

# **A Corporate Culture Channel: How Increased Shareholder Governance Reduces Firm Value**

## **ABSTRACT**

I show corporate culture is an important channel through which shareholder governance affects firm value. By quantifying culture and using a regression discontinuity strategy, I demonstrate stronger governance significantly changes culture: it increases results-orientation but decreases customer-focus, integrity, and collaboration. Shareholders initially realize financial gains from stronger governance: increases in sales, profitability, and payout occur. Over time, however, intangible assets associated with culture deteriorate, offsetting the gains. These findings support multitasking theory where stronger governance incentivizes focus on easy-to-observe benchmarks rather than harder-to-measure intangibles. Because firm value declines 1.4% through this channel, such focus doesn't align with shareholders' long-term interests.

**JEL classification:** D23, G23, G30, K22, M14, O16.

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Corporate governance affects firm value, capital productivity, and economic growth (Shleifer and Vishny (1997); Gompers, Ishii, and Metrick (2003)). Yet details about the transmission mechanisms from governance to economic outcomes are not fully understood. Existing studies on corporate governance are either silent on the specific channel through which governance affects economic outcomes or they focus on channels related to readily observable metrics, such as capital expenditures, plant openings and closures, and perquisite consumption. In this paper, I collect new data to examine whether shareholder governance affects firm value via its impact on intangible assets, and corporate culture in particular. I find that corporate culture is a significant transmission mechanism for the governance-value link, but in contrast to the paradigm that stronger governance is good, firm value declines 1.4% through this corporate culture channel.

The motivation for examining the interaction between shareholder governance and intangible assets comes from anecdotal evidence (Strine (2006); Graham, Harvey, and Rajgopal (2005)) and from economic theory which suggests governance reform does not unambiguously add value (Hermalin and Weisbach (2012); Acharya, Gabarro, and Volpin (2013)). For example, stronger shareholder governance may encourage managerial short-termism (Stein (1989); Karpoff and Rice (1989)). If a manager excessively focuses on short-term results at the expense of long-term value, he benefits more by neglecting the value of an asset with a fair value that is not readily observable. Intangible assets, which include corporate culture, are the most valuable assets meeting this criterion.<sup>1</sup> To illustrate this intuition, I propose a simple extension of the Holmstrom and Milgrom (1991) multitasking model; it demonstrates that stronger governance creates a tension between the metrics rewarded and unrewarded by shareholders. When there are changes to the relative returns across metrics, managers have an incentive to realign the intangible assets in a way that does not necessarily boost the firm’s intrinsic value. If an unrewarded intangible measure, such as integrity or collaboration, is strongly related to firm value but competes with a rewarded tangible measure, such as earnings or sales, firm value is predicted to decline in the long run.

There are two primary challenges to testing the empirical relationship between shareholder governance and firm value via corporate culture. The first is defining and quantifying corporate culture. Previous research from psychology and economics defines corporate culture as an intangible asset designed to meet unforeseen contingencies as they arise (Kreps (1990)); this intangible asset includes the shared assumptions, values, and beliefs that help employees understand which behaviors are appropriate (Schein (1990)). To quantify corporate culture, I construct an original data set using over 1.8 million employee reviews from career intelligence firms. I transform via textual analyses the 400 million words in the reviews to develop a specialized set of corporate culture measures. The new text-based measures of corporate culture cover all firms in the Standard &

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<sup>1</sup>Deterioration in the present value of corporate culture can accumulate years before impairment occurs because of accounting rules. The Financial Accounting Standards Board’s Accounting Standards Codification 360 only requires that long-lived intangible assets be assessed for impairment if triggers are present or in the case of an asset sale. Impairment does not even need to be recognized unless the carrying amount is greater than both the fair value and the undiscounted cash flows. Furthermore, Edmans (2011) shows the stock market does not fully value intangibles.

Poor's indices (S&P) and allow for richer, more extensive hypotheses testing than previously possible. Cross-validation using Fortune's 100 Best Companies to Work For list, Kinder, Lydenberg, Domini (KLD) corporate social responsibility data, and industry descriptions suggests the textual analyses appropriately map variations in corporate culture.

The second challenge is addressing the endogeneity among shareholder governance, corporate culture, and firm value. Shareholder governance is not randomly assigned, so naive regressions of corporate culture on shareholder governance cannot be interpreted as causal. For example, latent investment opportunities are a determinant of firm value. When latent investment opportunities decline, shareholders may increase governance to curb over investment; the impending decline in investment may also affect the corporate culture. Alternatively, corporate culture could affect shareholder governance if shareholders choose to strengthen governance as a remedy for a weak culture. These examples of omitted variables and simultaneity lead to biased, inconsistent estimates in a naive regression. To address the endogeneity of shareholder governance and mitigate concerns about the external validity of a single inference, I use three complementary empirical strategies.

First, I exploit the discontinuity in the probability of implementing pro-shareholder governance proposals in close-call elections. These proposals include ones that declassify the board, allow shareholders to recoup CEO compensation for unsatisfactory performance, etc ... Close-call elections, in which a proposal either passes with 51% of the vote or fails with 49% of the vote, are essentially equivalent to independent random events (Lee (2008)). This quasi-randomness implies that there is balance between the treated and control firms; factors such as firm characteristics, time trends, and bargaining critiques no longer confound estimates (Hermalin and Weisbach (1998)). While the regression discontinuity design is generally regarded as having the greatest internal validity of all quasi-experimental methods (Lee (2008)), its external validity is more limited, because the estimated treatment effect is local to only the few hundred firms which fall close to the discontinuity.

To mitigate concerns about external validity, the second empirical strategy analyzes thousands of firms. The second approach is an instrumental variable approach, which tests if active shareholder governance is associated with changes in corporate culture. By monitoring and disciplining managers through explicit actions, active shareholder governance is an important determinant of improved economic outcomes (Carleton, Nelson, and Weisbach (1998); Gillan and Starks (2000)). When shareholders engage in active governance, they typically hold less diversified portfolios (Brav et al. (2008)). The instrument exploits this variation in diversification. I use the average diversification of the investment funds holding a firm's equity as an instrument for the percentage of shareholders actively engaged in governance. The instrument is plausibly exogenous, because a shareholders' undiversified nature likely only affects the corporate culture through its correlation with active shareholder governance. Further, empirical research corroborates that the path from diversification to change in firm policies occurs through investors engaging management rather than vice versa (Faccio, Marchica, and Mura (2011)).

Because there are different methods to enhance corporate governance and some may be more effective than others, the third research design analyzes an alternate method, intervention by activist hedge funds. Over the past 15 years, hedge funds have become a dominant force in shareholder activism, and they often use the same strategies as those employed by traditional investors, including shareholder proposals, direct negotiations, and media campaigns (Brav et al. (2008)). To implement this complementary test, I use a propensity matching design. While the matching technique controls for many observable firm characteristics, the sample cannot be considered as randomly assigning governance to firms. Yet because there is substantial overlap in observables among public firms, matching techniques make a significant step toward the ideal of random assignment and produce estimates with minimal bias (Heckman, Ichimura, and Todd (1997)).

My first main finding establishes the link between governance and culture. I find that increases in shareholder governance are statistically significant and economically meaningful determinants of changes in corporate culture. Using the text-based measures of corporate culture, I find that increases in shareholder governance lead to statistically significant increases in results-orientation and statistically significant decreases in customer-orientation, integrity, and collaboration. This suggests that following an increase in shareholder governance, managers implement processes which lead employees to believe that performance and achievement are the appropriate response to unforeseen contingencies even if this involves sacrificing honesty, ethics, and teamwork. Such a trade-off between aspects of culture that support short-term financial gains but undermine the firm's long-term best interest is consistent with the predictions of a multitasking model of a managerial action following a tightening of governance. The evidence to support this trade-off is consistent across the three complementary research designs. And because each empirical strategy uses a different set of identifying assumptions and sample of firms, this implies that the conclusions are not fragile to those research design features.

The second part of my analyses links the shareholder-governance-induced changes in corporate culture to firm value. As a motivating example of the governance-value link via corporate culture, consider Sears Holdings. In 2005, hedge fund billionaire Eddie Lampert, acquired a large position in the company. In the first year after the acquisition, Sears Holdings thrived and equity prices outperformed the market by 18%. Two years later, profits had declined 45% and sales retreated to pre-Lampert levels. Press commentary suggests the cause of Sears' descent is Mr. Lampert's re-orientation of Sears' corporate culture toward results. Many insiders claim that by focusing on tasks that can be easily quantified means they skimp on tasks that cannot easily be quantified but are important to long-term value. For example, an insider notes "the model creates a warring-tribes culture... cooperation and collaboration are not there." Another Sears' employee remarked, "the result was confusing to the customer; it became disjointed," (Kimes (2013)).

My second main finding shows that the story of Sears is not an outlier; rather, I find the same pattern of governance, culture, and value changes occurring on average for the firms in each of my

samples. In the short term, firms realize financial gains from the results-oriented corporate culture, but in the long term, the gains are reversed. Specifically, in the year of the change in corporate culture, increases in sales, profitability, and payout occur. Yet, in the long term, which is defined as up to five years after the increase in governance, decreases in both intangible assets and customer satisfaction along with increases in goodwill impairment occur. By the end of the third year, the tangible gains in sales and profitability erode and the intangible losses dominate.

My third main finding examines the net effect of increases in shareholder governance and how they differ across firms with different starting cultures. The third set of tests reinforces the contrasting short-term and long-term economic outcomes following the governance-induced changes in corporate culture. Using event day, event week, and long-run abnormal equity returns, I find that stronger shareholder governance affects both tangible and intangible aspects of the firm. While stronger governance leads to statistically significant losses in intangibles (1.4% effect measured in terms of firm value), it leads to gains in tangible results. On net, the effect of stronger governance is positive for the average firm. But quantile instrumental variable regressions, which permit an understanding beyond the distributional mean, show the effect is negative for many firms in the distribution because of this corporate culture channel.

My findings highlight stronger governance is a dual-edged sword. Shareholders face a trade-off between the unobservable quality of corporate culture and observable, tangible results when implementing governance reforms. By highlighting this new economic trade-off, I offer real-world guidance for shareholders assessing which firms to target for which types of governance reforms. For example, my findings suggest that firms with less results-orientation and intangibility may benefit more from increased governance.

This study relates to and contributes to several strands of literature. The first strand looks at the importance of the interaction between culture and governance. I find that an increase in shareholder governance interferes with corporate culture by disrupting employee cooperation and integrity. This negative interaction between culture and governance is consistent with research examining country-specific cultures (Stulz and Williamson (2003); Guiso, Sapienza, and Zingales (2006); Aghion, Algan, and Cahuc (2008)). However, research examining firm-specific outcomes on the relationship between culture and governance is nascent and inconclusive. For example, Matsa (2011) and Bernstein and Sheen (2013) both examine leveraged buyout transactions, which are a form of governance, and reach contradictory conclusions about the effect of governance on culture. In a contemporaneous paper, Guiso, Sapienza, and Zingales (2013) provide evidence that complements my findings but in a narrower context; they contrast governance structures between private and public firms.

Second, this paper speaks to the literature on governance reform. Although I suggest that an increase in shareholder governance is associated with a negative effect on firm value via corporate culture, the findings do not suggest that all shareholder governance is bad. Rather, I contribute

evidence consistent with theoretical research emphasizing governance reform is a two-edged sword (Hermalin and Weisbach (2012); Acharya, Gabarro, and Volpin (2013)). This differs from previous studies that examine the aggregate effect of shareholder governance on firm value (Cunat, Gine, and Guadalupe (2012); Kadyrzhanova and Rhodes-Kropf (2011); Comment and Schwert (1995)) as well as studies that only examine tangible aspects of the shareholder governance-value link (Asker, Farre-Mensa, and Ljungqvist (2013); Yermack (2006)). The focus on shareholder governance differs from research that focuses on external governance such as state and international legal protection (La Porta et al. (1997); Giroud and Mueller (2010)). In addition, the findings supplement research linking corporate culture and firm value (Edmans (2011); Ahern, Daminelli, and Fracassi (2013)) and provide empirical support for theories of the firm focused on the intangible assets and employees (Goel and Thakor (2008); Carlin and Gervais (2009); Berk, Stanton, and Zechner (2010); Acharya, Myers, and Rajan (2011)).

Third, this research relates to the literature on activist investors. I show that funds with shorter investment horizons incentivize short-term financial engineering by management at the detriment of long-term value creation. Such short-term gains are well-documented (Brav et al. (2008), Klein and Zur (2009)), yet the long-term effects are only now being analyzed (Brav, Jiang, and Kim (2013)). More broadly, many of the findings are consistent with value expropriation by one set of shareholders to the detriment of other shareholders in the firm (Johnson et al. (2000); Bates, Lemmon, and Linck (2006)). Fourth, I show that collecting data on managerial practices enhances economic insights, which is similar to research that links managerial practices with competition and productivity (Bloom and Van Reenen (2007); Ichniowski and Shaw (2009)).

The rest of the paper proceeds as follows. **Section I** provides details on how corporate culture is defined and measured. **Section II** presents a theoretical model which delivers empirical predictions. **Section III** describes the empirical design and data. **Section IV** presents the empirical results, and **Section V** concludes. Also, **Appendix A** defines variables, **Appendix B** details the computational techniques used in the text-based analyses, and **Appendix C** includes robustness checks.

## I. New Data Measuring Aspects of Corporate Culture

### A. *Defining and Measuring Corporate Culture*

In order to assess the impact of an increase in shareholder governance on corporate culture, I need to be able to define and quantify corporate culture. I define and quantify corporate culture using computational techniques that automate the traditional procedures developed in industrial psychology and anthropology for the study of culture (Schein (1990); Hall (1976)). The automation procedure is a significant advancement, because it facilitates the analyses of corporate culture across many firms. To understand the details of this large-scale undertaking, background information on both the definition of corporate culture and the computational techniques used to quantify corporate

culture are described below.

Schein (1990) delineates three interrelated levels of corporate culture. The first level refers to beliefs about human nature and reality in the setting of the firm. The second level is the firm's espoused and documented values and goals. At the third level are artifacts and visible aspects of firm; these artifacts include everything from the physical layout, the dress code, and the manner in which people address each other, to the emotional intensity of a place. The new measures encompass all three levels of corporate culture.

Corporate culture is defined as an intangible asset designed to meet unforeseen contingencies as they arise (Kreps (1990)); this asset includes the shared assumptions, values, and beliefs that help employees understand which behaviors are and are not appropriate (Schein (1990)). The new measures reflect this definition as well as those coming from research that refines this definition. For example, Young (1993) develops an adaptive learning model to show that the coordinating conventions designed to meet the unforeseen contingencies come from a defer-to-seniors norm. Such a defer-to-seniors norm is included in the new measures by construction. In addition, the new measures encompass other variations in the definition of corporate culture (Lazear (1999); Van den Steen (2010); and Hermalin (2013)). The new measures also share elements of the classifications used to study the effects of culture on merger performance (Cameron et al. (2006); Ahern, Daminelli, and Fracassi (2013)).

To quantify the definition of corporate culture, I use employee reviews collected by career intelligence firms, whose hallmark is their dedication to revealing what life is really like for employees. In the reviews, employees answer questions about the corporate culture, firm values, work-life balance, and the workplace environment. The date of the survey, the employee's work history, job title, employment status, job location, and verified authenticity are collected. Appendix B provides examples of the reviews. Although the surveys are not a census of employees, for this paper's purpose what is necessary is that the sample be representative of variations in the underlying corporate culture over time. For this reason, data is pulled from multiple career intelligence firms to ensure employees at all levels in the firm hierarchy are represented. For example, one provider has an established partnership with LinkedIn and reported in 2010 that its average user was 43 with an annual income of \$106,000. In contrast, another provider's niche market is college students and young professionals, so the average age of its estimated 30 million annual users is much lower. The final provider attracts the most diverse audience as their primary line of business is as a job search platform; they have an estimated 17 million unique users each month. For each review, the name of the reviewers is anonymous, but his identity is authenticated by the career intelligence firm. This verification procedure ensures there are no repeat reviewers and no incentive for employees to post fake positive reviews stemming from fear of reprisal. Moreover, because the reviews are unsolicited, potentially perverse incentives are mitigated. Furthermore, observational analysis suggests that behavioral biases such as anchoring are not distorting the content of the reviews. Each



of these facets about the incentives for writing a review as well as the enduring livelihood of career intelligence firms suggests that the text from the reviews provide pertinent information.

The texts from the reviews are transformed into quantitative measures of corporate culture using computational linguistic techniques similar to those previously used in finance (e.g., Antweiler and Frank (2004); Tetlock (2007); Loughran and McDonald (2011); Hoberg, Phillips, and Prabhala (2013)). In total, I use the more than 400 million words of text contained in over 1.8 million employee reviews to construct seven measures of corporate culture. The seven measures of corporate culture represent its primary attributes: adaptability, collaboration, customer-orientation, detail-orientation, integrity, results-orientation, and transparency as outlined by (O’Reilly, Chatman, and Caldwell (1991); O’Reilly et al. (2012)).

The quantitative measures of corporate culture are measures of textual *similarity*. This is a standard measure used in computational linguistics (Jurafsky and Martin (2009)) and is the same technique used by Hoberg, Phillips, and Prabhala (2013). The measure is calculated as the normalized dot product between two vectors, which are weighted in a manner that captures each unique concept in two texts. All the reviews for a given firm-year are aggregated and the *similarity* between the aggregate text and master texts that describe the fundamental attributes of culture are calculated. The master texts contain the concepts related to the attributes of corporate culture and are determined using WordNet, which is a lexical database of semantic relations developed at Princeton University. This database is external, so the measures constructed for this paper are not discretionary. The Jiang and Conrath (1997) distance, which measures concept *relatedness* is used to determine the concepts included in the corporate culture master texts. The Jiang-Conrath measure is a methodological advancement over previous text-based measures of distance used in finance because it accounts for both commonality and difference across concepts. Contemporaneous research in finance by Manela and Moreira (2013) also uses WordNet and a *relatedness* measure to quantify historical rare disaster risk. Appendix B contains a more thorough description of the attributes of corporate culture and the mathematical derivations associated with the text-based analyses.

## B. Validating and Summarizing the Measures of Corporate Culture

Table I provides descriptive statistics for the attributes of corporate culture for U.S. public firms that are included in the S&P index between 2002 and 2012. It shows the mean, standard deviation, and median for each of the attributes of corporate culture. The interpretation of the constructed measures for the attributes of corporate culture is akin to a correlation coefficient. High, positive values mean the firm displays more of that attribute of corporate culture whereas low or negative values indicate less of it. For example, a low or negative value for the collaboration aspect of culture would indicate the firm is divisive and cut-throat in nature. Most of the attributes of corporate culture – adaptability, collaboration, customer-orientation, detail-orientation, integrity,



results-orientation, and transparency – exhibit some skew to the right, which is common in textual analyses (Jurafsky and Martin (2009)). Because different master text files are used, the levels of the measures are not directly comparable to one another. But a single measure is comparable in a relative sense across various groupings such as time and industry.

In total, the number of firm-year observations is 4,673 and ranges from 247 in 2002 to a peak of 653 in 2007. The variation in the number of observations reflects the exclusion of firms that did not have at least 100 current employees write a review in a given year. I justify the use of a minimum of 100 current employee reviews by considering variations in individual employees’ responses, overlap in culturally relevant text, and tolerance for error; however, I test alternative minimums in Appendix C. The average number of reviews per firm-year is 296 and the average number of words per firm-year is approximately 78,000. Analyses of job title and job tenure suggest a wide range of employees are reporting their views on corporate culture; this suggests the measures are not prone to spurious variation due to non-uniformity in views across ranks in the hierarchy. Furthermore, Kalmogorov-Smirnov tests indicate no distributional change in job title over time, statistically speaking.

To determine if corporate culture is affected by an increase in shareholder governance, it is important to understand the sources of variation in the text-based measures of corporate culture. I assess the stability of the distribution of the new measures of corporate culture as well as the rates of change within firm. My findings are consistent with prior research, which suggests that corporate culture is stable but never static (Kotter and Heskett (1992)). The right-hand columns of Table I use univariate analyses to test for firm-specific changes in corporate culture as a function of time. For each attribute, the change is statistically insignificant over time; this suggests corporate culture is stable. Table I also reports that the average number of employee reviews is increasing over time. This fact does not affect the reported statistics, because the computational techniques, which transform the text into quantitative measures, account for variations in the length of the text.

The kernel density estimates plotted in Figure 1 provide a visual illustration of the variation in the text-based measures of corporate culture across other moments of the distribution. The density plots confirm that the measures of corporate culture do not exhibit bimodality and rather they appear to be normally distributed with a slight skew to the right. The accompanying right-hand plots, which show within-firm variation in the attributes of corporate culture from the current year to the following year, again suggest that culture is stable but never static. Kolmogorov-Smirnov tests confirm that the observed empirical distributions are the same from one year to the next. In conclusion, the visual evidence along with the statistical evidence suggests that the measures of corporate culture do not display excess variation. This implies subsequent analyses using these text-based measures which may detect changes are correctly identifying efforts by management to alter the corporate culture.

Although the variation in the measures appears to be plausible, the usefulness of this study is limited if the mapping of text to culture is not truly measuring culture; [Table II](#) begins to demonstrate that the measures of corporate culture appears to accurately map to the culture. In [Table II](#), the measures of corporate culture are separated into industry classifications. Each of the industries in Panel A appears to conform to intuition. For example, information technology equipment exhibits high levels of adaptability and innovativeness whereas utilities exhibit little adaptability and innovativeness. Similarly, healthcare employees report higher levels of collaboration and integrity.

Because it is important to understand where the variation in culture originates, Panel B decomposes the variation in culture into three components – across industries, across firms within an industry, and within a firm over time. This exercise finds that the overall culture rating varies more within industry than within a firm; however, the seven attributes of culture vary more within the firm over time. Customer-orientation and detail-orientation vary the most between industries whereas collaboration, results-orientation, and transparency vary the most within a firm over time. The between-industry and within-firm statistics conform to prior case studies documenting differences in corporate culture ([Kotter and Heskett \(1992\)](#)).

As a second test to cross-validate the measures of corporate culture, [Table III](#) demonstrates that the constructed measures are highly correlated with two popular assessments of the workplace environment, Fortune’s 100 Best Companies to Work For list and the KLD review of corporate social responsibility. Panel A shows that an indicator for being on Fortune’s 100 Best Companies to Work For list is significantly and positively associated with having a higher corporate culture rating; the correlation coefficient is 0.33. Similarly, Panel B shows that having a greater number of KLD employee relations strengths is significantly and positively associated with having a higher corporate culture rating; the correlation coefficient is 0.43. For a limited number of firms, KLD assesses detailed aspects of the firms’ strengths and weaknesses such as their business ethics, customer-focus, and product innovativeness. Each of the detailed assessments is matched to its closest cultural attribute. For example, business ethics is mapped to integrity. The correlation between the detailed assessments and the matching measures, which include integrity, customer-orientation, and adaptability, suggest the mapping from the text is accurate.

