Social Alignment in the CEO Market: Evidence from Two-sided Matching

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[Very preliminary, do not circulate.]

Abstract

This paper empirically investigates how firm-CEO mission-alignment in social activities impacts CEO hiring, examining its significance alongside traditional skill-based complementarities related to talent, experience, and education. Leveraging data on prosocial activities of public firms and CEOs from 2007 to 2020, we estimate a two-sided matching model and find that prosocial mission-alignment plays a vital role in firm-CEO matching, comparable to well-known skill-based synergy sources. However, while firms in favor of prosociality match exhibit improved social ratings and ESG scores, they often experience diminished financial performance, posing a challenge to shareholder interests prioritizing financial returns. By addressing both firms' and CEOs' preferences, we show potential trade-offs in the CEO selection process, offering significant implications for corporate governance strategies that seek to balance social responsibilities with financial outcomes.

Keywords: CEOs, ESG, Prosocial, Structural estimation, Two-sided matching

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1. Introduction

CEOs play a pivotal role in shaping modern corporations (Bertrand, 2009; Cziraki and Jenter, 2020). Consequently, the selection and incentivization of CEOs are crucial for a firm's success. A large literature in business and economics examines the design of compensation contracts that incentivize CEOs to maximize firm value Edmans et al. (2017). Far less explored, however, are how firms and CEOs are matched and the consequences of such matches (Oyer and Schaefer, 2011). Limited work in this area tends to focus on alignment between CEOs' skills and firms' business operation characteristics (Rosen, 1982; Gabaix and Landier, 2008; Pan, 2017), without recognizing that shared values or missions could also drive the match, especially when the shared-mission may not necessarily improve firms' financial outlook. One aspect of such missions that has become increasingly important is to serve the interests of a broad set of stakeholders like social enterprises.[1] We empirically investigate whether the social-mission alignment between firms and CEOs matters in CEO hiring and examine the impact of social alignment on post-hiring corporate outcomes.

In particular, we develop a two-sided multi-dimensional matching model that incorporates the complementarities between firms' social missions and CEOs' prosocial preferences, as well as other matching dimensions influencing productivity as identified in prior studies, such as firm size and CEO talent, firm diversification and CEO experience, and firm R&D emphasis and CEO education (Gabaix and Landier, 2008; Pan, 2017). The structural approach addresses the endogeneity challenges in traditional reduced-form regression models because CEO hiring involves mutual selection between firms and CEOs. In addition, different dimensions of CEO and firm attributes inevitably suffer from the multicollinearity problem, which undermines the interpretations of results from regression models. Through formally modeling and estimating the two-sided matching, we explicitly consider the endogenous decision-making process, capturing preferences revealed from matching choices that maximize the total synergy in the pair-wise stable equilibrium.

Our data comprises 694 CEO-firm matches from the turnover events during 2007 to 2020. Two observations from the data are helpful to validate the matching model. First, firms with higher

[1] For example, in 2019 Business Roundtable (BRT) released a new Statement on the Purpose of a Corporation signed by 181 CEOs who commit to lead their companies for the benefit of all stakeholders—customers, employees, suppliers, communities and shareholders.

social scores frequently hire CEOs actively engaged in prosocial activities during our sample period (2007-2020). Second, firms matched with CEOs who prioritize prosocial aspects less than their employers often experience declines in the post-hiring social performance.

We estimate our model using the maximum score method, a standard approach developed by Fox (2010) and Fox (2018), and widely applied in economics, management, and finance. We assume observed firm-CEO matches as equilibrium choices. The social dimension and three productivity dimensions enter the match value function as the interaction terms of both sides' characteristics in each dimension. Each coefficient of the corresponding synergy dimension indicates its relative importance in the firm-CEO match decision. To factor in the compensation's effect on a CEO's decision to join, we estimate the matching model with a transfer.

The estimation algorithm is intuitive. We calculate the pair-wise match value for both matched and unmatched pairs using observed characteristics and coefficient parameters. Then we translate the likelihood of a specific match into inequalities derived from comparing match values. The observed component of the match value function acts as a latent variable within discrete choice models, enabling us to identify and quantify the relative significance of each synergy dimension. In the estimation stage, we search for parameter values to maximize the total number of inequalities that satisfy the pair-wise comparison implied by the equilibrium.

Our structural estimation offers three key findings. First, the estimated relative importance of each synergy dimension suggests that the prosocial mission-alignment plays a crucial role in firm-CEO matching, alongside skill-based characteristics such as talent, experience, and education. Matching talent CEOs with large firms emerges as the most important factor. Surprisingly, matching prosocial CEOs with socially-oriented firms is equally important as matching experienced CEOs with diversified firms. Meanwhile, aligning technical CEOs with R&D-intensive firms shows minimal or no significant synergy in our model.

Second, we observe an intriguing outcome regarding matching consequences. Firms prioritizing prosocial mission-alignment in hiring have higher social ratings and ESG scores in the future, but deliver weaker future financial performance measures like ROA and Tobin's Q. This contrast suggests that emphasizing prosocial attributes in CEO selection may not align with the interests of

equity holders who focus on financial returns, reflecting recent skepticism about ESG investments.

Third, we explore match value sharing between firms and CEOs, considering discrepancies in matching dimensions. We find that prosocial CEOs are more attractive in the labor market, which is indicated by a larger share of match value they can expect from compensation negotiation. In addition, social-oriented firms rely on less pecuniary incentive to attract prosocial CEOs who are well aligned. Although our framework does not explicitly model CEO incentive problems as principal-agent structural estimations would, the match value sharing results suggest potential trade-offs in CEO hiring.

This paper contributes to the literature in three ways. First, it addresses the debate on ESG orientation value. The public interests in corporate social responsibility are evidenced by a surge in ESG academic publications and media coverage. While both positive and negative impacts of hiring prosocial CEOs have been found (e.g., Margolis and Walsh, 2003; Barnea and Rubin, 2010; Servaes and Tamayo, 2013; Eccles et al., 2014; Flammer, 2015), our findings suggest that, even though social-alignment becomes an important consideration in CEO hiring, the benefits for socially responsible firms paired with prosocial CEOs may primarily enhance public image rather than financial performance.

Second, it provides early empirical evidence of mission-alignment being considered in CEO hiring, complementing studies that focus on skill-based characteristics (Campbell et al., 2023). Meaningful work offers nonmonetary incentives to lower level employees (Cassar and Meier, 2018). However, at the firm top level, corporate missions are often diverse and articulated verbally so that it is challenging to quantitatively assess its alignment in large sample. We leverage available data on prosocial activities to study mission-alignment in CEO hiring through the lens of prosocial preferences.

Finally, we introduce the maximum score estimation method to accounting literature. While two-sided matching models have shed light on various issues in economics and finance (Chiappori and Salanié, 2016; Salanié, 2024), their application in accounting remains limited (Bertomeu et al., 2023). By adopting this approach, we explore the under-researched CEO hiring process.

