11-1-2018

Does Persistence Explain ESG Disclosure Decisions?

Garret A. McBrayer
Boise State University

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Garrett A. McBrayer*
Assistant Professor of Finance
College of Business and Economics
Boise State University
garrettmcbrayer@boisestate.edu.

Abstract

Advocates of an increased focus on environmental, social, and governance (ESG) initiatives have argued that increased ESG disclosure is a necessary first step. Given the limited regulatory requirements on ESG disclosure, manager preferences serve as a primary determinant of ESG transparency. Using data on ESG disclosure from Bloomberg, I examine the extent to which disclosure persistence on the behalf of firm management, as proxied by managerial tenure, affects firms' ESG disclosure strategies. Overall, I find that ESG disclosure quality and ESG disclosure variability are reduced as management tenure increases. Further, I find that the replacement of a firm's CEO interrupts disclosure persistence, e.g., median ESG disclosure scores increase roughly 9.7% in the two years following the replacement of a firm's CEO. The results of this study highlight one inhibitor, i.e., persistence, to inducing more complete, transparent ESG disclosure.

JEL Classification: M41, M48, G18, G38, Q56

Keywords: corporate social responsibility; sustainability; ESG disclosure; persistence; executive tenure

Introduction

The maxim, "If you can measure it, you can manage it," or some variation thereof, is a common idiom used in a myriad of business situations. Increasingly, the sentiment has been applied within the context of corporate environmental, social, and governance (ESG) initiatives (Doda, Gennaioli, Gouldson, Grover, and Sullivan, 2015). The question of what, exactly, should be measured or reported is a philosophical endeavor. From an implementation perspective, however, a significant challenge in obtaining ESG data is that the thorough collection of the data, at least for U.S. firms, is predicated upon firm managers electing to voluntarily disclose ESG information. For most firms, managers are granted great leeway with respect to their ESG disclosure strategies (Sullivan and Gouldson, 2007; Clarkson, Li, Richardson, and Vasvari, 2008). Advocates for the enhancement, or expansion, of ESG initiatives argue that increased ESG disclosure is a necessary first step as requiring an organization to reveal ESG information will induce stakeholder pressure for improvement (Greenstone, Oyer, and Vissing-Jorgensen, 2006; Weil, Fung, Graham, and Fagotto, 2006; Reid and Toffel, 2009; Kaymak and Bektas, 2017). What, then, induces firm management to disclose ESG information? Or, perhaps more pointedly, what inhibits them from disclosing more? The results of Cohen, Malloy, and Nguyen (2016) suggest that one answer may be simple persistence on the part of firm management.

Cohen et al. (2016) examine textual changes in firm 10-K and 10-Q filings over the period 1994 to 2014 and find that firm filings exhibit a significant degree of similarity between periods. The authors argue that, when faced with repetitive tasks (e.g., the authorship of corporate regulatory filings), one approach taken by firm mangers in dealing with the demands of the task is to "codify rules that lower the cost of performing these tasks." Essentially, individuals act to reduce the burden of repetitive tasks by defaulting to their prior responses in dealing with the task. Although the primary focus of Cohen et al. (2016) is to examine instances where this codification is interrupted, the study provides compelling evidence for the presence of disclosure inertia, or persistence, in corporate filings. For instance, one of the

† I am grateful for the invaluable comments and suggestions of Jason MacDonald and Josh Filzen as well as to the seminar participants at Boise State University. All errors remain my own.

measures of overlap used by Cohen et al. (2016) with an interpretation similar to that of a correlation statistic, indicates intertemporal disclosure overlap of 0.86, on average, over their entire twenty-one year sample period. If it is the case that corporate filings suffer, at least to some degree, from codification or disclosure inertia, then one inhibitor to increased ESG disclosure, given the lack of legal and/or regulatory mandates governing ESG disclosure for a majority of firms, may be as innocuous as persistence.[1] Managers provide lower quality ESG disclosure simply based on their "recycling" of prior disclosures. Further, the effects of inertia would increase with time as both the potential and propensity to codify are increased. In this paper, I examine explicitly the extent to which ESG disclosure is affected by disclosure persistence on behalf of firm management. Specifically, I examine how the environmental, social, and governance disclosure score (ESG Score) of a firm, as measured by Bloomberg Data Services (Bloomberg), is affected by managerial persistence, proxied by management time with the firm, or tenure.

To examine the association, I obtain data on ESG disclosure from Bloomberg for firms over the period January 1st 2006 through December 31st 2015. The ESG data is merged with data from S&P Capital IQ's Compustat ExecuComp database (Execucomp) in order to compute measures of management tenure (measures are constructed for both the CEO as well as for firm management more generally). In univariate testing, I find a negative association between ESG disclosure and management tenure. Firms whose managers have been with their respective firms longer disclose less. Further, I find that ESG disclosure scores by firms whose executives have increased tenure exhibit less intertemporal variability. This effects holds whether the composition of firm management encompasses all managers tracked through ExecuComp or is limited to just the CEO. The relation is persistent across the component measures of ESG disclosure scores, i.e., environmental, social, and governance scores. Recognizing the potential for confounding factors, I examine the association in a multivariate framework. Controlling for the average age and compensation of firm management, in addition to firm financial characteristics and industry and time fixed effects, I continue to find that ESG disclosure is negatively related to managerial tenure. In economic terms, moving from the 25th percentile to the 75th percentile of average manager tenure reduces the median *ESG Score* by 9.3% and reduces the intertemporal variability in ESG disclosure by 20.1%. A similar percentile move in CEO tenure results in a drop of *ESG Score* by 4.5% and of ESG variability by 14.6%.

To mitigate concerns relating to identification issues in the empirical methodology, I examine the association in an event study framework where the relation between ESG disclosure and managerial tenure is examined subsequent to the replacement of the firm's CEO. The sample covers 714 instances of CEO turnover over the period. To conduct the event study analysis, I propensity-score match the CEO turnover sample to a sample of firms for which the CEO was not replaced and examine the relation between CEO turnover and subsequent changes in ESG disclosure. The intuition being that if persistence inhibits ESG disclosure, then a shock to the composition of management, specifically the replacement of their chief executive, would interrupt persistence directly while affecting ESG strategies indirectly. Firms that experience a CEO turnover exhibit positive and significant increases in *ESG Score* subsequent to the replacement of their CEO. Economically, the median composite ESG disclosure score increases nearly 9.7%, on average, in the two years subsequent to the replacement of a firm's CEO. Interestingly, the overall change in *ESG Score* seems to be driven by changes in environmental and governance disclosure strategies post-replacement and not changes in social disclosure strategies.

This study contributes to the literature on the adoption of corporate ESG disclosure strategies (Sharma, Pablo, and Vredenburg, 1999; Bansal and Roth, 2000; Sharma, 2000; Rodriguez and Lemaster, 2007; Brammer and Pavelin, 2008; Delmas and Toffel, 2008; Doshi, Dowell, and Toffel, 2013; Gamerschlag, Moller, and Verbeeten, 2011; Huang, 2013; among others). The results show that persistence in management's approach to ESG disclosure, as proxied by managerial tenure, plays an important role in inhibiting more complete, transparent disclosures. Further, I document that a shock to managerial tenure, by means of a CEO turnover, interrupts the inertia of ESG disclosure leading to an increase in the information revealed by a firm. These findings are of direct interest to market participants and regulators who are currently interested in improving ESG disclosures. In markets characterized by information asymmetries, increasing ESG transparency leads to several documented improvements in firm efficiencies and financial performance (Cho and Patten, 2007; Aerts and Cormier, 2009; Goss, 2009; Lee and Faff, 2009; Dhaliwal, Li, Tsang, and Yang, 2011; El Ghoul, Guedhami, Kwok, and Mishra, 2011; Goss and Roberts, 2011; Cheng, Ioannou, and Serafim, 2014; among others).

[1] In the absence of regulatory ESG reporting requirements for a majority of U.S. firms, initiatives such as the Sustainable Stock Exchange Initiative and the Sustainable Accounting Standards Board continually work to increase corporate transparency in ESG disclosure by encouraging exchanges and corporations to adopt disclosure policies that improve ESG disclosure transparency.