The novel measures of corporate culture, which I construct, are an improvement over both the KLD and Best Places to Work For List for multiple reasons. First, the Best Places to Work For List likely suffers from selection bias, because firms that select into the study must pay to participate. This feature produces perverse incentives amongst participating firms and managers to manipulate survey responses. Because employers are aware of the studies reputation among prospective employees, some employers are suspected of pressuring their employees to inflate their reviews, which may bias the list of included firms. Second, both studies only extend to a small number of firms. The Best Places to Work For List only includes 100 firms, of which close to half are private, in any given year. KLD only provides detailed information for firms that make it

into their social responsibility investment indexes. Third, the new, text-based measures are more comprehensive. The new measures do not try to reduce corporate culture to a binary variable rather they are continuous and include a family of concepts. As such, this type of measure more closely reflects the manner in which psychologists and anthropologists assess culture (Schein (1990)).

## II. Theoretical Motivation

Shareholder governance affects firm value yet details about the transmission mechanisms from governance to value are not fully understood. In this section, I provide a highly stylized Holmstrom and Milgrom (1991) multitasking model for the purpose of clarifying how shareholder governance may affect firm value via its impact on intangible assets, and corporate culture in particular. First, I present real-world anecdotes as motivation for examining a corporate culture channel and second, I present a theoretical framework as guidance for testing this channel. However, there are a variety of theoretical motivations for why corporate culture may matter, so the proposed model is best viewed as an example of a theoretical motivation.

The real-world examples build on research showing that strengthening shareholder governance imposes costly externalities such as short-termism (Stein (1989); Aghion and Stein (2008)). Survey evidence suggests that in the last decade as shareholder governance has strengthened so too has managers myopic focus on quarterly earnings. In a 2003 survey of approximately 400 U.S. financial executives, Graham, Harvey, and Rajgopal (2005) find that 59% of executives would reject a positive-NPV project to meet the analyst consensus earnings estimate. In a 2013 survey of over 1000 U.S. executives, McKinsey & Co. found 79% of executives felt pressure to demonstrate strong financial performance over a time period of less than two years whereas only 7% felt pressure to deliver strong performance over a horizon of five or more years. The executives appear to recognize that the short-term focus stemming from shareholder pressure may not be in the best long-term interest of the firm. Almost half of respondents said that their company’s management team currently uses a time horizon of less than three years when determining corporate strategy, but 73% believed a time horizon of more than three years is optimal.

The examples below extend the logic underlying short-termism to the corporate culture channel. They illustrate how catering to and achieving short-term targets can hurt long-term value. In each example, the intuition is similar – focusing on things that can be easily quantified means employees skimp on things that cannot easily be quantified but are important to value creation. More specifically, the examples show that performance-oriented cultures incentivize employees to focus their efforts on results and away from customer service, integrity, and teamwork.

**Example 1:** Consider Home Depot. By the early 2000s, Home Depot had grown from an entrepreneurial firm to one with a large market capitalization; despite the impressive growth, investors clamored for even greater profit margins. Then CEO, Robert Nardelli, tackled the challenge by cultivating a corporate culture of performance and accountability. One of Nardelli’s actions aimed

at meeting shareholders' desired targets led to deterioration in the firm's corporate culture. Specifically, Nardelli changed the sales staff from 30% part-time to 50% part-time employees in order to cut costs and boost profits. However, following the change customers began to complain about poor service and fellow employees criticized part-timers for not being loyal to the team effort that defined Home Depot's previous culture (Charan (2006)).

**Example 2:** Consider an executive tasked with expanding operations abroad. Many investors vocalize to management their desires to see rapid growth through globalization. Expanding abroad, however, can put firms in ethical and legal predicaments. All firms listed on the major U.S. exchanges are subject to anti-bribery laws, which include rules against gifts and commissions. Yet in China and other countries gifts are commonplace. For an employee facing pressure to deliver new sales abroad, there's an ethical predicament that pits integrity against results. Choosing results would boost short-term performance, but at the expense of the firm's reputation for sound business practices, which could deter future customers.

**Example 3:** Consider the implications of a culture shift on employees. The coordination process to achieve a new corporate culture could lead to disagreement among employees about what is the dominant culture of the workplace. If collaboration had been an important attribute of the culture before the shift toward results-orientation, some employees may continue to follow the old culture of collaboration whereas others may focus on the results-oriented aspects. Initially, the combination of these two efforts will boost productivity; however, when the results-oriented actions are rewarded and the collaborative actions are not, the new culture will be reinforced. If employees, who used to share information across divisions to cross-sell clients, stop sharing such information, then sales could fall below pre-change levels. Sears Holdings is an example where an organization stopped rewarding cooperation in favor of results, but this action led divisions to turn against each other and for sales in all brands to suffer (Kimes (2013)).

The intuition presented in the three examples has previously been translated into theoretical frameworks (e.g., Karpoff and Rice (1989); Brandenburger and Polak (1996)) but not in a way which specifically highlights the tension between tangibles and intangibles. The unifying theme from these earlier theoretical models is that shareholders have a strong prior belief about what management should do, and shareholders convey to management the large positive or negative payoffs that result from complying with their prior beliefs. Even if management has private information that suggests another strategy is better, management cannot credibly convey this private information. Therefore, managements' best response is to comply with shareholders' prior beliefs. I build upon this common theme.

To relate the theoretical precedents to corporate culture and the tension described in the anecdotes, I present a simple, stylized model. The goal of presenting this theoretical model is to guide in the interpretation and intuition of the empirical results presented below. The model is an extension of Holmstrom and Milgrom (1991) and describes managerial responses to increases in shareholder

governance. It is a principal-agent model, in which the manager (agent) chooses how much to invest in corporate culture  $c$ , which is unobservable to the shareholder (principal). This assumption of unobservability is supported by empirical evidence on the market's valuation of corporate culture (Edmans (2011)). First, I solve for the base case, in which shareholder governance does not affect the actions the manager takes with respect to corporate culture. Second, I solve for the case in which shareholder governance does affect the actions the manager takes with respect to corporate culture.

To match the definition and quantification of corporate culture outlined in the previous section, I assume corporate culture is composed of seven orthogonal attributes:  $c = (c_1, \dots, c_7)$ . I define  $B(c)$  as the benefit to shareholders when the manager chooses culture level  $c$ , where the mapping function  $B$  itself is unknown by the shareholder. Let  $C(c)$  denote the cost to the manager of investing in culture at level  $c$ , where  $C$  is weakly increasing and strictly convex ( $C' \geq 0$ ,  $C'' \geq 0$ ). Costs can be fixed or variable. Management is assumed to expend a fixed resource to change the culture, but because culture is prone to decay, some variable expenses are incurred to maintain the culture.

The shareholders observe a set of indicators  $y = (y_1, \dots, y_J)$ . These indicators are the readily observable tangible metrics commonly evaluated by shareholders such as sales growth, profitability, and earnings. These indicators determine the firm's total market value but may not fully align with the intrinsic value. For example, recall that accounting rules allow managerial discretion in recognizing goodwill impairment. Thus, both the book and market value may differ from the intrinsic value of the firm. This is an important feature, because it means these indicators which depend on  $c$  do not fully reveal the manager's orientation of the corporate culture. To make this more precise, consider the following specification.

$$\begin{aligned} y_1 &= \mu_1(c_1, \dots, c_7) + \varepsilon_1 \\ &\vdots \\ y_J &= \mu_J(c_1, \dots, c_7) + \varepsilon_J \end{aligned} \tag{1}$$

where  $\varepsilon_j|c \sim F_j$ , for  $j = 1, \dots, J$ .  $F_j$  is the cumulative density function of  $\varepsilon_j$  and the conditional moments are defined such that  $E[\varepsilon_j|c] = 0$  and  $E[\varepsilon_j \varepsilon_{j'}|c] = 0$  for all  $j$  and  $j'$ . The firm's production function for intrinsic value is represented by  $\mu$  and  $\mu_{1,k}$  is the partial derivative,  $\frac{\partial y_k}{\partial c_1}$ , which measures the marginal increase in the expected market value of  $y_k$  resulting from an increase in dimension 1 of corporate culture,  $c_1$ . For illustrative purposes, the indicators in this model can only lead to increases in expected market value if one or more of the underlying dimensions of corporate culture changes.

In the first case, which is the base case, let  $S(y)$  denote the compensation contract of the manager. In this case, managerial compensation does not depend on corporate culture and is simply a fixed rate,  $S(y) = s_0$ . The manager chooses  $c$  to minimize cost:

$$\frac{\partial C}{\partial c_i} = 0, i = 1, \dots, 7. \quad (2)$$

Unless  $C(c) = -B(c)$ , the manager sets  $c$  lower than the efficient level. This suggests there is room for improvement if  $S$  can depend on  $c$ , even if indirectly through  $y$ . Shareholders rationally recognize that there is this room for improvement and choose to strengthen the shareholder governance as a remedy.

In this second case, assume that shareholder governance is strengthened. For example, assume managerial compensation is linked to performance such that he is rewarded with additional pay based on the readily observable metrics  $y_j$  in the amount of  $s_j$  when  $y_j$  reaches a predetermined target  $T_j$ , for  $j = 1, \dots, J$ . In this second case of strengthened shareholder governance, the manager's compensation is as follows:

$$S(y) = s_0 + \sum_{j=1}^J s_j I(y_j \geq T_j) \quad (3)$$

In this second case of strengthened shareholder governance, the manager's maximization problem over expected compensation given costs is as follows. It assumes that the manager is risk neutral. It uses the fact that the expectation of an indicator function is the probability of the associated event.

$$E[S(y)] - C(c) = s_0 + \sum_{j=1}^J s_j [1 - [F_j(\mu_j(c) - T_j)]] - C(c) \quad (4)$$

The first order condition from this second maximization problem is as follows. It assumes the cumulative density function is continuously differentiable.

$$\frac{\partial C}{\partial c_i} = \sum_{j=1}^J s_j f_j(\mu_j(c) - T_j) \mu_{ij}, i = 1, \dots, 7 \quad (5)$$

This first order condition shows that  $c$  is chosen such that the marginal cost of improvement in culture aspect  $i$  equals the expected marginal compensation from an increase in  $c_i$  for  $i = 1, \dots, 7$ . In contrast to the base case, the first order condition from the second case reveals that relative prices,  $s_j \mu_{ij}$ , are what matters. This is in line with standard multitasking theory which predicts when there are changes to the relative returns across tasks, there are incentives to reallocate efforts. In this case, when there are changes to the relative returns across attributes of corporate culture due to increases in the shareholder governance, the manager is incentivized to change the aspects of culture which will increase the indicators  $y$  without necessarily increasing the firm's intrinsic value.

The transformation function,  $\mu$ , determines which responses play out. In line with the intuition presented in the anecdotes, because shareholders can only observe tangible metrics, it is in the

managers' best interest to change the orientation of the corporate culture in a way that amplifies the difference between the indicators the market prefers and the intrinsic value. The dimension of culture, which is likely to amplify this difference, is results-orientation. For example if  $c_1$  is results-orientation,  $\mu$  transforms  $c_1$  in such a way that  $y$  significantly increases. However, if an unrewarded attribute such as collaboration or integrity competes with the rewarded attribute of results-orientation, the intrinsic value of the firm may be hurt.

Ultimately, there is strong theoretical and anecdotal motivation to suggest that shareholder governance can impact firm value via corporate culture. The extent to which these events occur is the focus of the empirical analysis. However, before turning to the next section, which explains the empirical framework and sources of exogenous variation to test this theory, I summarize the three empirically testable hypotheses.

1. An increase in shareholder governance affects corporate culture. The change in relative benefits,  $s_j\mu_{ij}$ , encourages managers to increase results-orientation but decrease other attributes of culture such as collaboration or integrity.
2. Managers that cater to shareholders' desire for metrics  $y$  and alter the corporate culture, produce better tangible metrics such as financial results and equity returns in the short term.
3. Managers that cater to shareholders' desire for metrics  $y$  and alter the corporate culture may reduce long-term, firm value due to the misalignment of the corporate culture.

### III. Empirical Design and Data

Establishing empirically how shareholder governance affects economic outcomes is critical for understanding firms and market. Because shareholder governance is an endogenous decision, determining the consequences of stronger shareholder governance on intangible assets and firm value are especially difficult to disentangle. In this section, I outline how institutional features of the governance process and detailed data now available allow for credible estimates of causal effects. Several complementary empirical strategies and datasets are employed to estimate the relationship between stronger governance, culture, and firm value. In the first two subsections, I focus on estimating the average effect of governance on culture. Subsection III.A presents a fuzzy regression discontinuity framework which uses natural variation in shareholders legal powers to act. Subsection III.B presents two complementary empirical tests which examine interventions by activist shareholders and serves as a test of the external validity of the fuzzy regression discontinuity inferences. Subsection III.C presents an empirical strategy for decomposing the net effect of stronger shareholder governance on firm value into the effect attributable to changes in corporate culture and the effect attributable to other transmission mechanisms. Finally, subsection III.D presents a quantile instrumental variable regression framework, which enables an understanding beyond the mean of the distribution to the full distribution effects. Such a comprehensive empirical strategy is necessary



for a rigorous understanding of the transmission mechanisms underlying the governance-value link and of the policy implications for creating additional firm value.

#### *A. Fuzzy Regression Discontinuity Design and Data*

The primary specification is a fuzzy regression discontinuity design. It exploits natural variation in shareholder governance, which arises from institutional features of the shareholder governance reform process. The intuition for the empirical design is to use naturally occurring random thresholds to replicate an experiment in which firms are randomly assigned shareholder governance. I exploit the naturally occurring, but random threshold that receiving 50% of the vote share increases the probability that a shareholder governance reform will be implemented. Statistically, the passing demarcation from these close-call elections is essentially equivalent to an independent random event. On average, the firm and manager characteristics for a stock with 50.1% of shareholders' votes are similar to the firm and manager characteristics for a stock in which proposals fail to pass with 49.9% of shareholders' votes. This quasi-randomness implies that omitted firm characteristics are no longer confounding estimates of the expected change in economic outcome.

This fuzzy regression discontinuity design builds upon the work of [Cunat, Gine, and Guadalupe \(2012\)](#), who use a sharp regression discontinuity design to study governance proposals, but is distinct in three ways. First, in a sharp design, the treatment is the effect of the vote passing on the outcome variable of interest, whereas in the fuzzy design, the treatment is the effect of the governance proposal being implemented. Put another way, the sharp design assumes the stock market accurately predicts the probability that the passing vote will lead to the implementation of governance reform whereas the fuzzy design removes this ambiguity. A second difference arises because of the outcome variables under consideration. I focus on the transmission mechanisms such as corporate culture as opposed to the net effect on firm value. Third, I extend the fuzzy regression discontinuity design in subsection III.C to decompose the net effect into the various transmission mechanisms underlying the governance-value link.

To assess the merits of the proposed research designs, it is important to understand the institutional details underlying voting on shareholder governance proposals. A complete review of corporate voting and elections is beyond the scope of this paper, but additional information can be found in [Kahn and Rock \(2008\)](#) and [Yermack \(2010\)](#). Instead, I focus on the details underlying how proposals are included on the proxy, how voters are identified, what information is available to voters, and how the votes are tabulated.

By law, the shareholder, who is the beneficial owner, has the right to vote. Annually, beneficial shareholders exercise their legal rights and vote on a range of matters from routine elections of directors of the board to proposals that strengthen or weaken shareholder governance. Proposals can be introduced by both managers and shareholders. Shareholder proposals must be received six months prior to the annual meeting date to be included in the proxy. Frequently, a company's

receipt of a shareholder proposal will prompt a dialogue between management and the shareholder. Either management will make some concessions, or management will be able to explain the rationale for its current practice so as to allay the shareholder's concerns. In either case, the shareholder would then withdraw the formal proposal. In addition, firms may contest shareholder proposals and subsequently drop them from the proxy. For example, the SEC prohibits shareholders from sponsoring proposals on "substantially the same" subject once a resolution fails to receive enough support in prior years. Proposals can also be omitted for technical reasons, which include failure to meet stock ownership requirements or late filings, and proposals can be omitted on ordinary business grounds. The SEC reviews the firms proxy procedures and may issue no-action letters in response to decisions to omit proposals. The SEC cannot adjudicate on whether a company is obligated to include shareholder proposals in its proxy materials, but U.S. courts can adjudicate on the matter.

A firm must file its definitive proxy statement with all shareholder and management proposals to be voted upon 60 days prior to the annual meeting. Corporations send out proxy cards, a proxy statement, and the annual report to its registered owners. A record date is fixed in advance of any vote that determines the registered owners. The process of sending out proxy cards is complicated by the complexity of custodial share ownership and the fact that many shares are held in the street's name (Kahn and Rock (2008)). The confusion over who owns the shares has led to incidences of materials not arriving, votes not being counted, and over voting when securities have been lent out for short selling purposes. The additional noise in the process supports the regression discontinuity design, because it makes it even harder for a corporation to manipulate the forcing variable, which is one of the two assumptions necessary for identification in this research design (Lee (2008)).

The proxy statement provides information on the proposals and management's recommendation to vote "For" or "Against" the proposal. In addition, institutional investors receive data and recommendations on proposals from proxy advisory service companies such as Institutional Shareholder Services (ISS). Evidence suggests institutional investors actively assess the merits of proposals (Iliev and Lowry (2013)) and do not blindly follow management or proxy advisory recommendations. To vote their shares, the registered owners of the stock execute the proxy card to indicate their position. The proxy cards are then returned to a tabulator who, under the oath of law after checking their formal validity and comparing them to the shares registered, reports the outcome to the board of directors. Voter turnout is high, because approximately 70% of shares are held by institutional investors. In 1988, the U.S. Department of Labor (DOL) issued its Avon Letter, which put private pension plan trustees on notice that proxy voting rights must be a diligently exercised aspect of fiduciary duty. Additional posturing by the DOL and later the SEC meant that institutional investors could no longer rubber stamp the passage of management supported proposals; as a consequence, there are several close-call votes and high-profile corporate governance contests. Once voting begins, firms are unable to remove a proposal; however, many proposals

are only precatory, meaning that they are advisory suggestions from shareholders and cannot be forcefully implemented by law. Within 15 days of the annual meeting, firms must file SEC Form 8K, which states the outcomes of the elections. Within one quarter of the annual meeting, firms must file SEC Form 10Q, which reports voting results. The decision to implement the proposal will usually be contained in these filings.

The details of the voting process outlined above help to clarify the intuition underlying the fuzzy regression discontinuity approach and the assumptions that make it valid. Intuitively, the fuzzy regression discontinuity approach compares changes in economic outcomes after a shareholder governance proposal passes by a small margin to identical proposals that fail by a small margin. For the fuzzy regression discontinuity approach to be valid, firms must not be able to manipulate the voting outcome. The integrity of the process outlined above suggests this is the case. To implement this empirical research design, I collect data on shareholder governance proposals, voting outcomes, and proposal implementation. FactSet SharkRepellent provides data on shareholder proposals that make it on the proxy statement and proxy voting results. Implementation data comes from SEC Edgar filings. The comparison of economic outcomes for firms whose proposals just pass and just fail are identical in the sense that they all strengthen shareholder governance.

In [Appendix A](#), I provide details on the classification of pro-shareholder governance reforms. The rationale builds upon prior precedents (e.g., [Gompers, Ishii, and Metrick \(2003\)](#); [Bebchuk, Cohen, and Ferrel \(2009\)](#)). But I also recognize that most of the elements of these G-index cannot lead to executive entrenchment, and those that can induce entrenchment do so only under limited circumstances ([Klausner \(2013\)](#)). Therefore, although I classify 63 proposals, I focus on proposals that are thought to have real effects on executive decisions. The following five proposals account for 70% of those close to the threshold in my sample. They are: (1) change in director qualification requirements; (2) change in vote requirement to elect directors (e.g., majority from plurality); (3) declassifying the board; (4) allowing for a decrease in the requirement to call a special meeting; (5) non-routine changes to managerial compensation (e.g., require equity to be retained or allow shareholders to recoup compensation for poor performance).

Prior empirical research suggests that the above proposals have real effects on executive decisions (e.g., [Bebchuk and Cohen \(2005\)](#); [Bebchuk, Cohen, and Ferrel \(2009\)](#); [Cornelli, Kominek, and Ljungqvist \(2013\)](#)), and thereby may also impact managerial and board actions with regard to corporate culture. Majority voting has yet to be studied empirically, but anecdotal evidence suggests it affects directors' decisions. Plurality voting is considered a rubber stamp of management preferred board members. Because the number of nominees to the board is typically equal to the number of board seats to be filled, a nominee who only receives one vote is elected under this voting paradigm. This suggests that plurality votes are unlikely to shape director behavior in favor of shareholders whereas majority votes give a meaningful voice to shareholders. For firms implementing majority voting proposals, there are instances both of directors offering to resign

and leaving the board after failing to receive a majority of votes. When directors job security is weakened, there is reason to believe such a proposal has a real effect on decision-making.

**Table IV** summarizes the proposals voted upon and compares those close to the passing threshold with the full universe of proposals. An important feature to note is the large discontinuity in the likelihood of implementation when a proposal receives a passing vote from shareholders. For the fuzzy regression discontinuity design to be valid, a discontinuity or jump in the probability of a proposal being implemented when the vote is greater than the passing threshold is necessary. For binding proposals, the discontinuity is 100% versus 0%, but even amongst precatory proposals, Table IV reveals that there is large jump in the probability of implementation. A second important feature to note is how lopsided the proposals are in terms of taking power away from managers when the votes are close-call votes. Within 5% of the passing threshold, 85% of the proposals attempt to take power away from management. This finding echoes the well-documented rise in the power of shareholders over the last decade. For example, consider the following statistics reported by Spencer Stuart, a top executive search firm. As of 2012 for S&P 500 companies, 83% of boards – up from 40% in 2002 – have declassified structures. This means it is easier for unsatisfied shareholders to replace the whole board of directors in one year. Similarly, 59% of boards – up from 31% in 2002 – have the CEO as the only non-independent member. An independent director is someone who has never worked at the company, is not related to any of the key employees and has never worked for a major supplier, customer or service provider, such as lawyers, accountants, consultants, and bankers. This means there are fewer conflicts of interest between the board and the CEO which is thought to reduce the scope of agency problems.