2. Two-sided Matching Model

2.1. Model Setup

To empirically examine the impacts of social preferences in the CEO labor market, we estimate a one-to-one matching model involving a finite number of managers, represented by a set $M = \{m_1, \cdots, m_n\}$ and a finite number of firms, represented by a set $C = \{c_1, \cdots, c_n\}$, where n is the number of firms and CEOs. Both firms and managers maximize their utility by selecting their partners. The utility is transferable between firms and CEOs and each firm appoints only one CEO, who in turn exclusively serves that firm. If firm c_i hires manager m_i as the CEO, the matching derives a utility of $F(c_i, m_i)$, which consists of two parts: the retained value of the firm $V(c_i, m_i)$ and the CEO's compensation $p(c_i, m_i)$,

$$F(c_i, m_i) = V(c_i, m_i) + p(c_i, m_i) \tag{1}$$

The firm's retained value $V(c_i, m_i)$ must be positive and there is no searching cost in the model. Without loss of generality, we assume firm c_i is matched with manager m_i for all $i = 1, \cdots, n$.

In equilibrium, each pair of matched firm and CEO cannot obtain a higher utility from any counterfactual match. Thus, for any two matched pairs (c_i, m_i) and (c_j, m_j), we can infer that firm c_i derives at least as much utility from appointing CEO m_i as from m_j, and the same holds for firm c_j. Specifically, the following inequality should be satisfied:

$$V(c_i, m_i) \geq V(c_i, m_j) \wedge V(c_j, m_j) \geq V(c_j, m_i) \tag{2}$$

The firm's utility equals the total matching utility less the compensation paid to the manager, which yields:

$$\begin{aligned} &[F(c_i, m_i) - p(c_i, m_i)] \geq [F(c_i, m_j) - p'(c_i, m_j)] \wedge \\ &[F(c_j, m_j) - p(c_j, m_j)] \geq [F(c_j, m_i) - p'(c_j, m_i)] \end{aligned} \tag{3}$$

Note that the counterfactual compensations $p'(c_i, m_j)$ and $p'(c_j, m_i)$ are unobservable in our data, since (c_i, m_j) and (c_j, m_i) are not matched in equilibrium. Compensation is an endogenous result of

the entire labor market and is not explicitly determined within the model. However, in equilibrium, if firm c_i seeks to hire manager m_j, it must offer compensation at least equal to m_j's compensation at firm c_j. Firm c_i will not offer higher compensation to manager m_j, as doing so would reduce its retained value given the total matching utility $F(c_i, m_j)$. Thus, we have $p'(c_i, m_j) = p(c_j, m_j)$. The same logic applies to firm c_j and we have the pairwise individual rationality (I.R.) condition:

$$\begin{aligned} &[F(c_i, m_i) - p(c_i, m_i)] \geq [F(c_i, m_j) - p(c_j, m_j)] \wedge \\ &[F(c_j, m_j) - p(c_j, m_j)] \geq [F(c_j, m_i) - p(c_i, m_i)] \end{aligned} \tag{4}$$

Our identification strategy relies on the equilibrium inequality condition: any two observed firm-CEO matches $\{(c_i, m_i); (c_j, m_j)\}$, must satisfy the I.R. condition specified in Equation (4). In the following sections, we will introduce the specification of the utility function $F(\cdot)$ and the estimation strategy.

2.2. Specification of the Utility Function

The utility function $F(\cdot)$ specifies how firm and CEO characteristics combine to generate match-specific utility. Following the literature (Pan, 2017), we specify the utility function as the weighted sum of interactions between firm and CEO characteristics, presented as follows:

$$F_\beta(c_i, m_i) = \sum_{k=1}^{4} \beta_k C_{ik} M_{ik} + \beta_5 \mathbf{1}_{c_i, m_i} + \epsilon_{c_i, m_i} \tag{5}$$

where β is the structural parameter to be estimated; c_i and m_i are the sets of firm and manager characteristics; $\mathbf{1}_{c_i, m_i}$ is an indicator that equals one if manager m_i had experience in firm c_i's industry based on 2-digit SIC code; ϵ_{c_i, m_i} is the match-specific error term. We examine four dimensions of firm characteristics $c_i = \{C_{i1}, C_{i2}, C_{i3}, C_{i4}\}$: C_{i1} (*Assets*) denotes the firm size; C_{i2} (*Dvision*) denotes the degree of diversification; C_{i3} (*RD*) denotes the research intensity; and C_{i4} (*SocialScore*) denotes the social performance score. These firm characteristics are interacted with four CEO attributes $m_i = \{M_{i1}, M_{i2}, M_{i3}, M_{i4}\}$: M_{i1} (*Talent*) denotes the managerial ability; M_{i2} (*Experience*) denotes the experience; M_{i3} (*Education*) denotes the technical expertise; and M_{i4}

(*ProSocial*) denotes the prosocial orientation. All firm and CEO characteristics are in their annual CDFs which reflect their rank in the market.

2.3. Maximum Score Estimator

The parameter β in Equation (5) is structurally identified in our main analysis through a comparison of the utility of actual and counterfactual matches, which is expected to satisfy the I.R. condition outlined in Equation (4). The estimation is robust to non-interactive terms, such as the firm fixed effects, as they do not affect the inequality. We employ the maximum score estimator (MSE), a semiparametric method developed by Fox (2010), to estimate the structural parameter β. MSE identifies model parameters by maximizing an objective function that counts the number of satisfied I.R. conditions:

$$\begin{aligned} Q(\beta) = \sum_{y=1}^{Y} \sum_{i=1}^{M_y-1} \sum_{j=i+1}^{M_y} \mathbf{1} \big\{ & [F_\beta(c_i, m_i) - F_\beta(c_i, m_j)] \geq [p(c_i, m_i) - p(c_j, m_j)] \wedge \\ & [F_\beta(c_j, m_j) - F_\beta(c_j, m_i)] \geq [p(c_j, m_j) - p(c_i, m_i)] \big\} \end{aligned} \tag{6}$$

where Y denotes the number of calendar years covered by our sample, and we assume that CEO labor markets are independent across years. M_y is the number of CEO turnovers in year Y and $p(\cdot)$ represents the CEO's total compensation in annual CDFs. Intuitively, Equation (6) compares the utility of all observed matches with the utility of their counterfactual matches.

The estimated parameter $\hat{\beta} = \arg\max_{\beta} Q(\beta)$ is the optimal choice which maximizes the number of times that the inequality holds. Since there is no analytical solution for $\hat{\beta}$ that maximizes Equation (6), we apply the differential evolution method (Storn and Price, 1997) to numerically search for the globally optimal parameters. As shown in Fox (2018), β can only be partially identified and the estimated $\hat{\beta}$ reveals the relative importance of different match dimensions. For instance, if $\hat{\beta}_1 > \hat{\beta}_2$, it implies that the interaction between C_1 and M_1 is relatively more important than the interaction between C_2 and M_2. The sign of $\hat{\beta}_i$ reflects whether firm and CEO attributes i complement ($\frac{\partial^2 F}{\partial C_i \partial M_i} > 0$) or substitute ($\frac{\partial^2 F}{\partial C_i \partial M_i} < 0$) each other.

