterizations through manual review.

By delineating broad groupings into specific director attributes, our topic modeling enables a systematic and reproducible analysis of director characteristics. This approach provides a foundation for

[9] Defined in text modeling literature as words with little to no informational content.
[10] Results are robust for alternative numbers of topics. Since LDA just groups biographies by their content, more (less) topics will result in more specific (more general) groupings but will ultimately identify the same directors.
[11] Probability a given term belongs to a given topic.

examining how board composition influences REIT performance, addressing key gaps in governance research and advancing our understanding of directors' advisory roles.

4. Background Connection with REIT Performance

Once topics are characterized using LDA, each director is assigned a gamma value for each topic, representing the probability that their background aligns with that topic. Directors are then classified into a single background group based on the topic with the highest gamma, which simplifies their multidimensional attributes into distinct classifications. While some directors have diverse experiences, this stricter grouping is practical and aligns with observed patterns, where most directors' primary careers dominate their biographies. For instance, a director with a career in banking is likely to have auxiliary roles related to finance. This approach also offers actionable insights for practitioners by clearly linking director characteristics to firm outcomes.

To analyze the relationship between board composition and firm performance, gamma values are aggregated across directors within a firm to create firm-level average gammas for each topic. These averages, representing the likelihood that a firm's board reflects specific backgrounds, are linked to monthly firm returns sourced from the Center for Research in Security Prices (CRSP) for the period January 2000 to December 2022. Summary statistics, presented in Table 2, indicate that the average monthly return for REITs during this period was 1.1%, compared to 0.55% for a broad market index. The distribution of topics, detailed in Table 3, reveals significant variation across firms, reflecting the diversity of director backgrounds in the sample.

4.1 Effect of Firm-Level Gamma on Returns

The effect of gamma on firm returns reflects the relationship between the increasing probability that a director belongs to a particular background group and that firm's performance. Firm-level gamma is calculated as:

$$agam_i = \frac{\sum BoardMemberGammas}{\#ofBoardMembersinfirm}.$$

This measure captures the average likelihood that a board comprises directors from specific background topics, resulting in ten average gammas per firm.

To examine the relationship between board composition and monthly firm returns, we estimate the following Model (1) from January 2000 to December 2022:

$$Ret_{i,t} = agam_i + \sum_{n=1}^{10} topic_n + \sum_{n=1}^{10} topic_n * agam_i + controls + e_{i,t} \quad (1)$$

In Model (1), monthly returns are regressed on the average gamma of each firm per topic, with $topic_n$, representing a dummy variable for each topic. The key coefficient of interest is the interaction term ($topic_n * agam_i$), which captures the change in monthly firm returns for a one standard deviation increase in the likelihood that directors belong to a given topic. The results are presented in Table 4.

Table 4 reveals a strong and statistically significant relationship between average gamma for topics 2 and 7 and firm returns. These topics, as described in Table 1, represent directors with executive or governance experience in accounting and finance. The coefficients indicate that firms with directors from these backgrounds achieve monthly returns that are 1.8% to 2% higher than the average REIT in the sample. These results, significant at the 5% level, are economically meaningful. However, it is essential to interpret these findings as reflecting an increase in the likelihood of board composition from topics 2 and 7, rather than an endorsement of adding any specific number of such directors. The return increase represents a 64% improvement over the average REIT return of 1.1% and a 227% improvement over the broad market return of 0.55%, demonstrating the relative value of directors from these backgrounds. Directors categorized under topics 2 and 7 are hereafter referred to as "high-value directors."

Additional regressions introduce controls and fixed effects to further validate these findings. Models (2) and (3) are specified as follows:

$$Ret_{i,t} = \sum topic_n + agam_i + volume_{i,t} + vw_i + sp_i + \sum topic_n * agam_i + e_{i,t} \quad (2)$$

$$Ret_{i,t} = \sum topic_n + agam_i + volume_{i,t} + \sum topic_n * agam_i + \lambda_i + e_{i,t} \quad (3)$$

Model (2) incorporates topic dummies, firm-level average gamma, trading volume, and price indices for the value-weighted market and S&P500. Model (3) adds group fixed effects to control for differences across REIT subtypes, such as timberlands, apartments, and resorts. In both models, the interaction term remains the coefficient of interest, representing the differential monthly return for a standard deviation change in gamma. Table 5 reports the results.

High-value directors consistently demonstrate a positive and statistically significant relationship with firm returns across all specifications. In Model (2), the coefficients on the interaction term retain significance at the 1% level, with minimal reduction in magnitude after adding controls. These estimates suggest that increasing the likelihood of high-value directors by one standard deviation is associated with a 1.7% to 1.9% increase in monthly returns, a 55% to 73% improvement over the baseline return of 1.1%.

When considering REIT subgroups in Model (3), high-value directors continue to exhibit significant positive effects. The coefficients indicate that REITs with higher probabilities of high-value board composition achieve returns that are 1.1% to 1.3% greater per month than similar REITs within the same property type. These findings provide robust evidence of the positive relationship between high-value directors and superior firm performance.

4.2 Firm Returns Across Gamma Quartile

The relationship between firm returns and average gamma within each topic group offers insight into whether boards with homogenous backgrounds outperform those with diverse compositions. As the average gamma for a given topic increases, it becomes more likely that a firm's directors predominantly belong to that background classification. Existing literature provides conflicting perspectives on the value of board diversity. Studies such as Carter, Simkins, and Simpson (2003) and Bernile, Bhagwat, and Yonker (2018) suggest that diversity enhances performance, while others, like Donaldson, Malenko, and Piacentino

(2020), argue that disagreement among directors with varied backgrounds can impede decision-making, potentially destroying value through board deadlock.

Within the context of this study, we examine whether firm returns increase monotonically as boards become more homogenous in their backgrounds, particularly with respect to high-value director classifications (topics 2 and 7). If homogeneity adds value, we expect a positive relationship between firm returns and gamma levels for high-value topics. Conversely, if diversity drives performance, returns should show no discernible pattern with respect to gamma levels.

Table 6 reports average monthly firm returns from January 2000 to December 2022, sorted by topic and gamma quartile. The results strongly support the value of homogenous boards for high-value backgrounds. For topic 2, the spread in returns between firms in the lowest and highest gamma quartiles is 48.2 basis points per month, while for topic 7, the spread is 27 basis points. Welch two-sample t-tests confirm that these differences are statistically significant, at the 5% level for topic 2 and the 10% level for topic 7. Moreover, returns for topic 2 exhibit a monotonic increase across gamma quartiles, indicating a positive linear relationship between high-value board composition and firm performance.

The evidence presented in Table 6 underscores the strong positive relationship between high-value directors and firm returns. As the proportion of directors classified under high-value topics increases, so too does firm performance, favoring homogeneity in board composition within REITs. These results highlight the unique value that concentrated expertise brings to board decision-making, challenging the benefits of diversity in background within REITs.

4.3 Firm Returns Before and After Addition of High-Value Directors

While cross-sectional analysis reveals how high-value directors influence returns across firms, it does not capture how their addition impacts firm performance over time. To address this, we subset the data to include only firms that added at least one high-value director during the sample period from January 2000

to December 2022. For each firm, we create two groups: one covering the period before the addition of a high-value director (before-start) and the other for the period after their addition (after-start).

The differences in firm performance before and after the addition of high-value directors are striking. Average monthly returns increase from 98.58 basis points before the addition to 150 basis points afterward, representing a 52% improvement. These results are consistent when high-value directors are classified into their respective backgrounds—executive or governance experience in accounting or finance (topics 2 and 7). The observed jump in returns also indicates that REITs adding high-value directors tended to underperform prior to their appointment. Specifically, pre-addition returns were 12% below the total sample REIT monthly average but exceeded it by 36% post-addition. This evidence suggests that high-value directors play a critical role in reversing underperformance and enhancing firm outcomes, particularly in the performance-sensitive REIT sector.