The findings of this study should not be interpreted hastily. It should not be inferred that a potential "solution" to increasing the voluntary disclosure of ESG information is to increase managerial turnover. Instead, readers of this study should recognize that: 1) codification of a repetitive task is a natural response to improve efficiencies in dealing with these tasks; and, 2) that risk-averse market participants tend to react asymmetrically to release of new information. It is therefore in the interest of management, at least in some cases, to withhold disclosure as the perceived costs to disclosure exceed the perceived benefits (Teoh and Hwang, 1991; Genotte and Trueman, 1996). If markets desire increased transparency along ESG dimensions from highly- persistent firms, then further study is needed in order to construct incentive regimes, regulatory or otherwise, that induce more transparent, complete ESG disclosure while offering some leeway as more tenured managers update their firm's current disclosure strategies.

The results of this study are most closely related to those of Lewis, Walls, and Dowell (2014) who show that CEO tenure is negatively related to the propensity of a firm to respond to the Carbon Disclosure Project (CDP) survey. In their study, Lewis et al. (2014) find that the likelihood of a firm to respond to the CDP survey decreases as CEO tenure increases. Despite the apparent similarities, there are at least three key differences between this work and that of Lewis et al. (2014). First, their work centers exclusively on environmental disclosure, whereas this study examines ESG disclosure more holistically by incorporating both an intertemporal examination of environmental disclosure as well as an examination of social and governance disclosure in addition to environmental disclosure. This distinction is important as ESG disclosure spans several facets of a firms overall, time-varying disclosure strategy outside of its environmental strategies. Second, the dichotomous measure of disclosure used in Lewis et al. (2014) captures a manager's propensity to respond to the survey and not necessarily the quality of the disclosure itself nor the changes in disclosure strategies over the firm's lifecycle. The use of Bloomberg data enables both an examination of the quality of the firm's disclosure directly as well as the ability to quantify the economic impacts of changes in disclosure strategies through time. Finally, by using measures of ESG disclosure quality developed by an independent data service for a large set of firms regardless of their preferences for inclusion, this study avoids the potential issues of inference using survey-based data thus enabling a broader extrapolation of its results (Armstrong and Overton, 1977). For instance, inclusion into or omission from the CDP data may simply be a function of a firm maintaining an adequate investor relations staff, remembering to submit the survey in time, or as a function of the efficacy of the mailing service in completing the round-trip.

The remaining sections of this paper are organized as follows. Section 2 discusses the related literature and motivates the study. Section 3 describes the data and sample identification procedures. Results of empirical analyses are presented in Section 4. Section 5 concludes.

Related Literature and Concept Development

Strategies pertinent to disclosure rely on management's interpretation of the costs and benefits of disclosure (Verrecchia, 1983). ESG disclosure subjects management to a similar probabilistic assessment of the costs and benefits of disclosure (Li, Richardson, and Thorton, 1997; Clarkson et al., 2008; Chatterji and Toffel, 2010). In most instances, managers are granted great leeway with respect to their ESG disclosure strategies (Clarkson et al., 2008). The voluntary nature of most ESG disclosure provides space for managers to select the level of firm disclosure consistent with their preferences (Sharma et al., 1999; Bansal and Roth, 2000; Sharma, 2000; Delmas and Toffel, 2008; Doshi et al., 2013). For example, managerial attitudes towards environmental issues affect firm strategies for pollution reduction and play a prominent role in their firm's response to environmental issues (Cordano and Frieze, 2000; Egri and Herman, 2000; Sharma, 2000). Proponents for an expansion of ESG initiatives argue that increased ESG disclosure is the first step as disclosure transparency provides stakeholders the information necessary to induce improvement (Greenstone et al., 2006; Weil et al., 2006; Doda et al., 2015). The question then becomes, what inhibitors exist that hinder timely, thorough ESG disclosure? The findings of Cohen et al. (2016) suggest that one answer may be disclosure inertia arising through "default" choice behavior.

Cohen et al. (2106) examine textual changes in corporate regulatory filings, i.e., 10-Q and 10-K filings, from one period to the next. Although the authors are primarily interested in identifying instances of textual change, they document significant "inertia" in corporate disclosure. The authors argue that corporate disclosure suffers from the "default" choice problems identified in psychology and behavioral economics literature. Cohen et al. (2016) suggest that, "Defaults generally take effect when an agent fails to make an active choice, fails to update his selection, or fails to 'opt out' of a given baseline selection." Decision inertia, or default choice behavior, has been leveraged in numerous settings ranging from 401k planning choices (Madrian and Shea, 2001; Choi, Laibson, Madrian, and Metrick, 2004,

Beshears, Choi, Laibson, and Madrian, 2009), to long-distance carrier selection (Schweitzer, 1994), to organ donation settings (Davidai, Gilovitch, and Ross, 2012) in efforts by social planners to encourage "more" desirable social outcomes. The basic premise of decision inertia argues that, when faced with repetitive tasks, one approach taken by individuals in dealing with the demands of the task is to "codify rules that lower the cost of performing these tasks." The findings of Cohen et al. (2016) seem to suggest that this phenomenon is present in corporate regulatory filings. As a result, decision inertia, or simple persistence, may affect the quality of ESG disclosure as managers seek to codify their approach in dealing with the repetitive task. Managers provide lower quality ESG disclosure simply based on their "recycling" of prior disclosures.

Existing literature on the effects of executive tenure on organizational change offer insights into the association between ESG disclosure quality and the phenomenon of disclosure persistence. Finkelstein and Hambrick (1990) show that executive team tenure is a significant determinant of firm strategy and performance with long-tenured teams exhibiting more static strategies. Miller and Shamsie (2001) document a decline in product line experimentation with increased executive tenure. The documented stagnation of executive's strategies over time executive has been attributed to a commitment to the status quo (Hambrick, Geletkanycz, and Fredrickson, 1993) as executives become more wedded to the correctness of their views (Hambrick and Fukutomi, 1991). Miller (1991) suggests that managers are prone to become risk- averse and insulated from new approaches as tenure increases. Finkelstein and D'Aveni (1994) and Westphal and Zajac (1995) argue that the propensity towards static strategies is somewhat institutionalized as a manager's informal power becomes institutionalized. For example, long- tenured managers are able to increase their influence by promoting demographically similar subordinates (Westphal and Zajac, 1995) thus increasing their commitment to established strategies (Miller, 1991). As it relates to disclosure, Cohen et al. (2016) document a reduction in similarity measures from one period to the next for corporate regulatory disclosures when the CEO or CFO are replaced. The change in CEO/CFO seems to serve as a mechanism to induce changes in disclosure strategies. Most closely related to this work is that Lewis et al. (2014) who find that CEO tenure is negatively related to the propensity of a firm to respond to the Carbon Disclosure Project (CDP) survey. The authors conclude that newer CEOs are more likely to acquiesce to institutional pressures to disclose.

The contribution of this study is to advance our understanding of inhibitors to quality ESG disclosure. Given the extant literature on disclosure strategies, managerial preferences, and persistence, I hypothesize that persistence plays a role in ESG disclosure strategies. I test this hypothesis in three ways. First, I examine how the completeness of ESG disclosure is affected by managerial tenure. Given the trend of increasing institutional pressures for higher quality ESG disclosure, I would expect that tenure is negatively related to ESG disclosure completeness. Second, I explore how ESG disclosure varies within a given firm over time as a function of managerial tenure. If tenure negatively affects ESG disclosure quality and engenders disclosure persistence, then I would expect to find that variability is reduced as tenure increases. Finally, I investigate the association following the replacement of a firm's CEO. If persistence negatively affects ESG disclosure quality, then a shock to the composition of firm management should mitigate the effect.