Following the approach in Akkus et al. (2016), we obtain the point estimate $\hat{\beta}$ by running the

differential evolution algorithm with multiple random initial guesses and selecting the parameter vector that yields the highest score. Since MSE requires no assumptions about the error distribution, we compute confidence intervals for the estimators using subsampling techniques (Politis and Romano, 1994; Delgado et al., 2001). We set our subsample size to $n_s = \lfloor N/2 \rfloor$, where $\lfloor \cdot \rfloor$ denotes the floor function (returning the largest integer less than or equal to the input), and N is the number of observations in the full sample. We randomly draw n_s observations from the full sample and estimate the parameter $\hat{\beta}_s$ using the subsample. Repeating this procedure $S = 100$ times, we generate a set of presudo-parameters $\{\hat{\beta}_1, \cdots, \hat{\beta}_S\}$. The approximate empirical distribution of our estimated parameter can be calculated by:

$$\tilde{\beta}_s = \left(\frac{n_s}{N}\right)^{1/3} \cdot (\hat{\beta}_s - \hat{\beta}) + \hat{\beta} \tag{7}$$

We take the 2.5th and 97.5th percentiles of the empirical distribution to compute the 95% confidence intervals for our estimates.

3. Data and Initial Analysis

3.1. Data and Variable Construction

We construct a panel of CEO-firm-year observations centered around CEO succession events, defined as instances in which a firm appoints a new CEO, either through internal promotion or external hiring. Succession timing and origin are identified based on ExecuComp records, supplemented with information from company press releases. For each succession case, we collect detailed background information on the incoming CEO and firm characteristics prior to the appointment. The sample covers the period from 2007 to 2020 and is restricted to CEOs whose career histories are traceable in BoardEx.

Our initial sample comprises 2,271 CEO turnover events identified from ExecuComp and successfully matched with BoardEx profiles. After sequentially merging firm characteristics from Compustat, managerial ability scores, educational background, prosocial measures, and firm-level ESG data, we obtain a final sample of 689 CEO-firm matches with complete data suitable for

structural estimation. Appendix Table A1 summarizes the sample construction process and the corresponding number of observations at each stage.

To construct the firm-CEO attribute matches used in our estimation, we define firm characteristics along three dimensions: firm size (*Assets*), diversification (*Division*), and innovation intensity (*RD*), measured respectively as total assets, segment sales entropy, and R&D expenditure scaled by sales. CEO characteristics are constructed to mirror these firm traits. Managerial talent (*Talent*) is proxied by a DEA-based operational efficiency score, following the methodology of Demerjian et al. (2012). Experience (*Experience*) reflects the average segmental entropy of a CEO's prior employers, and technical expertise (*Education*) is measured as a discrete ordinal variable ranging from 1 (non-science bachelor's degree) to 5 (PhD in science). Specifically, a score of 5 is assigned to those with a PhD in a science-related field (7% of the sample), 4 to those with a master's degree in science (10%), 3 for a bachelor's degree in science (38%), 2 for a master's degree outside of science such as an MBA or MA (24%), and 1 for a non-science bachelor's degree or incomplete qualification (21%).

In addition to productivity-related attributes, we incorporate a novel dimension of CEO-firm matching that captures alignment in stakeholder-oriented values. Specifically, we interact the firm's social performance score (*SocialScore*) with the CEO's Prosocial Score to capture the degree of value congruence along social preferences. The firm-level S Score is sourced from Refinitiv ESG and reflects the company's performance in areas such as employee development, human rights, community involvement, and diversity and inclusion. To capture the prosocial orientation (*Prosocial*) of CEOs, we follow the classification methodology proposed by Feng et al. (2024). A CEO is identified as prosocial if they have previously held a position in an IRS-recognized charitable organization, as documented in BoardEx. Building on this binary indicator, we further develop a continuous Prosocial Score that captures both the charitable character of the affiliated organizations and the CEO's level of engagement. Charitable organizations are identified using the IRS Exempt Organizations Business Master File Extract.[2] We assign scores according to IRS

[2]An organization is defined as purely charitable if it holds subsection code 03 and classification code 1 (i.e., code 1000). For more details, see https://www.irs.gov/charities-non-profits/exempt-organizations-business-master-file-extract-eo-bmf.

subsection and classification codes: a score of 6 is assigned for affiliations with organizations under subsection 03 and classification code 1000; a score of 5 for other codes beginning with digit 1 under subsection 03; and scores ranging from 1 to 4 for all other configurations based on classification details. Affiliations not matched to the IRS database receive a default score of 0.5, and CEOs with no organizational involvement are assigned a score of 0. To account for the intensity of engagement, the score is multiplied by 1.5 when the CEO served as chairman of the organization. This procedure yields a continuous metric of prosocial orientation, ranging from 0 to 9. Specifically, 18% of CEOs have no charitable affiliations, while 37% receive a score of 0.5, reflecting minimal or unverifiable involvement. At the upper end, 21% attain a score of 6, and 5% reach the maximum score of 9, indicating affiliation with highly charitable organizations and elevated engagement, including board chairmanship. Appendix Table A2 reports detailed variable definitions.

3.2. Descriptive Statistics

Table 1 summarizes the characteristics of firm–CEO matches in the sample. Panel A shows that the number of matches increases steadily from 2007 to 2020. Panel B reports descriptive statistics for the key firm and CEO variables used in the structural estimation. Firms are sizable on average, with mean log assets of 8.68. CEO talent, diversification, and technical education measures exhibit meaningful variation, while both the firm-level Social Score and CEO Prosocial Score show wide dispersion, ranging from 0.04 to 0.98 and 0 to 9, respectively, which provides substantial identifying variation in the social dimension.

[Place Table 1 Here]

To visualize the alignment between firm social orientation and CEO prosociality, Figure 1 plots average Prosocial Scores of newly appointed CEOs from 2007 to 2020, distinguishing firms with above- and below-median social scores. A positive assortative matching pattern is evident throughout: firms with stronger social performance consistently hire more prosocial CEOs. Linear trend lines highlight the persistent gap over time.

[Place Figure 1 Here]

3.3. Initial Analysis

We begin by examining whether mismatches between firm attributes and incoming CEO characteristics help explain variation in ESG performance following CEO turnover. While prior research has emphasized the role of CEO traits in shaping firm outcomes (e.g., Dyreng et al., 2010; Feng et al., 2024; Ge et al., 2011), relatively little is known about how the fit between firm priorities and CEO values contributes to non-financial performance. In particular, it remains an open question whether firms with strong social commitments experience weaker ESG outcomes when newly appointed CEOs exhibit limited stakeholder orientation, an issue that cannot be resolved by examining CEO credentials or firm characteristics in isolation.

We run regressions where the dependent variables are one-year changes in firm-level ESG performance following CEO succession, including five standardized scores from Refinitiv: *S Score*, which captures the firm's social performance across areas such as employee relations, community engagement, and diversity; *Workforce Score*, focused on labor-related policies and outcomes; *Community Score*, capturing external social impact; *E Score*, measuring environmental performance; and *ESG Score*, a composite of environmental, social, and governance factors. To capture potential managerial underqualification, four mismatch indicators are constructed by comparing firm characteristics with corresponding CEO attributes: firm size versus managerial talent, business diversification versus CEO experience, innovation intensity versus technical education, and social performance versus prosocial orientation. The indicator equals one if the firm's attribute exceeds the CEO's in terms of respective CDF rankings, consistent with the notion of underqualification in that dimension.