To examine risk-adjusted returns, we estimate the following model:

$$Ret_{i,t} = \alpha + mom_t + mkt_t + SMB_t + HML_t + e_{i,t} \quad (4)$$

Model (4) regresses the monthly returns of REITs on the Fama-French 3-factor model with Carhart (1997) momentum. Alpha (α) represents the risk-adjusted return after accounting for variation attributable to these factors. We compare risk-adjusted returns before and after the addition of high-value directors to assess their impact beyond what can be explained by market factors. The results are presented in Table 7.

Consistent with the univariate analysis, the addition of high-value directors significantly increases risk-adjusted returns. A comparison of the constants in the two columns of Table 7 shows that adding a high-value director raises risk-adjusted returns by 50 basis points per month. This increase aligns with the univariate findings and demonstrates that high-value directors impart substantial value to the firms they govern, independent of market-wide influences. The specific mechanisms through which this value is created are explored further in Section 6.

4.4 Two-Stage Least Squares

Endogeneity is a persistent challenge in empirical studies of the relationship between board composition and firm performance. Following Knyazeva, Knyazeva, and Masulis (2013), we account for the endogeneity problem by implementing an instrumental variables approach. Our instrument leverages the accounting and finance rankings of the universities attended by directors, which are likely to influence the directors' expertise in these areas but are unlikely to directly affect firm performance. This approach satisfies both the relevance and excludability conditions for a valid instrument. F-statistics from the first-stage regression confirm the strength of the instrument, with a p-value less than 0.01.

University rankings are sourced from the University of Texas at Dallas (UTD) publication scores for the period 2000–2022. To construct a firm-level measure, we aggregate the rankings of universities attended by each board member. Using this, we create the variable "high-value proportion" ($HV\_prop_{i,t}$), defined as the proportion of a board composed of high-value directors over time. The first-stage regression predicts $HV\_prop_{i,t}$ using the board's aggregate university ranking and relevant controls. The fitted values from this regression are then used in the second-stage model, specified as follows:

$$Ret_{i,t} = \alpha + HV\_prop_{i,t} + \delta_{i,t} + e_{i,t} \quad (5)$$

Here, $HV\_prop_{i,t}$ represents the predicted proportion of high-value directors, and the coefficient on this term captures the average change in monthly returns for a one standard deviation increase in $HV\_prop_{i,t}$. Results from Model (5) are presented in Table 8.

Results from Table 8 indicate that, after accounting for endogeneity, firms that increase the proportion of high-value directors on their board by one standard deviation increase monthly returns by 2.6%, significant at the 5% level. However, it is important to interpret this finding with caution. The magnitude of the effect reflects changes in the proportion of high-value directors, not the addition of any specific number of directors, as board size influences $HV\_prop_{i,t}$.

By leveraging REITs' unique structure to isolate the advisory function of boards and employing two-stage least squares to address endogeneity, this analysis provides compelling evidence that the relationship between director characteristics and firm performance is causal.

4.4 Generalized Difference in Differences

To further establish a causal relationship, we implement a generalized difference-in-differences (DiD) framework. This approach compares returns across firms that add a high-value director before and after the appointment, allowing for time-varying treatment effects. The model is specified as follows:

$$Ret_{i,t} = \beta_0 + \alpha_i + \delta_t + \sum \rho_t(start_t * treat_i) + \epsilon_{i,t} \quad (6)$$

In Model (6), α_i and δ_t represent individual and time fixed effects, respectively. The dummy variable $start_t$ equals 1 when a high-value director is appointed, while $treat_i$ equals 1 for firms employing high-value directors at any time during the sample period. The interaction term ($start_t * treat_i$) captures the dynamic treatment effects, measuring the difference in returns between treated firms (those adding high-value directors) and matched control firms (those without such additions). Table 9 presents the results of Model (6).

Even within this restrictive framework, the addition of high-value directors demonstrates a significant positive impact on firm performance. Table 9 shows that firms adding high-value directors experience an average increase of 30 basis points in monthly returns compared to their control group. This improvement corresponds to an annualized return increase of 3.6% relative to their matched peers, providing robust evidence that high-value directors materially enhance firm performance.

5. When Do Firms Add a High-Value Director?

Univariate evidence from Section 4.3 suggests that REITs may strategically add high-value directors during periods of underperformance, recognizing the potential value these directors bring. In this section, we first

examine the timing of high-value director addition in an event study framework, then examine director motivation for joining REITs.

5.1. High-Value Director Event Study

To examine the timing of high-value director appointments, we conduct an event study, defining the "event date" as the addition of a high-value director to a firm's board. The analysis spans a two-year window before and after the appointment, providing sufficient time to observe effects while minimizing confounding events.

We follow Marais (1984) and Hein and Westfall (2004) in employing bootstrapping to construct confidence intervals, addressing concerns about sample size and time-series correlation. The initial "naïve" model compares firm returns before and after the addition of a high-value director without referencing a benchmark index. The results of this model are presented in Figure 4.

To provide a more robust analysis, we benchmark firm performance against a real estate market index, using a market model where the benchmark is the value-weighted average monthly returns of all real estate firms in CRSP identified by their SIC codes. The model is specified as:

$$r_{i,t} = \alpha + \beta rre_t + e_{i,t}$$

where $r_{i,t}$is the return of firm i in month t, and rre_t is the return of the value-weighted real estate index at time t. Using the estimated parameters, abnormal returns ($AR_{i,t}$) are calculated as:

$$AR_{i,t} = r_{i,t} - E\left[r_{i,t}\middle|rre_t\right] + e_{i,t}$$

where $E\left[r_{i,t}\middle|rre_t\right]$ irepresents the fitted value of firm returns based on the real estate index. Cumulative abnormal returns (CARs) are computed by summing abnormal returns over the event window. Results from the market model are presented in Figure 5.

The results of the naïve event study (Figure 4) suggest that firms adding high-value directors experience positive cumulative returns both before and after the appointment. However, the broader positive trend in REIT returns during the sample period limits the naïve model's ability to isolate the specific impact of high-value directors. These issues are mitigated in the real estate market model (Figure 5), which offers a more robust framework for analysis.

The timing of these appointments also addresses endogeneity concerns in board construction. If high-value directors were primarily attracted to high-performing firms, these firms would likely exhibit strong performance prior to the addition. The observed underperformance before the appointments instead suggests a causal relationship between high-value directors and subsequent performance improvements.

5.2. Director Motivation for Joining REITs

A natural question arises: why would high-value directors, recognized by the market for their expertise, choose to join underperforming firms? Dou and Zhang (2022) argue that directors joining poorly performing firms often take on leadership roles without significant pay increases, gaining reputational benefits instead. Consistent with this, we propose that high-value directors are added to underperforming REITs to provide strategic advice while bolstering their own reputational standing. This arrangement benefits both parties—directors enhance their professional status, while firms receive critical advisory services.

Table 10 compares the compensation and tenure of high-value directors to their peers, using data from BoardEx. High-value directors receive lower base salaries but a significantly larger portion of their compensation tied to performance metrics (68.63% vs. 62.51%). Their tenures are also shorter, averaging two and a half years less than other directors. This evidence aligns with the notion that high-value directors primarily serve in advisory roles, offering strategic expertise during critical periods and moving on to new opportunities. Untabulated results further indicate that high-value directors secure more prestigious

directorships following their service to REITs, a recognized marker of director quality (Chin, Tran, Wu, and Zhivotova, 2022).