Research Approach, Data and Methodology

ESG disclosure score data are gathered from Bloomberg over the period January 1st, 2006 through December 31st, 2015. The Bloomberg data are limited to those firms who are tracked by Compustat in order to collect measures of firm financial characteristics. The ESG data offered by Bloomberg contain a composite, firm-year measure of ESG disclosure score (*ESG Score*) as well as individual disclosure scores for the component parts of ESG [i.e., environmental disclosure score (*Environ*), social disclosure score (*Social*), and governance disclosure score (*Govnce*)] where available. Bloomberg offers the following description of their ESG measure: "Proprietary Bloomberg score based on the extent of a company's Environmental, Social, and Governance (ESG) disclosure. …The score is also tailored to different industry sectors." Bloomberg's ESG disclosure scores capture the disclosure activity of a given firm adjusted for the disclosure activity of firms operating within the same industry. ESG disclosure scores range from 0.1 for firms who disclose a "minimum amount of ESG data" to 100 for "those that disclose every data point collected by Bloomberg."[2]

[2] Bloomberg records a score of "N/A" for firms whose disclosure does not contain any data relating to data points used in the construction of ESG Score.

Data on manager tenure is collected from ExecuComp. The ExecuComp data includes information on the compensation structure and demographic characteristics of the top-five executive officers within a firm. For each firm-individual combination, I construct a measure of the individual's tenure by counting the number of consecutive years the individual has been with the firm. For each firm, I then take the average tenure to construct a measure of the average tenure of the top-five executives (*Avg Tenure*). In addition to *Avg Tenure*, I construct a measure of the CEO's tenure in the Chief Executive Officer position (*CEO Tenure*). This measure counts the number of consecutive years the CEO has been in the chief executive position with the firm. In addition to the measures of tenure collected from ExecuComp, I collect data on the average age of management (*Avg Age*), the age of the CEO (*CEO Age*), the CEO's total compensation for a given year (*CEO Comp*), and on the gender of the CEO (*CEO Gender*).

Finally, I collect measures of firm financial characteristics from Compustat. Consistent with the approaches of prior studies which examine ESG disclosure (e.g., Gamerschlag et al., 2011; Huang, 2013), I construct measures of firm size (*Revenue*), firm age (*Firm Age*), growth opportunities (*Market-to-Book*), capital expenditures (*CapEx*), leverage (*Leverage*), profitability (*ROS*), and of the firm's asset tangibility (*Tangible Assets*).[3] The sample identification process results in a final sample of 10,096 firm-year observations covering 1,450 firms over the period January 1st, 2006 through December 31st, 2015. Descriptive statistics on the sample are provided in Table 1.

[Insert Table 1 here]

Panel A reports the descriptive results for the entire sample. The mean (median) *ESG Score* is19.001 (14.050) across the firm-year observations in the sample. The mean (median) within-firm standard deviation of *ESG Score*, i.e., σ(*ESG Score*), is 3.044 (1.477). Data on the individual component disclosure scores is limited for the sample consistent with the universe of Bloomberg ESG data. Of the 10,096 observations on *ESG Score*, Bloomberg provides component scores for 3,749, 6,580, and 10,090 firm-year observations for *Eviron*, *Social*, and *Govnce*, respectively. The mean *CEO tenure* is 6.188 over the sample; *Avg Tenure* is slightly less at 5.081 years. Panels B and C provide descriptive statistics on the ESG disclosure scores and tenure by fiscal- year and Fama-French (1997) 17-industry classification, respectively. ESG disclosure scores remain relatively constant throughout the sample period with the exception of the first year of the sample. The cross-industry scores and score variability exhibit greater variability. *ESG Score* and σ (*ESG Score*) are lowest in the Steel Industry at 14.591 and 1.599, respectively, and are highest in the Utility Industry at 28.013 and 5.784. It should noted that cross-industry comparison of univariate ESG disclosure levels offers little insight as ESG disclosure scores are industry adjusted.

Analysis of Empirical Results

ESG Disclosure and Tenure: Univariate Results

Table 2 presents a pairwise correlation matrix of the measures used in the analysis. Pearson (Spearman) correlations are presented below (above) the diagonal. ESG disclosure scores and ESG disclosure variability are inversely correlated with *Avg Tenure* for all measures of disclosure over the sample period. For both Pearson and Spearman correlations, this relation is statistically significant at conventional levels for 9 of the 10 correlations. *CEO Tenure* is negatively, and statistically significantly, related to ESG disclosure scores and variability for 6 of the 10 ESG measures (the remaining 4 correlations are statistically indistinguishable from zero).

[Insert Table 2 here]

Management tenure is negatively related to ESG disclosure levels and disclosure variability on average consistent with the existence of persistence in disclosure strategy. For the remaining CEO and manager characteristics, ESG disclosure scores are positively correlated with the age of managers and CEOs and with the level of CEO compensation.

[3] A detailed description of variable calculations is provided in Appendix A.

ESG Disclosure and Tenure: Multivariate Results

Structural characteristics of Bloomberg's approach to ESG disclosure scoring, namely the industry adjustment, along with the variability in manager and firm characteristics presented in Tables 1 and 2 suggest significant variation within the sample. To account for the heterogeneity within the sample, I conduct a set of cross-sectional, time-series regressions on the relation between ESG disclosure scores and management tenure. Following prior literature on voluntary ESG disclosure, I include measures of firm size (*Revenue*), firm age (*Firm Age*), growth opportunities (*Market-to-Book*), capital expenditures (*CapEx*), leverage (*Leverage*), profitability (*ROS*), and of the firm's asset tangibility (*Tangible Assets*) (Gamerschlag et al., 2011; Huang, 2013). To control for cross-correlations in disclosure scores, the regression specifications include fixed effects for fiscal-year and Fama-French (1997) 17-industry and compute robust standard errors clustered by fiscal-year. The results of the regression analyses are presented in Table 3.

[Insert Table 3 here]

The dependent variable in the first set of regression tests, those presented in the left-hand side of Table 3, is the firm's composite ESG disclosure score (*ESG Score*). Overall, the results indicate a negative relation between ESG disclosure and managerial tenure. The results in the left-most column of Table 3 examine the association using the CEO's tenure (*CEO Tenure*) in addition to the covariates describes above. *CEO tenure* is negatively related to ESG disclosure controlling for other factors. In economic terms, moving from the 25th percentile of *CEO Tenure* to the 75th reduces the median *ESG Score* by 4.5%. The second column of Table 3 examines the relation between *Avg Tenure* and *ESG Score*. The coefficient estimate on *Avg Tenure* is negative, statistically significant, and nearly three times that of *CEO Tenure*. A move from the 25th percentile of *Avg Tenure* to the 75th percentile is associated with a reduction in ESG Score of 9.3%. The third column of Table 3 presents the results of the fully-specified model where *CEO Tenure* and *Avg Tenure* are simultaneously included as covariates. Tenure is negatively related to ESG disclosure scores for both measures of tenure. The coefficient estimate on *Avg Tenure*, however, is nearly ten times that of *CEO Tenure*. From an economic perspective, the negative effect on ESG disclosure of a move from the 25th percentile to the 75th percentile for *Avg Tenure* is roughly 8.8% while that on *CEO Tenure* is markedly less at negative 1.1%.

The right-hand side of table 3 presents the results of an examination of the association between manager tenure and the variability of ESG scores. The dependent variable in these tests is the standard deviation of *ESG Score* by firm, i.e., σ (*ESG Score*). *CEO Tenure* and *Avg Tenure* are negatively related to the variability of ESG disclosure scores for all three specifications. In the fully specified model, a move from the 25th percentile to the 75th percentile for *Avg Tenure* (*CEO Tenure*) is associated with a reduction of disclosure variability of roughly 16.5% (8.8%). ESG disclosure by firms with increased managerial tenure exhibit less variability over the sample period consistent with the notion that ESG disclosure strategies exhibit intertemporal persistence.

The composite measure of ESG disclosure, *ESG Score*, provides an aggregate measure of ESG disclosure. To ensure that the results are not driven by any single component of the composite ESG disclosure score, I conduct a series of regression tests using the component scores. The number of observations varies across this series of tests as a result of data availability limitations on the Bloomberg system for component scores, i.e., of the 10,096 firm-year observations in the sample, Bloomberg provides data on *Environ*, *Social*, and *Govnce* for 3,749, 6,580, and 10,090 firm-year observations, respectively. I repeat a version of the regression analyses presented in Table 3 for *ESG Score*, its component measures, and of ESG disclosure score variability. As with the prior regression specifications, all tests include fixed effects for fiscal-year and Fama-French (1997) 17-industry and compute robust standard errors clustered by fiscal-year. The results of these tests are presented in Table 4.