To obtain estimates of the consequences of increases in shareholder governance, I follow the standard methods for a fuzzy regression discontinuity design and adopt a potential outcomes framework (Roberts and Whited (2013)). Let  $Outcome_i(0)$  and  $Outcome_i(1)$  denote the potential change in outcomes with and without treatment for firm  $i$ , respectively. Let  $Implement_i \in \{0, 1\}$  denote the treatment received, where  $Implement_i = 1$  if firm  $i$  implements the shareholder governance reform and  $Implement_i = 0$  otherwise. The observed change in outcome for firm  $i$  is:

$$\begin{aligned} Outcome_i &= (1 - Implement_i) \cdot Outcome_i(0) + Implement_i \cdot Outcome_i(1) \\ &= \begin{cases} Outcome_i(0) & \text{if } Implement_i = 0 \\ Outcome_i(1) & \text{if } Implement_i = 1 \end{cases} \end{aligned} \quad (6)$$

Next, let  $vote_i$  be the distance from the passing margin and  $pass$  indicate the passing threshold. The relationship between the probability of proposal implementation and  $vote_i$  is:

$$\Pr[Implement_i = 1 | vote_i] = \begin{cases} g_0(vote_i) & \text{if } vote_i < pass, \\ g_1(vote_i) & \text{if } vote_i \geq pass. \end{cases} \quad (7)$$

Combining Equation (6) and (7), the effect of an increase in shareholder governance for firms implementing the proposal is identified as follows:

$$\tau_{Outcome} = \frac{\lim_{vote \downarrow pass} E[Outcome|V = vote] - \lim_{vote \uparrow pass} E[Outcome|V = vote]}{\lim_{vote \downarrow pass} E[Implement|V = vote] - \lim_{vote \uparrow pass} E[Implement|V = vote]} \quad (8)$$

Several outcomes are considered including: the expected change in corporate culture, percent of short-horizon equity investors, financial performance, and equity returns. In each case, the numerator is the difference in the expected outcome and the denominator is the difference in probability of a proposal being implemented near the threshold.

In order to estimate the conditional expectations in Equation (8), I employ the polynomial method, which is a technique Hahn, Todd, and VanDerKlaauw (2001) showed is equivalent to the instrumental variable regression. The specification for the equivalent instrumental variable regression is as follows:

$$Outcome_i = \alpha + \beta Implement_i + f(vote_i - pass) + \gamma Z_i + \epsilon_i \quad (9)$$

Observations are at the proposal level. An indicator variable for the discontinuity,  $T_i = I[vote_i \geq pass]$ , serves as an instrument for  $Implement_i$ , where  $Implement_i = 1$  if firm  $i$  implements the shareholder governance reform and  $Implement_i = 0$  otherwise. The relevance condition is likely to hold because  $T_i$  affects probability of implementation. The exclusion restriction is unlikely to be violated, because the random decision to make the passing threshold hold 50% as opposed 60% is unrelated to the outcome variable other than through its effect on the proposal being implemented.  $Z_i$  includes firm-specific covariates such as firm size, Tobin's Q, lifecycle stage, and profitability and industry-by-year fixed effects. In Equation (9),  $\beta$  is equivalent to  $\tau_{Outcome}$  from Equation (8). Technical details of the estimation procedure such as the polynomial,  $f(vote_i - pass)$ , and the distance from the passing threshold are discussed in greater detail in Section IV.

One important impetus motivating the use of a fuzzy regression discontinuity design is a recognition, formalized by Hahn, Todd, and VanDerKlaauw (2001), that the research design requires seemingly mild assumptions compared to those needed for other non-experimental approaches. Furthermore, the causal inferences from regression discontinuity designs are potentially more credible than those from typical natural experiment strategies such as a difference-in-differences design. This notion has a theoretical justification. Lee (2008) shows mathematically that one need not assume the regression discontinuity design isolates treatment variation that is as good as randomized; instead, randomized variation is a consequence of the firms inability to precisely control the vote share near the threshold. This key assumption facilitating identification can be indirectly tested by examining the empirical distribution near the passing threshold. This assumption likely holds if voting procedures follow legal protocol set forth by the SEC. This assumption does not preclude firms from pooling on a particular vote or trying to influence the vote. In fact, sorting

only undermines the causal interpretation of regression discontinuity design estimates if the sorting is perfect, which again can be indirectly tested.

Despite the mild assumptions for a fuzzy regression discontinuity design, it is worthwhile assessing when they may fail. Built into the design of treatment and control are implicit fixes for any sort of time trend or confounding covariates. This implies that an argument suggesting an outcome is simply trending over time or changing because of a different factor that is correlated with the outcome is not a valid criticism. Yet still, it is important to assess that there are no simultaneous discontinuities in other covariates. I find no discontinuities in other observable firm characteristics such as profitability, firm size, Tobin’s Q, lifecycle stage, leverage, cash holdings, investment, payout, insider ownership, institutional ownership, managerial entrenchment, pre-change cultural levels, and M&A activity. Furthermore, to address lingering concerns about potentially important confounders, I limit my sample selection in a few different ways. These are the restrictions: the proposals must not be a say-on-pay, routine, social, environmental, nor labor proposals; the firm must not be active in the M&A market, which is defined based on acquisition expenses reported in their financial statements in the same period; the proposals must strengthen rather than weaken governance; and the firm must not have multiple close-call governance proposals go in opposite directions.

While the fuzzy regression discontinuity design exhibits many beneficial characteristics, it does have limitations. The most notable limitation is that the research design typically involves a small sample size. If the few hundred firms that fall close to the discontinuity are different than the typical firm, the estimates, although credible, may not generalize. To test if the regression discontinuity results generalize, two alternative empirical strategies that extend to thousands of firms are described in the next subsection.

## *B. Alternative Empirical Approaches and Data*

Beyond increasing shareholders’ legal rights through proxy voting protocol, other approaches to shareholder governance are important. The threat of exit itself, or the colloquial “Wall Street Walk,” can be a form of shareholder governance ([Admati and Pfleiderer \(2009\)](#)) as can activities such as face-to-face meetings, shaming of management through publicized lists of worst managers, and organized media campaigns against management ([Klein and Zur \(2009\)](#)). The second and third identification approaches compliment the first research design by extending the results to active governance as well as to a larger sample of firms.

The second specification is an instrumental variable approach, which tests if active shareholder governance is associated with a change in corporate culture. The specification is as follows:

$$Culture_{ijt} = \alpha + \beta ActiveGovernance_{ijt} + \gamma Z_{ijt} + f_i + \delta_{jt} + \epsilon_{ijt} \quad (10)$$

Observations are at the firm-year level.  $Culture_{ijt}$  represents the corporate culture for firm  $i$  in

industry  $j$  in year  $t$ ,  $ActiveGovernance_{ijt}$  captures the percentage of shares outstanding held by actively governing shareholders,  $Z_{ijt}$  is a vector of the observable firm-specific covariates,  $f_i$  is a firm fixed-effect,  $\delta_{jt}$  is an industry-by-time fixed-effect, and  $\epsilon_{ijt}$  is the unobservable error component.

The percentage of shares outstanding held by actively governing shareholders is instrumented for using the average portfolio diversification of all the funds holding firm  $i$ 's equity in year  $t$ . Data on actively governing shareholders and the diversification of all institutional shareholders is obtained from FactSet Lionshares. Actively governing shareholders are based on a subset of short-horizon institutional investors (primarily mutual funds) and the definition comes directly from FactSet Lionshares. Although the risk of a stock portfolio depends on the proportions of the individual stocks, their variances, and their covariances, I use a simple measure of diversification based upon the number of equities held. The advantage of using a more complicated measure occurs only when the simple measure proves to be a weak instrument. This is not the case and the instrument easily passes weak instrument tests. The instrument is relevant, because shareholders engaging in activism and governing firms often have less diversified holdings (Brav et al. (2008)). The intuition for the relevance condition is that higher stakes in individual companies are necessary to make the returns from a more active strategy worthwhile.

The effectiveness of the instrumental variable approach to identification is limited if the instrument violates the exclusion restriction. This paper argues that the undiversified nature of the investment funds holding the firm's equity only affects corporate culture through its correlation with these funds actively applying governance. Another possible mechanism is that having more undiversified investors means that these firms are selected by funds with a preference for exposure to idiosyncratic risk. If undiversified investors have a preference for certain corporate policies and rather than convey those preferences to management they simply cherry-pick the firms with their preferred policies, then this may mitigate the effectiveness of this strategy. For example, if this cherry-picking skill is correlated with corporate culture, it may be spuriously driving the result. However, unconstrained arbitrage arguments suggest this is not the mechanism. Furthermore, work focusing on the diversification of a controlling owner's portfolio and firm outcomes reiterates that the transmission mechanism is investor influence (Faccio, Marchica, and Mura (2011)). An additional limitation is if boards independently decide to change the culture of the firm due to weak performance, but undiversified, active investors are attracted to firm's with weak performance. Research suggests it is unlikely that the catalyst for management to refocus the firm is completely independent of active governance (Cornelli, Kominek, and Ljungqvist (2013)), and moreover, members of the board have a fiduciary responsibility of loyalty to the shareholders, which suggests their actions are not completely independent (Black (2001)).

The third identification approach is an alternative means for testing if active shareholder governance is associated with a change in corporate culture and firm value; the approach follows a similar methodology to that employed by Brav et al. (2008). In this setup, treated firms are those



targeted in activist shareholder governance campaigns. These campaigns are commonly conducted by a small group of well-known hedge funds and dissident investors. In comparison to the targeted firms, a group of control firms is selected via a propensity score matching.

This third method compliments the previous instrumental variable method that examines institutional investor actively engaging management. Although it is well-documented that some institutional investors actively engage management (Carleton, Nelson, and Weisbach (1998); Gillan and Starks (2000)), some are thought to be closet-index funds that passively track the market. This fact suggests that the interpretation of the instrumental variable estimators is an average treatment effect based on two subpopulations. This third approach analyzes yet another subpopulation of investors, activist hedge funds, to which the average effect from the instrumental variable approach may or may not extrapolate.

In order to test this third research design, data is collect on activist hedge funds. Appendix A provides a list of these dissident investors, which is composed using FactSet SharkRepellent and Capital IQ event headline data. The list includes activist hedge funds such as Bulldog Investors and prominent investment strategists such as Carl Icahn and David Einhorn. In contrast to institutional investors, hedge funds are typically structured and operated as limited partnerships or limited liability companies exempt from certain registration, disclosure and other requirements under the Securities Act of 1933, Securities Exchange Act of 1934, and the Investment Company Act of 1940. This regulatory difference limits the availability of data on hedge funds equity positions. However, hedge funds are not exempt from filing SEC Form 13D, 13F, nor 13G. A 13G filing is required for investors who acquire at least a 5% interest in an equity whereas a 13D filing requires the filer to disclose why they have an interest in the company. A 13F must be filed quarterly by all managers who exercise investment discretion over \$100 million or more in total securities. To determine the equity positions of the activist investors, a name matching algorithm is implemented; it matches SEC Form 13D, 13G, and 13F filers to the list of activist hedge funds and strategists included in Appendix A.

The motivation for using the propensity score algorithm is that it can allow for more accurate inferences in a treatment-control group setting by achieving greater covariate balance. Additional motivation comes from the fact that the data are well suited to using such an algorithm (Heckman, Ichimura, and Todd (1997)); the pool of potential control firms is large, which increases the likelihood of overlap in the support of firm-specific covariates across the two groups. The observable covariates used to select the matching firms include profitability, firm size, Tobin’s Q, lifecycle stage, book leverage, cash flow-to-capital, investment-to-capital, payout yield, institutional ownership, the E-index, industry, and year. The matching procedure results in a group of control firms that are statistically indistinguishable from the treated firms along these dimensions.

Table V summarizes the distribution of covariates for all firms, firms in the regression discontinuity sample, firms in the instrumental variable sample, and firms in the matched sample.

The firm-specific covariates typically correspond to calendar year observations, but for firms in the regression discontinuity sample, annual observations based on the fiscal year ending prior to the annual meeting when voting takes place are used. The regression discontinuity sample departs from the sample of all firms. The firms in the regression discontinuity sample have greater exposure to common proxies for principal-agent conflicts: they are highly profitable firms with low market-to-book ratios; they are older, larger, and at later lifecycle stages; although they have higher payout and lower excess cash, they exhibit greater managerial entrenchment as measured by the E-index. This is suggestive that the regression discontinuity sample may be special and not generalize to the full population of firms. However, in contrast to the discontinuity sample, the distribution of covariates across the sample of all firms and the instrumental variable sample display little variation and are statistically indistinguishable. The matched sample again is a select group; however, the treated firms and counterfactual firms within the matching sample have strong covariate balance. The only covariate with a statistical difference is a goodwill impairment indicator. As [Table V](#) demonstrates, each empirical strategy uses different sample sizes and identifying assumptions. When the conclusions are not fragile to these variations, this suggests that the common critiques of the regression discontinuity design such as lack of generalizability are inconsequential.

### *C. Shareholder-Governance Value Link via Corporate Culture*

If changes in corporate culture are part of the transmission mechanism behind the governance-value link, it is worthwhile to understand the sign and magnitude of the economic effect transmitted via the governance-induced changes in corporate culture, or what I refer to as “via the corporate culture channel.” For example, in the extreme case where the entire economic effect only comes from the corporate culture channel, this suggests shareholders would benefit more from governance reforms in firms with a weak corporate culture. Alternatively, if a corporate culture channel exhibits an opposite sign from more tangible channels, this suggests marginal improvements could be made that limit the negative externalities from governance induced changes in corporate culture.

Because corporate culture may be a function of shareholder governance, an additional layer of difficulty is added to the challenge of identifying the average effect of the governance-induced changes in culture on firm value. Any regression of governance-induced changes in culture on firm value will be inconsistent, because there is an omitted variable bias from the unaccounted for change in governance. Including both the change in governance and the change in culture on the right hand side introduces two endogenous variables, which requires additional work to disentangle the effects of each variable. One solution to this type of problem is to fuse economic theory with statistical assumptions about unobservables and estimate a structural model. Yet economic theory does not provide clear predictions about the expected sign or magnitude for a corporate culture channel; this makes the structural modeling approach less appealing. Instead, I adopt a descriptive econometric model, which allows the data to speak for itself. Specifically, I estimate an econometric model of

the following form:

$$Value_i = \alpha + \beta_I Implement_i + \beta_C \Delta Culture_i + f(vote_i - pass) + \gamma Z_i + \epsilon_i \quad (11)$$

Observations are at the proposal level.  $Value_i$  represents abnormal equity returns after adjusting for Fama French and momentum factors for firm  $i$ . The returns are measured over different periods including: the event day, the event week, and long horizons.  $Implement_i$  is an indicator variable for an implemented proposal that strengthens shareholder governance,  $\Delta Culture_i$  is an indicator variable for a change in corporate culture that entails an increase in results-orientation and a decrease in collaboration, customer-orientation, and integrity in the year following the vote on the proposal.  $Z_i$  is a vector of the observable firm-specific covariates such as firm size and Tobin's Q that account for information asymmetry in the market; industry-by-time fixed effects are also included.

The challenge to estimating such a model is that there are two endogenous variables,  $\Delta Culture_i$  and  $Implement_i$ . Any specification with two endogenous variables is not well identified. Even the previous empirical approaches such as the fuzzy regression discontinuity design are not well identified when firm value is the dependent variable. The lack of identification is evident when examining the first stage estimation in an instrumental variable approach. When both the change in corporate culture and the increase in shareholder governance are included, the combination of an intermediate outcome, a change in corporate culture, combined with a beginning outcome, an increase in shareholder governance, invalidates the exclusion restriction. Statistically speaking, such a model suffers from multicollinearity, so there could be an infinite number of solutions.

To generate a consistent estimate for the effect of the corporate culture channel on firm value, I use an instrumental variable strategy that treats both endogenous variables. I use two instruments to disentangle the average effects on firm value via a corporate culture channel from any remaining effects from the stronger governance. The primary assumption needed for identification in the two instrumental variables approach is that both instruments are relevant and satisfy the exclusion restriction, yet one instrument differentially impacts the endogenous variable that is a function of the other endogenous variable. A proof of these identifying assumptions can be found in the Appendix of [Acemoglu and Angrist \(2000\)](#); instead, I will focus on the intuition and potential limitations.

One source of variation which is likely to be relevant to both governance and culture arises from the proposals themselves. Although each proposal strengthens shareholder governance, there is heterogeneity in the language describing the proposals. The proposed instruments exploit the heterogeneity in the language. Some of the shareholder governance proposals are indicated to be supported by management when the proxy is delivered to shareholders. This insight is combined with the prior insight that a proposal is more likely to be implemented when it crosses the passes threshold to generate two instruments. The proposed instruments are the interaction between

an indicator variable for the passing threshold discontinuity and an indicator variable for being a management supported proposal. The intuition for the relevance to corporate culture is that a vote exceeding the passing threshold for a proposal that is supported by management may differentially impact culture as the results may be anticipated by management. The intuition for the relevance to governance is exactly the same as before both instruments lead to an increase in the probability of implementation of the pro-shareholder governance proposals at the passing threshold.

One potential identification problem raised by Equation (11) is omitted-variables bias from correlation between the governance-induced change in corporate culture and other firm-event-day effects embodied in the error component. Yet the proposal language heterogeneity is unlikely to be correlated with contemporaneous firm-event-day shocks, because management are unable to withdraw proposals on the event day and the proposals as they are written must be delivered to shareholders 60 days before the vote. A drawback of the proposed strategy is that it does not necessarily eliminate bias from firm-specific shocks if the market price does not properly incorporate the information contained in the proxy ballot prior to the event. However, the given approach makes substantial strides to mitigate bias in the estimation and provide credible evidence of the size and magnitude of the average effect on firm value via corporate culture.

#### *D. Estimating Effects Across the Distribution of Starting Cultures*

Each of the previous frameworks produces estimates of the *average* effect of stronger governance on culture and subsequently of governance induced changes in culture on firm value. However, estimates at the mean may be driven by a small set of firms in a particular range of the distribution. If governance induced changes in corporate culture are only important for firm value when they are in a particular range of the distribution, this has important policy implications. Because the empirical designs presented so far only test if stronger shareholder governance significantly changes the corporate culture, on average, and the mean does not describe the entire distribution, this subsection presents a quantile instrumental variable regression framework that allows for a greater understanding of the full distribution. Specifically, this research design characterizes the heterogeneous impact of stronger governance on firms with different starting levels of culture. Again corporate culture is endogenous, making conventional quantile regression inconsistent. To explore the entire distribution of effects, I use the instrumental variables quantile regression method developed by (Chernozhukov and Hansen (2005)). This is a methodological improvement over studies which employ traditional quantile regressions (e.g., Edgerton (2012)), because it allows for more than descriptive statements.

For the inferences from the quantile instrumental variable regression to be credible, additional assumptions are required. Analogous to traditional instrumental variable regressions, quantile regressions require the same relevance and exclusion restrictions; however, this research design also requires a rank similarity condition. The rank similarity condition means that each firm's rank

in the conditional outcome distribution is invariant in expectation, regardless of the status of the change in shareholder governance. There are no formal tests available to validate an assumption of rank similarity, but controlling for observable covariates helps to achieve rank similarity. The primary specification is the same as in Equation (10) but varies across quantiles,  $\tau$ .

$$Q(Culture_{ijt}|\tau) = \alpha(\tau) + \beta(\tau)ActiveGovernance_{ijt} + \gamma(\tau)Z_{ijt} + f_i(\tau) + \delta_{jt}(\tau) + \epsilon_{ijt}(\tau) \quad (12)$$

Observations are at the firm-year level.  $Culture_{ijt}$  represents the corporate culture for firm  $i$  in industry  $j$  in year  $t$ ,  $ActiveGovernance_{ijt}$  captures the percentage of shares outstanding held by actively governing shareholders,  $Z_{ijt}$  is a vector of the observable firm-specific covariates,  $f_i$  is a firm fixed-effect,  $\delta_{jt}$  is an industry-by-time fixed-effect, and  $\epsilon_{ijt}$  is the unobservable error component.

## IV. Empirical Results

This section presents the three main empirical findings from the complementary research designs presented in the previous Section. First, I use the text-based measures of corporate culture, which are described in Section I, to demonstrate that an increase in shareholder governance leads to a statistically significant increase in results-orientation and statistically significant decreases in customer-orientation, integrity, and collaboration. Second, I show stronger shareholder governance affects both the tangible and intangible assets of the firm but at different time horizons. In the short term (the year of the change in corporate culture) statistically significant increases in sales, profitability, and payout occur. Yet, in the long term (up to four years after the change in corporate culture) statistically significant decreases in both intangible assets and customer satisfaction along with increases in goodwill impairment occur. Third, I decompose the net effect of increases in shareholder governance on firm value into the effect attributable to governance-induced changes in culture and to the effect attributable to other transmission mechanisms. While stronger governance leads to statistically significant losses in intangibles through the corporate culture channel (1.4% effect measured in terms of firm value), it leads to gains in tangible results. The net effect of stronger shareholder governance is positive (1.0%). The three findings illustrate the importance of corporate culture as a transmission mechanism from governance to firm value. In addition, they support the theoretical predictions outlined in Section II that an increase in shareholder governance is a dual-edged sword. Because shareholder governance changes the relative benefits to the CEO of investing in different aspects of corporate culture, shareholders face a trade-off between the unobservable value of a well-aligned corporate culture and the observable value of tangible results when implementing governance reforms. The empirical evidence, which supports the three findings, are presented in the subsections below.

### A. Fuzzy Regression Discontinuity Design

The evidence for the effect of stronger governance on culture is both visual and statistical. **Figure 2** presents visual evidence for a discontinuity in the percentage of proposals implemented after the vote share crosses the passing threshold. This discontinuity is critical for estimating the effect of an increase in shareholder governance on corporate culture. The figure illustrates the discontinuity by plotting the average percent of proposals implemented as a function of the proximity to the passing threshold. If the proposal passes as is indicated by being above the passing threshold, then the average implementation rate is approximately 35 percentage points higher. This implementation rate is approximately 10 percentage points higher than averages reported for earlier time periods (e.g., [Ertimur, Ferri, and Stubben \(2010\)](#)). The likely reason is changes to directors incentives. Proxy voting advisory services such as Institutional Shareholder Services (ISS) began including implementation of passing proposals as a criterion for recommending a director.

**Figure 3** presents visual evidence for a discontinuity in corporate culture in the year after a close vote on a shareholder governance proposal. The discontinuity in corporate culture is the second critical component for estimating the effect of an increase in shareholder governance on corporate culture. The figure depicts corporate culture through four of its fundamental attributes – results-orientation, integrity, collaboration, and customer-orientation. For each of the four attributes of corporate culture, there is a clear discontinuity after the passing threshold. In contrast, for firms that had proposals just fail to pass, the changes in the attributes of corporate culture are negligible. This visual evidence supports that the directional relationship between shareholder governance and culture is from shareholder governance to culture. But these pictures are best interpreted as reduced form visual evidence, because they do not condition for other covariates.

What is interesting to note from the plots in **Figure 3** is how corporate culture changes specifically after an increase in shareholder governance; the plots reveal that results-orientation sharply increases and integrity sharply decreases, while collaboration and customer-orientation decrease. The remaining aspects of culture – adaptability, detail-orientation, and transparency – are not plotted, because there are no discernible discontinuities following an increase in shareholder governance. This duality is consistent with the theoretical model presented in **Section II**. Efforts are reallocated across different dimensions of culture when the relative returns to each dimension are altered. Results-orientation may produce the tangible metrics, which shareholders reward whereas integrity may not. The loss in integrity is also consistent with evidence comparing private and public firms – public firms exhibit lower levels of integrity ([Guiso, Sapienza, and Zingales \(2013\)](#)).