In summary, the relationship between high-value directors and REITs is mutually beneficial. High-value directors contribute to performance improvements while enhancing their own professional standing, and firms strategically leverage their expertise during periods of underperformance.

6. How do Directors Affect Returns?

We propose that, due to the unique tax incentive structure of REITs, the primary channel through which directors affect returns is their advisory function. A wealth of literature highlights the differences between traditional and REIT governance. Supporting this perspective, we hypothesize that more powerful management teams, such as those led by CEOs who are also board chairs, are more likely to appoint high-value directors. This hypothesis contrasts with traditional governance literature, which finds that powerful CEOs typically avoid appointing strong independent directors (Fracassi and Tate, 2012; Jiraporn et al., 2016; Morse et al., 2012). In REITs, however, the diminished monitoring role of boards provides CEOs with an incentive to appoint directors who enhance the advisory capacity of the board. This prediction aligns with the theoretical framework proposed by Adams and Ferreira (2007).

To test this hypothesis, we estimate the following model:

$$HV\_prop_{i,t} = \alpha + CEO\_chair_{i,t} + \delta_{i,t} + e_{i,t} \quad (7)$$

where $HV\_prop_{i,t}$ represents the proportion of high-value directors on the board, $CEO\_chair_{i,t}$ is a dummy variable equal to 1 if the CEO concurrently serves as the board chair, and $\delta_{i,t}$ is a vector of controls. If directors in REITs primarily serve an advisory role, we expect a positive coefficient on $CEO\_chair_{i,t}$, indicating that more powerful CEOs appoint more high-value directors.

Table 11 presents the results of Model (7). The coefficient on CEO_chair is positive and strongly significant, suggesting that REITs with CEOs who are also board chairs have, on average, a 2.9% higher

proportion of high-value directors compared to REITs led by less powerful CEOs. This finding provides robust evidence that REIT directors primarily serve in an advisory capacity, as powerful CEOs, who would typically avoid appointing strong monitors, are incentivized to seek high-value directors to bolster the board's advisory function.

6.1 Univariate Evidence

In their advisory capacity, high-value directors influence REIT returns through two primary channels:

1. Investment Influences: These include the ability to select profitable property submarkets, as documented by Hochberg and Mühlhofer (2017).
2. Managerial Influences: These encompass cost-cutting, increased oversight, and similar actions.

While high-value directors may affect both avenues, their influence is constrained by time. Regulations on REITs and the relative illiquidity of real estate make it challenging to pivot investment strategies quickly. Moreover, the observed rapid increase in returns following the appointment of high-value directors suggests that short-term improvements are unlikely to be driven solely by acquiring new properties. Instead, these immediate returns are likely to result from cost-cutting measures and the sale of underperforming assets. Over the long term, directors can enact more substantial changes, focusing REIT portfolios on higher-quality and more profitable properties, leading to sustained outperformance.

To explore how high-value directors impact their firms over time, we construct two groups. The first group examines firm performance before and after the addition of a high-value director across the entire sample period. This approach allows us to capture long-term impacts, such as shifts in investment strategy. The second group limits observations to a two-quarter window around the director's appointment. Changes in this window are more likely attributable to immediate actions, such as cost reductions or the liquidation of non-performing assets. By comparing these groups, we assess how directors create value over time. Table 12 reports the changes in accounting measures following the appointment of high-value directors.

As expected, Table 12 illustrates that high-value directors have distinct short-term and long-term impacts on their firms. In the two quarters immediately following their appointment, significant increases are observed in non-operating income, net income, and the sale of real estate, which rise by 37%, 25%, and 31%, respectively. These increases suggest that high-value directors prioritize the sale of underperforming properties, resulting in a substantial boost to non-operating income and net income. The average real estate sales per quarter increase to $13.19 million post-director addition, 30% higher than the sample average. By cutting non-performing assets, high-value directors provide an immediate earnings boost while enabling the REIT to concentrate on its best-performing properties, mitigating the inefficiencies of a poorly managed portfolio.

In contrast, long-term effects show a strategic pivot. While short-term gains come from property sales, these activities decline over the full sample period, with real estate sales decreasing by 41%. This reduction reflects a shift toward a more focused REIT portfolio composed of high-quality assets. The difference between the 34% decrease in total assets and the comparatively modest 7% decrease in total real estate owned underscores this transition. High-value directors appear to focus the portfolio, divesting non-core assets and redeploying capital toward more profitable property submarkets. This long-term reallocation aligns with prior findings documenting the ability of skilled managers to select outperforming asset classes, contributing to sustained REIT outperformance.

These findings suggest that high-value directors initially generate value through quick, impactful managerial decisions, such as cost-cutting and asset liquidation. Over time, their influence extends to more strategic initiatives, restructuring the REIT portfolio to focus on high-quality properties and profitable submarkets. This dual role highlights the critical importance of high-value directors in both the short-term stabilization and long-term success of the firms they govern.

6.2 Multivariate Evidence

To provide additional statistical rigor and supplement the findings from Section 6.1, we examine how high-value directors influence firm performance by studying the relationship between accounting variables and earnings per share (EPS) before and after the director's appointment. The relationship is framed through the following models:

$$EPS_{i,t} = Assets_{i,t} + Cash_{i,t} + ShortTermInvest_{i,t} + Non - OperatingIncome_{i,t} + NetIncome_{i,t} + CoreRealEstateFunds_{i,t} + GainonRealEstateSales_{i,t} + \sum(AllVariables) * start_{i,t} + e_{i,t} \quad (8)$$

$$EPS_{i,t} = Assets_{i,t} + Cash_{i,t} + ShortTermInvest_{i,t} + Non - OperatingIncome_{i,t} + NetIncome_{i,t} + CoreRealEstateFunds_{i,t} + GainonRealEstateSales_{i,t} + \sum(AllVariables) * start_{i,t} + \gamma_i + \delta_t + e_{i,t} \quad (9)$$

In these models, subscripts i and t denote REIT and quarter, respectively. EPS is the earnings per share of common stock, assets refers to total reported assets, cash is in U.S. dollars, $ShortTermInvest$ is short-term investments, $Non - OperatingIncome$ represents income not derived from core real estate activities, $CoreRealEstateFunds$ refers to rents paid, and $GainonRealEstateSales$ measures profit from property sales. Start is a dummy variable indicating the addition of a high-value director. Interaction coefficients between Start and the accounting variables measure how each activity affects EPS post-director appointment. Model (9) incorporates quarter and group fixed effects to account for time and REIT subgroup heterogeneity. Both models are estimated over the full sample period and a two-quarter window around the director's appointment to evaluate how directors impart value over time.

Table 13 presents the results for these models. For the full sample, several variables exhibit a notable change in coefficients after the addition of a high-value director. Before the appointment, cash, core real estate funds, and gain on real estate sales all exhibit negative and significant relationships with EPS. After the director's start, these coefficients flip to positive and significant at the 1% level. In column one of Table 13, the interaction coefficients (Cash*Start, Core Real Estate Funds*Start, and Gain on Real Estate

Sales*Start) indicate that a $1 million increase in these variables corresponds to an increase in EPS of 0.0002, 0.00002, and 0.002, respectively. These results remain robust when fixed effects are added in column two, with only a slight decrease in the significance of Cash*Start.

The change in signs of these coefficients is particularly meaningful. Prior to the addition of high-value directors, negative coefficients suggest inefficiencies: mismanagement of cash, poorly handled core real estate operations, and suboptimal property sales. After the directors' appointment, the positive coefficients indicate significant improvements in these areas, suggesting that high-value directors transform previously inefficient activities into value-generating ones. This evidence strongly supports the findings in Section 6.1, demonstrating that high-value directors drive better resource allocation and operational focus. Moreover, the prior negative relationships between these variables and EPS further suggest that high-value directors are typically appointed to underperforming firms.