[Insert Table 4 here]

Panel A of Table 4 displays the results of analyses using the level of disclosure as the dependent variable. The left-third of Panel A displays the results of analyses of the association between *CEO Tenure* and ESG component disclosure scores. The first column simply repeats the results of Table 3 for comparison purposes. The remaining three columns present the results for testing on *Environ*, *Social*, and *Govnce*, respectively. The coefficient estimates are negative for all specifications and are statistically significant for the component specifications using *Environ* and *Govnce* as their dependent variables. The middle third of Panel A reports the results on the association using *Avg Tenure* as its proxy for persistence. Across all specifications, *Avg Tenure* is negatively related to ESG disclosure and

ESG component disclosures. The right-most third reports the results of a fully specified model where *CEO Tenure* and *Avg Tenure* are included as covariates. The relation between ESG disclosure and tenure is negative and statistically significant for all of the coefficient estimates on *Avg Tenure*. In the fully specified model, the variation in *Avg Tenure* subsumes the some of the effect of *CEO Tenure*. This result is somewhat expected given the high correlation between the two measures.

Panel B of Table 4 presents the results of tests examining the variability of ESG component disclosure scores. Coefficient estimates on *CEO Tenure* and *Avg Tenure* are negative across all model specifications. Further, the association is statistically significant for all estimates on *Avg Tenure* and is significant for *CEO Tenure* for all but one specification. The negative coefficient estimates suggest that increases in tenure, either for the CEO or for the average of the top managers, is associated with a reduction in intertemporal ESG disclosure variability. Taken with the results in Panel A, increases in managerial tenure are associated with reductions in ESG disclosure and increases in disclosure persistence across the component measures of ESG and are not driven by any single ESG component.

ESG Disclosure and Tenure: Event Study Analysis

In this section I explore the association between ESG disclosure and managerial tenure in an event study framework. To accomplish this, I examine how the association changes following a shock to composition of management, specifically, a CEO turnover event. CEO turnover events are an ideal setting to examine the effects of persistence on ESG disclosure as the composition of management, specifically the chief executive, is changed thus directly affecting decision inertia, i.e., persistence, while only indirectly affecting ESG disclosure. Using ExecuComp to identify instances where the CEO for a given firm is replaced, I identify 714 CEO turnover events for the sample firms over the period. To control for contemporaneous changes in industry or market characteristics contributing to the turnover event, I follow the methodology of Weisbach (1988) to construct a propensity-score matched sample where firms who experience a turnover in a given year are matched to firms which did not experience a turnover. The matching process yields a balanced sample of 1,428 observations, half of which experienced a turnover.

To examine the effect of the turnover on ESG disclosure, I construct three change measures of ESG disclosure scores. For each measure of ESG disclosure, including the composite score and its component scores, I compute the difference in the score from the fiscal-year end before the turnover year to the fiscal-year end of the turnover year [(t-1)→t], from the fiscal-year end before the turnover year to the fiscal-year end after the turnover year [(t-1)→(t+1)], DQG IURP the fiscal-year end before the turnover year to the fiscal-year end two years after the turnover year [(t-1)→(W2)]. 7KH two-year period subsequent to the turnover event is examined due to the fact that Gabarro (1987) finds that nearly all major actions taken by new CEOs occur in this interval. The changes in ESG disclosure scores are then used a dependent variables in change regression specifications. The change specifications use, as covariates, the contemporaneous change in the independent variables described in previous testing. In addition to the changes in control variables, a new indicator variable, *CEO Turnover*, is added which takes a value of 1 of the observation is for a sample firm who experienced a CEO turnover, and 0 otherwise. Consistent with the prior regression specifications, all specifications include fixed effects for fiscal-year and Fama-French (1997) 17-industry and compute robust standard errors clustered by fiscal-year.

[Insert Table 5 here]

Table 5 presents the results of the event study tests examining the changes in ESG disclosure subsequent to the replacement of a firm's CEO. In summary, CEO turnovers are accompanied with future improvements in ESG disclosure consistent with the notion that a shock to the persistence in disclosure strategies improves ESG disclosure. The replacement of a firm's CEO is associated with an improvement in median *ESG Score* of 9.7%, on average, over the two years subsequent to the turnover event. Changes in *Environ* and *Govnce* exhibit a similar pattern, i.e., both measures display improvement in disclosure over the two years subsequent to the replacement of a firm's CEO. Interestingly, the results for the specifications using *Social* as their dependent variables exhibit a positive association between social disclosure and CEO turnover, but the association is statistically insignificant (the p-value on the *CEO Turnover* coefficient estimate in the two-year post-turnover specification is just outside of conventional significance levels at 0.165). Collectively, the results seem to suggest an improvement in ESG disclosure when disclosure persistence suffers an interrupting event.

Conclusions and Implications

Research on the determinants of voluntary ESG disclosure seeks to understand the heterogeneity in corporate disclosure strategies. In this study, I suggest that one factor affecting ESG disclosure quality and completeness is persistence on behalf of firm managers in their disclosure strategies. Managers provide lower-quality, less-informative ESG disclosure simply based on their "recycling" of prior disclosures. Further, the effects of persistence increase in managerial tenure as both the propensity and the possibility to codify are increased.

Using Bloomberg data on ESG disclosure scores, I find a significant negative association between manager tenure and ESG disclosure transparency and ESG disclosure variability. Firms whose managers have been with their respective firms longer disclose less and provide disclosures that exhibit reduced intertemporal variability. I validate this relation between ESG disclosure strategy and tenure in at least three ways. First, I show that the association is economically significant. A move from the 25th percentile to the 75th percentile in the average tenure of firm management is associated with a reduction in the median ESG disclosure score and the median disclosure variability of 9.3% and 20.1%, respectively. A similar percentile move in CEO tenure results in a drop of *ESG Score* by 4.5% and of disclosure variability by 14.6%. Secondly, I document evidence for the relation across the components measures of ESG disclosure score. And, finally, I document an interruption in disclosure persistence following a CEO turnover event. The median composite ESG disclosure score improves 9.7%, on average, in the two years following the replacement of a firm's chief executive.

This study contributes to recent literature that seeks to understand the adoption and implementation of corporate ESG disclosure strategies (Sharma et al., 1999; Bansal and Roth, 2000; Sharma, 2000; Rodriguez and Lemaster, 2007; Brammer and Pavelin, 2008; Delmas and Toffel, 2008; Doshi et al., 2013; Gamerschlag et al., 2011; Huang, 2013; among others). The findings in Lewis et al. (2014) suggest that manager characteristics affect a firm's likelihood to "acquiesce to institutional pressures" to initially disclosure environmental information. The results of this work show that disclosure persistence, or inertia, plays an important role in inhibiting more complete, transparent ESG disclosures across the various facets of ESG disclosure and throughout the firm's lifecycle. These findings are of direct interest to market participants and regulators who are currently interested in improving ESG disclosure.

Further study is needed in order to determine incentive regimes, regulatory or otherwise, that induce more transparent, complete ESG disclosure. Codification of a task, a contributing mechanism to disclosure persistence, is a natural response to improve efficiencies in dealing with repetitive tasks. The findings of this study suggest that disclosure persistence arising through codification of ESG disclosure inhibits more complete, transparent ESG disclosure. Further, in markets characterized by risk-averse participants, it is in the interest of management to withhold disclosure in some cases as the perceived costs to disclosure exceed the perceived benefits. If markets desire increased transparency in ESG disclosure from highly-persistent firms, then incentives needed to be constructed in such a way that they allow some concessions as managers work to update their current ESG disclosure strategies.