In each plot, the hollowed-circles are the average change in culture within the derived bin width. [Lee and Lemieux \(2010\)](#) recommend fitting optimal bin widths on each side of the threshold. As is clear in the picture, the change in corporate culture to the left of the threshold is relatively more flat; this suggests a larger bin width is optimal to the left. The derived bin width is 75 basis points of the vote share to the right and 100 basis points of the vote share to the left of the passing

threshold. The solid lines are fitted values from regressions on either side of the passing threshold and the dashed lines are 95% confidence intervals constructed from bootstrapped standard errors. In some instances, the jump in culture begins to fade when it is more than 10 percentage points from the discontinuity. Because these proposals receive very strong support and are the most likely to be implemented, managers and directors may have anticipated the outcome before the actual vote. Such anticipation may have led to early changes in the culture rendering detection after the vote more difficult. The method for estimating the fitted line in these figures is known to perform poorly at boundary points; therefore, although the graphs suggest a substantial change in corporate culture, the statistical results from implementing the method of [Hahn, Todd, and VanDerKlaauw \(2001\)](#) outlined in Equation (9) are more credible.

[Table VI](#) is the statistical equivalent to the visual evidence for the change in corporate culture in the year following an increase in shareholder governance. [Table VI](#) reports the results from implementing the method of [Hahn, Todd, and VanDerKlaauw \(2001\)](#) outlined in Equation (9) to estimate the change in corporate culture. Firm-annual-meeting-year observations within 10% of the passing threshold are included in the estimation. The 10% cut-off is determined using a cross-validation procedure outlined that minimizes the sum of squared errors between various polynomial estimates. Estimates from linear, quadratic, cubic, and quartic polynomials are displayed. To evaluate which functional form is best, the information criterion gain from adding the  $n^{th}$  term is displayed in braces and the  $t$ -statistic on the additional  $n^{th}$  term is displayed in brackets. Since the fit of a model can be improved by increasing model complexity, additional terms may be beneficial; however, additional terms can also lead to overfitting when sampling error leads to observations that differ from the true data generating process. This tension regarding the optimal model fit is addressed by selecting models with the smallest information criterion and only ones where the addition of the  $n^{th}$  term is statistically significant.

The estimates in [Table VI](#) reinforce the multitasking interpretation evident in the figures. It shows that corporate culture through results-orientation exhibits a statistically significant and economically meaningful increase, while integrity, collaboration, and customer-orientation exhibit statistically significant and economically meaningful decreases. For example, Panel A shows that an increase in shareholder governance leads to statistically significant 0.8 standard deviation increase in the results-orientation attribute of corporate culture. Alternative functional forms lead to slightly different point estimates, but all are significantly different than 0 at the 99th percentile. In all cases but collaboration the linear model is preferred; for collaboration, the quartic model is preferred based on the information criterion. Statistical significance is not sensitive to the preferred model.

The finding that one aspect of corporate culture increases while other aspects decrease is consistent with the economic theory detailed in [Section 2](#), which suggests focusing on tangible benchmarks may hurt intangibles. In addition, the finding is consistent with empirical research from labor economics showing that in certain contexts more high-powered incentives lead to counterproductive



results. In a randomized experiment, economists found that enhanced incentives destroy voluntary collaboration. More generally, this finding relates to several studies analyzing incentives in a multitasking framework; such research demonstrates that giving incentives to an agent in one sphere excessively distorts performance in other tasks (e.g., Lazear (2000)).

The finding that corporate culture changes following an increase in shareholder governance remains notably robust across a battery of changes to the model specifications. The findings are qualitatively similar when the polynomial changes. The results are robust to the inclusion of fixed effects and firm-specific covariates such as profitability, Tobin’s Q, firm size, and the firm’s lifecycle stage. In addition, Table CI of Appendix C shows that the results are robust when observations within 3%, 5%, and 20% of the passing threshold are included in the estimation. In some cases, using 20% of the data weakens the statistical significance, but this difference is not very concerning. Because the internal validity of a regression discontinuity design is strongest for observations closest to the threshold and a proposal that passes with 70% of the vote is hardly a close-call vote. This difference highlights that the votes closest to the threshold most closely replicate a random experiment.

Several additional robustness checks are considered. Table CII of Appendix C shows that the results are robust to variations in the minimum number of reviews required for a firm observation to be analyzed. Table CIII shows that the results are robust to variations in the time period following the increase in shareholder governance. Even at three years after the increase, results-orientation is significantly increased while collaboration and integrity are significantly decrease. Customer-orientation maintains a negative sign but is no longer significantly different than 0. One interesting feature to note from Table CIII is that the point estimates do not increase over time; this suggests that most of the change to corporate culture occurs within the first year. It is plausible that increases in shareholder governance may filter through some firms faster than others, and also through some parts of organizations faster than others. For example, such diffusion should be faster in smaller firms, firms with flatter hierarchies, or for employees working at headquarters. Yet the firms in the regression discontinuity sample exhibit similarity in time to change. One potential explanation is that most of the firms in the sample are large, mature firms with centralized decision-making. Further, Cameron et al. (2006) illustrate that best practices for leaders to implement culture change happen rapidly.

The next set of findings relates to the economic theory which predicts that increases in shareholder governance may encourage negative outcomes such as managerial short-termism. Because managers are predicted to cater to shareholders’ prior beliefs, when a subset of shareholders have a credible reward for managers and a prior belief that short-term financial metrics are preferable, managers will cater to this. Alternatively, if shareholders are more likely to hold their shares for the long term, managers will cater to this patience and desire for long-term value creation. Figure 4 provides visual evidence for an increase in short-horizon equity investors after an increase

in shareholder governance. The visual evidence indicates that in the year after a passing vote on a proposal which increases shareholder governance, investors with shorter investment horizons acquire approximately 5 to 10% more of the firm’s outstanding shares in comparison to the counterfactual firm’s shares just to the left of the passing threshold. This piece of supporting evidence is important for understanding why a manager would be motivated to change the culture, and in particular, helps to explain the observed increase in results-orientation at the expense of collaboration, customer-orientation, and integrity. The economic intuition for relationship between the change in corporate culture and the rise of short-horizon shareholders is that these short-horizon shareholders are using their newly won legal rights to pressure management into decisions that produce short-term financial gains. The increase in short-horizon shareholders suggests they may be the catalyst driving the managers’ myopic decisions with respect to corporate culture.

**Table VII** reports the statistical equivalent to the visual evidence for changes in the shareholder base, and in particular shifts in the shareholder base toward those with shorter investment horizons. **Table VII** reveals there is statistical significant increase in short-horizon shareholders following an increase in shareholder governance. The economic takeaway from **Table VII** suggests that managers are catering to short-horizon investors when they orient the corporate culture toward results. It appears managers are strongly motivated to change the culture, as the estimated 1.07 standard deviation increase in short-horizon investors translates into an approximately 15 percentage point shift in the investor base toward those with shorter horizons. This result is robust to the inclusion of fixed effects and firm-specific covariates such as profitability, Tobin’s Q, firm size, and lifecycle stage as well as to the proximity to the passing threshold.

### *B. Alternative Empirical Approaches*

Like the previous set of analyses, **Table VIII** illustrates how corporate culture changes as a function of stronger shareholder governance. However, **Table VIII** differs from previous tables, because it estimates the effects using alternative identification strategies and definitions of shareholder governance. In particular, it examines active shareholder governance. Panel A shows the results from implementing the instrumental variable approach whereas Panel B shows the results from implementing the matching approach; Panel A defines shareholder governance as the percentage of shares outstanding held by actively governing shareholders whereas Panel B defines shareholder governance as an activist campaign conducted by a dissident investor.

For each attribute of corporate culture, Panel A presents standardized coefficient estimates for the association between corporate culture and shareholder governance with  $t$ -statistics in parentheses. The 0.23 reported in the first column of Panel A is interpreted as follows: a standard deviation increase in active shareholder governance is associated, on average, with a 0.23 standard deviation increase in results-orientation, all else equal. In addition, **Table VIII** shows integrity, collaboration, and customer-orientation exhibit statistically significant and economically meaningful decreases.

Across specifications, the  $F$ -statistic from the first-stage exceeds the requisite 10 to ensure minimal bias of the instrumental variable estimate while more formal statistical tests for weak instruments such as the Kleibergen and Paap test are also satisfied. The specification is robust to the inclusion of firm-specific covariates, firm fixed effects, and industry-by-time fixed effect. The reported  $t$ -statistics use robust standard errors clustered by firm.

Focusing on Panel B, the first row presents least squares estimates of the change in corporate culture associated with an activist shareholder campaign for the full sample of firms and the second row presents the results for the matched sample. The least squares results show that corporate culture through results-orientation statistically significant increases, while integrity, collaboration, and customer-orientation statistically significant decreases. The preferred estimates are the matched results, which reveal a statistically significant increase in results-orientation and decrease in collaboration. The direction of the other attributes remains qualitatively similar but no longer statistically significant. This mixed finding is consistent with recent research suggesting that activist hedge funds approach have alternative objectives with regards to shareholder governance (Brav et al. (2008)).

Overall, there are several important features to take away from Table VII and Table VIII. First, the similarity in the results across the various specifications makes it unlikely that any single assumption is driving the finding that corporate culture changes when shareholder governance increases. When drilling down into the attributes of culture, what is remarkably consistent is that results-orientation increases while other attributes such as collaboration, customer-orientation, and integrity decrease. Second, Table VIII is an important supplement the discontinuity findings, because a common critique of fuzzy regression discontinuity designs is that the treatment effect estimates are local and do not generalize beyond those firms close to the threshold. It reiterates that a statistically significant and economically meaningful negative interaction between shareholder governance and corporate culture exists. Third, the strong ties between the results suggest that increases in shareholders' legal rights truly led short-horizon investors to exercise their new rights and push management for short-term gains at the expense of other shareholders.

### *C. Shareholder Governance-Value Link via Corporate Culture*

The previous two subsections provide evidence, which suggests increases in shareholder governance change the corporate culture and shift the investor base toward those with short horizons. This subsection examines the economic implications of the findings. Specifically, if one of the transmission mechanisms behind the governance-value link is its impact on corporate culture, theory predicts that managers who alter the corporate culture generate superior financial results and equity returns in the short-term. Yet, in the long term, those firms may lose value from the change in corporate culture. Alternatively, some may suggest that corporate culture and corporate governance reinforce each other. Still others may suggest that culture mitigates the effect of changes

in shareholder governance. Ultimately, empirical evidence is necessary to distinguish which theory fits the data best.

The charts in [Figure 5](#) provide suggestive evidence that shareholder-governance-induced changes in corporate culture have an economically meaningful effect on firm value in both the short term and long term. Both charts in [Figure 5](#) examine abnormal equity returns, which are calculated using the Fama-French and momentum factors, following an increase in shareholder governance. The left-hand chart uses the smaller sample of firms from the regression discontinuity approach whereas the right-hand chart uses the larger sample of firms from the instrumental variable approach. Each chart plots the daily difference between the cumulative average abnormal returns for the firms that experienced an increase in shareholder governance relative to firms that did not experience an increase in shareholder governance. To more accurately envision the governance-value link via corporate culture, the regression discontinuity sample is further restricted to passing vote firms that implement the proposal, experience a change in corporate culture, and are within 10% of the threshold.

The left-hand plot reveals that in the year following an increase in shareholder governance, which is also the year of the change in corporate culture, those firms experience abnormal returns approximately 5% higher than their counterfactuals. In contrast, in the second year following the increase in shareholder governance, those firms begin to underperform and the abnormal returns begin to reverse directions reaching almost -7% by the end of two years. The right-hand chart, which uses the larger sample of firms, shows an identical pattern; the abnormal returns are more muted ranging from 3% higher than their counterfactuals in the first year to -3% by the end of the second year.

The statistical evidence in [Table IX](#) supports the visual evidence in [Figure 5](#) and conforms to the predictions of economic theory; shareholder-governance-induced changes in corporate culture have an economically meaningful effect on firm value. Panel A examines abnormal equity returns, which are calculated using the Fama French and momentum factors, on the day of an increase in shareholder governance vote. [Table IX](#) reports the results from implementing the double instrumental variable method outlined in Equation (11) to estimate the abnormal equity returns following an increase in shareholder governance. Event day observations within 10% of the passing threshold on each side are included in the estimation.

The estimated net change in firm value resulting from an exogenous increase in shareholder governance is 1.1% and is statistically significant. This finding is robust to the inclusion of covariates for information asymmetry and firm size as well as industry-by-time fixed effect. The sign and magnitude of the estimate is similar to that reported by [Cunat, Gine, and Guadalupe \(2012\)](#), in which a reduced form variation of the fuzzy regression discontinuity design is used. Column (2) repeats the exercise but separates the corporate culture channel from the other transmission mechanisms associated with stronger shareholder governance. Again there is a statistically signif-

icant increase in firm value following an increase in shareholder governance; however, through the corporate culture channel firm value is reduced.

The estimated effect on firm value via corporate culture is -1.4%; this economically meaningful and statistically significant finding is revealed in Column (2) of [Table IX](#). The finding suggests that corporate culture is an economically important part of the transmission mechanism behind the shareholder governance-value link. The statistically significant 1.6% increase in firm value from the non-corporate culture channel implies there are multiple mechanisms through which the governance-value link is realized. Because the corporate culture channel exhibits the opposite sign from what remains attributable to the other transmission mechanisms, this suggests marginal improvements can be made that limit the negative spillovers from shareholder governance-induced changes to corporate culture.

To assess the relevance condition in this two endogenous variable setting, statistical tests require care. For example, a common limitation is that only one of the two instruments is highly correlated with the endogenous variables, but the other one is just noise. The strength of the first instrument will ensure that traditional  $F$ -statistic tests are satisfied in this case, but without any relevance for the second instrument, the model is not identified. An alternative statistic that can assess relevance with multiple endogenous variables is Shea’s test and it is used to assess the relevance in this specification. The instruments pass Shea’s test for weak instruments in the case of multiple endogenous variables and give credence to the usefulness of the instruments in mitigating the endogeneity concern.

As a robustness check, Column (3) and (4) of Panel A estimate the effect on firm value of increases in shareholder governance using two alternative instruments. Like the first set of instruments, these alternative instruments exploit variation in the language of proposals. Specifically, some of the shareholder governance proposals disproportionately impact the CEO as opposed to directors on the board. The intuition for the relevance to corporate culture is that a vote exceeding the passing threshold for a proposal that disproportionately impacts the CEO is more salient to the CEO, and thereby it is more likely to lead to a change in the corporate culture. Evidence from board minute meetings supports this assumption (?). The estimated effect on firm value using this alternative set of instruments is -1.3% and is statistically significant. It is very similar to the -1.4% estimated with the first set of instruments. Additional robustness checks reveal the estimates for the effect on firm value are qualitatively similar at the 3% and 20% thresholds. Further checks reveal that alternative event windows lead to qualitatively similar results. These can be found in [Table CIV](#) of Appendix C. Finally, Column (5) reports the least-squares estimates of the effects for comparison. The least squares estimates retain the same sign but are smaller in magnitude. This fact reiterates the need for an empirical design such as the natural experiment used in this paper to mitigate potential bias from non-exogenous variation.

Further breaking down the transmission mechanism by the specific attributes of corporate

culture provides suggestive evidence of which attribute is driving the reduction in firm value. Estimates for the results-orientation channel suggest it significantly increases firm value by 1.8% and accounts for the market’s positive revision of firm value following an increase in shareholder governance. Strikingly, the results-orientation channel renders the direct shareholder governance channel unimportant for firm value. In contrast, yet consistent with the predictions from a multi-tasking framework, the decline in collaboration, customer-orientation, and integrity all suggest negative effects on firm value. Only collaboration is statistically significant at -2.0%, but this appears to be the consequence of a weak instruments problem. Neither the customer-orientation nor integrity channels pass Shea’s test, but both results-orientation and collaboration pass Shea’s test. The significance of the findings for results-orientation and collaboration are robust to the inclusion of firm-specific covariates for information asymmetry and size as well as industry-by-time fixed effect. The robustness tests for the individual aspects of culture are included in [Table CVII](#).

As an alternative to analyzing event day returns, Panel B of [Table IX](#) uses a long-run event study methodology. As with other long-run event studies (e.g., [Gompers, Ishii, and Metrick \(2003\)](#); [Yermack \(2006\)](#)), at best the data reveals a correlation. But under the assumption that investors only slowly realize that the manager is expropriating the value of the corporate culture to produce short-term results, this type of exercise is useful. Alternatively, if not all shareholders are informed of the change in culture, it is possible a subgroup of shareholders may extract the rents from the uninformed shareholders. In such a scenario, the negative effects from the governance-induced change in corporate culture would only slowly be reflected in equity prices. What is striking is that the statistical pattern repeats the pattern from [Figure 5](#) and revealed in Panel A. In the short term, firms with a change in corporate culture experience statistically significant cumulative abnormal returns of 6.9%; yet, in the long term, the initial boost completely reverses and cumulative abnormal returns of -7.3% accumulate. The same pattern holds across various definitions of increases in shareholder governance.

These superior and then inferior equity returns are economically important, because they support the hypothesis that managers concentrating on tangible benchmarks following an increase in shareholder governance hurt other aspects of value creation, which is not in the best long-term interest of the firm. The evidence for time-shifting value is consistent with theories underlying both short-termism and value expropriation by one set of shareholders to the detriment of other shareholders in the firm. If these theories reflect the reality firms’ face, one would also expect to observe managers achieving tangible benchmarks such as short-term sales growth; in addition, one would expect to see deterioration in the value of the firm’s intangible assets. These key theoretic predictions are the focus of the next set of tests.

As further support of the economic predictions about the governance-value link via corporate culture, [Table X](#) examines if short-term financial results are realized following an increase in shareholder governance. When this is the case, it supports the idea that management is catering to

shareholders by changing the corporate culture and making it more results-oriented. Panel A of [Table X](#) employs the regression discontinuity framework outlined in Equation (9); it shows that in the short-term results are produced. It reveals statistically significant increases in sales growth, profitability, return on equity, and payout in the form of dividends. Panel B of [Table X](#) employs the instrumental variable framework outlined in Equation (10); the results are similar. Profitability and payout in the form of both dividends and repurchases exhibit statistically significant increases. Panel C repeats the exercise using a multivariate regression, where the primary independent variable is an indicator for a change in corporate culture. Such a change is defined as the simultaneous increase in results-orientation and decrease in collaboration, customer-orientation, and integrity. It reveals a strong correlation between a change in corporate culture and an increase in sales, profitability, and payout in the form of repurchases.

As an additional check of the economic predictions about the governance-value link via corporate culture, [Table XI](#) examines long-term financial results following an increase in shareholder governance. If managers are expropriating the present value of intangible assets like corporate culture to create the short-term results, evidence of long-term deterioration in their value should be evident. [Table XI](#) supports this prediction. Panel A employs the regression discontinuity framework outlined in Equation (9); it shows that in the long-term the value of intangible assets decreases and the probability of goodwill impairment increases. Both are economically meaningful. For example, the unconditional probability of goodwill impairment is only 3%, yet the estimate of a 1.3 standard deviation increase in the probability of goodwill impairment 3 years after an increase in shareholder governance translates into a conditional probability of 11%.

A unique addition to Panel's B and C of [Table XI](#) is the examination of customer satisfaction. When customers are less satisfied, brand equity, which is an important intangible asset, declines in value. Restricting the sample to the firms whose brands are included in the American Customer Satisfaction Index, [Table XI](#) reveals a sharp decrease in customer satisfaction as early as one year after the increase in shareholder governance. Hence, providing large sample evidence reminiscent of the anecdotal evidence from Sears Holding, where insiders claimed the new culture was confusing to the customer and led to dissatisfaction. The estimates for intangible assets and goodwill impairment also show statistically significant decreases after three years.

Across each specification in [Table XI](#), the effects of an increase in shareholder governance on the value of intangible assets are strongest three to four years after the increase in shareholder governance. This evidence suggests that managers are expropriating the value of corporate culture to produce short-term financial results. This timeline is consistent with the finding that the average CEO tenure is less than five years ([Kaplan \(2012\)](#)), and it suggests that the managers payoff from catering to shareholders short-term interests exceeds that from employing a strategy that is in the best long-term interest of shareholders. Ultimately, the empirical evidence supports the previous evidence that increases in shareholder governance lead managers to alter the corporate culture. And



is consistent with the same theory that predicts a positive link between shareholder governance and value, in which investors initially realize financial gains from the more streamlined corporate culture. However, managers concentrating on tangible benchmarks hurt the intangibles, which is not in the best long-term interest of the firm. Again consistent with the same theory a longer-term negative link between shareholder governance and value via corporate culture emerges. The value of the firm’s intangible assets deteriorate.

To test if governance-induced changes in corporate culture have greater economic importance for firms far from the mean of the culture distribution, [Figure 6](#) explores the entire distribution of corporate culture using the instrumental variable quantile regression framework outlined in Equation (12). The instrumental variable quantile regression results suggest that the firms which are already in the upper quartile of the results-orientation distribution prior to the increase in shareholder governance are the most likely to suffer net losses in terms of firm value. When firms are already in the upper quartile, they no longer experience an increase in results-orientation that is statistically significant from 0; however, they do experience the downside. The quantile estimates for collaboration, customer-orientation, and integrity suggest that the whole distribution for these attributes shifts down. This tells us that it is not just the firms in the low or high end of the other distributions that are driving the deterioration in the value of the firm’s intangible assets.

#### *D. Robustness Checks and Discussion*

To ensure that the estimates of the relationship between shareholder governance and firm value via corporate culture are reasonable, the sensitivity of the estimates and the validity of the assumptions underlying identification are checked. For the fuzzy regression discontinuity design, there are two threats to identification. The first is if the identifying assumption that the vote share near the passing threshold is continuous does not hold. The second is if there is another variable that changes discontinuously at the threshold and is spuriously driving the result.

[Figure C1](#) in Appendix C plots the density of the vote share around the passing threshold. This plot suggests that there is no discontinuity in the distribution of the forcing variable at the threshold. This indicates that firms cannot manipulate nor have precise control over the forcing variable around the threshold. Intuitively, this result holds because shareholder votes are fair elections, where discretion by the firm in measuring or manipulating the vote tally is unlikely.

Although the visual evidence from [Figure C1](#) in Appendix C suggests that the identifying assumption holds and that firms are unable to manipulate the vote tally, it is important to rule out potential alternatives. For example, a proxy voting irregularity known as over-voting, whereby securities lending practices lead to accidental, duplicate proxy votes, implies that the forcing variable may be manipulated if the firm chooses which votes to count. Alternatively, some have suggested that those running the proxy voting process are paid by management and therefore, are incentivized to leave the voting window open longer or close it quickly when a management supported proposal

is close to the threshold.

To address these additional concerns about vote manipulation, [Table CV](#) in Appendix C reports results from performing McCrary’s test ([McCrary \(2008\)](#)) over vote subsamples likely to be affected, which include (1) only votes that require a majority of shares outstanding as opposed to shares voted and (2) only votes proposed by management as opposed to shareholders. In each case, there is no evidence to suggest that there is any violation of the assumptions necessary for identification of the results presented above. The intuition for McCrary’s test is the idea that if there are surprisingly many proposals just barely qualifying for a desirable treatment and surprisingly few failing to qualify, then that is evidence to reject the null of no manipulation. McCrary’s test is implemented by partitioning the vote share into optimal bins and performing local linear regressions on the frequencies in those bins. Insignificant results from McCrary’s tests provide indirect evidence that the regression discontinuity strategy is valid.