In the two-quarter window around the director's appointment, columns three and four of Table 13 show little evidence of significant changes in coefficients, aside from marginal significance for Short Term Investments*Start in the fixed effects specification. This result is unsurprising given the limited sample size for this subset, which reduces statistical power. Nonetheless, the broader patterns observed over the full sample period underscore the significant role high-value directors play in reshaping firm performance.

The evidence from these multivariate tests highlights the transformative impact of high-value directors. By improving cash management, focusing real estate operations, and optimizing property sales, these directors enhance earnings and realign underperforming firms toward efficiency. While short-term impacts are less pronounced due to data limitations, the long-term effects provide compelling evidence of their ability to generate sustained value for REITs.

7. Conclusion

Real estate investing, characterized by infrequent appraisals and opaque information compared to liquid assets, offers skilled managers unique opportunities to extract alpha through expertise and informational

advantages. REITs, with their reduced need for director monitoring due to special tax incentives, provide an ideal setting to study the relationship between director's characteristics and their advisory functions. Our findings reveal significant differences in firm performance based on directors' backgrounds, emphasizing the critical role of governance expertise.

Using hand-collected biographies from REIT websites and proxy filings, we employ a machine-learning algorithm to classify directors into ten distinct background groups based on text patterns. By analyzing the composition of REIT boards, we find that increasing the proportion of directors with executive or governance experience in accounting and finance roles significantly enhances firm performance. Monthly returns increase by 1.8% to 2% for firms with boards that include these high-value directors, representing a substantial improvement relative to the sample average. These results are robust across various econometric specifications, including two-stage least squares and generalized difference-in-differences models, which address potential endogeneity concerns. Furthermore, returns increase monotonically with the likelihood that a board comprises directors with these specific backgrounds, and risk-adjusted returns improve by 50 basis points per month after their appointment.

High-value directors are more likely to join underperforming REITs, which lag benchmark performance by 12% before their appointment but outperform by 36% afterward. These directors drive performance improvements by optimizing capital efficiency, divesting underperforming assets, and refocusing investments on more profitable property submarkets. Such changes stabilize returns and lead to sustained outperformance. Moreover, high-value directors are characterized by shorter tenures and a higher proportion of performance-based compensation, underscoring their focus on delivering measurable results.

This study highlights the significant and lasting impact of governance through the advisory function, particularly in less liquid asset classes like real estate. Directors with expertise in accounting and finance bring critical skills and informational advantages that generate substantial benefits for the firms they govern. Additionally, our use of machine learning to analyze unstructured data demonstrates the value

of these tools for advancing governance research by reliably classifying director backgrounds and quantifying their impact on firm performance.

These findings have implications for investors, managers, and policymakers, as they suggest that careful selection and recruitment of directors with specific expertise can significantly improve firm performance. These results may also inform future research on the advisory function of governance, particularly in the real estate sector, and help guide the development of policies to improve corporate governance practices.

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Table 1 – LDA Topics and Classification

Topic 1:	Topic 2:	Topic 3:	Topic 4:	Topic 5:	Topic 6:	Topic 7:	Topic 8:	Topic 9:	Topic 10:
Filter Topic	Executive Experience Accounting and Finance	Legal Experience / Banking	Many Awards / Financial Experience	Investment / Development	Development / Lending	High Governance Experience / Finance	Land Intensive Industry (Oil and Gas, etc.)	Branding Expert	Hospitality / Gaming
Unconditional Top Terms by LDA Beta									
Served	Chief Executive	University	Award	Investment	Real Estate	Board	President	Served On	Resorts
Board	Financial	Law	Philanthropy	Capital	Development	Committee	Oil	Committee	Hotels
Real Estate	Accounting	Counsel	Real Estate	Equity	Bank	Directors	Business	Managed	Casino
Top Terms by Uniqueness Measure									
None	Governs	Hedge	Controller	Urban Land Institute	Goldman Sachs	Asset Management	Gas	Advertising	Compensation
	Dedicated	Beta	CFO	Shopping	Mortgage	Skilled	Manufacturing	Marketing	Entertainment
	Success	Analyst	Treasurer	Projects	Lending	Finance	Entrepreneur	Customer	Audit

Topics are generated based on the Latent Dirichlet allocation algorithm running on the board of director biographies for REITs. The number of output topics is ten. The top ten terms based on beta, the probability that a certain word belongs in each topic, for each topic are displayed.

Uniqueness of terms per topic is calculated as: $Uniqueness_{Term_i} = \frac{Beta_{Term_i}}{\sum_{j \neq i} Beta_{Term_j}}$. Classification of the topics into a background group is done

after the fact and is based on the terms in the topic along with a sanity check by randomly sampling biographies which match a type and hand classifying to check matches. Topic 1 is a filter topic that aggregates biographies with sparce information about the director.

Table 2 – Summary Statistics

Variable	N	Mean	SD	Min	Pct. 25	Pct. 75	Max
Panel A: Months							
Returns	2,080,810	0.011	0.098	-0.77	-0.031	0.053	2.9
Volume	2,080,810	191,577	305,804	60	34,563	237,109	11,272,466
Topic Class	2,080,810	5.3	2.9	1	2	8	10
Market Return	2,080,810	0.0055	0.045	-0.17	-0.018	0.032	0.13
Panel B: Quarters							
Total Assets	5,957	6,429	10,093	60	1,425	7,137	125,172
Current Assets	5,957	175	340	0	15	177	6,835
Cash	4,676	169	342	0	12	172	6,719
Income	4,243	55	152	-1,787	4.3	61	3,758
Long Term Debt	5,957	2,871	4,248	0	589	3,193	46,727
Depreciation of RE	5,310	49	70	-142	9.1	55	835
Core RE Funds	4,061	99	164	-1,148	20	108	1,649
Long Term Investment	5,521	4,714	6,283	0	997	5,542	83,142
Short Term Investment	4,412	37	85	0	0	40	2,002
Non-Operating Income	5,945	12	83	-1,699	0	6	3,747
Net Income	5,953	44	124	-1,616	4.7	49	3,588
Total Real Estate	5,380	4,493	5,763	0	1,032	5,475	73,323

Sale of Real Estate	5,236	10	68	-115	0	1.3	3,735
EPS	5,956	0.33	0.76	-12	0.08	0.49	15

Panel A represents monthly summary statistics for all NAREIT REITs matched with CRSP data. Panel B section represents quarterly summary statics for all NAREIT REITs matched with Compustat data. Returns and Market Return represent monthly returns for REITs and a broad market index, respectively. Volume represents the number of trades per month for REITs. Topic Class Represents the characterization of each REIT to a topic by board of director biographical information. All values in panel B are reported in millions of dollars aside from EPS, which measures the earnings per share with magnitude matching the reported value. Time is from January 2000 – December 2022.