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Table 1: Descriptive Statistics

Panel A: Full Sample								
	N	**Mean**	**Median**	**Std. Dev.**	**p5**	**p25**	**p75**	**p95**
ESG Disclosure Scores								
ESG Score	10,096	19.001	14.050	11.744	11.157	11.157	20.661	46.694
σ (ESG Score)	10,096	3.044	1.477	3.757	0.000	0.364	4.563	11.130
Environ Score	3,749	20.591	15.504	17.210	1.550	6.202	33.103	53.488
Social Score	6,580	18.128	14.035	14.822	3.509	8.772	24.561	49.123
Govnce Score	10,090	51.899	51.786	5.926	46.429	48.214	51.786	62.500
Management Characteristics								
CEO Tenure	10,096	6.188	5.000	4.394	1.000	3.000	8.000	15.000
CEO Age	10,096	56.074	56.000	7.145	45.000	51.000	60.000	68.000
CEO Comp ($M)	10,096	6.021	4.424	5.489	0.751	2.193	7.929	17.400
CEO Gender	10,096	0.966	1.000	0.182	1.000	1.000	1.000	1.000
Avg Tenure	10,096	5.081	4.600	2.683	1.750	3.000	6.500	10.000
Avg Age	10,096	53.023	53.167	3.954	46.571	50.429	55.500	59.333
Firm Characteristics								
Revenue ($B)	10,096	6.326	1.960	11.288	0.176	0.690	5.967	33.887
Firm Age	10,096	30.075	24.000	18.107	6.000	16.000	46.000	63.000
Market-to-Book	10,096	1.852	1.400	1.527	0.433	0.865	2.318	4.912
CapEx	10,096	0.081	0.036	0.145	0.007	0.020	0.071	0.300
Leverage	10,096	0.227	0.213	0.189	0.000	0.064	0.337	0.568
ROS	10,096	0.097	0.110	0.361	-0.030	0.058	0.171	0.309
Tangible Assets	10,096	0.273	0.196	0.230	0.026	0.090	0.394	0.761

This table presents descriptive statistics on the sample of firm-year observations covered in the period January 1st, 2006 through December 31st, 2016. The sample covers all firms with ESG data available from Bloomberg who are also covered by ExecuComp and Compustat. ESG Score and its component scores are obtained directly from Bloomberg. Tenure variables are computed based on the number of consecutive years a given executive is associated

with the same firm in ExecuComp. Panel A presents descriptive statistics for the entire sample. Panels B and C present statistics on ESG scores and tenure measures by fiscal-year end and Fama and French (1997) 17- industry classifications, respectively. Remaining variable definitions are provided in Appendix A.

Table 1: Descriptive Statistics (cont.)

Panel B: Means by Year								
Year	**N**	**ESG Score**	**σ(ESG Score)**	**Environ**	**Social**	**Govnce**	**CEO Tenure**	**Avg Tenure**
2006	159	23.738	6.249	19.570	18.146	53.673	6.019	5.325
2007	650	18.552	4.142	19.066	13.971	51.769	5.194	4.755
2008	847	18.315	3.807	18.416	13.698	51.443	5.478	4.806
2009	938	19.174	3.540	20.082	15.593	51.839	5.767	4.854
2010	1,268	18.063	2.796	20.533	16.914	51.777	5.900	4.908
2011	1,303	18.393	2.693	21.386	18.258	51.805	6.234	5.071
2012	1,311	19.035	2.628	21.269	19.152	51.855	6.352	5.195
2013	1,267	19.699	2.697	22.084	20.657	52.182	6.552	5.295
2014	1,268	19.825	2.725	21.117	21.223	52.160	6.686	5.263
2015	1,085	18.971	2.881	20.004	21.825	51.794	6.806	5.266
Panel C: Means by Industry								
Industry	**N**	**ESG Score**	**σ(ESG Score)**	**Environ**	**Social**	**Govnce**	**CEO Tenure**	**Avg Tenure**
Food	372	23.092	4.257	21.427	24.937	53.610	5.946	5.738
Mining	146	23.361	4.327	21.552	25.379	55.186	6.445	5.030
Oil	491	21.995	3.801	17.592	20.593	53.208	6.263	5.251
Clths	194	17.422	2.109	17.975	16.578	50.709	6.572	4.912
Durbl	174	16.432	3.051	19.158	14.069	50.718	5.931	4.904
Chem	318	23.115	5.404	25.473	24.424	53.768	5.978	5.364
Cnsum	449	23.396	3.912	34.465	21.933	53.527	5.381	4.337
Cnstr	471	17.671	2.399	16.354	16.567	51.649	6.565	5.891
Steel	126	14.591	1.599	8.958	12.982	50.865	7.302	5.361
Fabpr	121	15.952	1.662	17.079	14.787	51.018	6.893	4.900
Machn	1,612	18.986	3.011	20.576	17.379	51.911	6.447	4.992
Cars	234	17.905	2.956	18.587	13.624	51.725	5.645	4.699
Trans	559	19.930	3.372	22.013	18.968	52.060	6.449	5.350
Utils	516	28.013	5.784	19.610	25.574	56.582	5.535	5.525
Rtail	867	18.239	2.436	19.724	15.543	50.820	6.478	5.211
Other	3,446	16.438	2.372	19.729	15.201	50.783	6.091	4.888

Table 2: Correlation Matrix

Pearson (Spearman) Correlations Below (Above) Diagonal

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) ESG Score	**1.000**	0.569[c]	0.968[c]	0.851[c]	0.725[c]	-0.020	0.049[c]	0.403[c]	-0.051[c]	-0.092[c]	0.089[c]
(2) σ(ESG Score)	0.677[c]	**1.000**	0.561[c]	0.465[c]	0.427[c]	-0.068[c]	-0.017	0.232[c]	-0.019	-0.069[c]	0.004
(3) Environ Score	0.971[c]	0.493[c]	**1.000**	0.721[c]	0.641[c]	-0.039[b]	0.042[b]	0.379[c]	-0.051[c]	-0.097[c]	0.061[c]
(4) Social Score	0.895[c]	0.522[c]	0.729[c]	**1.000**	0.619[c]	0.024	0.040[b]	0.346[c]	-0.028[a]	-0.057[c]	0.118[c]
(5) Govnce Score	0.785[c]	0.535[c]	0.636[c]	0.654[c]	**1.000**	-0.034[b]	0.074[c]	0.312[c]	-0.051[c]	-0.065[c]	0.131[c]
(6) CEO Tenure	0.002	-0.030[c]	-0.034[b]	0.007	-0.002	**1.000**	0.388[c]	0.086[c]	0.104[c]	0.366[c]	0.142[c]
(7) CEO Age	0.049[c]	0.019[a]	0.039[b]	0.040[c]	0.043[c]	0.401[c]	**1.000**	0.077[c]	0.070[c]	0.188[c]	0.507[c]
(8) CEO Comp	0.457[c]	0.374[c]	0.309[c]	0.337[c]	0.389[c]	0.063[c]	0.055[c]	**1.000**	-0.082[c]	-0.068[c]	0.111[c]
(9) CEO Gender	-0.038[c]	0.001	-0.054[c]	-0.026[b]	-0.038[c]	0.061[c]	0.046[c]	-0.045[c]	**1.000**	0.097[c]	-0.037[b]
(10) Avg Tenure	-0.018[a]	-0.019[a]	-0.114[c]	-0.026[b]	-0.005	0.457[c]	0.245[c]	0.002	0.028[c]	**1.000**	0.306[c]
(11) Avg Age	0.106[c]	0.070[c]	0.058[c]	0.132[c]	0.092[c]	0.221[c]	0.558[c]	0.090[c]	-0.003	0.381[c]	**1.000**

This table presents a correlation matrix of the ESG scores and manager characteristic variables used in the analysis. Pearson (Spearman) correlations are presented below (above) the diagonal. Variable definitions are provided in Appendix A. Statistical tests on relation between variables are performed for both measurements of correlation. Results are presented to the right of each correlation statistic where [a], [b], and [c] indicate statistical significance at the 10%, 5%, and 1%, respectively.