To check the second threat to identification, placebo tests are used. [Figure C2](#) in Appendix C plots several alternative covariates near the threshold. Each of the plots, which include profitability, Tobin’s Q, firm size, the firm’s lifecycle stage, investment-to-capital, institutional holdings, and the E-index, reveal that alternative covariates exhibit no jump near the threshold. This visual evidence suggests that the discontinuity from proposal implementation is driving the results rather than an alternative discontinuity.

To further validate the visual evidence of no discontinuity in alternative covariates, placebo regression tests are run. These tests use the alternative covariates as the outcome variables and employ the standard fuzzy regression discontinuity framework. [Table CVI](#) in Appendix C presents these results. There is no statistically significant difference in the alternative covariates; this holds across several functional form specifications. Hence, the visual and statistical evidence confirms that the firms close to the threshold are plausible counterfactuals and that the estimated effects are likely to be internally valid.

## V. Conclusion

The last two decades have produced a wealth of information about corporate governance and its importance for firm value. In particular, there has been great interest in what happens to firm value when shareholder governance strengthens. This paper builds on that research by analyzing the details of the transmission mechanisms underlying the governance-value link. Using novel data and a set of rigorous empirical tests, I show corporate culture is an economically important channel through which governance affects firm value. But, in contrast to more tangible channels, firm value declines via the corporate culture. The intuition follows from a simple multitasking model which predicts governance reform creates a tension between aspects of performance rewarded and unrewarded under the new system. In particular, stronger governance affects corporate culture by encouraging managers to increase aspects of the culture heavily rewarded by shareholders such as

results-orientation but reduce their focus on other aspects such as collaboration. Such a model also predicts an increase in easy-to-observe performance metrics in the short term but reductions in long-term, firm value, primarily through harder-to-measure intangibles.

I overcome the challenges of empirically testing for a corporate culture channel by developing a novel data set that quantifies aspects of corporate culture. I collect millions of reviews from career intelligence websites and I transform them via textual analyses into a specialized set of corporate culture measures. Because governance is not randomly assigned, I use a fuzzy regression discontinuity design. The design estimates the effect of exogenous variation in shareholders' legal powers to act for a subsample of firms with close shareholder votes. To address concerns about the external validity of such inferences as well as the definition of governance, I supplement the discontinuity design with an instrumental variable strategy on the full sample of firms. In this complementary research design, I examine the tightening of governance through activist investors engaging management. Across each design, I find consistent patterns. Stronger shareholder governance significantly increases results-orientation but decreases customer-orientation, integrity, and collaboration. Consistent with the positive link between governance and value, stronger governance increases tangible results such as sales and profitability in the short term. But by focusing on tangible benchmarks, managers hurt the intangibles, which is not in the firm's best long-term interests. Governance reduces intangibles such as goodwill and customer satisfaction, which ends up reducing firm value by 1.4%.

The findings suggest shareholders face a tradeoff between enhancing activities that produce easy-to-observe performance metrics and difficult-to-measure intangible assets. On net, the effect of stronger governance is positive for the average firm. But quantile instrumental variable regressions show the effect is negative for many firms because of this corporate culture channel. By highlighting this economic trade-off, I reconcile some of the tension between the shareholder-centric and director-centric view of governance. Although previous empirical evidence decisively favors stronger governance (e.g., [Bebchuk and Cohen \(2005\)](#)), such studies typically focus on easy-to-observe measures of performance. By focusing on the harder-to-observe intangibles, I find evidence consistent with the director-centric view (e.g., [Lipton and Savitt \(2007\)](#)). This implies the oft-heard argument that shareholder activism leads companies to focus on short-term results at the expense of long-term investment is supported when one examines the evidence on investments in corporate culture rather than focusing on easy-to-observe metrics such as capital expenditures and plant openings and closings.

In conclusion, the findings present a challenge for future researchers to suggest a governance design that does not lead to adverse effects on firm value via a corporate culture channel. Additional research that examines if the corporate culture effect is more or less pronounced in economies where governance mechanisms are less developed is welcome. Additional research that focuses on developed economies and identifies channels for governance improvements in the presence of

heterogeneous shareholders is wanted. For example, research assessing the interaction between expected shareholder horizon and managerial decisions would be useful.

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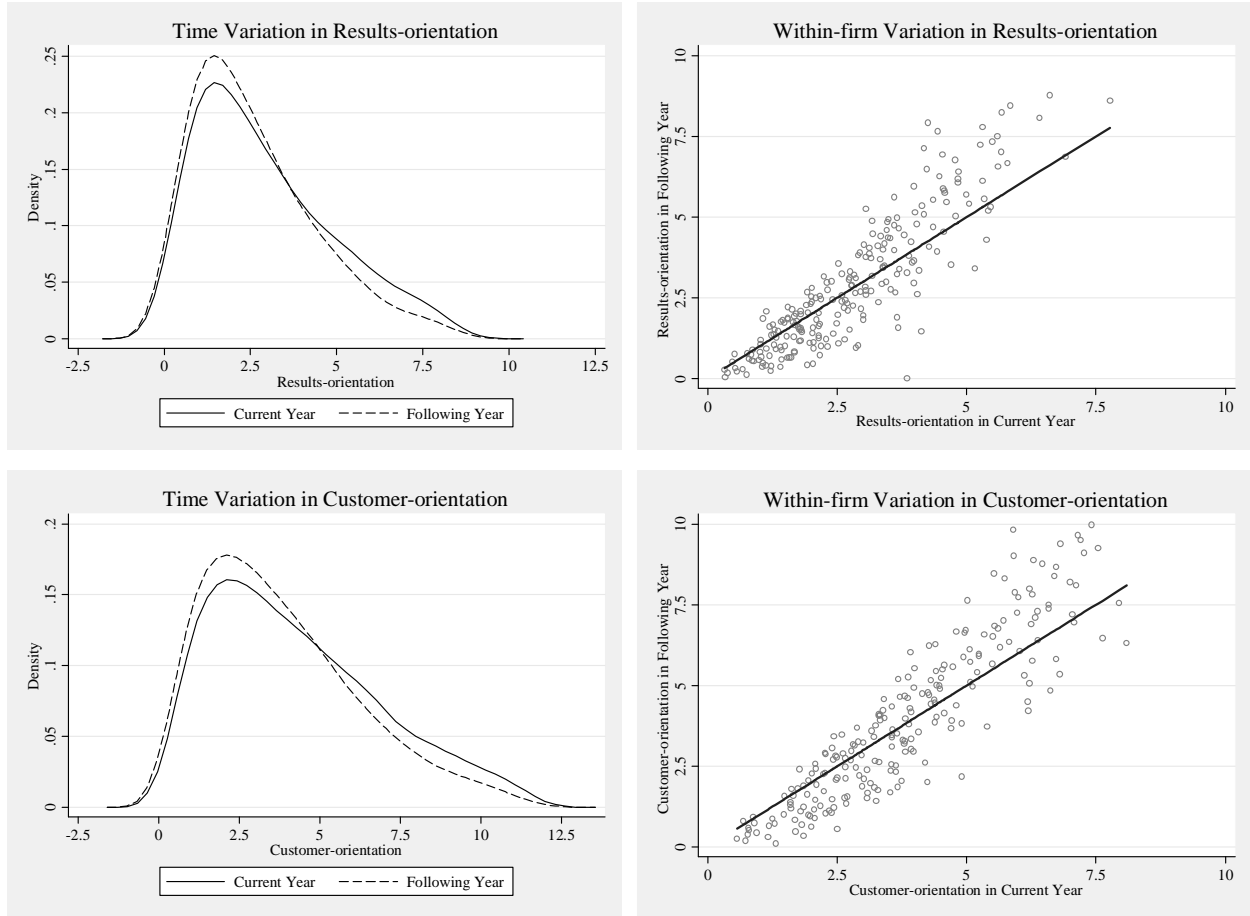
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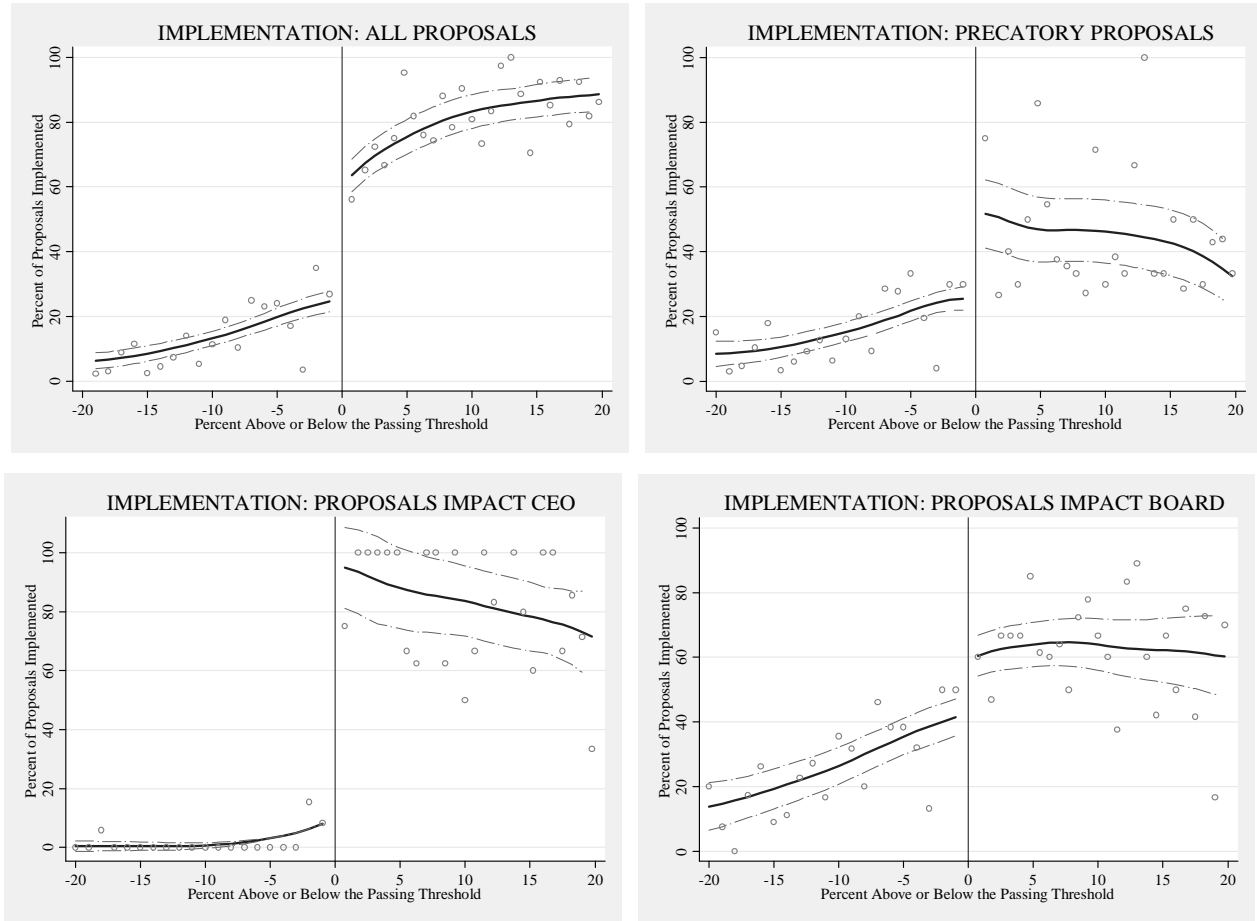


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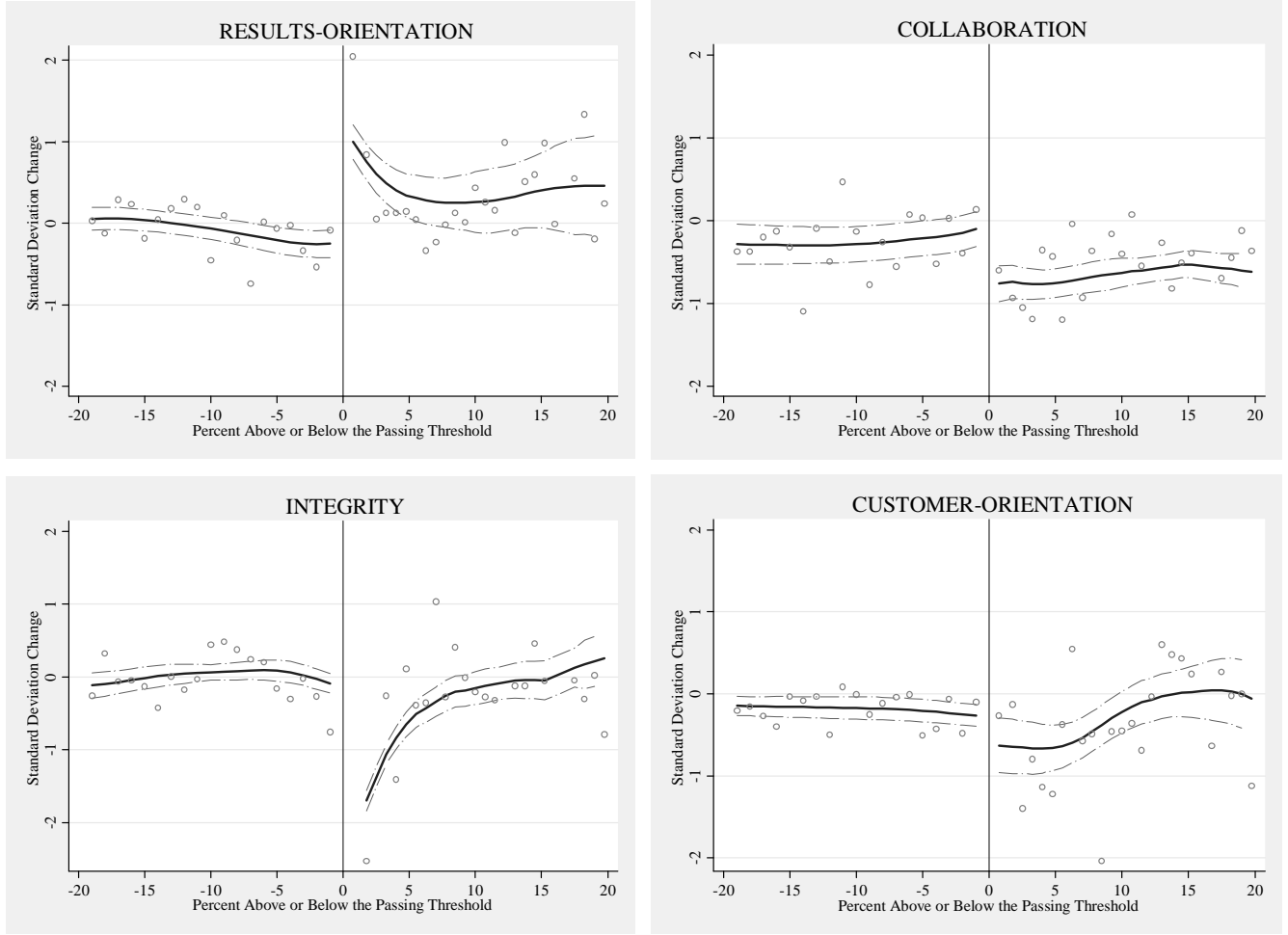
## Figures and Tables



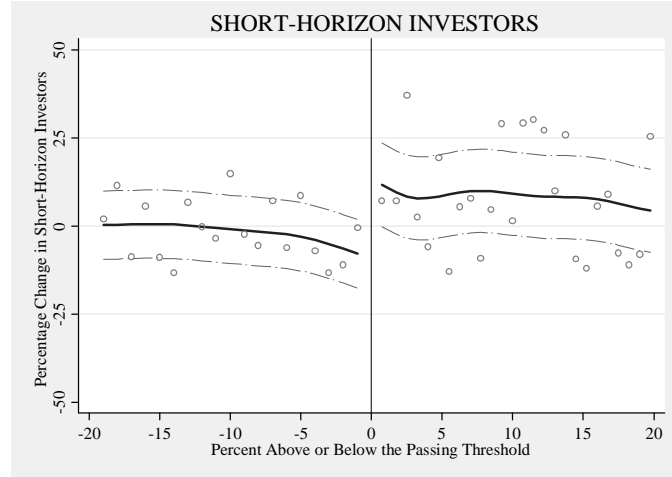
**Figure 1. The distribution of corporate culture:** The plots on top examine the results-orientation attribute of corporate culture and the plots below examine the customer-orientation attribute of corporate culture. The sample includes all firm-year observations between 2002 and 2012 with sufficient survey data (at least 100 current employee reviews per firm-year). The left-hand plots display kernel estimates of density from the sample and compares the current year to the following year. The right-hand plots display within-firm variation in the attributes of corporate culture from the current year to the following year. These figures illustrate that the observed variation in the text-based measures of corporate culture is plausible.



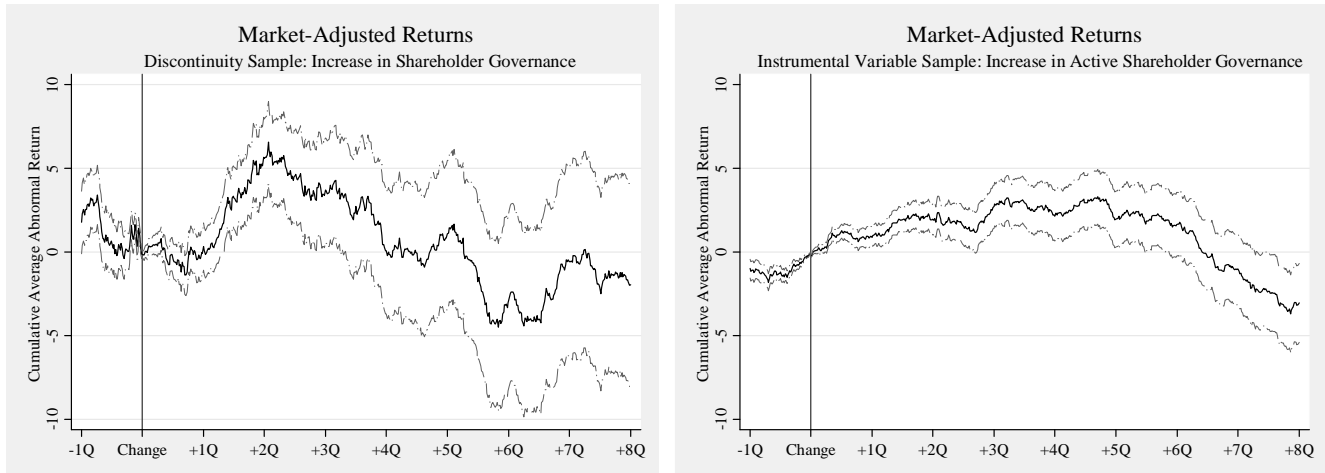
**Figure 2. Average proposal implementation by vote share:** This figure shows the average percent of proposals implemented after a close vote on an annual meeting proposal. If the proposal passes as is indicated by being above the passing threshold, then it is significantly more likely to be implemented by the firm. Each circle is the average standard deviation change in the cultural attribute within the derived bin width and contains multiple underlying observations. Solid lines are fitted values from polynomial regressions on either side of the discontinuity. Standard errors are calculated via bootstrapping and the dashed lines represent the upper and lower 95% confidence intervals. The sample includes all shareholder governance-related proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management and the board of directors to the shareholders. Additional subsamples of proposals are plotted, which include only precatory, only CEO, and only director proposals. In each case, the discontinuity in implementation is evident.



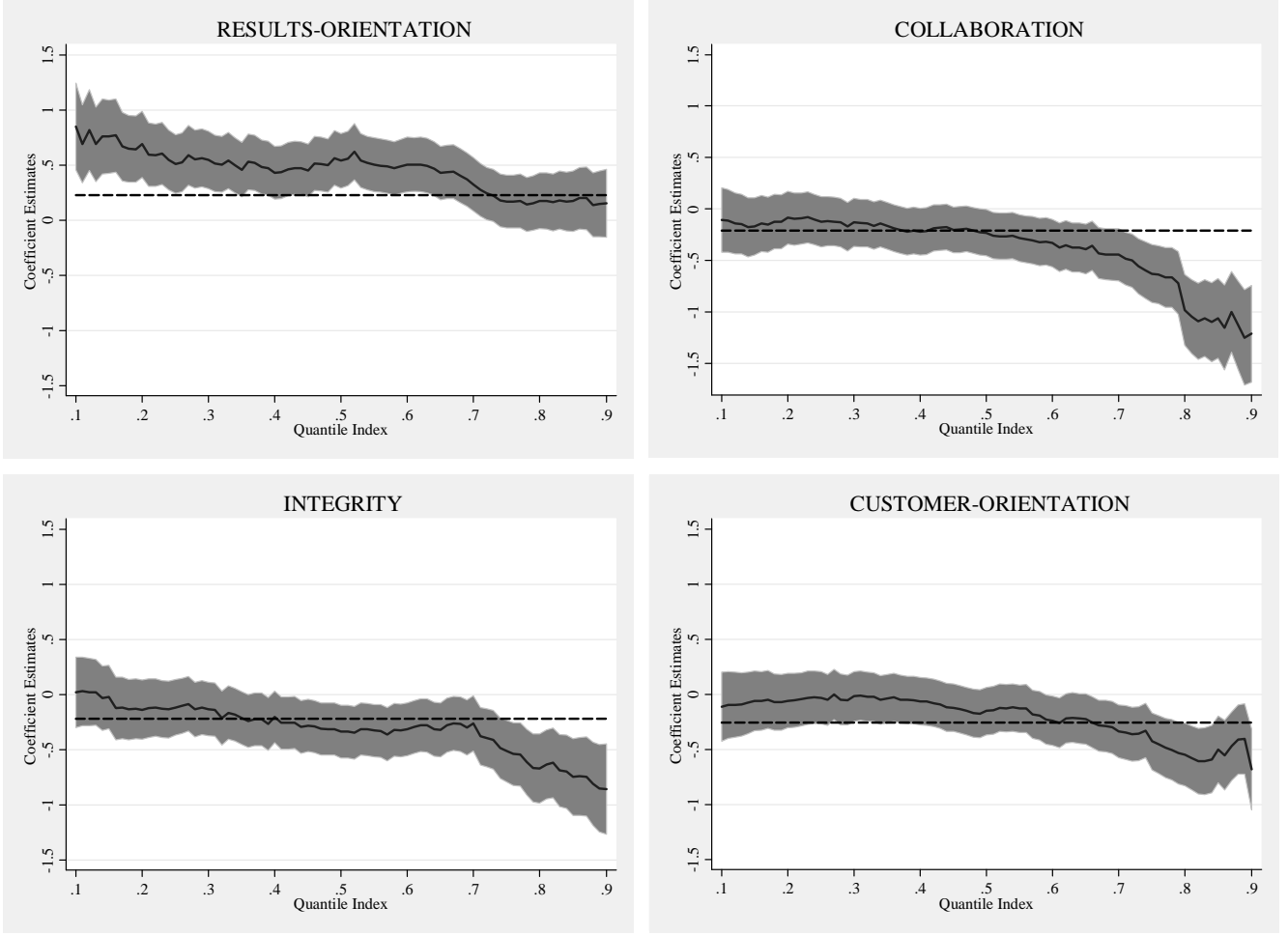
**Figure 3. Average change in corporate culture by vote share:** This figure shows the change in corporate culture in the period after a close vote on an annual meeting proposal. If the proposal passes as is indicated by being above the passing threshold, then it is significantly more likely to be implemented by the firm. Each circle is the average standard deviation change in the cultural attribute within the derived bin width and contains multiple underlying observations. Solid lines are fitted values from polynomial regressions on either side of the discontinuity. Standard errors are calculated via bootstrapping and the dashed lines represent the upper and lower 95% confidence intervals. The sample includes all governance-related proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management and the board of directors to the shareholders. A thorough description of the fundamental attributes and how they are derived is included in [Appendix B](#). In brief, the quantitative measures are derived from semantic text-based analyses of over 400 million words contained in over 1.8 million open-ended responses by employees to questions about their workplace culture. The observation level is a firm-annual meeting year. The remaining attributes of corporate culture – adaptability, detail-orientation, and transparency – are not plotted because there is no discernible discontinuity.