Table 3 – Gamma Summary Statistics

Topics	N	Mean	SD	Min	Pct. 25	Pct. 75	Max
Panel A: Director Level							
1	1419	0.15	0.26	0.000076	0.00035	0.23	1
2	1419	0.06	0.17	0.000071	0.00029	0.0007	1
3	1419	0.11	0.23	0.000073	0.00031	0.041	1
4	1419	0.13	0.25	0.000073	0.00033	0.14	1
5	1419	0.13	0.24	0.000071	0.00033	0.14	1
6	1419	0.083	0.22	0.000071	0.00029	0.00074	1
7	1419	0.066	0.19	0.000071	0.00029	0.00074	1
8	1419	0.07	0.19	0.000071	0.00028	0.00071	1
9	1419	0.094	0.23	0.000071	0.00029	0.00097	1
10	1419	0.11	0.23	0.000071	0.00031	0.087	1
Panel B: Firm Level							
1	148	0.16	0.14	0.00032	0.06	0.2	0.65
2	148	0.059	0.072	0.00019	0.00054	0.089	0.52
3	148	0.11	0.11	0.000094	0.032	0.16	0.54
4	148	0.13	0.11	0.000094	0.049	0.2	0.46
5	148	0.12	0.12	0.00025	0.026	0.19	0.52
6	148	0.084	0.12	0.000094	0.00043	0.11	0.55
7	148	0.068	0.11	0.000094	0.00083	0.077	0.75
8	148	0.071	0.1	0.000094	0.00063	0.1	0.67
9	148	0.09	0.11	0.00021	0.0051	0.13	0.78
10	148	0.11	0.12	0.000094	0.021	0.16	0.58

Panel A presents summary statistics for gamma on the director level. Gamma is calculated as the probability that a particular biography belongs to a topic as classified by the LDA algorithm. Panel B presents summary statistics for gamma on the firm level. Firm level gammas are computed as the average gamma amongst all directors within a firm.

Table 4 – Topic Gamma Effect on Returns

	Dependent variable:
	Returns
Topic 1*Average Gamma	0.004
	(0.008)
Topic 2*Average Gamma	0.020**
	(0.008)
Topic 3*Average Gamma	-0.004
	(0.010)
Topic 4*Average Gamma	0.012
	(0.010)
Topic 5*Average Gamma	-0.005
	(0.009)
Topic 6*Average Gamma	0.007
	(0.008)
Topic 7*Average Gamma	0.018**
	(0.009)
Topic 8*Average Gamma	0.004
	(0.011)
Topic 9*Average Gamma	-0.009
	(0.009)
Constant	0.011***
	(0.001)
Controls	YES
Observations	40,296
R^2	0.2095
Adjusted R^2	0.2094
Residual Std. Error	0.0882
F Statistic	2817***

Significance is denoted as *p<0.01**p<0.05***p<0.01. Results are from the following model: $Ret_{i,t} = agam_i + \sum_{n=1}^{10} topic_n + \sum_{n=1}^{10} topic_n * agam_i + controls + e_{i,t}$. Where ret is the monthly returns for firm i, and topic is a dummy variable for a topic and gamma match. Average gamma is computed as $agam_i = \frac{\sum Board\ Member\ Gammas}{\#\ of\ Board\ Members\ in\ firm}$. A characterization of the topics for board background can be found in table 1. Monthly observations are used from January 2000 – December 2022.

Table 5 – Effect of Gamma on Returns (With Controls)

	Dependent variable:	
	Returns	
	OLS	FE
	(2)	(3)
Topic 2	-0.002**	-0.002
	(0.001)	(0.001)
Average Gamma	-0.004**	-0.003
	(0.002)	(0.002)
Topic 7	-0.002**	-0.001
	(0.001)	(0.001)
Volume	-0.000	-0.000
	(0.000)	(0.000)
VW Return	1.775***	
	(0.026)	
S&P500 Return	-0.824***	
	(0.027)	
Topic 2*Avg. Gamma	0.019***	0.013**
	(0.005)	(0.006)
Topic 7*Avg. Gamma	0.017***	0.011*
	(0.006)	(0.006)
Constant	0.004***	
	(0.0003)	
Group Effects	NO	YES
Observations	40,296	40,296
R^2	0.210	
Adjusted R^2	0.209	
Residual Std. Error	0.088	
F Statistic	7,747.762***	1.227

Significance is denoted as *p**p***p<0.01. Results are from the following models, from left to right: $Ret_{i,t} = \sum topic_n + agam_i + volume_{i,t} + vw_i + s\&p_i + \sum topic_n * agam_i + e_{i,t}$ and $Ret_{i,t} = \sum topic_n + agam_i + volume_{i,t} + \sum topic_n * agam_i + \lambda_i + e_{i,t}$. Where ret is the monthly returns for firm i, topic is a dummy variable for topic and gamma match, volume is the monthly trading volume of firm i, vw is the monthly return on a value weighted index, s&p is the monthly return on an S&P500 index, and average gamma is computed as $agam_i = \frac{\sum Board\ Member\ Gammas}{\#\ of\ Board\ Members\ in\ firm}$. λ_i represents group fixed effects by type of REIT. A characterization of the topics for board background can be found in table 1. Monthly observations are used from January 2000 – December 2022.

Table 6 – Return Difference Across Gamma Quartile

Topic	Gamma Quartile	Average Returns	Q4 - Q1
1	1	0.0137	
1	2	0.00977	
1	3	0.0108	
1	4	0.0103	-0.0034
2	1	0.00778	
2	2	0.00883	
2	3	0.0108	
2	4	0.0126	0.00482
3	1	0.0111	
3	2	0.0108	
3	3	0.00973	
3	4	0.00999	-0.00111
4	1	0.0103	
4	2	0.0108	
4	3	0.0105	
4	4	0.0111	0.0008
5	1	0.0124	
5	2	0.0103	
5	3	0.0115	
5	4	0.00975	-0.00265
6	1	0.00911	
6	2	0.0117	
6	3	0.01	
6	4	0.0108	0.00169
7	1	0.0101	
7	2	0.00823	
7	3	0.0102	
7	4	0.0128	0.0027
8	1	0.0106	
8	2	0.0108	
8	3	0.0105	
8	4	0.0101	-0.0005
9	1	0.0119	
9	2	0.0118	
9	3	0.0101	
9	4	0.00823	-0.00367
10	1	0.0111	
10	2	0.0101	
10	3	0.0114	
10	4	0.0093	-0.0018

Average returns are the mean of returns for all firms per month per topic per gamma quartile. Gamma is computed within the LDA algorithm as the per-topic-per-firm probability. Q4 – Q1 refers to the 4th gamma quartile (highest gamma) average returns minus the 1st gamma quartile (lowest gamma) returns within each topic. Monthly returns are used from January 2000 to December 2022.

Table 7 – Risk Adjusted Returns

	Dependent variable:	
	Returns	
	Before	After
Momentum	-0.002***	-0.002***
	(0.0001)	(0.00004)
Market	0.009***	0.007***
	(0.00005)	(0.00005)
SMB	0.003***	0.004***
	(0.0001)	(0.0001)
HML	0.002***	0.004***
	(0.0001)	(0.0001)
Constant	0.002***	0.007***
	(0.0002)	(0.0002)
Observations	40,296	40,296
R^2	0.243	0.163
Adjusted R^2	0.243	0.163
Residual Std. Error	0.088	0.095
F Statistic	13,492.270***	10,728.070***

Significance is denoted as *p**p***p<0.01. Both columns represent the results of the following model: $Ret_{i,t} = \alpha + mom_t + mkt_t + SMB_t + HML_t + e_{i,t}$. The left column represents results before the addition of a high value board member, the right column after. This model represents a factor regression of each REIT against the Fama French three factor model containing market return (mkt), returns on a portfolio of small minus big stocks (SMB), and returns on a portfolio containing high book-to-market stocks minus low book-to-market stocks (HML), the risk-free rate, plus the Carhart (1997) momentum factor. Monthly observations are used from January 2000 – December 2022.