Table 3: ESG Disclosure and Management Tenure

Dependent Variable =	**ESG Score**			**σ(ESG Score)**		
CEO Tenure	-0.127 [c]		-0.036 [b]	-0.043 [c]		-0.026 [c]
	(-11.985)		(-2.208)	(-7.818)		(-4.621)
Avg Tenure		-0.375 [c]	-0.352 [c]		-0.085 [c]	-0.069 [c]
		(-13.667)	(-10.006)		(-13.248)	(-10.218)
CEO Age	0.001	0.001	0.008	-0.002	-0.005	-0.000
	(0.092)	(0.072)	(0.667)	(-0.541)	(-1.483)	(-0.062)
CEO Comp	0.284 [c]	0.270 [c]	0.272 [c]	0.048 [c]	0.044 [c]	0.046 [c]
	(7.899)	(7.866)	(7.916)	(4.977)	(4.694)	(4.807)
CEO Gender	-0.288 [a]	-0.297 [b]	-0.264 [a]	0.413 [c]	0.394 [c]	0.417 [c]
	(-1.735)	(-2.196)	(-1.836)	(6.244)	(6.208)	(6.442)
Ln(Revenue)	3.924 [c]	3.946 [c]	3.945 [c]	1.204 [c]	1.209 [c]	1.209 [c]
	(45.897)	(46.239)	(46.725)	(26.303)	(26.339)	(26.107)
Firm Age	0.076 [c]	0.083 [c]	0.083 [c]	0.012 [c]	0.013 [c]	0.013 [c]
	(20.969)	(23.506)	(23.506)	(6.054)	(6.850)	(6.833)
Mkt-to-Bk	0.730 [c]	0.728 [c]	0.733 [c]	0.199 [c]	0.197 [c]	0.200 [c]
	(18.180)	(17.636)	(17.788)	(8.586)	(8.556)	(8.643)
CapEx	4.318 [c]	4.253 [c]	4.265 [c]	2.566 [c]	2.546 [c]	2.555 [c]
	(6.388)	(5.989)	(6.057)	(15.217)	(15.068)	(15.394)
Leverage	-4.849 [c]	-5.125 [c]	-5.142 [c]	-0.850 [c]	-0.895 [c]	-0.907 [c]
	(-12.255)	(-12.613)	(-12.749)	(-12.514)	(-13.543)	(-13.705)
Tangible	4.329 [c]	4.552 [c]	4.554 [c]	0.817 [c]	0.860 [c]	0.861 [c]
	(19.151)	(19.232)	(19.545)	(7.772)	(7.691)	(8.036)
ROS	-2.008 [c]	-2.001 [c]	-1.999 [c]	-0.533 [c]	-0.532 [c]	-0.531 [c]
	(-13.996)	(-14.933)	(-14.884)	(-13.684)	(-14.554)	(-14.248)
Constant	-16.632 [c]	-15.768 [c]	-16.070 [c]	-7.780 [c]	-7.456 [c]	-7.669 [c]
	(-15.430)	(-15.089)	(-15.583)	(-35.707)	(-34.081)	(-33.798)
Observations	10,096	10,096	10,096	10,096	10,096	10,096
Adj. R^2	0.449	0.453	0.453	0.363	0.364	0.365

This table reports coefficient estimates from ordinary-least-squares regression estimation on the relation between *ESG Score*, ESG score variability, manager tenure, and a vector of control variables. *ESG Score* is the composite disclosure score as reported by Bloomberg. ESG score variability, i.e., σ(*ESG Score*), is the standard deviation of *ESG Score* for a given firm. Measures of tenure are computed from ExecuComp as the number of consecutive years an individual exists in the data set with a given firm. All specifications include fixed effects for fiscal-year and industry using Fama and French (1997) 17-industry classifications and compute robust standard errors clustered by fiscal-year. t-statistics are presented in parentheses below the coefficient estimates. Remaining variable definitions are provided in Appendix A. [a], [b], and [c] indicate statistical significance at the 10%, 5%, and 1%, respectively.

Table 4: ESG Disclosure Components and Manager Tenure

Panel A: Disclosure Level

	ESG	Environ	Social	Govnce	ESG	Environ	Social	Govnce	ESG	Environ	Social	Govnce
CEO Tenure	-0.127 [c]	-0.140 [b]	-0.048	-0.061 [c]					-0.036 [b]	-0.012	0.053	-0.029 [b]
	(-11.985)	(-2.119)	(-1.263)	(-5.179)					(-2.208)	(-0.171)	(1.283)	(-2.200)
Avg Tenure					-0.375 [c]	-0.583 [c]	-0.385 [c]	-0.145 [c]	-0.352 [c]	-0.576 [c]	-0.418 [c]	-0.127 [c]
					(-13.667)	(-6.279)	(-6.886)	(-8.054)	(-10.006)	(-5.977)	(-6.996)	(-6.391)
CEO Age	0.001	0.074	-0.037	0.004	0.001	0.075 [a]	-0.021	0.001	0.008	0.078	-0.033	0.006
	(0.092)	(1.505)	(-1.552)	(0.524)	(0.072)	(1.730)	(-0.967)	(0.088)	(0.667)	(1.606)	(-1.357)	(0.881)
CEO Comp	0.284 [c]	0.159 [c]	0.203 [c]	0.127 [c]	0.270 [c]	0.137 [c]	0.193 [c]	0.121 [c]	0.272 [c]	0.138 [c]	0.191 [c]	0.122 [c]
	(7.899)	(3.103)	(6.036)	(9.651)	(7.866)	(2.684)	(5.759)	(9.297)	(7.916)	(2.690)	(5.683)	(9.376)
CEO Gender	-0.288 [a]	0.460	1.955 [b]	-0.454 [a]	-0.297 [b]	0.843	2.065 [c]	-0.472 [a]	-0.264 [a]	0.853	2.028 [c]	-0.446 [a]
	(-1.735)	(0.317)	(2.520)	(-1.881)	(-2.196)	(0.572)	(2.671)	(-1.956)	(-1.836)	(0.580)	(2.624)	(-1.846)
Ln(Revenue)	3.924 [c]	6.017 [c]	4.435 [c]	1.610 [c]	3.946 [c]	5.988 [c]	4.440 [c]	1.618 [c]	3.945 [c]	5.986 [c]	4.441 [c]	1.618 [c]
	(45.897)	(23.647)	(29.353)	(32.192)	(46.239)	(23.761)	(29.613)	(32.575)	(46.725)	(23.650)	(29.638)	(32.539)
Firm Age	0.076 [c]	0.051 [c]	0.099 [c]	0.042 [c]	0.083 [c]	0.057 [c]	0.104 [c]	0.044 [c]	0.083 [c]	0.057 [c]	0.104 [c]	0.044 [c]
	(20.969)	(3.304)	(9.836)	(11.996)	(23.506)	(3.745)	(10.419)	(12.528)	(23.506)	(3.742)	(10.441)	(12.532)
Mkt-to-Bk	0.730 [c]	0.471 [b]	0.443 [c]	0.382 [c]	0.728 [c]	0.497 [b]	0.471 [c]	0.380 [c]	0.733 [c]	0.499 [b]	0.461 [c]	0.383 [c]
	(18.180)	(2.319)	(4.326)	(11.542)	(17.636)	(2.469)	(4.637)	(11.531)	(17.788)	(2.468)	(4.498)	(11.585)
CapEx	4.318 [c]	-0.371	1.559	1.754 [c]	4.253 [c]	0.052	1.648	1.725 [c]	4.265 [c]	0.059	1.616	1.735 [c]
	(6.388)	(-0.167)	(0.939)	(3.740)	(5.989)	(0.023)	(0.990)	(3.673)	(6.057)	(0.027)	(0.970)	(3.693)
Leverage	-4.849 [c]	-3.976 [b]	-3.592 [c]	-1.726 [c]	-5.125 [c]	-4.453 [b]	-3.838 [c]	-1.817 [c]	-5.142 [c]	-4.452 [b]	-3.815 [c]	-1.831 [c]
	(-12.255)	(-2.264)	(-4.219)	(-5.687)	(-12.613)	(-2.547)	(-4.488)	(-5.968)	(-12.749)	(-2.547)	(-4.464)	(-6.013)
Tangible	4.329 [c]	6.064 [c]	5.781 [c]	1.655 [c]	4.552 [c]	6.521 [c]	6.092 [c]	1.734 [c]	4.554 [c]	6.501 [c]	6.140 [c]	1.735 [c]
	(19.151)	(3.521)	(5.685)	(5.132)	(19.232)	(3.857)	(6.047)	(5.387)	(19.545)	(3.829)	(6.086)	(5.391)
ROS	-2.008 [c]	12.067 [c]	-1.028	-0.629 [c]	-2.001 [c]	12.686 [c]	-0.746	-0.628 [c]	-1.999 [c]	12.664 [c]	-0.687	-0.627 [c]
	(-13.996)	(3.983)	(-1.132)	(-6.867)	(-14.933)	(4.238)	(-0.785)	(-6.861)	(-14.884)	(4.223)	(-0.719)	(-6.828)
Constant	-16.632 [c]	-43.863 [c]	-22.429 [c]	36.733 [c]	-15.768 [c]	-42.372 [c]	-22.105 [c]	37.175 [c]	-16.070 [c]	-42.495 [c]	-21.598 [c]	36.936 [c]
	(-15.430)	(-12.348)	(-12.474)	(68.266)	(-15.089)	(-12.261)	(-12.743)	(71.100)	(-15.583)	(-12.016)	(-12.088)	(68.801)
Observations	10,096	3,749	6,580	10,090	10,096	3,749	6,580	10,090	10,096	3,749	6,580	10,090
Adj. R^2	0.449	0.271	0.359	0.342	0.453	0.276	0.363	0.344	0.453	0.276	0.364	0.344