[Place Table 2 Here]

Table 2 reports the regression results. Mismatches in traditional capability dimensions, *Assets* > *Talent*, *Division* > *Experience*, and *RD* > *Education* are not systematically associated with post-succession changes in ESG outcomes. In contrast, managerial underqualification in stakeholder orientation (*SocialScore* > *Prosocial*) is negatively and significantly associated with all three social performance measures: *S Score*, *Workforce Score*, and *Community Score*, as well as the composite

ESG score. This pattern suggests that misalignment in social values between the firm and its incoming CEO weakens the firm's ability to sustain ESG-related activities, particularly those that require continuity in stakeholder-facing strategy and internal commitment.

Taken together, the results highlight the importance of alignment between firm social priorities and CEO prosocial orientation in sustaining stakeholder-related performance. The evidence underscores the idea that non-financial match quality, particularly along values and strategic orientation, can have material implications for outcomes that depend on leadership emphasis and internal cultural continuity. These patterns suggest that observable firm and CEO attributes alone may not be sufficient to capture the effectiveness of executive appointments, especially when value alignment plays a central role. In the following section, we formalize this intuition using a structural matching framework that jointly considers multiple dimensions of firm-CEO fit.

4. Structural Estimation Results

4.1. Determinants of Matching

As shown in Figure 1, firms with better social performance were likely to hire CEOs with higher prosocial orientation. To quantitatively investigate the importance of social preference in the firm-CEO matching relative to other firm and CEO attributes, we estimate the model specified in Section 2 with the CEO turnover sample spanning from 2007 to 2020.

Table 3 presents the summary statistics of our sample and the corresponding estimation results. Panel A presents summary statistics—including the number of observations, mean, standard deviation, and the 25th, 50th, and 75th percentiles—for four firm-CEO matching variables and compensation. Panel B presents the estimation results-including parameters $\{\hat{\beta}_1, \hat{\beta}_2, \hat{\beta}_3, \hat{\beta}_4\}$ that maximize the objective score function, along with their 95% confidence intervals using subsampling methods. The percentage of I.R. inequalities satisfied serves as a measure of the goodness of fit.

[Place Table 3 Here]

The positive and statistically significant coefficients for *SocialScore* $\times$ *ProSocial* in Panel B suggest that the alignment between socially oriented firms and prosocial CEOs enhances total utility.

Moreover, the effects of social preferences are comparable in magnitude to other production-related attributes documented in prior literature. For instance, in column (1), the estimated coefficient of *SocialScore* × *ProSocial* (2.44) exceeds that of *Division* × *Experience* (1.82). In column (2), the coefficient of *SocialScore* × *ProSocial* is similar when adding a dummy variable to control for the industry-specific managerial skill (2.31 vs 2.44). Our structural estimation results validate the preliminary pattern and suggest that social preference is an important determinant of the firm-CEO match value.

4.2. Social-alignment and Future ESG Performance

Table 4 investigates whether estimated CEO-firm matching quality is associated with future changes in ESG performance. The analysis draws on the structural estimation of match values and separately considers two components of match quality: MQ_{soc}, which reflects alignment between firm social performance and CEO prosocial orientation, and MQ_{fin}, which captures the combined match quality across three conventional dimensions, that is, firm size and CEO talent, business diversification and CEO experience, and R&D intensity and CEO education.

[Place Table 4 Here]

Panels A, B, and C present results using different ESG outcomes as dependent variables: the *S Score*, *E Score*, and overall *ESG Score*, respectively. In each panel, the dependent variable is a forward-looking indicator that equals one if the firm's respective ESG score increases relative to the year of CEO appointment, measured over one-, two-, and three-year horizons ($t + 1$, $t + 2$, and $t + 3$).

In Panel A, MQ_{soc} is positively and significantly associated with future improvements in the *S Score* across all time horizons. The effect is strongest in the first year, with the coefficient in columns (1) and (2) both statistically significant and economically meaningful. This relationship persists in columns (3)-(6), suggesting that alignment in stakeholder orientation at the time of appointment has long-lasting implications for a firm's social performance trajectory. In contrast, MQ_{fin} is insignificant throughout, indicating limited relevance of traditional operational match quality in explaining subsequent shifts in social outcomes.

Panel B extends the analysis to environmental performance. The coefficient on MQ_{soc} is statistically significant at the 10% level in year $t + 1$ as shown by columns (1) and (2), at the 5% level in year $t + 2$ as shown by columns (3) and (4), and at the 1% level in year $t + 3$ as shown by columns (5) and (6), indicating an increasingly strong association between social match quality and improvements in environmental outcomes over time. This pattern is consistent with the view that environmental initiatives are subject to longer planning and implementation horizons and often rely on sustained strategic commitment at the leadership level. Although the prosocial score is constructed from social and charitable affiliations, the results suggest that value-oriented CEOs may also contribute to environmental progress, either by integrating sustainability into broader governance or by fostering organizational priorities that support long-term ESG investment. As in Panel A, MQ_{fin} remains statistically insignificant across all specifications.

Panel C presents results using the overall *ESG Score*. The pattern closely resembles that in Panel A: MQ_{soc} is a positive and significant predictor of ESG improvement in all three years post-succession, while MQ_{fin} remains insignificant. The consistency of this pattern reinforces the idea that value-based alignment, rather than technical or experiential fit, plays a more prominent role in shaping ESG outcomes after a leadership transition.

These findings are in line with recent evidence that executive values and personal preferences influence firms' stakeholder policies and non-financial performance (e.g., Feng et al., 2024). They also complement prior studies showing that effective CEO-firm fit extends beyond technical expertise to encompass shared priorities and organizational values. Whereas outcomes tied to operations or innovation can be delegated or codified, stakeholder-facing initiatives typically require sustained CEO involvement and visibility. By relying on estimated match quality rather than binary mismatch indicators, this analysis captures a finer gradient of CEO-firm alignment and helps distinguish the role of value congruence from that of production-based complementarities.

4.3. Social-alignment and Future Financial Performance

Table 5 examines whether CEO-firm matching quality is associated with subsequent changes in financial performance, using growth in *ROA* (Panel A) and *TobinQ* (Panel B) over one-, two-, and

three-year horizons following CEO succession. As in prior analyses, we distinguish between MQ_{soc}, reflecting alignment in stakeholder orientation, and MQ_{fin}, reflecting alignment in production-related characteristics.

[Place Table 5 Here]

The results reveal a consistent temporal pattern across both match dimensions. Coefficients on MQ_{soc} are almost not statistically significant in the first year but become significantly negative in years *t+2* and *t+3* for both *ROA* and *TobinQ*. Similarly, MQ_{fin} nearly shows no significant association with performance in year t+1, but becomes positive and statistically significant in the second and third years. These results suggest that match quality influences financial outcomes, but the direction and timing of these effects depend on the type of alignment considered.