Table 8 – Two Stage Least Squares High Value Director Effect on Returns

	Dependent variable:
	Monthly Returns
HV Proportion	0.026 **
	(0.012)
Constant	0.00286 ***
	(0.007)
Controls	YES
Observations	23,380
R^2	0.2373
Adjusted R^2	0.2371
Residual Std. Error	0.08664

Significance is denoted as $^{*}p<0.1^{**}p<0.05^{***}p<0.01$. HV proportion is defined as $\frac{num\ of\ high\ value\ directors_{i,t}}{num\ of\ total\ directors_{i,t}}$ so that hv proportion defines the fraction of a board i that it composed of high value directors at any given year t. Results are reported from a second stage regression. The first stage results are achieved by regressing hv proportion on the summed ranking of the finance and accounting departments of the board's university degrees.

Table 9 – Generalized Difference in Differences

	Dependent variable:
	Yearly Returns
Treatment*Post	0.003 ***
	(0.001)
Time Effects	YES
Unit Effects	YES
Observations	3,234
R^2	0.00004
Adjusted R^2	0.001
F Statistic	8.419

Significance is denoted as $^{*}p<0.1$ $^{**}p<0.05$ $^{***}p<0.01$. Results are reported from a generalized difference in difference framework where firms are considered treated if the firm adds a high value board member and treated on the date the board member joins the firm. Unit and time fixed effects are included in the model.

Table 10 – Director Compensation and Tenure

High Value	Salary	Bonus	Total Comp	Equity	LTIP	Options	Total Direct Comp	Performance Comp %	Wealth Delta	Tenure (Days)
0	478.84	1056.55	756.21	90208.44	15712.93	22691.6	848.23	62.51%	591.97	2928
1	173.82	933.70	260.43	9859.65	4762.7	10807.6	294.3	68.63%	164.12	2147

All values are reported in hundreds of thousands (000) and represent averages over the individual director's tenure. High value denotes directors with executive or governance experience in finance or accounting roles. Wealth delta is the change in wealth in the company (Total Equity Linked Wealth) for each 1% change in the stock price at the Annual Report Date selected for the individual. LTIP represents long term incentive pay for performance metrics. Performance compensation % refers to Performance to total - Ratio of Value of LTIPs Held to Total Compensation for the period. Monthly observations are used from the period Jan 2000 – December 2022.

Table 11 – Determinants of Board Structure

	Dependent variable:
	Proportion of High Value Directors
CEO Chair	0.029***
	(0.003)
EPS	-0.002**
	(0.001)
Assets	0.0001***
	(0.00003)
Cash	-0.00004***
	(0.00000)
ST Investment	-0.0001***
	(0.00002)
Non-Operating Income	-0.0001
	(0.00004)
Net Income	0.00002
	(0.00003)
Sale of Real Estate	0.00003
	(0.00004)
Constant	0.122***
	(0.002)
Observations	4,935
R^2	0.041
Adjusted R^2	0.039
Residual Std. Error	0.110
F Statistic	23.202***

Significance is denoted as *p<0.1**p<0.05***p<0.01. Results are reported from the following model: $HV\_prop_{i,t} = CEO\_chair_{i,t} + Assets_{i,t} + Cash_{i,t} + Short\ Term\ Invest_{i,t} + Non-Operating\ Income_{i,t} + Net\ Income_{i,t} + Gain\ on\ Real\ Estate\ Sales_{i,t} + e_{i,t}$. Subscripts i and t denote REIT and quarter, respectively. HV_prop is the proportion of high value board members (directors with a finance or accounting background in director or executive roles), EPS is the earnings per share of common stock, assets is the total reported assets, cash is cash in U.S. dollars, short term invest is the amount of short-term investment, non-operating income is funds not from core real estate rents, net income is the net income in U.S. dollars, and gain on real estate sales is the amount gained on the sale of property. CEO chair is a dummy = 1 if the CEO is also the chair of the board. Observations are quarterly from Q1 2000 – Q4 2022.

Table 12 – Change in Accounting Values after High Value Appointment

	Variable:												
Start	Total Asset	Cash and Short-Term Invest	Cash	Inc.	Total Long-Term Debt	Dep of RE	Funds from Core RE	Long Term Invest	Short Term Invest	Non-Oper. Inc.	NI	Tot RE	Sale of RE
Panel A: 2 Quarters Around Appointment													
0	6235.2	170.86	164.04	53.67	2929.7	50.38	113.64	4748.6	33.48	9.43	39.79	4573.7	10.09
1	6717.1	176.53	169.19	59.63	3187.0	57.57	124.32	5441.6	32.42	12.91	49.84	5148.8	13.19
% Δ	8%	3%	3%	11%	9%	14%	9%	15%	-3%	37%	25%	13%	31%
Panel B: Full Sample													
0	7694.7	206.91	182.82	57.55	3317.4	52.17	101.57	4864.8	39.46	14.95	50.83	4649.7	12.61
1	5083.0	142.10	146.79	49.10	2395.8	44.85	95.78	4539.9	33.99	8.53	37.67	4305.7	7.38
% Δ	-34%	-31%	-20%	-15%	-28%	-14%	-6%	-7%	-14%	-43%	-26%	-7%	-41%

All values are sample means for their respective variables reported in millions of dollars. Panel A only includes observations within a two-quarter window around a high value board member appointment. Panel B includes all observations. "0" represents observations before high value appointment, "1" after. "% Δ" represents percentage change in the variable mean after the board of director addition. Observations are quarterly and the sample period is from Q1 2000 – Q4 2022.

Table 13 – High Value Channel of Effect on EPS

	Dependent variable:			
	EPS			
	Full Sample		2 Quarters Around Appointment	
	OLS	FE	OLS	FE
	(1)	(2)	(3)	(4)
Assets	-0.001***	-0.001***	-0.003***	-0.002*
	(0.0002)	(0.0002)	(0.001)	(0.001)
Start	0.002	0.017	0.107	0.033
	(0.025)	(0.037)	(0.077)	(0.067)
Cash	-0.0001**	-0.0001**	-0.0001	0.0002
	(0.00005)	(0.0001)	(0.0002)	(0.0001)
ST Invest	-0.00003	0.0003**	0.0001	0.0005
	(0.0002)	(0.0002)	(0.001)	(0.001)
Non-Operating Income	-0.0001	-0.001***	-0.005**	0.001
	(0.0003)	(0.0002)	(0.002)	(0.002)
Net Income	0.006***	0.006***	0.008***	0.007***
	(0.0002)	(0.0002)	(0.001)	(0.001)
RE	-0.00002***	-0.00001**	0.00003**	-0.00001
	(0.00000)	(0.00000)	(0.00001)	(0.00001)
Gain on RE Sale	-0.002***	-0.002***	0.0004	-0.001
	(0.0002)	(0.0002)	(0.002)	(0.001)
Assets*Start	-0.002***	-0.002***	0.0001	0.0002
	(0.0003)	(0.0003)	(0.001)	(0.001)
Cash*Start	0.0002***	0.0002**	-0.0002	-0.0002
	(0.0001)	(0.0001)	(0.0003)	(0.0002)
ST Inv*Start	0.0003	-0.0001	0.001	0.001*
	(0.0003)	(0.0003)	(0.001)	(0.001)
NO Inc*Start	-0.001**	-0.0003	0.009	-0.002
	(0.001)	(0.0005)	(0.006)	(0.003)
Net Inc*Start	0.002***	0.001***	0.001	0.001
	(0.0004)	(0.0004)	(0.002)	(0.001)
RE*Start	0.00002***	0.00002***	-0.00002	-0.00002
	(0.00001)	(0.00001)	(0.00002)	(0.00001)
RE Gain*Start	0.002***	0.002***	-0.005	0.003
	(0.001)	(0.0005)	(0.005)	(0.003)
Constant	0.195***		0.105**	
	(0.015)		(0.050)	
Time FE	NO	YES	NO	YES
Group FE	NO	YES	NO	YES
Observations	3,689	3,689	211	211