Table 4 presents the results of ordinary-least-squares regression estimation on the association between *ESG Score* and its components, ESG score variability, manager tenure, and a vector of control variables. *ESG Score* and its components scores are obtained from Bloomberg. The variability of ESG disclosure scores are computed by firm. Measures of tenure are computed from ExecuComp as the number of consecutive years an individual exists in the data set with a given firm. Panel A presents the results of tests using the level of ESG disclosure as it dependent variables. Panel B presents the results of tests using the variability in ESG disclosure scores. All specifications include fixed effects for fiscal-year and industry using Fama and French (1997) 17-industry classifications and compute robust standard errors clustered by fiscal-year. t-statistics are presented in parentheses below the coefficient estimates. Remaining variable definitions are provided in Appendix A. [a], [b], and [c] indicate statistical significance at the 10%, 5%, and 1%, respectively.

Table 4: ESG Disclosure Components and Manager Tenure (Cont.)

Panel B :Disclosure Variability

	σ(ESG)	σ(Environ)	σ(Social)	σ(Govnce)	σ(ESG)	σ(Environ)	σ(Social)	σ(Govnce)	σ(ESG)	σ(Environ)	σ(Social)	σ(Govnce)
CEO Tenure	-0.043 [c]	-0.058 [c]	-0.039 [c]	-0.036 [c]					-0.026 [c]	-0.023	-0.022 [a]	-0.015 [b]
	(-7.818)	(-3.190)	(-3.100)	(-5.845)					(-4.621)	(-1.152)	(-1.676)	(-2.271)
Avg Tenure					-0.085 [c]	-0.167 [c]	-0.084 [c]	-0.088 [c]	-0.069 [c]	-0.153 [c]	-0.071 [c]	-0.078 [c]
					(-13.248)	(-6.079)	(-4.268)	(-9.770)	(-10.218)	(-5.151)	(-3.427)	(-7.723)
CEO Age	-0.002	-0.003	-0.025 [c]	-0.000	-0.005	-0.008	-0.029 [c]	-0.001	-0.000	-0.002	-0.024 [c]	0.001
	(-0.541)	(-0.233)	(-3.008)	(-0.010)	(-1.483)	(-0.617)	(-3.813)	(-0.416)	(-0.062)	(-0.155)	(-2.904)	(0.389)
CEO Comp	0.048 [c]	0.007	0.036 [c]	0.026 [c]	0.044 [c]	-0.000	0.033 [c]	0.022 [c]	0.046 [c]	0.001	0.034 [c]	0.023 [c]
	(4.977)	(0.453)	(3.227)	(4.660)	(4.694)	(-0.018)	(2.963)	(4.084)	(4.807)	(0.083)	(3.053)	(4.214)
CEO Gender	0.413 [c]	0.689 [a]	0.823 [c]	0.197	0.394 [c]	0.735 [b]	0.826 [c]	0.188	0.417 [c]	0.759 [b]	0.840 [c]	0.202
	(6.244)	(1.887)	(4.067)	(1.204)	(6.208)	(2.033)	(4.114)	(1.156)	(6.442)	(2.097)	(4.181)	(1.240)
Ln(Revenue)	1.204 [c]	1.759 [c]	1.402 [c]	0.480 [c]	1.209 [c]	1.761 [c]	1.404 [c]	0.485 [c]	1.209 [c]	1.757 [c]	1.404 [c]	0.485 [c]
	(26.303)	(25.257)	(29.775)	(19.588)	(26.339)	(25.404)	(29.888)	(19.968)	(26.107)	(25.263)	(29.900)	(19.961)
Firm Age	0.012 [c]	-0.004	0.019 [c]	0.013 [c]	0.013 [c]	-0.002	0.020 [c]	0.015 [c]	0.013 [c]	-0.002	0.020 [c]	0.015 [c]
	(6.054)	(-0.879)	(5.620)	(8.036)	(6.850)	(-0.488)	(5.916)	(8.847)	(6.833)	(-0.505)	(5.913)	(8.854)
Mkt-to-Bk	0.199 [c]	0.238 [c]	0.070 [a]	0.006	0.197 [c]	0.236 [c]	0.068 [a]	0.004	0.200 [c]	0.241 [c]	0.072 [b]	0.006
	(8.586)	(3.552)	(1.958)	(0.361)	(8.556)	(3.525)	(1.913)	(0.284)	(8.643)	(3.587)	(2.015)	(0.401)
CapEx	2.566 [c]	1.062	2.940 [c]	1.168 [c]	2.546 [c]	1.148	2.931 [c]	1.151 [c]	2.555 [c]	1.154	2.944 [c]	1.156 [c]
	(15.217)	(1.253)	(4.361)	(3.902)	(15.068)	(1.351)	(4.337)	(3.857)	(15.394)	(1.358)	(4.361)	(3.872)
Leverage	-0.850 [c]	-0.580	0.114	-0.019	-0.895 [c]	-0.659	0.082	-0.077	-0.907 [c]	-0.661	0.071	-0.084
	(-12.514)	(-1.187)	(0.344)	(-0.118)	(-13.543)	(-1.349)	(0.249)	(-0.481)	(-13.705)	(-1.355)	(0.214)	(-0.526)
Tangible	0.817 [c]	2.288 [c]	0.949 [c]	0.697 [c]	0.860 [c]	2.402 [c]	1.021 [c]	0.746 [c]	0.861 [c]	2.368 [c]	1.005 [c]	0.746 [c]
	(7.772)	(4.430)	(2.752)	(3.881)	(7.691)	(4.696)	(2.970)	(4.175)	(8.036)	(4.626)	(2.920)	(4.174)
ROS	-0.533 [c]	2.508 [c]	0.377	-0.222 [c]	-0.532 [c]	2.713 [c]	0.423	-0.220 [c]	-0.531 [c]	2.669 [c]	0.410	-0.220 [c]
	(-13.684)	(2.921)	(1.183)	(-4.360)	(-14.554)	(3.146)	(1.281)	(-4.370)	(-14.248)	(3.106)	(1.250)	(-4.350)
Constant	-7.780 [c]	-10.482 [c]	-6.630 [c]	-2.263 [c]	-7.456 [c]	-9.915 [c]	-6.279 [c]	-2.010 [c]	-7.669 [c]	-10.133 [c]	-6.489 [c]	-2.138 [c]
	(-35.707)	(-10.887)	(-11.937)	(-7.152)	(-34.081)	(-10.512)	(-11.561)	(-6.502)	(-33.798)	(-10.515)	(-11.735)	(-6.728)
Observations	10,096	4,498	7,081	10,094	10,096	4,498	7,081	10,094	10,096	4,498	7,081	10,094
Adj. R^2	0.363	0.190	0.280	0.167	0.364	0.194	0.281	0.171	0.365	0.194	0.282	0.171