The absence of significant effects in year t+1 for both MQ_{soc} and MQ_{fin} may reflect transitional frictions commonly associated with CEO turnover. In the immediate aftermath of leadership change, firms may undergo internal adjustments, ranging from strategy recalibration to organizational restructuring, that temporarily dilute the observable influence of CEO-firm alignment on financial performance. It is only as the CEO's strategic vision begins to take hold that alignment effects become evident in firm outcomes.

What follows in years *t+2* and *t+3* is a divergence in the direction of performance implications depending on the dimension of alignment. The negative association between MQ_{soc} and financial performance suggests that stakeholder-aligned firms, that is, those in which the CEO and organization share a commitment to prosocial values, tend to shift focus away from short-term financial objectives. Such alignment may lead to intensified investment in ESG programs, community engagement, and other socially oriented initiatives that are consistent with long-run stakeholder goals but carry financial costs in the near to medium term. This trade-off has not been documented in prior literature and offers a novel contribution: even in the presence of high match quality, the strategic prioritization embedded in social alignment can result in lower financial growth.

In contrast, the positive and significant coefficients on MQ_{fin} in years *t+2* and *t+3* indicate that alignment in functional and operational dimensions is associated with improved financial

performance. These results are in line with Pan (2017), where CEO-firm fit in production-related attributes supports long-term value creation. CEOs who are well-matched on scale, complexity, and innovation capabilities appear more likely to implement strategies that enhance firm efficiency and valuation as their influence becomes embedded in firm operations.

Together, these findings underscore that the performance implications of CEO-firm matching depend critically on the nature of the alignment. While functional alignment enhances financial outcomes over time, stakeholder alignment may entail an intentional reallocation of priorities toward non-financial goals. By documenting this trade-off in contexts of strong CEO-firm alignment, the results offer a more comprehensive view of executive fit that recognizes both its potential benefits and its financial costs, depending on the strategic priorities reflected in the match.

4.4. Social-alignment Synergy Sharing Between Firms and CEOs

Since the matching outcomes are in equilibrium for both firms and CEOs, the two parties can negotiate their respective shares of the total value created by the match. The contract is signed only when both sides are satisfied with the terms. We measure CEO shares as the ratio of compensation to total match value, specified as follows:

$$\theta_i = p_i / \hat{F}(c_i, m_i) \tag{8}$$

where p_i represents the observed total compensation of the CEO and $\hat{F}(c_i, m_i) = \sum_{k=1}^{4} \beta_k C_{ik} M_{ik}$ denotes the total matching synergy based on our estimation.

[Place Table 6 Here]

Same as our earlier analysis, we restrict our sample to observations that the firm's retained value is non-negative. Table 6 presents the distribution of θ_i. Consistent with prior study (Pan, 2017), firms capture the majority of the match value. At the median, CEOs receive 40.5% of the total value, while the mean CEO share is 43.04%.

Based on the sample described above, we further examine how social alignment affects the distribution of total match-specific synergy. For this analysis, we compare each observed

match with less optimal pairings to calculate differences in compensation, synergy, and firm/CEO characteristics. Let Δ_{ij} represent the discrepancy in characteristics between observed matches i and j. For example, $\Delta_{ij}\hat{F} = \hat{F}_i - \hat{F}_j$. The analysis is limited to pairs of observed matches that exhibit a positive synergy discrepancy ($\Delta_{ij}\hat{F} > 0$) and that firms retain a non-negative reserve value ($\hat{F} - p \geq 0$) based on our estimation. Specifically, we run the following reduced-form regression:

$$\begin{aligned}\Delta_{ij}p/\Delta_{ij}\hat{F} = \alpha &+ \lambda_1 \cdot \Delta_{ij}Size \times \Delta_{ij}Talent + \lambda_2 \cdot \Delta_{ij}Division \times \Delta_{ij}Experience + \\ &\lambda_3 \cdot \Delta_{ij}RD \times \Delta_{ij}Education + \lambda_4 \cdot \Delta_{ij}SScore \times \Delta_{ij}Prosocial + \\ &\eta_1 \cdot \Delta_{ij}Size + \eta_2 \cdot \Delta_{ij}Division + \eta_3 \cdot \Delta_{ij}RD + \eta_4 \cdot \Delta_{ij}SScore + \\ &\gamma_1 \cdot \Delta_{ij}Talent + \gamma_2 \cdot \Delta_{ij}Experience + \gamma_3 \cdot \Delta_{ij}Education + \gamma_4 \cdot \Delta_{ij}Prosocial + \\ &\phi_y + \epsilon_{ij}\end{aligned} \tag{9}$$

where $\Delta_{ij}p/\Delta_{ij}\hat{F}$ is the proportion of compensation discrepancy to synergy discrepancy. A higher value of $\Delta_{ij}p/\Delta_{ij}\hat{F}$ suggests that CEOs receive more shares of the incremental synergy $\Delta_{ij}\hat{F}$. We include year fixed effects ϕ_y to account for the time trends.

[Place Table 7 Here]

Table 7 presents the results of Equation (9). The significantly positive coefficient of $\Delta_{ij}Prosocial$ suggests that on average in the CEO labor market, prosocial CEOs are more attractive so that they can expect a higher synergy share through compensation negotiation. Also, on average, firms with stronger social orientation tend to be more generous in providing monetary incentive to attract CEOs, which is indicated by the significantly positive coefficient of $\Delta_{ij}SScore$. However, noticeably, the coefficient of the interaction term $\Delta_{ij}SScore \times \Delta_{ij}Prosocial$ is significantly negative, suggesting that social oriented firms rely on less pecuniary incentive to attract prosocial CEOs who are well aligned.

5. Conclusion

In conclusion, this paper underscores the significance of social mission alignment in CEO hiring, drawing attention to its role alongside traditional skill-based characteristics such as talent, experience, and education. By estimating a structural model of two-sided matching using public firms from 2007 to 2020, we demonstrate that social alignment is a vital factor in firm-CEO matching, comparable in importance to other established synergy factors, like CEO talent with large firms and CEO experience with diversified firms. Our findings reveal that firms aligning with prosocial CEOs experience enhancements in future social performance, yet face potential declines in future financial performance metrics like ROA and Tobin's Q. These outcomes highlight a crucial tension between social responsibility and financial interests, reflecting a broader debate around the value of ESG orientation in corporate management.

We contribute to the existing literature by providing empirical evidence of prosocial mission-alignment as a critical dimension in CEO selection, offering insights into synergy creation in firm-CEO matches. Our results bring a fresh perspective to the ongoing discourse about ESG's implications, revealing that while social firms benefit reputationally from prosocial CEOs, these benefits often do not extend to financial performance. Moreover, our study introduces the maximum score method for estimating two-sided matching models, a novel approach in the accounting literature, enriching the methodological toolkit for exploring complex hiring processes.

Our investigation extends beyond traditional firm-CEO complementarities, probing the trade-offs firms face when prioritizing mission-alignment in CEO appointments. It emphasizes the dual-sided nature of the hiring process, addressing both firms' and CEOs' preferences that jointly determine the success of such matches. This paper not only quantifies the outcomes of prosocial mission-alignment but also invites reflection on the future direction of corporate governance practices that balance social imperatives with financial priorities. This novel exploration fills a notable gap in the literature, offering valuable implications for both academic inquiry and practical applications in corporate strategy and governance.