R^2	0.569	0.577	0.572	0.858
Adjusted R^2	0.567	0.550	0.539	0.617
Residual Std. Error	0.540		0.374	
F Statistic	323.291^{***}	315.721^{***}	17.371^{***}	31.336^{***}

Significance is denoted as $^{*}p<0.1^{**}p<0.05^{***}p<0.01$. Columns 1 and 3 represent results from the following model: $EPS_{i,t} = Assets_{i,t} + Cash_{i,t} + Short\ Term\ Invest_{i,t} + Non - Operating\ Income_{i,t} + Net\ Income_{i,t} + Core\ Real\ Estate\ Funds_{i,t} + Gain\ on\ Real\ Estate\ Sales_{i,t} + \sum(All\ Variables) * start_{i,t} + e_{i,t}$. Columns 2 and 4 results from $EPS_{i,t} = Assets_{i,t} + Cash_{i,t} + Short\ Term\ Invest_{i,t} + Non - Operating\ Income_{i,t} + Net\ Income_{i,t} + Core\ Real\ Estate\ Funds_{i,t} + Gain\ on\ Real\ Estate\ Sales_{i,t} + \sum(All\ Variables) * start_{i,t} + \gamma_i + \delta_t + e_{i,t}$. Subscripts i and t denote REIT and quarter, respectively. EPS is the earnings per share of common stock, assets is the total reported assets, cash is cash in U.S. dollars, short term invest is the amount of short-term investment, non-operating income is funds not from core real estate rents, net income is the net income in U.S. dollars, core real estate funds are the total rents drawn, and gain on real estate sales is the amount gained on the sale of property. Start is a dummy variable which indicates the start of a high value board member at a firm. $\gamma_i + \delta_t$ represent group and quarter fixed effects. Observations are quarterly from Q1 2000 – Q4 2022.

Figure 1

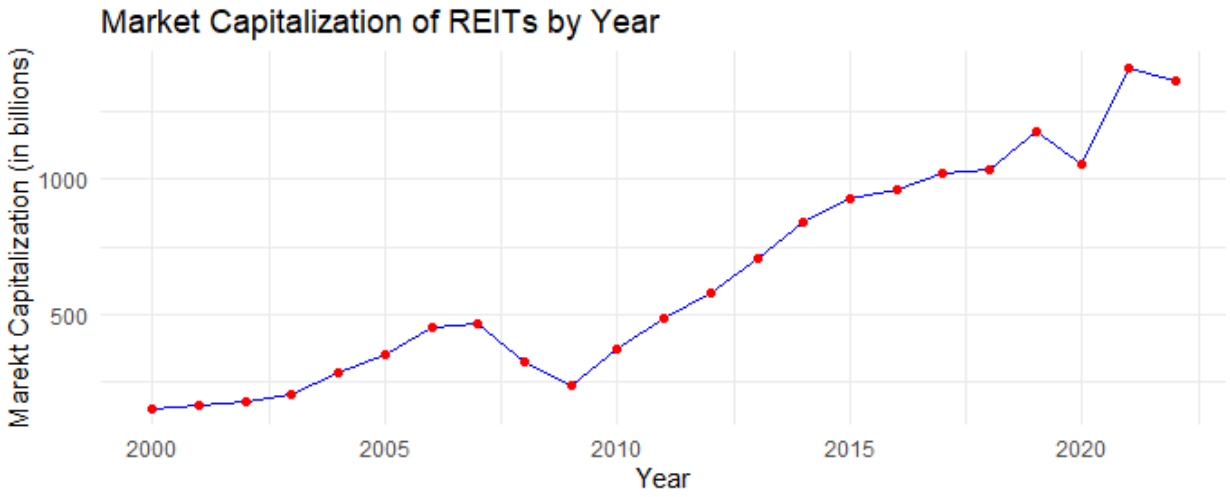
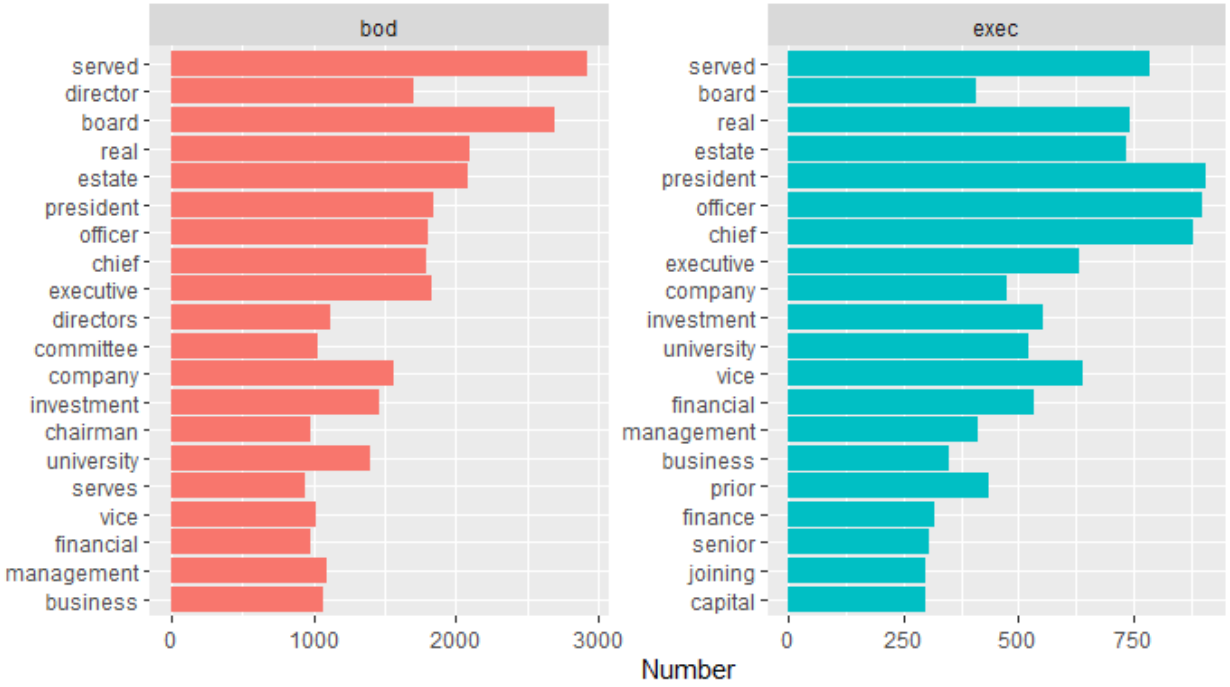
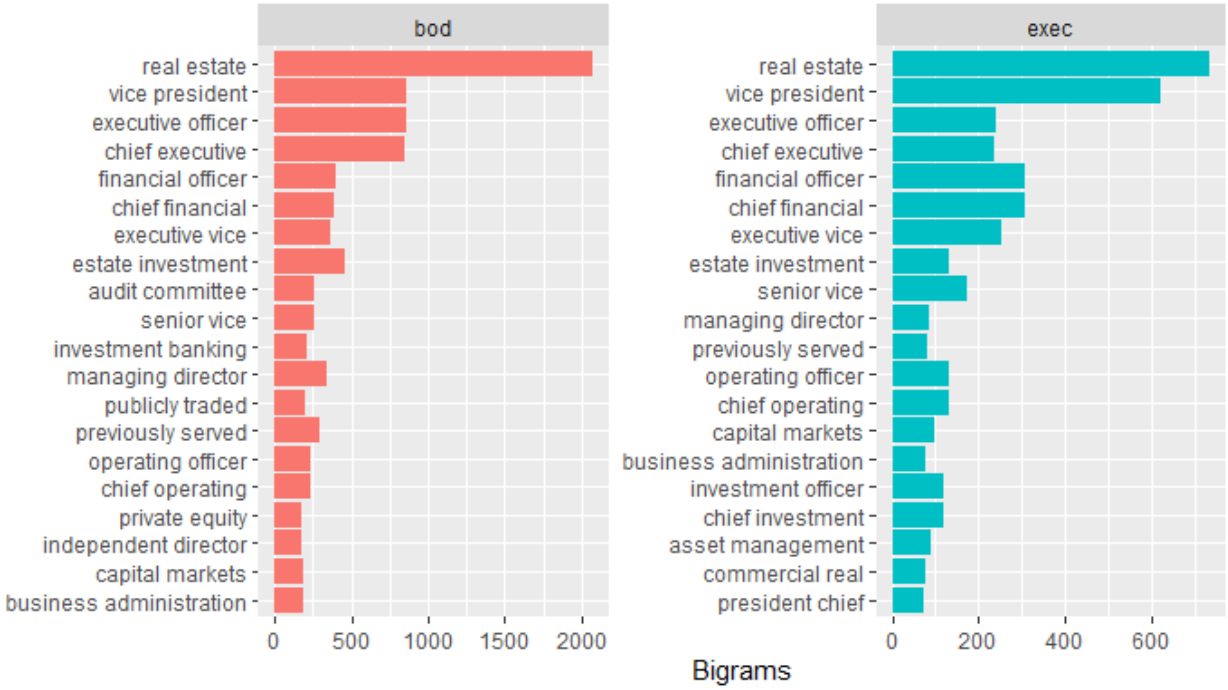