Table 5: Changes in ESG Disclosure Following CEO Turnovers

	Δ ESG			Δ Environ			Δ Social			Δ Govnce		
	(t-1)→t	(t-1)→(t+1)	(t-1)→(t+2)	(t-1)→t	(t-1)→(t+1)	(t-1)→(t+2)	(t-1)→t	(t-1)→(t+1)	(t-1)→(t+2)	(t-1)→t	(t-1)→(t+1)	(t-1)→(t+2)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CEO Turnover	0.132	0.694[a]	1.356[c]	0.105	1.765[a]	2.857[a]	-0.849	0.350	1.505	0.296	0.518[a]	0.461[a]
	(0.534)	(1.936)	(2.711)	(0.130)	(1.693)	(1.912)	(-1.623)	(0.463)	(1.391)	(1.176)	(1.856)	(1.87)
ΔCEO Age	0.641	2.068	1.152	-0.256	1.411	-5.255	-0.551	-2.291	-4.164	0.169	-0.093	-0.674
	(0.574)	(1.442)	(0.577)	(-0.057)	(0.246)	(-0.713)	(-0.231)	(-0.719)	(-0.876)	(0.149)	(-0.074)	(-0.370)
CEO Gender	0.888	1.541[b]	2.047[b]	3.148	5.098[b]	4.667[a]	2.998[c]	3.739[b]	4.435[c]	-0.585	-0.708	-0.264
	(1.333)	(2.209)	(2.338)	(1.438)	(2.184)	(1.746)	(3.379)	(2.565)	(2.966)	(-0.774)	(-0.763)	(-0.201)
ΔCEO Comp	0.087	0.036	0.373	-0.660	-0.540	0.207	-0.237	-0.060	0.551	0.696[b]	0.460[b]	0.311
	(0.541)	(0.177)	(1.275)	(-1.109)	(-0.810)	(0.241)	(-0.695)	(-0.149)	(0.872)	(2.376)	(2.109)	(1.041)
Δ*Ln*(Revenue)	2.297[c]	1.297[b]	1.211[b]	5.637[a]	3.892[a]	5.888[b]	2.214[b]	2.559[a]	2.735[a]	0.639	0.352	0.309
	(2.845)	(2.231)	(2.094)	(1.904)	(1.748)	(2.073)	(2.110)	(1.820)	(1.921)	(0.938)	(0.739)	(0.726)
ΔMkt-to-Bk	0.245	0.245	-0.332	-1.458	-1.495	-3.764	-0.099	0.251	-1.971	0.098	0.013	-0.058
	(0.563)	(0.441)	(-0.488)	(-0.554)	(-0.635)	(-1.333)	(-0.085)	(0.174)	(-1.426)	(0.180)	(0.021)	(-0.065)
ΔCapEx	-1.045	-1.063	-0.169	4.481	0.008	3.769	-0.230	6.329	2.687	-1.176	-2.626	3.059
	(-0.306)	(-0.221)	(-0.031)	(0.351)	(0.001)	(0.326)	(-0.027)	(0.665)	(0.290)	(-0.439)	(-1.026)	(1.033)
ΔLeverage	-0.776	0.656	1.886	-2.236	-8.191	-18.364	-2.727	-4.439	3.875	1.317	0.548	-0.015
	(-0.548)	(0.376)	(0.717)	(-0.349)	(-1.124)	(-1.623)	(-0.661)	(-1.082)	(0.684)	(0.798)	(0.405)	(-0.007)
ΔTangible	0.471	0.257	-0.168	2.607	11.617	0.901	0.241	-2.538	-7.542	-3.462	-3.355	-5.285
	(0.099)	(0.061)	(-0.034)	(0.156)	(0.656)	(0.047)	(0.025)	(-0.249)	(-0.651)	(-0.793)	(-0.950)	(-1.304)
ΔROS	-0.754[a]	-0.009	-0.023	2.511	17.919[a]	10.129	-1.335	2.072	1.228	0.493	-0.367	0.551
	(-1.880)	(-0.021)	(-0.051)	(0.473)	(1.760)	(0.743)	(-0.317)	(0.405)	(0.309)	(0.866)	(-0.553)	(1.061)
Constant	-2.466	-8.740	-5.922	-0.222	-10.622	13.536	1.046	8.172	15.617	0.415	0.142	1.773
	(-0.519)	(-1.453)	(-0.707)	(-0.012)	(-0.449)	(0.447)	(0.105)	(0.612)	(0.790)	(0.083)	(0.026)	(0.225)
Observations	1,398	1,074	798	521	399	298	868	677	506	1,397	1,074	798
Adj. R^2	0.058	0.075	0.083	0.098	0.116	0.149	0.067	0.086	0.081	0.040	0.057	0.059

This table reports the results of analyses on the changes in ESG scores following a CEO turnover event. CEO turnovers are identified using ExecuComp data. Turnover firms are propensity-score matched to firms who do not experience a turnover following the methodology of Weisbach (1988). For each turnover and match firm, I compute the change in ESG score and the contemporaneous change in firm characteristics from the fiscal-year before the turnover to the fiscal-year of [(t-1)→t], the fiscal-year before to the fiscal-year after [(t-1)→(t+1)], and from the fiscal-year before to two fiscal-years after [(t-1)→(t+2)]. All specifications include fixed effects for fiscal-year of the change and industry using Fama and French (1997) 17-industry classifications and compute robust standard errors clustered by fiscal-year. t-statistics are presented in parentheses. Remaining variable definitions are provided in Appendix A. [a], [b], and [c] indicate statistical significance at the 10%, 5%, and 1%, respectively.

Appendix A: Variable Definitions

Variable	Definition
ESG Score	Bloomberg's proprietary score based on the extent of a company's environmental, social, and governance disclosure. The score ranges from 0.1 to 100 with higher values reflecting increased ESG disclosure.
Environ Score	Bloomberg's proprietary score based on the extent of a company's environmental disclosure. Higher values reflect increased environmental disclosure.
Social Score	Bloomberg's proprietary score based on the extent of a company's social disclosure. Higher values reflect increased social disclosure.
Govnce Score	Bloomberg's proprietary score based on the extent of a company's governance disclosure. Higher values reflect increased governance disclosure.
CEO Tenure	A count of the number of consecutive years an individual has been in the CEO position within her respective firm.
CEO Age	The age of the CEO as reported by ExecuComp.
CEO Comp	Total compensation, in millions, for the CEO in a given year. Comprised of the following: salary, bonus, other annual, total value of restricted stock granted, total value of stock options granted (using Black-Scholes), long-term incentive payouts, and all other total as reported by ExecuComp.
CEO Gender	An indicator variable which takes a value of 1 if ExecuComp reports the gender of the CEO as male, and 0 otherwise.
Avg Tenure	For each individual-firm combination, I construct a measure of the individual's tenure by counting the number of consecutive years the individual has been with the firm. For each firm, I then take the average tenure in a given year to construct a measure of the average tenure of the firm's top-five executives.
Avg Age	The average age of a firm's top-five executives in a given year as reported by ExecuComp.
Revenue	The total revenue, in billions, at fiscal year-end as reported by Compustat.
Firm Age	The number of years the firm has existed in Compustat.
Market-to-Book	The market value of a firm's equity at the fiscal-year end scaled by its book value of equity.
CapEx	The capital expenditures for a firm at fiscal-year end scaled by the firm's total revenues.
Leverage	The total long-term debt plus the current portion of long-term debt scaled by the book value of total assets.
Tangible	Net property, plant, and equipment scaled by the book value of total assets.
ROS	EBIT scaled by total revenue.