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Tables and Figures

Figure 1. CEO Prosocial Scores Over Time by Firm Social Performance

This figure plots the average prosocial scores of CEOs appointed by firms with high or low social scores annually from 2007 to 2020. The high (low) social score firms are defined as firms whose social scores rank above (below) the median. The red (green) line represents the average CEO prosocial scores of CEOs appointed by firms with high (low) social scores. The dashed lines depicts the linear fit.

Table 1. Descriptive Statistics

Panel A reports the number of firm–CEO matches by CEO turnover year. Panel B reports summary statistics for firm and CEO variables used in the regressions. Variable definitions are presented in Table A2.

Panel A. Number of Matches by Year

Turnover Year	Number of Firm–CEO Matches
2007	24
2008	36
2009	33
2010	37
2011	41
2012	40
2013	31
2014	53
2015	63
2016	65
2017	70
2018	72
2019	62
2020	62

Panel B. Summary Statistics

Variable	Obs	Mean	Std. Dev	Min	25%	50%	p75%	Max
Assets	694	8.68	1.48	4.57	7.74	8.56	9.65	13.68
Talent	694	0.48	0.18	0.10	0.33	0.44	0.59	1.00
Division	694	0.21	0.33	0.00	0.00	0.00	0.37	1.54
S Score	694	0.49	0.23	0.04	0.30	0.46	0.66	0.98
Exp	694	0.42	0.59	0.00	0.00	0.12	0.68	3.21
RD	694	0.03	0.07	0.00	0.00	0.00	0.03	1.08
Edu	694	2.56	1.13	1.00	2.00	3.00	3.00	5.00
Prosocial	694	2.59	2.84	0.00	0.50	0.50	6.00	9.00

Table 2. Managerial Underqualification and Changes in ESG Score

This table examines the effects of managerial underqualification on ESG outcomes following CEO succession events.. The dependent variables are change of Refinitiv's *S Score*, *Workforce Score*, *Community Score*, *E Score*, and *ESG Score*. The independent variables are mismatch indicators that equal one if the firm's attribute exceeds the CEO's corresponding characteristic: firm size vs. talent (*Assets* > *Talent*), firm diversification vs. CEO's experience (*Division* > *Experience*), R&D intensity vs. CEO's education (*RD* > *Education*), and firm social performance vs. CEO prosocial orientation (*SocialScore* > *Prosocial*). Variable definitions are presented in Table A2. Year fixed effects are included in all regressions and robust t-statistics are in parentheses. *, **, *** indicate significance levels at 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
	Δ_{t+1} *S Score*	Δ_{t+1} *Workforce Score*	Δ_{t+1} *Community Score*	Δ_{t+1} *E Score*	Δ_{t+1} *ESG Score*
$\mathbf{1}\{Assets > Talent\}$	-0.15	0.33	-1.28	1.40**	0.98*
	(-0.26)	(0.35)	(-1.34)	(2.00)	(1.75)
$\mathbf{1}\{Division > Experience\}$	0.37	-0.81	-0.36	-0.57	-0.13
	(0.62)	(-0.88)	(-0.38)	(-0.83)	(-0.22)
$\mathbf{1}\{RD > Education\}$	0.84	-0.35	1.35	1.25	-0.04
	(1.27)	(-0.30)	(1.26)	(1.46)	(-0.06)
$\mathbf{1}\{SocialScore > Prosocial\}$	-3.04***	-2.26**	-2.49***	-0.52	-1.97***
	(-5.42)	(-2.40)	(-2.71)	(-0.72)	(-3.44)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	687	687	687	687	687
Adjusted R^2	0.059	0.043	0.014	0.034	0.031

Table 3. Maximum Score Estimation

This table presents summary statistics and results of maximum score estimation based on the matching utility specified in Equation (5) and empirical strategy specified in Equation (6). The results include estimated coefficients, 95% confidence intervals, number of inequalities and percentage of satisfied inequalities. **1**{*Same Industry*} is an indicator that equals one if the CEO had experience working for firms in the same (two-digit SIC) industry as the current firm before being appointed. All firm and CEO variables are in their annual empirical CDFs. Panel A presents the summary statistics of the matched sample and Panel B presents the estimated coefficients along with 95% confidence intervals. The percentage of inequalities satisfied serves as a measure of the goodness of fit.

Panel A. Summary Statistics

	Obs	Mean	Std. Dev.	25%	50%	75%
Assets × *Talent*	689	0.29	0.26	0.07	0.20	0.47
Dvision × *Experience*	689	0.41	0.22	0.26	0.31	0.54
RD × *Education*	689	0.40	0.23	0.22	0.39	0.53
SocialScore × *ProSocial*	689	0.33	0.25	0.11	0.27	0.51
Compenstation	689	0.51	0.29	0.26	0.51	0.76

Panel B. Estimation Results

	(1)		(2)	
	Point Estimation	95% Confidence Interval	Point Estimation	95% Confidence Interval
Assets × *Talent*	6.73	(4.99, 8.46)	5.69	(4.12, 7.27)
Dvision × *Experience*	1.82	(1.26, 2.38)	2.35	(1.11, 3.59)
RD × *Education*	0.70	(-0.20, 1.60)	-1.67	(-3.01, -0.32)
SocialScore × *ProSocial*	2.44	(1.15, 3.73)	2.31	(0.54, 4.07)
1{*Same Industry*}	-	-	12.56	(-49.00, 74.12)
Number of Inequality	18,329		18,329	
Satisfied Inequality (%)	17.91%		39.50%	

Table 4. Matching Quality and Changes in ESG Scores

This table examines the effects of firm-CEO matching quality on firm's future ESG performance. The dependent variables are indicators that equal one if a firm obtains higher ESG scores n years ($n = 1, 2, 3$) subsequent to the CEO's appointment. Panel A, B and C present the results using the social score (*SScore*), environmental score (*EScore*) and ESG composite score (*ESGScore*) as the dependent variables, respectively. The independent variables of interest are matching quality generated by production-specific characteristics ($MQ_{fin} = \sum_{k=1}^{3} \hat{\beta}_k C_k M_k$) and by social-specific characteristics ($MQ_{soc} = \hat{\beta}_4 C_4 M_4$). Variable definitions are presented in Table A2. Year and industry fixed effects are included in all regressions and robust t-statistics are in parentheses. *, **, *** indicate significance levels at 10%, 5% and 1%, respectively.