Figure 2



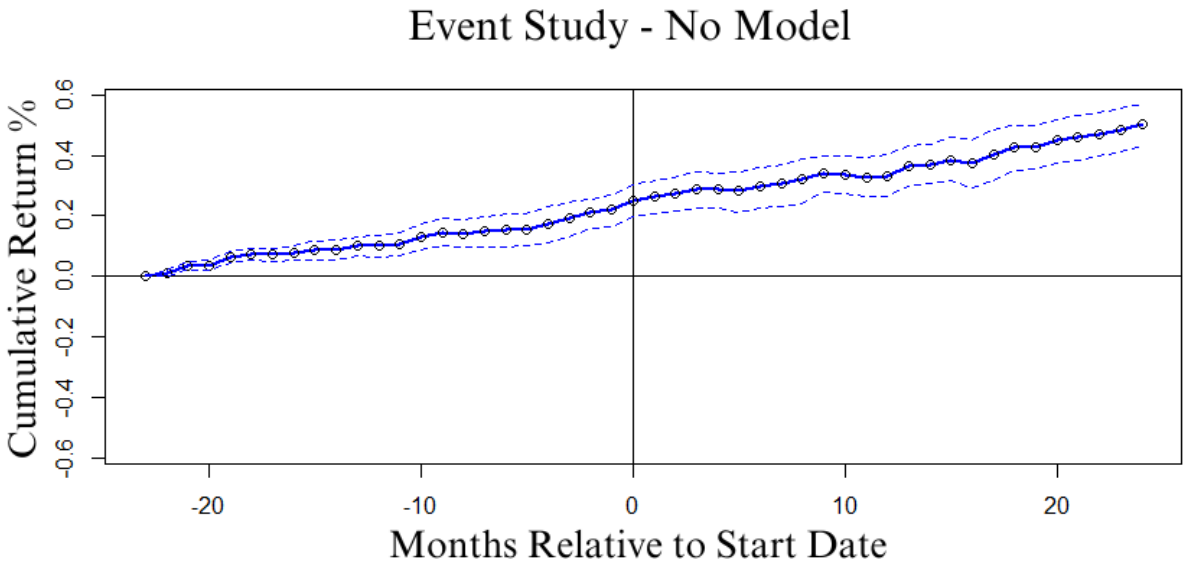
Top terms are computed by tokenizing the text content of biographies and computing the number of times a word appears in the full sample after removing names and stop words.

Figure 3



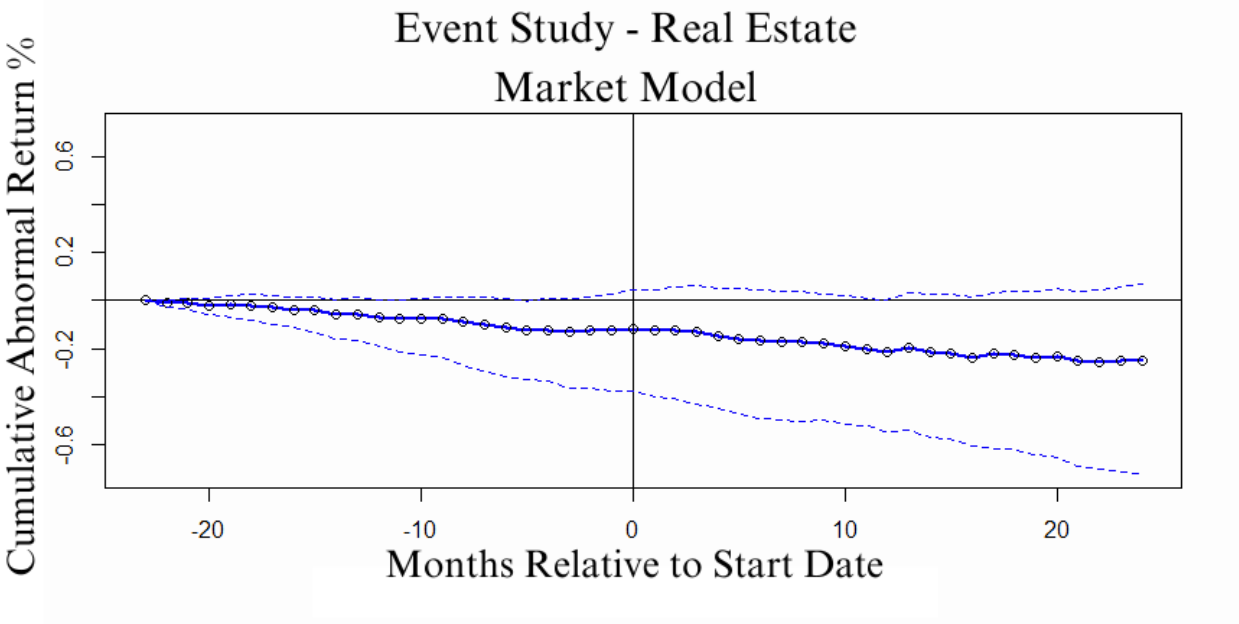
Top bigrams are computed by tokenizing bigrams within the text content of biographies and computing the number of times a given bigram appears in the full sample after removing names and stop words.

Figure 4



Cumulative return is computed as the summation of monthly return in the sample period window 24 months before and after the appointment of a high value individual to the board. 95% Confidence intervals are constructed using bootstrapping.

Figure 5



Cumulative abnormal return is computed as the summation of abnormal returns: $AR_{i,t} = r_{i,t} - E[r_{i,t}|rre_t] + e_{i,t}$. Where $E[r_{i,t}|rre_t]$ is the fitted value of REIT return given the returns of the value weighted real estate index from $r_{i,t} = \alpha + \beta rre_t + e_{i,t}$. CARs are computed for 24 months before and after the addition of a high value individual to the board. 95% Confidence intervals are constructed using bootstrapping.