**Figure 4. Average change in short-horizon funds by vote share:** This figure shows the change in the short-horizon investors (defined as holding the equity for less than one year) after a close vote on a proposal that increases shareholder governance. If the proposal passes as is indicated by being above the passing threshold, then it is significantly more likely to be implemented by the firm. Each circle is the average change in short-horizon investors within the derived bin width and contains multiple underlying observations. Solid lines are fitted values from polynomial regressions on either side of the discontinuity. Standard errors are calculated via bootstrapping and the dashed lines represent the upper and lower 95% confidence intervals. The sample includes all governance-related proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management and the board of directors to the shareholders.



**Figure 5. Market-adjusted returns following an increase in shareholder governance and change in corporate culture:** The left-hand chart plots the difference between the cumulative average abnormal returns, adjusted for Fama-French and momentum factors, for the firms in the regression discontinuity sample that experienced an increase in shareholder governance and a change in corporate culture relative to firms that did not experience an increase in shareholder governance. Change is the date when the passing vote occurred. The right-hand chart plots the difference between the cumulative average abnormal returns, adjusted for Fama-French and momentum factors, for the firms in the instrumental variable sample that experienced an increase in active shareholder governance and a change in corporate culture relative to firms that did not experience such an increase. Change is the date when the increase in active governance first occurred. Solid lines represent the relative cumulative average abnormal returns and dashed lines represent the upper and lower 95% confidence intervals from a test of the difference between the increase in shareholder governance and non-increase in shareholder governance firms. The discontinuity sample includes all governance-related proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management and the board of directors to the shareholders and that had votes within 10% of the passing threshold. The instrumental variable sample includes all S&P firms between 2002 and 2011 with data in Factset.



**Figure 6. Instrumental Variable Quantile Regressions:** Coefficient estimates are on the vertical axis, while the quantile index is on the horizontal axis. The shaded region is the 95% confidence interval estimated using robust standard errors. The panels contains estimate of the change in corporate culture following an increase in active shareholder governance obtained through instrumental variables quantile regression. For comparison, the dashed line in each panel plots the coefficient estimated using the instrumental variable approach, which identifies the average treatment effect, and is outlined in Eq.(10):  $Culture_{ijt} = \alpha + \beta ActiveGovernance_{ijt} + \gamma Z_{ijt} + f_i + \delta_{jt} + \epsilon_{ijt}$ . The dependent variable represents the corporate culture for firm  $i$  in industry  $j$  in year  $t$  via its' attributes. A description of corporate culture and its' attributes are included in [Appendix B](#).  $ActiveGovernance_{ijt}$  captures the shares outstanding held by short-horizon equity funds and the vector of firm controls,  $Z_i$ , includes profitability, firm size, Tobin's Q, the firm's lifecycle stage, book leverage, cash flow-to-capital, investment-to-capital, payout yield, institutional ownership, and the E-index.



**Table I**  
**Descriptive Statistics of Corporate Culture**

This table provides descriptive statistics of the fundamental attributes of corporate culture. A thorough description of the fundamental attributes and how they are derived is included in [Appendix B](#). In brief, the quantitative measures are derived from semantic text-based analyses of over 400 million words contained in over 1.8 million open-ended responses by employees to questions about their workplace culture. The constructed measures are akin to correlation coefficients. High, positive values mean the firm displays more of that attribute of corporate culture whereas low or negative values indicate less of that attribute. The sample includes U.S. public firms in the S&P index between 2002 and 2012 with sufficient survey data. For a firm to be included, at least 100 employee survey responses per year are required. A year is defined based upon firm-specific annual meeting dates. The left-hand columns summarize the data while the right-hand columns examine the variation in the data over time. To test the variation over time, I conduct univariate analyses, which compare the pairwise mean of each attribute of corporate culture in the current year with the following year. \*\*\*, \*\* and \* indicate  $p$ -values of 1%, 5%, and 10%, respectively.

	Distribution Summary			Test of Stability Over Time			
	Mean	SD	Median	Mean <sub>t</sub>	Mean <sub>t+1</sub>	Difference	$T$ -statistic
Adaptability	0.49	1.15	0.31	0.49	0.46	(0.04)	(1.49)
Collaboration	1.12	1.13	0.83	1.12	1.12	(0.00)	(0.15)
Customer-Orientation	4.43	3.12	3.78	4.43	4.41	(0.02)	(0.33)
Detail-Orientation	2.37	1.53	2.07	2.37	2.37	0.00	(0.16)
Integrity	1.53	1.76	1.09	1.53	1.55	0.01	(0.42)
Results-Orientation	3.11	2.68	2.52	3.08	3.02	(0.06)	(1.34)
Transparency	0.75	1.23	0.47	0.75	0.79	0.04	(1.28)
Reviews per Firm-Year	296	381	174	320.2	340.6	20.5	(3.70)***
Words per Review	263	172	211	261.9	266.1	4.3	(1.09)
Firm-Year Observations [2002-2012]	4,673			3,578			

**Table II Descriptive Statistics of Corporate Culture by Industry**

This table provides descriptive statistics of corporate culture and its' fundamental attributes by industry. The industries in Panel A are defined using the S&P industrial classification whereas Panel B uses the more refined three-digit standard industrial classification (SIC). A thorough description of the fundamental attributes and how they are derived is included in [Appendix B](#). In brief, the quantitative measures are derived from semantic text-based analyses of over 400 million words contained in over 1.8 million open-ended responses by employees to questions about their workplace culture. The constructed measures are akin to correlation coefficients. High, positive values mean the firm displays more of that attribute of corporate culture whereas low or negative values indicate less of that attribute. The sample includes U.S. public firms in the S&P index between 2002 and 2012 with sufficient employee survey data to construct the measures of corporate culture. For a firm to be included, at least 100 employee survey responses per year are required. A year is defined based upon firm-specific annual meeting dates.

Panel A. By Industry	Obs.	Adaptability	Collaboration	Customer-Orientation	Detail-Orientation	Integrity	Results-Orientation	Transparency
Consumer Discretionary	956	0.61	1.21	4.67	2.07	1.45	3.13	0.65
Consumer Staples	338	0.32	1.05	4.39	2.05	1.52	3.02	0.62
Energy	114	0.28	1.08	4.06	2.69	1.95	3.38	0.69
Financials	712	0.27	1.09	4.03	2.27	1.40	3.05	0.72
Healthcare	536	0.50	1.29	4.87	2.68	1.68	3.12	0.74
Industrials	640	0.44	1.08	4.41	2.39	1.51	3.27	0.83
Information Technology: Equipment	535	0.76	1.15	4.37	2.64	1.44	2.82	0.73
Information Technology: Services	480	0.52	0.97	4.32	2.36	1.33	2.88	0.71
Materials	186	0.55	1.08	4.89	2.73	2.20	3.84	1.00
Telecom	58	0.28	0.47	2.02	1.41	0.55	1.51	0.28
Utilities	118	0.26	1.09	4.06	2.60	1.76	3.43	0.96
Total	4,673	0.49	1.12	4.41	2.36	1.51	3.09	0.72

Panel B. By Total Variation	Adaptability	Collaboration	Customer-Orientation	Detail-Orientation	Integrity	Results-Orientation	Transparency
Within Firms	30%	57%	60%	52%	52%	55%	56%
Within Industries	46%	29%	31%	32%	34%	31%	32%
Between Industries	23%	14%	9%	16%	14%	14%	12%

**Table III**  
**Correlation between Corporate Culture and Popular External Assessments of  
the Workplace Environment**

This table provides correlation statistics between the constructed measures of corporate culture and two popular assessments of the workplace environment, Fortune's 100 Best Companies to Work For list and the KLD review of corporate social responsibility. A thorough description of how the corporate culture measures are derived is included in Appendix B. The sample includes U.S. public firms in the S&P index between 2002 and 2012 with sufficient employee survey data to construct the measures of corporate culture.

Panel A. Correlation with Fortune's 100 Best Places to Work List	Correlation
Corporate Culture & Best Places to Work Indicator	0.33
Panel B. Correlation with KLD Corporate Social Responsibility Data	
Corporate Culture & KLD Employee Relations Index	0.43
Corporate Culture Attribute & Detailed Questions Underlying KLD Index Construction	
Adaptability & KLD "Innovative Product Strength"	0.15
Customer-orientation & KLD "Quality Concerns"	-0.12
Integrity & KLD "Business Ethics Concerns"	-0.09

**Table IV**  
**Descriptive Statistics of Shareholder Governance Proposals**

This table summarizes the proposals, which are voted upon at the annual meeting. Routine matters such as director election and proposals related to acquisitions, social, or labor issues are excluded. Instead, this paper focuses on shareholder governance proposals, because these proposals are the primary way for shareholders to exert their power over management. The sample includes all S&P firms between 2005 and 2011. The margin of victory is defined relative to firm-specific thresholds. For example, some firms specify in their charter that the passing threshold is 60% rather than 50%. Alternatively, other firms define passing based on votes cast rather than the number of shares outstanding. Implementation of passing proposals is often non-binding, but the raw statistics suggest a substantial discontinuity in implementation at the passing threshold. [Appendix A](#) includes a list of proposal classifications.

Time Period = 2005-2011	Distance from Passing Threshold			
	Any	20%	10%	5%
Proposals Implemented	70%	46%	45%	45%
Proposals Implemented if Pass	92%	79%	75%	70%
Proposals Implemented if Fail	8%	12%	17%	20%
Mean Margin of Victory	18%	0%	0%	0%
Proposals Strengthening Governance over Management	20%	34%	34%	31%
Proposals Strengthening Governance over Directors	23%	41%	49%	54%
Proposals Brought by Shareholders	33%	61%	64%	67%
Shareholder Rights Related Proposals	21%	37%	43%	48%
Board Related Proposals	11%	21%	23%	24%
Compensation Related Proposals	11%	19%	19%	16%
Miscellaneous Governance Related Proposals	3%	3%	2%	1%
Non-governance Matters	54%	20%	13%	11%
Observations	6,590	1,929	937	393

**Table V**  
**A Comparison of Descriptive Statistics Across Research Designs**

This table summarizes the three main samples used in the empirical analyses. The full sample includes U.S. public firms in the S&P index between 2002 and 2012 with sufficient employee survey data to construct the measures of corporate culture. The discontinuity sample includes those firms with votes within 10% of the passing threshold. The instrumental variable sample includes firm's with information available on active shareholder governance from FactSet Lionshares. The matched sample includes those firms targeted in an activist campaign. The statistics are calculated using observations for firms traded on a major exchange (NYSE, AMEX, Nasdaq) with non-missing data available in the CRSP and Compustat databases as well as other relevant databases such as Thomson Reuters and FactSet. [Appendix A](#) provides precise definitions for all covariates. The table presents means and standard deviations (SD) for all covariates.

	Universe of Firms [2002-2012]		Discontinuity Sample		Instrumental Variable Sample		Matching Methods Sample		Matching Methods Counterfactuals	
Firm Covariates	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Profitability	13.8%	9.6%	14.4%	7.2%	16.0%	8.4%	15.6%	7.3%	15.4%	6.8%
Market-to-Book	1.7	1.4	1.2	0.7	1.8	1.3	1.4	0.9	1.4	0.9
Lifecycle Stage	0.2	1.2	0.3	0.5	0.3	0.4	0.2	0.5	0.2	0.5
Firm Age	27.2	16.6	39.9	18.0	29.0	17.5	32.0	17.9	31.3	18.2
Firm Size	9.2	1.6	10.5	1.3	9.0	1.4	9.3	1.7	9.4	1.6
Firm Intangibles	6.4	2.6	7.9	2.8	6.4	2.6	6.5	2.6	6.6	2.9
Book Leverage	22.6%	19.3%	23.9%	16.1%	21.1%	17.0%	23.6%	15.6%	23.7%	15.8%
Tangibility	22.3%	20.5%	26.7%	21.0%	25.8%	21.3%	30.4%	22.3%	27.5%	20.9%
Investment-to-Capital	24.0%	22.7%	17.8%	12.2%	24.1%	18.2%	22.9%	16.6%	21.8%	15.6%
Cash flow-to-Capital	100.2%	220.8%	74.4%	94.3%	98.2%	141.9%	89.6%	121.3%	90.2%	119.6%
Sales Growth	10.2%	33.0%	2.9%	17.4%	10.1%	19.6%	6.5%	24.1%	7.6%	17.6%
Dividend Yield	1.3%	1.6%	2.6%	2.0%	1.3%	1.5%	1.4%	1.6%	1.4%	1.7%
Repurchases Yield	2.7%	4.1%	2.6%	3.4%	2.8%	4.0%	4.6%	5.8%	4.1%	5.0%
Total Payout Yield	4.4%	14.3%	5.2%	3.5%	4.2%	4.1%	6.2%	6.1%	5.6%	5.4%
Goodwill Impairment Indicator	10.5%	30.6%	13.7%	34.4%	9.5%	29.3%	17.3%	38.0%	8.3%	27.6%
Acquisitions-to-Assets	2.2%	5.6%	1.4%	3.5%	2.3%	5.4%	1.5%	3.9%	1.6%	3.2%
Entrenchment-Index	2.0	1.3	2.4	1.1	1.9	1.3	2.0	1.3	1.9	1.2
Institutional Ownership	76.3%	17.0%	71.6%	11.9%	76.7%	14.7%	77.7%	16.2%	76.4%	15.6%
Short-Horizon Fund Ownership	10.4%	7.0%	7.5%	4.1%	10.6%	6.4%	11.3%	7.9%	10.7%	6.3%
Observations	4,673		183		2,365		196		196	

**Table VI**  
**Change in Corporate Culture Near the Shareholder Governance Discontinuity**

This table shows estimates of the average change in corporate culture following an increase in shareholder governance. The point estimates are in standard deviations to facilitate interpretation. Test-statistics calculated using robust standard errors, clustered at the firm level, are in parentheses. The exact specification is as in Eq. (9):  $\Delta Culture_i = \alpha + \beta Implement_i + f(vote_i - pass) + \gamma Z_i + \epsilon_i$ , where an indicator variable for the discontinuity,  $T_i = I[vote_i \geq pass]$ , serves as an instrument for  $Implement_i$ . The vector of firm controls,  $Z_i$ , includes firm size, profitability, Tobin's Q, and the firm's lifecycle status. Each panel displays estimates from linear, quadratic, cubic, and quartic polynomials. To evaluate which functional form is best, the information criterion gain from adding the  $n^{th}$  term is displayed in braces and the test-statistic on the additional  $n^{th}$  term is displayed in brackets. Since the fit of a model can be improved by increasing model complexity, additional terms may be beneficial; however, additional terms can also lead to overfitting when sampling error leads to observations that differ from the true data generating process. This tension regarding the optimal model fit is addressed by selecting models with the smallest information criterion and only ones where the addition of the  $n^{th}$  term is statistically significant. The sample includes all pro-shareholder proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management to the shareholders. In addition, for a firm to be included at least 100 current employee survey responses per year are required; a year is defined based upon firm-specific annual meeting dates. A thorough description of the measures of corporate culture and how they are derived is included in [Appendix B](#). In brief, the quantitative measures of corporate culture are derived from semantic text-based analyses of over 400 million words contained in over 1.8 million open-ended responses by employees to questions about their workplace culture. Observations within 10% of the passing threshold on each side are included; the 10% cut-off minimizes the sum of squared errors between various polynomial estimates. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Panel A. Within 10% of Threshold (Optimal Bandwidth)				
Dependent Variable = RESULTS-ORIENTATION	Linear	Quadratic	Cubic	Quartic
Increase in Shareholder Governance	0.79 (3.26)***	0.55 (2.73)***	1.37 (2.89)***	1.64 (2.94)***
T-stat from Addition of n <sup>th</sup> Term in Vote Share		[0.62]	[2.34]	[1.28]
Information Criterion Change		{10.26}	{-1.76}	{0.56}
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted $R^2$	9%	7%	10%	13%
Observations	183	183	183	183
Panel B. Within 10% of Threshold (Optimal Bandwidth)				
Dependent Variable = INTEGRITY	Linear	Quadratic	Cubic	Quartic
Increase in Shareholder Governance	-0.95 (2.64)***	-0.58 (1.81)**	-2.22 (3.89)***	-2.14 (4.30)***
T-stat from Addition of n <sup>th</sup> Term in Vote Share		[1.08]	[4.03]	[0.80]
Information Criterion Change		{7.42}	{-6.35}	{4.19}
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted $R^2$	9%	8%	13%	9%
Observations	183	183	183	183
Panel C. Within 10% of Threshold (Optimal Bandwidth)				
Dependent Variable = COLLABORATION	Linear	Quadratic	Cubic	Quartic
Increase in Shareholder Governance	-1.01 (2.19)**	-0.69 (1.74)*	-0.91 (1.25)	-2.56 (2.77)***
T-stat from Addition of n <sup>th</sup> Term in Vote Share		[2.04]	[0.50]	[3.36]
Information Criterion Change		{3.24}	{5.64}	{-13.30}
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted $R^2$	6%	7%	8%	9%
Observations	183	183	183	183
Panel D. Within 10% of Threshold (Optimal Bandwidth)				
Dependent Variable = CUSTOMER-ORIENTATION	Linear	Quadratic	Cubic	Quartic
Increase in Shareholder Governance	-1.04 (2.41)**	-1.03 (2.70)***	-0.72 (1.07)	-0.90 (1.42)
T-stat from Addition of n <sup>th</sup> Term in Vote Share		[0.12]	[0.35]	[1.26]
Information Criterion Change		{3.86}	{6.33}	{4.20}
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted $R^2$	8%	9%	8%	9%
Observations	183	183	183	183



**Table VII**  
**Change in Short-Horizon Investors Near the Shareholder Governance**  
**Discontinuity**

This table shows estimates of the average change in short-horizon investors following an increase in shareholder governance. The point estimates are in standard deviations to facilitate interpretation.  $T$ -statistics calculated using robust standard errors, clustered at the firm level, are in parentheses. The exact specification is as in as in Eq. (9):  $\Delta ShortHorizon_i = \alpha + \beta Implement_i + f(vote_i - pass) + \gamma Z_i + \epsilon_i$ , where an indicator variable for the discontinuity,  $T_i = I[vote_i \geq pass]$ , serves as an instrument for  $Implement_i$ . The vector of firm controls,  $Z_i$  includes firm size, profitability, Tobin's Q, and the firm's lifecycle status. Panel A displays estimates from linear, quadratic, cubic, and quartic polynomials. To evaluate which functional form is best, the information criterion gain from adding the  $n^{th}$  term is displayed in braces and the test-statistic on the additional  $n^{th}$  term is displayed in brackets. Since the fit of a model can be improved by increasing model complexity, additional terms may be beneficial; however, additional terms can also lead to overfitting when sampling error leads to observations that differ from the true data generating process. This tension regarding the optimal model fit is addressed by selecting models with the smallest information criterion and only ones where the addition of the  $n^{th}$  term is statistically significant. The sample includes all pro-shareholder proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management to the shareholders. Observations within 10% of the passing threshold on each side are included; the 1% cut-off minimizes the sum of squared errors between various polynomial estimates. Panel B shows how the point estimates vary when observations within half and twice the optimal cut-off are included. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Panel A. Within 10% of Threshold (Optimal Bandwidth)				
Dependent Variable = SHORT-HORIZON INVESTORS	Linear	Quadratic	Cubic	Quartic
Increase in Shareholder Governance	1.07 (2.23)**	0.92 (1.77)*	0.48 (0.73)	1.39 (1.95)*
T-stat from Addition of $n^{th}$ Term in Vote Share		[0.78]	[0.42]	[1.34]
Information Criterion Change		{5.36}	{7.16}	{1.83}
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted $R^2$	4%	4%	3%	4%
Observations	441	441	441	441
Panel B. Alternative Thresholds				
Dependent Variable = SHORT-HORIZON INVESTORS	Within 5% of		Within 20% of	
	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	2.18 (1.65)*	2.23 (1.86)*	0.33 (1.01)	0.37 (1.12)
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted $R^2$	4%	4%	3%	3%
Observations	200	200	816	816

Table VIII

## Change in Corporate Culture and Active Shareholder Governance

This table shows estimates of the average change in corporate culture following an increase in active shareholder governance. Panel A presents instrumental variable regression results, where active shareholder governance is instrumented for using the average portfolio diversification of all institutional investors holding firm  $i$ 's equity. The exact specification is as in Eq. (10):  $Culture_{ijt} = \alpha + \beta ActiveGovernance_{ijt} + \gamma Z_{ijt} + f_i + \delta_{jt} + \epsilon_{ijt}$ . The dependent variable represents the corporate culture for firm  $i$  in industry  $j$  in year  $t$  via its' attributes. A description of corporate culture and its' attributes are included in Appendix B.  $ActiveGovernance_{ijt}$  captures the shares outstanding held by short-horizon equity funds and the vector of firm controls,  $Z_i$ , includes profitability, firm size, Tobin's Q, the firm's lifecycle stage, book leverage, cash flow-to-capital, investment-to-capital, payout yield, institutional ownership, and the E-index. The point estimates are in standard deviations to facilitate interpretation.  $T$ -statistics calculated using robust standard errors, clustered by firm, are in parentheses. The sample includes all S&P firms between 2002 and 2012 with non-missing data available. Panel B illustrate the average difference in corporate culture between firms targeted by activist shareholder campaigns and their matched firms (via a propensity score algorithm based on the firm-specific covariates, year, and industry). \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