Panel A. Social Performance

	(1)	(2)	(3)	(4)	(5)	(6)
			$\mathbf{1}\{SScore_{t+n} > SScore_t\}$			
	$t+1$		$t+2$		$t+3$	
MQ_{fin}	-0.01	-0.01	-0.01	-0.01	0.01	0.01
	(-0.36)	(-0.33)	(-0.01)	(-0.04)	(0.14)	(0.31)
MQ_{soc}	0.42***	0.43***	0.45***	0.46***	0.47***	0.45***
	(2.81)	(2.81)	(3.17)	(3.18)	(3.39)	(3.26)
RD		0.35		0.26		0.19
		(0.52)		(0.39)		(0.30)
Advertising		0.43		0.54		0.49
		(0.60)		(0.78)		(0.73)
Tangibility		0.20		0.03		0.00
		(1.21)		(0.18)		(0.00)
Leverage		-0.10		-0.09		-0.11
		(-1.18)		(-1.03)		(-1.36)
Free Cash Flow		0.01		-0.04		0.03
		(0.02)		(-0.15)		(0.12)
Sales Growth		-0.02		-0.01		0.03
		(-1.19)		(-0.72)		(1.55)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	595	595	595	595	595	595
R-squared	0.14	0.15	0.17	0.17	0.16	0.17

Panel B. Environmental Performance

	(1)	(2)	(3)	(4)	(5)	(6)
			$\mathbf{1}\{EScore_{t+n} > EScore_t\}$			
	$t+1$		$t+2$		$t+3$	
MQ_{fin}	0.01	0.02	0.06	0.05	0.04	0.04
	(0.35)	(0.52)	(1.59)	(1.54)	(1.28)	(1.20)
MQ_{soc}	0.27*	0.26*	0.33**	0.34***	0.43***	0.45***
	(1.89)	(1.84)	(2.58)	(2.59)	(3.49)	(3.64)
RD		0.42		0.58		0.70
		(0.64)		(1.00)		(1.25)
Advertising		0.05		-0.31		-0.07
		(0.07)		(-0.50)		(-0.11)
Tangibility		0.24		-0.06		0.02
		(1.53)		(-0.45)		(0.18)
Leverage		-0.18**		-0.04		-0.05
		(-2.12)		(-0.49)		(-0.65)
Free Cash Flow		0.18		0.08		-0.29
		(0.63)		(0.33)		(-1.17)
Sales Growth		-0.01		-0.01		-0.01
		(-0.76)		(-0.57)		(-0.67)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	595	595	595	595	595	595
R-squared	0.11	0.12	0.20	0.21	0.18	0.19

Panel C. ESG Performance

	(1)	(2)	(3)	(4)	(5)	(6)
			$\mathbf{1}\{ESGScore_{t+n} > ESGScore_t\}$			
	$t+1$		$t+2$		$t+3$	
MQ_{fin}	-0.01	0.01	0.04	0.04	0.04	0.04
	(-0.05)	(0.03)	(1.05)	(1.16)	(1.42)	(1.41)
MQ_{soc}	0.44***	0.44***	0.25**	0.23*	0.34***	0.33***
	(3.06)	(3.05)	(2.01)	(1.88)	(3.01)	(2.91)
RD		1.24*		0.52		0.23
		(1.92)		(0.92)		(0.45)
Advertising		0.14		0.60		0.04
		(0.20)		(1.01)		(0.08)
Tangibility		0.14		0.10		-0.16
		(0.91)		(0.71)		(-1.29)
Leverage		-0.10		-0.08		-0.08
		(-1.16)		(-1.07)		(-1.19)
Free Cash Flow		0.12		0.22		0.31
		(0.43)		(0.90)		(1.36)
Sales Growth		-0.02		-0.00		-0.00
		(-0.87)		(-0.10)		(-0.28)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	595	595	595	595	595	595
R-squared	0.11	0.12	0.20	0.21	0.18	0.19

Table 5. Matching Quality and Changes in Financial Performance

This table examines the effects of firm-CEO matching quality on firm's future financial performance. The dependent variables are growth rates of ROA or Tobin's Q in n years ($n = 1, 2, 3$) subsequent to the CEO's appointment. Panel A and B present the results using the growth rate of ROA (*ROA (Growth Rate)*) and Tobin's Q (*TobinQ (Growth Rate)*) as the dependent variables, respectively. The independent variables of interest are matching quality generated by production-specific characteristics ($MQ_{fin} = \sum_{k=1}^{3} \hat{\beta}_k C_k M_k$) and by social-specific characteristics ($MQ_{soc} = \hat{\beta}_4 C_4 M_4$). Variable definitions are presented in Table A2. Year and industry fixed effects are included in all regressions and robust t-statistics are in parentheses. *, **, *** indicate significance levels at 10%, 5% and 1%, respectively.

Panel A. ROA

	(1)	(2)	(3)	(4)	(5)	(6)
	ROA (Growth Rate)					
	$t+1$		$t+2$		$t+3$	
MQ_{fin}	0.05	-0.01	0.46***	0.43***	0.46***	0.41**
	(0.27)	(-0.05)	(2.99)	(2.76)	(2.67)	(2.35)
MQ_{soc}	-1.05*	-0.87	-1.47**	-1.38**	-1.60**	-1.44**
	(-1.67)	(-1.36)	(-2.58)	(-2.40)	(-2.50)	(-2.23)
RD		-1.81		1.57		0.68
		(-0.63)		(0.60)		(0.23)
Advertising		-2.11		-0.19		-3.47
		(-0.70)		(-0.07)		(-1.12)
Tangibility		-1.73**		-0.85		-0.96
		(-2.52)		(-1.33)		(-1.34)
Leverage		-0.27		0.13		0.26
		(-0.74)		(0.40)		(0.71)
Free Cash Flow		-1.64		-1.05		-1.58
		(-1.31)		(-0.92)		(-1.24)
Sales Growth		-0.08		-0.02		-0.04
		(-1.08)		(-0.28)		(-0.54)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	593	593	575	575	560	560
R-squared	0.08	0.10	0.24	0.25	0.23	0.23

Panel B. Tobin's Q

	(1)	(2)	(3)	(4)	(5)	(6)
	TobinQ (Growth Rate)					
	$t+1$		$t+2$		$t+3$	
MQ_{fin}	0.01	0.01	0.05**	0.05**	0.08***	0.08***
	(0.51)	(0.69)	(2.02)	(2.09)	(3.30)	(3.35)
MQ_{soc}	-0.06	-0.06	-0.24***	-0.21**	-0.21**	-0.20**
	(-1.08)	(-1.01)	(-2.73)	(-2.53)	(-2.44)	(-2.26)
RD		0.41		1.28***		0.16
		(1.55)		(3.37)		(0.42)
Advertising		0.37		1.04***		0.69*
		(1.31)		(2.63)		(1.68)
Tangibility		0.08		-0.01		0.01
		(1.18)		(-0.01)		(0.03)
Leverage		-0.01		-0.04		-0.03
		(-0.22)		(-0.93)		(-0.61)
Free Cash Flow		-0.27**		-0.62***		-0.53***
		(-2.35)		(-3.74)		(-3.14)
Sales Growth		0.02**		0.02**		0.02**
		(2.49)		(2.16)		(2.16)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	593	593	575	575	560	560
R-squared	0.20	0.23	0.20	0.26	0.17	0.20

Table 6. Synergy Sharing between Firms and CEOs

This table presents the CEOs' shares of the estimated match-specific synergy, calculated as the CEO's total compensation p scaled by match-specific synergy $\hat{F}$. The analysis is limited to observed matches that firms retain a non-negative reserve value ($\hat{F} - p \geq 0$) based on our estimation. All shares are presented in percentages.

	(1)
Percentiles (%)	CEO's share of total matching synergy (%)
1	3.08
5	8.97
10	16.58
25	29.62
50	40.50
75	56.64
90	72.32
95	82.81
99	93.28
Mean	43.04
Std. Dev.	21.13
Observation	595

Table 7. The Effects of Relative Ranking on CEO Compensation Discrepancy

This table examines the effects of relative ranking of firms' and CEOs' characteristics on the proportion of compensation discrepancy to synergy discrepancy. The operator Δ_{ij} denotes the discrepancy in characteristics between observed matches i and j. The analysis is limited to pairs of observed matches that exhibit a positive synergy discrepancy ($\Delta_{ij}\hat{F} > 0$) and that firms retain a non-negative reserve value ($\hat{F} - p \geq 0$) based on our estimation. The independent variables are discrepancies in characteristics of firms and CEOs in their annual empirical CDFs. Year fixed effects are included in all regressions and robust t-statistics are in parentheses. *, **, *** indicate significance levels at 10%, 5% and 1%, respectively.

	(1) $\Delta_{ij}p/\Delta_{ij}F$
$\Delta_{ij}Size \times \Delta_{ij}Talent$	-6.20***
	(-6.84)
$\Delta_{ij}Division \times \Delta_{ij}Experience$	-0.16
	(-0.11)
$\Delta_{ij}RD \times \Delta_{ij}Education$	-0.44
	(-0.51)
$\Delta_{ij}SocialScore \times \Delta_{ij}Prosocial$	-1.69**
	(-2.45)
$\Delta_{ij}Size$	5.12***
	(12.69)
$\Delta_{ij}Division$	0.95
	(1.54)
$\Delta_{ij}RD$	0.16
	(0.44)
$\Delta_{ij}SocialScore$	1.08***
	(3.96)
$\Delta_{ij}Talent$	3.76***
	(8.94)
$\Delta_{ij}Experience$	-0.13
	(-0.30)
$\Delta_{ij}Education$	0.30
	(1.35)
$\Delta_{ij}Prosocial$	1.01***
	(3.50)
Year fixed effects	Yes
Observations	12,157
R-squared	0.02

The Appendix

Table A1. Sample Construction

Step	Description	N (CEO Turnovers)
1	Identify CEO turnovers from ExecuComp where CEOs are matched with BoardEx profiles (2007–2020).	2,271
2	Merge with firm-level characteristics: assets, R&D, and division from Compustat.	2,239
3	Retain observations with non-missing compensation data for the CEO's first full year post-turnover (from ExecuComp).	2,134
4	Merge with CEO experience data.	1,718
5	Merge with Managerial Ability scores.	1,112
6	Merge with education background and prosocial scores from BoardEx.	1,025
7	Merge with social performance from Refinitiv ESG.	689
8	Merge with compensation data from Incentive Lab. For firms not covered by Incentive Lab, the data were manually collected from proxy statements.	689

Table A2. Variable Definition

Variable	*Definition*	*Source*
Assets	Total book value of assets	*Compustat*
Division	Entropy of segment sales across 2-digit SIC business segments.	*Compustat*
RD	R&D expenditure divided by total sales.	*Compustat*
S Score	Social Pillar Score measuring a firm's management of stakeholder relationships, including workforce, community engagement, human rights, and product responsibility.	*Refinitiv ESG*
E Score	Environmental Pillar Score measuring firm performance in managing environmental risks and opportunities across categories such as emissions, resource use, and innovation.	*Refinitiv ESG*
Workforce Score	Subcategory of the Social Pillar that evaluates firm practices on job satisfaction, diversity and inclusion, health and safety, and employee development.	*Refinitiv ESG*
Community Score	Subcategory of the Social Pillar capturing firm initiatives related to public health, business ethics, and community engagement.	*Refinitiv ESG*
ESG Score	Aggregated score reflecting firm-level ESG performance based on company-reported data across Environmental, Social, and Governance pillars.	*Refinitiv ESG*
Talent	The average DEA-based firm efficiency score across the CEO's prior public firm employments before the appointment. Each score is weighted by the CEO's share of total top management compensation at the corresponding firm. DEA scores are constructed using input-oriented Data Envelopment Analysis following Demerjian et al. (2012).	*Demerjian et al. (2012); Compustat; ExecuComp; BoardEx*
Experience	The average entropy of segment sales across the CEO's past employers.	*Compustat, Boardex*
Education	Ordinal variable indicating the CEO's highest academic degree and field. The variable equals 5 for a PhD in science, 4 for a master's degree in science, 3 for a bachelor's degree in science, 2 for a master's degree outside science, and 1 for a bachelor's degree outside science or no degree.	*Boardex*
Prosocial	Continuous variable measuring the CEO's orientation toward charitable engagement. The score is based on affiliations reported in BoardEx with IRS-recognized charitable organizations. A score of 6 is assigned to affiliations with organizations classified under subsection 03 and classification code 1000. Scores of 5 and 4 are assigned to affiliations with other organizations under subsection 03, depending on the classification code range. For affiliations outside subsection 03, scores range from 1 to 3 depending on the presence or value of classification code 1. Affiliations not found in the IRS database are assigned a score of 0.5, and CEOs with no affiliations are scored as 0. Scores are multiplied by 1.5 if the CEO served as chairman of the organization.	*BoardEx, IRS*
Adversiting	Advertisement expenditure divided by total sales.	*Compustat*
Tangibility	Net property, plant, and equipment divided by total assets.	*Compustat*

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Table A2. Variable Definition - Continued

Leverage	Long-term debt plus debt in current liabilities, divided by total assets.	*Compustat*
Sales Growth	Change in total sales from the previous fiscal year.	*Compustat*
Free Cash Flow	Cash flows from operations less capital expenditure divided by total assets.	*Compustat*

Table A3. Correlation Table

	Tcomp	*Assets × Talent*	*Div × Exp*	*RD × Edu*	*SScore × Prosocial*	*Assets*	*Div*	*RD*	*SScore*	*Talent*	*Exp*	*Edu*
Assets × Talent	0.613***											
Div × Exp	0.037	0.080**										
RD × Edu	0.149***	0.087**	0.043									
SScore × Prosocial	0.421***	0.446***	0.063*	0.060								
Assets	0.683***	0.796***	0.100***	0.036	0.483***							
Div	-0.006	0.043	0.891***	0.015	0.040	0.059						
RD	0.100***	0.059	0.014	0.647***	0.079**	-0.035	0.015					
SScore	0.394***	0.446***	0.054	0.123***	0.804***	0.487***	0.038	0.161***				
Talent	0.363***	0.738***	-0.005	0.058	0.241***	0.319***	-0.015	0.088**	0.253***			
Exp	0.067*	0.100***	0.931***	0.056	0.065*	0.122***	0.692***	-0.001	0.048	0.004		
Edu	0.118***	0.073*	0.076**	0.822***	0.022	0.064*	0.032	0.153***	0.042	0.021	0.105***	
Prosocial	0.199***	0.158***	0.059	-0.062*	0.606***	0.202***	0.025	-0.098**	0.119***	0.069*	0.080**	-0.017