	Dependent Variable						
	Results-Orientation	Integrity	Collaboration	Customer-Orientation	Adaptability	Detail-Orientation	Transparency
Panel A. Shares Held by Active Shareholders							
Active Shareholder Governance [IV]	0.228 (2.02)**	-0.219 (1.71)*	-0.211 (1.67)*	-0.253 (2.08)**	0.013 (0.09)	-0.130 (1.06)	-0.164 (1.21)
First-stage F-stat	708.51	708.51	708.51	708.51	708.51	708.51	708.51
T-stat on Instrument	(9.93)***	(9.93)***	(9.93)***	(9.93)***	(9.93)***	(9.93)***	(9.93)***
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-by-time Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted $R^2$	24%	12%	11%	25%	7%	21%	8%
Observations	2,365	2,365	2,365	2,365	2,365	2,365	2,365
Panel B. Activist Shareholder Campaigns							
Active Shareholder Governance [OLS]	0.156 (3.32)***	-0.135 (2.07)**	-0.166 (2.50)**	-0.169 (2.82)***	0.010 (0.01)	-0.023 (0.38)	-0.071 (1.19)
Active Shareholder Governance [Matching]	0.290 (2.86)***	-0.094 (0.96)	-0.179 (1.87)*	-0.198 (1.58)	0.091 (0.93)	-0.097 (0.92)	-0.162 (1.46)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry & Time Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Matched Activist Campaigns	196	196	196	196	196	196	196

**Table IX**  
**Shareholder Governance-Value Link Via Corporate Culture**

This table shows estimates of the average change in abnormal equity returns following an increase in shareholder governance; Panel A examines abnormal equity returns on the day of the annual meeting vote whereas Panel B examines abnormal equity returns over long event periods. Abnormal equity returns are calculated using Fama French and momentum factors. *T*-statistics calculated using robust standard errors clustered by firm are in parentheses. Firm controls include firm size and Tobin's *Q*. The discontinuity sample includes all pro-shareholder proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management to the shareholders. Panel A exclude firms without valid corporate culture measures; a year is defined based upon firm-specific annual meeting dates. A thorough description of the corporate culture measures is included in [Appendix B](#). Observations within 10% of the passing threshold on each side are analyzed. A change in corporate culture is defined as the simultaneous increase in results-orientation and decrease in collaboration, customer-orientation, and integrity. The sample size in Panel B is restricted to observations with data available four years after the change in shareholder governance that have adequate investor data in Factset. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Panel A. Short-term Equity Returns	Two Instrumental Variable Discontinuity Framework			
	(1)	(2)	(3)	(4)
Dependent Variable = MARKET-ADJUSTED RETURNS	[Event Day]	[Event Day]	[Event Day]	[Event Day]
Increase in Shareholder Governance	1.05%	1.57%	1.33%	1.85%
	(2.42)**	(1.78)*	(2.71)***	(1.36)
Change in Corporate Culture		-1.36%		-1.33%
		(1.89)*		(1.68)*
Shea's Partial $R^2$ for Increase in Shareholder Governance	49%	32%	34%	25%
Shea's Partial $R^2$ for Change in Corporate Culture	N.A.	20%	N.A.	25%
Proposal Variation	Support	Support	CEO	CEO
Distance from Threshold	10%	10%	10%	10%
Model	Linear	Linear	Linear	Linear
Firm Controls	Yes	Yes	Yes	Yes
Industry-by-Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	183	183	183	183
<hr/>				
Panel B. Long-term Equity Returns	(1)	(2)	(3)	
Dependent Variable = MARKET-ADJUSTED RETURNS	[+ 2 Quarters]	[+ 1 Year]	[+ 2 Years]	
Increase in Shareholder Governance [Discontinuity Sample]	6.95%	5.14%	-7.29%	
Observations = 133, 10% Distance from Threshold, Linear Model	(1.77)*	(0.69)	(0.99)	
Increase in Active Shareholder Governance [IV Sample]	1.27%	0.98%	-3.96%	
Observations = 2365	(1.52)	(0.70)	(1.71)*	
Change in Corporate Culture [IV Sample]	0.42%	-2.11%	-7.76%	
Observations = 2365	(0.40)	(1.22)	(2.71)**	
Firm Controls	Yes	Yes	Yes	
Industry-by-Time Fixed Effects	Yes	Yes	Yes	

**Table X**  
**Change in Corporate Culture and Short-term Firm Performance**

This table presents three sets of results illustrating the relationship between shareholder governance and short-term performance via corporate culture. Panel A presents regression discontinuity estimates of the average change in short-term performance following an increase in shareholder governance via a corporate culture channel. Panel B presents instrumental variable regression results, which illustrate the association between within-firm changes in active shareholder governance and short-term firm performance. Panel C presents multivariate regression results where the dependent variable is long-term firm performance measures and the independent variable is an indicator for a change in corporate culture, which is defined as the simultaneous increase in results-orientation and decrease in collaboration, customer-orientation, and integrity. Firm controls include profitability, firm size, Tobin's Q, the firm's lifecycle stage, book leverage, cash flow-to-capital, investment-to-capital, repurchases yield, dividend yield, and industry competitiveness. When the control variable is the dependent variable of interest, it is excluded. The point estimates are in standard deviations to facilitate interpretation. The sample includes all S&P firms between 2002 and 2011 with non-missing data available. Short-term is defined as the average over the four quarters following the governance change. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

	Dependent Variable				
	Sales Growth	ROA	ROE	Repurchases	Dividends
<b>Panel A. Discontinuity Sample</b>					
Increase in Shareholder Governance	0.754 (2.60)***	0.602 (1.69)*	0.599 (1.76)*	-0.201 (0.49)	0.945 (1.76)*
Distance from Threshold	10%	10%	10%	10%	10%
Model	Linear	Linear	Linear	Linear	Cubic
Adjusted $R^2$	10%	13%	8%	19%	39%
Firm Controls	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Observations	374				
<hr/>					
	Dependent Variable				
	Sales Growth	ROA	ROE	Repurchases	Dividends
<b>Panel B. Instrumental Variable Sample</b>					
Active Shareholder Governance	0.236 (1.58)	0.260 (2.59)***	0.043 (0.36)	0.57 (3.68)***	0.339 (3.70)***
First-stage F-stat	39.25	39.44	39.25	39.66	39.17
T-stat on Instrument	(6.83)***	(6.85)***	(6.83)***	(6.77)***	(6.80)***
Adjusted $R^2$	12%	12%	3%	18%	11%
Firm Controls	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry-by-Time Fixed Effect	Yes	Yes	Yes	Yes	Yes
Observations	16,541				
<hr/>					
	Dependent Variable				
	Sales Growth	ROA	ROE	Repurchases	Dividends
<b>Panel C. Multivariate Regression</b>					
Change in Corporate Culture	0.233 (6.09)***	0.054 (2.83)***	0.024 (0.81)	0.055 (2.01)**	-0.018 (1.04)
Adjusted $R^2$	16%	20%	3%	12%	12%
Firm Controls	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry-by-Time Fixed Effect	Yes	Yes	Yes	Yes	Yes
Observations	16,541				

**Table XI**  
**Change in Corporate Culture and Long-term Firm Performance**

This table presents three sets of results illustrating the relationship between shareholder governance and long-term firm performance via corporate culture. Panel A presents regression discontinuity estimates of the average change in long-term firm performance following an increase in shareholder governance via the corporate culture channel. Panel B presents instrumental variable regression results, which illustrate the association between within-firm changes in active shareholder governance and long-term firm performance; the endogenous active shareholder governance is instrumented for using the average portfolio diversification of all institutional investors holding firm  $i$ 's equity. Panel C presents multivariate regression results where the dependent variable is long-term firm performance measures and the independent variable is an indicator for a change in corporate culture, which is defined as the simultaneous increase in results-orientation and decrease in collaboration, customer-orientation, and integrity. Firm controls include profitability, firm size, Tobin's Q, and the firm's lifecycle stage. The point estimates are in standard deviations to facilitate interpretation. The sample includes all S&P firms between 2002 and 2011 with non-missing data available in the CRSP, Compustat, FactSet. The alternate sample size reflects the restriction to firms with at least four years of data after an increase in shareholder governance. Customer satisfaction data comes from the American Customer Satisfaction Index, which only collects data for a limited number of brands; there is insufficient overlap in the discontinuity sample. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

	Dependent Variable		
	Intangible Assets	Goodwill Impairment	Customer Satisfaction
<b>Panel A. Discontinuity Sample</b>			
Increase in Shareholder Governance [Event Year + 1]	-0.172 (0.99)	0.946 (1.47)	N.A.
Increase in Shareholder Governance [Event Year + 2]	-0.328 (1.81)*	1.003 (1.56)	
Increase in Shareholder Governance [Event Year + 3]	-0.520 (1.84)*	1.256 (1.86)*	
Increase in Shareholder Governance [Event Year + 4]	-0.586 (2.10)**	1.277 (1.97)**	
Distance from Threshold	10%	10%	
Model	Quadratic	Cubic	
Firm Controls	Yes	Yes	
Year Fixed Effect	Yes	Yes	
Observations [Event Year + 4]	185	185	
<b>Panel B. Instrumental Variable Sample</b>			
Active Shareholder Governance [Event Year + 1]	0.165 (0.91)	0.061 (0.64)	-0.184 (1.69)*
Active Shareholder Governance [Event Year + 2]	-0.064 (0.50)	0.423 (2.10)**	-0.284 (2.82)***
Active Shareholder Governance [Event Year + 3]	-0.197 (1.86)*	0.550 (2.74)***	-0.257 (2.36)**
Active Shareholder Governance [Event Year + 4]	0.004 (0.04)	0.312 (1.35)	-0.006 (0.04)
Satisfies Weak Instrument Tests	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes
Industry-by-Time Fixed Effect	Yes	Yes	Yes
Observations [Event Year + 4]	2,542	2,542	530
<b>Panel C. Multivariate Regression</b>			
Corporate Culture Change [Event Year + 1]	0.219 (1.09)	-0.054 (2.83)***	0.024 (0.81)
Corporate Culture Change [Event Year + 2]	0.104 (0.81)	0.016 (0.95)	-0.022 (0.10)
Corporate Culture Change [Event Year + 3]	-0.031 (2.13)**	0.057 (2.07)**	-0.526 (2.53)**
Corporate Culture Change [Event Year + 4]	-0.274 (2.02)**	0.183 (1.67)*	-0.487 (2.17)**
Firm Controls	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes
Industry-by-Time Fixed Effect	Yes	Yes	Yes
Observations [Event Year + 4]	2,542	2,542	530

## Appendix A. Variable Definitions

Corporate accounting data came from the Compustat-CRSP fundamental quarterly and annual database. Quarterly definitions follow. The annual definitions are analogs.

$$\text{Acquisitions-to-Assets} = ACQ/ATQ$$

$$\text{Assets} = ATQ$$

$$\text{Book Leverage} = (DLCQ + DLTTQ)/(DLCQ + DLTTQ + MEQ)$$

$$\text{Cash flow-to-Capital} = (IBQ + DPQ)/PPENTQ_{t-1}$$

$$\text{Firm Age} = \text{Years since first observed in Compustat.}$$

$$\text{Firm Intangibles} = \log(INTANQ), \text{ in which } INTAN \text{ is in real 2010 dollars.}$$

$$\text{Firm Size} = \log(ATQ), \text{ in which } ATQ \text{ is in real 2010 dollars.}$$

$$\text{Goodwill Impairment Indicator} = I[GDWLIPQ > 0]$$

$$\text{Investment-to-Capital} = ((CAPXY - SPPEY) - (CAPXY_{t-1} - SPPEY_{t-1}))/PPENTQ_{t-1}$$

$$\text{Lifecycle Stage} = RETQ/ATQ$$

$$\text{Market Capitalization} = MEQ$$

$$\text{Market Value of Assets (MVA)} = MEQ + DLCQ + DLTTQ + PSTKQ - TXDITCQ$$

$$\text{Profitability} = OIBDPQ/ATQ$$

$$\text{Return on Equity} = (OIBDPQ - DVCQ)/CEQQ$$

$$\text{Sales Growth Rate} = REVTQ/REVTQ_{t-1}$$

$$\text{Tangibility} = PPENTQ/ATQ$$

$$\text{Tobin's Q} = MVA/ATQ$$

**Dividend Yield, Repurchases Yield, and Payout Yield** are calculated as follows. Dividend payments are determined using CRSP, where only ordinary shares incorporated in the U.S. (*SHRCD* equal to 10 or 11, cash dividends distributed in U.S. dollars (first two digits of *DISTCD* equal to 12 or 13) for firms listed on major exchanges (*EXCHCD* equal to 1, 2, or 3) are included. A regular dividend is the first cash dividend payment reported on the CRSP Master File that is followed by another dividend in less than 13 months. This ensures dividends which are first reported as other frequency (*DISTCD* beginning with 120, 121, 130, 131, 126, 128, 136, or 138) that followed a regular dividend pattern are not excluded. All other frequency dividends are designated special dividends (*DISTCD* beginning with 127, 129, 137, or 139). Gross share repurchase are defined by converting Compustats repurchases fiscal year to date variable, *PRSTKCY*, into quarterly amounts and adjusts to account for changes in preferred stock, *PSTKQ*. If Compustat has data available on both the number of shares repurchased and the average price per share of shares repurchased, this is taken to be the quarterly gross repurchase (*CSHOPQ\*PRCRAQ*). Net repurchases equal gross repurchases less the value of issuances of new stock (*CSHIQ\*PRCC*). If a firm uses the treasury stock method to account for repurchases, net repurchases equal the dollar amount of the increase in common treasury stock (*TSTKQ*). Total payout is defined as the sum of net repurchases, regular dividends, and special dividends.

**Abnormal Returns** are computed using daily returns and the Fama French and momentum factors.

**Activist Campaigns** are determined from multiple sources. First, FactSet searches are used. Second, Capital IQ's Key Developments database, which provides structured summaries of material news and events that may affect the market value of securities is used. Third, a list of known activist funds and key individuals is matched to SEC Schedule 13-D filings. **Table AII** lists these activist investors.

**Customer Satisfaction** comes from the American Customer Satisfaction Index (ACSI), which provides a benchmark of customer satisfaction with the quality of products and services available to household consumers in the United States. Each year, roughly 70,000 customers are surveyed about the products and services they use the most to generate the index. The brands covered are associated with 230 companies in 43 industries. For a complete list of the brand index, please visit: <http://www.theacsi.org/acsi-results/acsi-results>

**Entrenchment-Index (E-index)** is an alternative index to the index developed by [Gompers, Ishii, and Metrick \(2003\)](#). The E-index is based on a subsample of the most relevant governance matters for firm value as shown by [Bebchuk, Cohen, and Ferrel \(2009\)](#).

**Fortune's 100 Best Places to Work List** has been published annually since 1998. Companies must be five years or older to participate and have at least 1000 employees. Both private and public firms participate. Companies pay a fee to participate. The selection criteria for the list is based on employees' responses to a proprietary employee survey developed by the Great Place to Work Institute. For a complete list of all the companies and the respective ranks, please visit: <http://www.greatplacetowork.com/best-companies/100-best-companies-to-work-for>

**Kinder, Lydenberg, Domini (KLD) Ratings** are produced to guide institutional investors concerned with socially responsible investment. They consider community, employee, environmental, governance, product, and social issues. Within each broad category, KLD creates two sets of indicators measuring management best practices (these are referred to as strengths) and the most serious challenges management faces (these are referred to as concerns). The overall strengths and concerns rating is the sum of the indicators across the broad category.

**Shareholder Governance** are the legal rights that define the relationships between a firm's management, its board, and its shareholders. This paper focuses on proposals that when implemented would shift power from management and the board of directors to shareholders. **Table AI** describes the proposal, the classification, and the rationale behind the classification. In all cases, the rationale follows precedent (e.g., [Gompers, Ishii, and Metrick \(2003\)](#); [Bebchuk, Cohen, and Ferrel \(2009\)](#)).

**Active Shareholder Governance, Short-horizon Investors, and Diversification Instrument** are derived from FactSet LionShares data. FactSet calculates both institutional and mutual fund portfolio turnover by dividing the average transactions by the market value of the portfolio



to generate a turnover level. Portfolios are classified into five categories from very high to very low turnover. Very high portfolios have less than six month holding period whereas very low portfolios have holding periods of four years or more. Both very high and high turnover (defined as less than one year) portfolios constitute a short-horizon investor. A change in short-horizon investor defines an overall shift in the shares outstanding held by such investors. Both a shift from long-horizon to short-horizon institutional investors while maintaining a constant percent of the shares outstanding as well as any new short-horizon positions count toward the change in short-term investors. The diversification instrument is defined on an equity-quarter basis as the average number of equities held by the funds which hold that firm's equity in that quarter.

Table AI Proposal Classification

Proposal	Classification
Remove Ownership Limit from Charter	Decrease CEO's power. Allowing for large stakeholders increases CEOs accountability via monitoring.
Increase Compensation Related Disclosure/Prepare Special Report	Decrease CEO's power. Disclosure increases accountability via monitoring.
Set Shareholder-approved Limitations for Golden Hellos	Decrease CEO's power. Golden Hellos are signing bonuses offered to executive recruits.
Adopt a Policy that a Significant Portion of Compensation be Performance-based	Decrease CEO's power. Increases accountability.
Implement a Policy of Confidential Voting	Decrease CEO's power. Increases accountability.
Recoup Incentive Compensation Awarded for Unsustainable Performance	Decrease CEO's power. Increases accountability.
Disclose Transactions between CEOs and Directors.	Decrease CEO's power. Decrease Directors' powers. Increases monitoring.
Separate Chairman and CEO Positions	Decrease CEO's power. Reduces CEOs authority/leadership ability, and increases accountability
Redeem or Require Shareholder Vote on Poison Pill	Decrease CEO's power. Reduces flexibility to manage and negotiate with would-be acquirers.
Decrease Miscellaneous Takeover Defenses	Decrease CEO's power. Reduces flexibility to manage.
Decrease Vote Requirement for Mergers (Eliminate Supermajority)	Decrease CEO's power. Reduces flexibility to manage.
Decrease Vote Requirement to Amend Charter/Bylaws (Eliminate Supermajority)	Decrease CEO's power. Reduces flexibility to manage.
Decrease Vote Requirements for Shareholder Proposals (Eliminate Supermajority)	Decrease CEO's power. Reduces flexibility to manage.
Require an Independent Lead Director	Decrease CEO's power. Reduces flexibility to manage.
Cap/Restrict Executive Compensation	Decrease CEO's power. Restricts compensation.
Setting a New Record Date for Solicitation	Decrease CEO's power. Setting a later date exploits purchases by arbitrageurs friendly to the dissident.
Set Shareholder-approved Limitations for Golden Parachutes/Severance Packages	Decrease CEO's power. These are bonuses for early exit.
Adopt Director Nominee Qualifications	Decrease Directors' powers. Additional qualifications could lead to earlier removal than anticipated.
Increase Director Disclosure About Potential Conflicts of Interest	Decrease Directors' powers. Additional qualifications could lead to earlier removal than anticipated.
Require Independent Directors on Board Committee	Decrease Directors' powers. Additional qualifications could lead to earlier removal than anticipated.
Add Minorities/Women to Board	Decrease Directors' powers. Additional qualifications could lead to earlier removal than anticipated.
Require Two Director Candidates for Each Board Seat	Decrease Directors' powers. Competition could lead to earlier removal than anticipated.

Adopt Term Limits for Directors	Decrease Directors' powers. Could lead to earlier removal than anticipated.
Allow Cumulative Voting	Decrease Directors' powers. Cumulative voting makes it easier to elect dissident directors.
Eliminate Expanded Constituency Provisions	Decrease Directors' powers. Eliminates directors' ability to consider other stakeholders.
Allow Shareholders to Fill Board Vacancies	Decrease Directors' powers. Gives shareholders ability to replace directors.
Change Vote Requirement to Elect Directors to Majority from Plurality	Decrease Directors' powers. Increases accountability.
Require Equity be Retained by Directors for Specified Period	Decrease Directors' powers. Increases accountability.
Remove Indemnification for Directors that Results from Harm to Society	Decrease Directors' powers. Increases personal liability charges.
Filling Board Vacancies Related that Shifts Power from Board to Shareholders	Decrease Directors' powers. Increases shareholder ability to replace directors.
Adopt a Director Resignation Policy	Decrease Directors' powers. Policy requires director who receives more withheld than votes to resign.
Limit Number of Boards a Director Can Sit On Concurrently	Decrease Directors' powers. Reduces compensation, limits overextension of directors and increases
Approve Dissident Expense Reimbursement	Decrease Directors' powers. Reduces costs for activist shareholders, dissidents, etc...
Fix the Number of Directors at Specified Number	Decrease Directors' powers. Reduces flexibility of board. Extra seats that need to be filled are given to
Allow for Shareholder Nominee in Company Proxy	Decrease Directors' powers. Reduces job tenure.
Declassify Board	Decrease Directors' powers. Reduces job tenure.
Decrease Advanced-Notice Requirements	Decrease Directors' powers. Reduces job tenure.
Decrease Difficulty to Remove Directors (Eliminate Supermajority)	Decrease Directors' powers. Reduces job tenure.
Decrease Difficulty to Remove Directors (With/Without Cause)	Decrease Directors' powers. Reduces job tenure.
Elect Dissident's Director Nominee	Decrease Directors' powers. Reduces job tenure.
Mandatory Director Retirement Age Related	Decrease Directors' powers. Reduces job tenure.
Remove Director(s)	Decrease Directors' powers. Reduces job tenure.
Eliminate Dual Class Structure	Decrease Directors' powers. Removes preferential voting treatment and thereby secured seats.
Cap/Restrict Director Compensation	Decrease Directors' powers. Restricts compensation.
Allow for or Decrease Requirement to Call Special Meetings	Decrease Directors' powers. Special meetings allow directors to be replaced prior to annual meeting.

Allow for or Decrease Requirement to Act by Written Consent	Decrease Directors' powers. Written consent allows directors to be replaced prior to annual meeting.
Increase Miscellaneous Takeover Defenses	Increase CEO's power. Allows greater flexibility to manage.
Increases to Proposed Executive Compensation	Increase CEO's power. Increases CEO compensation.
Eliminate Fair Price Provision	Increase CEO's power. Makes would-be acquirers pay more and thereby reduces threat of takeover.
Create Dual Class Structure	Increase Directors' powers. Allows for preferential voting treatment and thereby secured seats.
Allow for Expanded Constituency Provision	Increase Directors' powers. Considers more stakeholders and protects against fiduciary duty lawsuits.
Authorize Blank Check Preferred Stock	Increase Directors' powers. Increase CEO's power. Increases strategic options.
Strengthen Board's Ability to Amend Bylaws Related	Increase Directors' powers. Increase CEO's power. Increases strategic options.
Increase the Size of the Board	Increase Directors' powers. Provides flexibility when dissidents try to gain power within the board.
Increase Advanced-Notice Requirements	Increase Directors' powers. Reduces threat to current directors.
Eliminate or Increase Requirement to Act by Written Consent	Increase Directors' powers. Reduces threat to job tenure.
Eliminate or Increase Requirement to Call Special Meetings	Increase Directors' powers. Reduces threat to job tenure.
Increase Difficulty to Remove Directors (Cause Only)	Increase Directors' powers. Reduces threat to job tenure.
Increase Difficulty to Remove Directors (Supermajority Requirement)	Increase Directors' powers. Reduces threat to job tenure.
Filling Board Vacancies Related that Shifts Power from Shareholders to Board	Increase Directors' powers. Removes shareholder ability to replace directors.
Eliminate Cumulative Voting	Increase Directors' powers. Shareholders cannot rally around their dissident director pick.
Decrease Size of the Board	Increase Directors' powers. Takes away dissidents ability to replace with their own director.

Table AII Activist Campaigns

Fund Name	Key Individual
Arcadia Capital Advisors LLC	Richard S. Rofo
Barington Capital Group, LP	James A. Mitarotonda
Becker Drapkin Management LP	Steven R. Becker, Matthew A. Drapkin
Biglari Capital Corp.	Sardar Biglari
Bulldog Investors	Phillip Goldstein
Carlson Capital LP	Clint D. Carlson
Clinton Group, Inc.	George E. Hall
Corvex Management LP	Keith Meister
Crescendo Advisors LLC	Eric S. Rosenfeld
Discovery Group I LLC	Daniel J. Donoghue, Michael R. Murphy
Elliott Management Corporation	Paul Elliott Singer
Franklin Mutual Advisers, LLC	Peter A. Langerman
GAMCO Asset Management Inc.	Mario J. Gabelli
Greenlight Capital, Inc.	David Einhorn
Harbinger Capital Partners	Philip A. Falcone
Highfields Capital Management LP	Jonathon S. Jacobson
Highland Capital Management, LP	James D. Dondero
Icahn Associates Corp.	Carl C. Icahn
JANA Partners LLC	Barry S. Rosenstein
Jewelcor Management, Inc.	Seymour Holtzman
Karpus Investment Management	George W. Karpus
Lawndale Capital Management LLC	Andrew E. Shapiro
Locksmith Capital Management LLC	Timothy E. Brog
Loeb Capital Management LLC	Gideon J. King
Marcato Capital Management LLC	Richard T. McGuire
Millennium Management LLC	Israel A. Englander
Newcastle Partners L.P.	Mark E. Schwarz
Nierenberg Investment Management Company, Inc.	David Nierenberg
Oliver Press Partners LLC	Augustus K. Oliver, Clifford Press
Pardus Capital Management L.P.	Karim Samii, Joseph R. Thornton
Pershing Square Capital Management LP	William A. Ackman
PL Capital, LLC	Richard J. Lashley, John W. Palmer
Raging Capital Management LLC	William C. Martin
Red Mountain Capital Partners LLC	Willem Mesdag
Relational Investors, LLC	Ralph V. Whitworth
Riley Investment Management LLC	Bryant R. Riley
Roark, Rearden & Hamot LLC	Seth W. Hamot
Sandell Asset Management Corp.	Thomas E. Sandell
Scepter Holdings, Inc.	Geoffrey P. Raynor
Seidman and Associates, LLC	Lawrence B. Seidman
Southeastern Asset Management, Inc.	O. Mason Hawkins
Starboard Value LP	Jeffrey C. Smith, Mark R. Mitchell, Peter A. Feld
Steel Partners, LLC	Warren G. Lichtenstein
Stilwell Value LLC	Joseph D. Stilwell
TCI Fund Management LLP	Christopher A. Hohn
Third Point Management Co. LLC	Daniel S. Loeb
Triam Fund Management, LP	Nelson Peltz, Peter W. May, Edward P. Garden
ValueAct Capital Management LP	Jeffrey W. Ubben
Western Investment LLC	Arthur D. Lipson
Wynnefield Capital Management, LLC	Nelson Obus, Joshua H. Landes

## Appendix B. Deriving Corporate Culture Measures

In this paper, I develop measures of principal components of corporate culture as laid out by O'Reilly, Chatman, and Caldwell (1991) and O'Reilly et al. (2012). The seven principal components of corporate culture are described as follows. They were determined using principal component analysis, which is a mathematical procedure that uses orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables. Thus, each attribute should be thought of as a distinct dimension of culture.

**Adaptability:** Willing to experiment; fast-moving; quick to take advantage of opportunities; taking initiative; risk-taking; innovative;

**Collaboration:** Working in collaboration with others; team-oriented; cooperative; supportive; not aggressive; low levels of conflict;

**Customer-orientation:** Being customer-oriented; listening to the customers; being market driven;

**Detail-orientation:** paying attention to detail; being precise; emphasizing quality; being analytical;

**Integrity:** Having integrity; high ethical standards; being honest;

**Results-orientation:** Being results-oriented; high expectations for performance; achievement oriented; not easy going; not calm;

**Transparency:** putting organization's goals before the unit; individual goals are transparent; sharing information freely.

To quantify these attributes of corporate culture, I draw upon employee reviews collected from career intelligence firms. Below are examples of employee reviews from two different career intelligence firms.

Feb 5, 2013



Senior Management



Culture & Values



Comp & Benefits



Career Opportunities



Work/Life Balance



### "An Impressive Workforce That Continues to Improve"



Director

(Current Employee)

I have been working at PepsiCo full-time for more than 3 years

In a competitive market, PepsiCo is pushing to make change happen through innovation and collaborative working environments. Open dialogue is both supported and encouraged. The level of cultural and ethnic diversity is admirable and continues to be something that PepsiCo can be proud of. Opportunities are honestly limitless for those willing to take charge of their career path and communicate clearly with leadership around how they'd like to progress into any number of channels within this global organization.

There are still some that struggle with the idea of being a "PepsiCo" employee vs. one of the divisions or brands and although this can be expected of any organization it should be remembered that a mental and cultural shift of this magnitude takes time.

submitted July 17, 2008

#### REVIEWER DETAILS

**Dates of Employment:**  
8/2005 to 3/2006

**Status when reviewed**  
Former employee

#### Workplace Culture

Employer: detail-oriented, high expectation, results matter. Corporate culture: I have never talked to an Intel Engineer (my colleagues) who loved his or her job. We will mention the pay is good when outsiders were asking us. They don't like say they hate going to work. Intel turnover rate for new employees is extremely high. The culture emphasizes results more than anything. People are sometimes on call with four or five pagers during the night. They are expected to answer the phone or replied emails though he or she is on vacation. The individual has no role in this culture. There are a lot of nonsense acronyms in the work culture. It makes no sense to have some unnecessary acronym to confuse people such as "CE" (copy exactly), "BI" process (burn in process). Flexible working hours: This is called unlimited working hours especially for production folks. Though it is said flexible going to work and flexible going home. There is no way for production engineers to be late than 1 hour to work. Boss, counterparts, phone call and emails will keep coming to you every minute. This is normal for them to reply working emails at 11pm and get up at early 5am to rush for teleconference at home or office at 5.30am. Dress code: Casual wear is good. Employees can wear what they like. Opportunities for advancement: If your superior is caring and you are working to support core business function, otherwise increament is not as good as you think. Focal (annual review) is a crucial thing. Although you did your job well, there is a quota of "performance graded" in every group in many business functions, especially the oversea branches. For example, a manager has 10 engineers under his supervision. There is 10% (1 engineer) must/ will receive the bad grade of annual review. They call it "IR" (Internal Review). If he or she gets "IR", he or she can forget about salary increment in the year. Company quirks: Intel employee ID (Worldwide ID card, WWID card) can be used to access most plants in Intel branches worldwide. Employees can get discount for food in Intel canteen. "Focal" is a sensitive word in Intel - the annual review.

#### Interview

Rounds of interviews: 2. 2 managers and 1 group leader. What is your long term goal? What is the difference between quality and reliability?

#### Business Outlook

Strength: Good quality of the products. Weakness: Some products are too expensive compared to the competitor. People may like to use competitor products. Employee morale: Due to culture, people are generally result-driven, mind their own business.

To develop the measures of corporate culture, I use two linguistic measures – *relatedness* and *similarity* in distinct ways to generate a single, firm-year measure for each principal component of culture. In textual analysis, there is an important distinction between *similarity* and *relatedness*. Two words are similar if they are cognitive synonyms, which linguists define as a word that can be directly substituted in context without changing the meaning. In contrast, word *relatedness* embodies a large set of potential relationships between words. For example, antonyms have high *relatedness* but no *similarity*. Moving beyond a single word, two texts exhibit *similarity* if the distribution of words in the text is more alike.

First, I use word *relatedness* to develop a master list of every word and phrase that is related

to each of the seven principal components of corporate culture. The pool of potential words and phrases comes from WordNet, so it is not arbitrary. The relatedness measure, which I use to construct the master texts, is the Jiang-Conrath measure (discussed below). It is a standard measure within computational linguistics that is known for accuracy (Jurafsky and Martin (2009)). Second, this paper uses textual similarity to compare the actual words used in the online employee reviews of their workplace environment with words in the master list that describes each attribute. This is a standard method within computational linguistics and generates something akin to a correlation coefficient that describes how much of an attribute of culture a particular firm exhibits. This paper provides the mathematical details of both the relatedness and similarity measures below.

The following steps briefly outline the construction of the measures of corporate culture:

**1. Prepare the master texts** – To construct the master text list for each of the principal components of corporate culture the relatedness measure, which is the Jiang-Conrath distance measure (as discussed below), is calculated for each of the 82,115 noun concepts and 13,767 verb concepts recorded in WordNet across each of the concepts that describe corporate culture – adaptability, collaboration, customer-orientation, detail-orientation, integrity, results-orientation, and transparency. If a word is not contained in the database, which occurs from misspellings, proper nouns such as names, slang terms, etc . . . , it is excluded. For the 18,156 adjective concepts and 3,621 adverb concepts only those directly described by O’Reilly et al. (2012) are included. Highly related concepts are included in the master text describing the particular attribute of culture. These concepts represent words that are in the highest percentile of concepts.

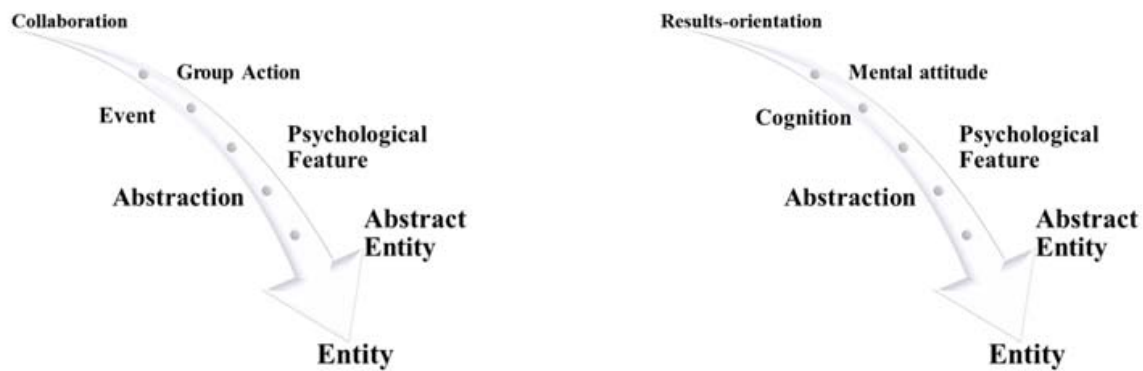
**2. Aggregate the reviews** – All words from all employees in the year between annual meetings based on employee review dates and firm-specific annual meetings dates are appended together. In total, approximately 1.8 million employee surveys are analyzed. The surveys contain approximately 400 million words.

**3. Clean the words and phrases in the reviews** – All punctuation tags are removed. Cornell University’s SMART system provides a list of 571 overly common words such as pronouns, prepositions and conjunctions; these words are removed. Non-alphabetic characters such as numerals, special characters, percentages, and dates are removed. A regular expression module searches for expressions that define one concept and demarcates them. For example, contractions are separated out so if someone describes their workplace by writing there isn’t collaboration, not collaborative is demarcated. Or if someone says joined forces to meet client needs, the concept joined forces, which is a similar and related concept to collaboration is demarcated. A count of the occurrences of each remaining concept in the firm-year-specific text is pushed into a vector.

**4. Calculate the measures** – The similarity measure, which is a normalized dot product of two co-occurrence vectors (as discussed below), is calculated for each of the fundamental attributes of corporate culture for each firm in each year. These are the final measures used in this paper’s analyses.



**Details on Relatedness Measure:** Word relatedness is a linguistic measure that makes strides to disambiguate word sense. It does so using a thesaurus-like algorithm. Specifically, the algorithm measures concept relatedness using information found in a lexical hierarchy of concepts, and quantifies how much concept X is like to concept Y. Figure B1 illustrates high-level lexical hierarchies, where the starting point is a specific attribute of corporate culture. Progressing toward the endpoint of the hierarchy increases the generality. There is no unique endpoint for all words in the English language, but the end point is drawn from a base that contains a limited number of generic terms such as Entity. The intuition for the steps is that each one is a “kind of” the other in the case of nouns or one “way to” the other in the case of verbs. For example, results-orientation is a kind of mental attitude, mental attitude is a kind of cognition, etc. . . Whereas, play along is one “way to” collaborate, collaborate is one “way to” cooperate, cooperate is one “way to” work, etc. . .



**Figure B1. Lexical hierarchies:** This figure illustrates lexical hierarchies, where the starting point is a specific attribute of corporate culture. This network structure provides a powerful tool for advancing computational applications such as text analysis and is used in the construction of this paper’s measures of corporate culture.

The hierarchies in the Figure B1 above are computed using WordNet, which is a lexical database of semantic relations developed by the Cognitive Science Laboratory at Princeton University. This database is external, so the measures constructed for this paper are not discretionary. The design of WordNet is inspired by current psycholinguistic theories of human lexical memory, and many researchers have contributed to its construction in the past 25 years. Nouns, verbs, adjectives and adverbs are grouped into sets of cognitive synonyms, called synsets, each expressing a distinct concept. One concept can be expressed with a single word or as a phrase. Each of WordNet’s 117,659 synsets are linked to other synsets by means of a small number of conceptual relations such as lexical hierarchies.

The path between two senses in the hierarchy, or more precisely the number of edges between two nodes, is the length or the semantic distance. Shorter lengths indicate lower semantic distance. In order to overcome the limitation that each link in the network represents a uniform distance, in practice, modern algorithms rely on the structure of the lexical hierarchy but also add probabilistic information about the likelihood of ending up at that point on the hierarchy. The probabilities are derived from a corpus of texts.

The specific measure of relatedness used is the Jiang-Conrath distance (Jiang and Conrath (1997)), and the intuition for it is that measures between two concepts A and B need to do more than measure the amount of information in common but also the differences between them. The distance they create takes into consideration both. Mathematically, the relatedness is measured as follows:

$$relatedness_{JC}(c_1, c_2) = \frac{1}{2 \times \log P(LN(c_1, c_2)) - (\log P(c_1) + \log P(c_2))} \quad (A.1)$$

Where  $c_1$  and  $c_2$  are concepts;  $P$  indicates the probability of the concept occurrence based on a corpus of text;  $LN$  signifies the concept associated with the lowest node in the hierarchy that subsumes both of the concepts. For example, a hill is a kind of natural elevation, which is a kind of geological formation; coast is a kind of shore, which is a kind of geological formation. Therefore, the  $LN$  of the concepts hill and shore is geological formation based on the WordNet hierarchy.

The Jiang-Conrath distance measure is used to construct the text that describes the attributes of culture. Specifically, for each attribute of corporate culture a master text is created, which contains all the concepts listed above in the description of the attributes, but it also extends this list to include related concepts. For each main concept, its' Jiang and Conrath distance from each of the other synsets is created. Then, the distances for each pair are sorted into percentiles, and any concept that is in the highest percentile of relatedness is included as part of the description of the cultural attribute.

An alternative approach to measuring relatedness makes use of machine learning techniques. The basis for machine learning approaches to textual analysis is to hand classify the true sense of the words in a subset of the data referred to as the training set, and then project what is learned from the training set onto the remainder of the data. The disadvantage of machine learning is that the outcomes are sensitive to the training data and may underperform less time consuming methods as a result of over fitting to the training data. This paper does not use this method, because the size of the data set limits the construction of multiple training sets that are easily classified.

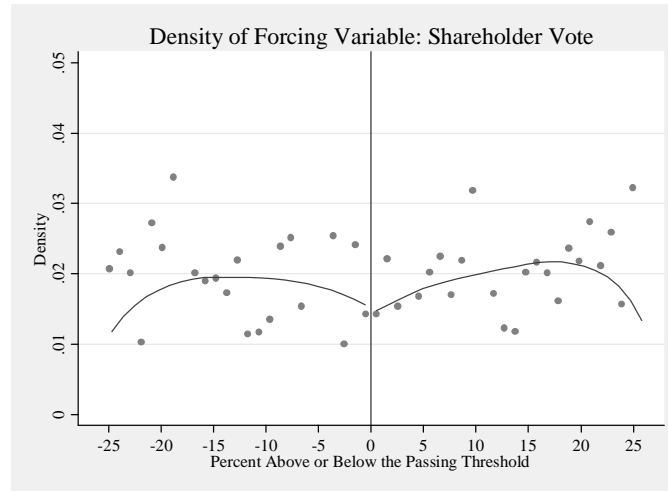
**Details on Similarity Measure:** Textual similarity is a linguistic measure that makes strides to capture the degree to which two texts are the same. The technique makes use of the full distribution of words in the text, and the intuition is that the meaning of a word is related to the distribution of words around it, and the co-occurrence of multiple words indicates similarity. The mathematical intuition for the similarity measure comes from geometry. Although in geometry the

Euclidean distance is the typical measure for the distance between two vectors, it is not appropriate for textual similarity since Euclidean distance is very sensitive to extreme values. Instead, linguists found that the dot product between normalized co-occurrence vectors achieves a much higher correlation than the Euclidean distance measure in terms of what humans would classify as similar. Co-occurrence vectors contain the unique words from each of the texts as well as an appropriate weight, which may be a count as in the case of [Hoberg, Phillips, and Prabhala \(2013\)](#), a binary indicator, or a weighted-association. Since the raw dot-product favors longer vectors and frequent words, normalization allows for comparison across texts of varying lengths. Geometrically, the normalized dot product is equivalent to the cosine of the angle between two vectors and therefore has an intuitive interpretation. The range of the measure is between  $[-1, 1]$  and higher, positive values indicate greater similarity. Mathematically, the similarity between text A and text B is as follows:

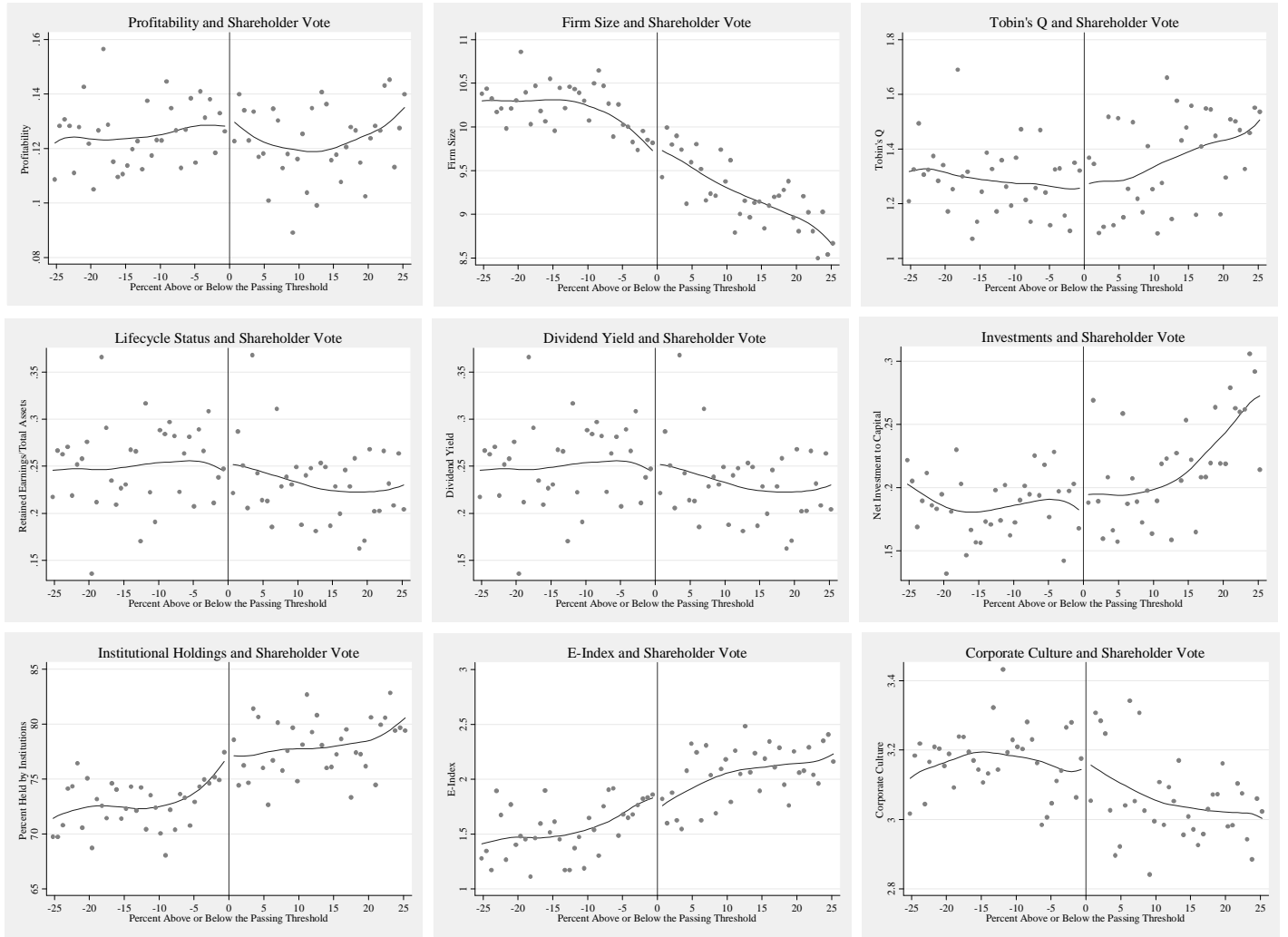
$$similarity_{cosine}(\vec{v}_A, \vec{v}_B) = \frac{\vec{v}_A \cdot \vec{v}_B}{|\vec{v}_A| |\vec{v}_B|} = \frac{\sum_{i=1}^N v_{A,i} \times v_{B,i}}{\sqrt{\sum_{i=1}^N v_{A,i}^2} \sqrt{\sum_{i=1}^N v_{B,i}^2}} \quad (\text{A.2})$$

The advantages of the similarity measure derived from this distributional technique are the computational ease and clear intuition, but there are some limitations. One of the limitations of this method is that it only considers words in their raw form and does not account for variation in word meaning by context. For example, bank has multiple senses both as a noun and as a verb. As a noun it could mean financial institution, sloping mound, biological repository, or the building belonging to a financial institution. As a verb bank could mean to tip, to do business with a bank, or to have confidence in. Beyond the measurement noise from such sense ambiguity, the distributional techniques also does not account for word morphologies such as plurals, possessive suffixes, or verb form.

## Appendix C. Additional Figures and Tables



**Figure C1. Density of the forcing variable:** This figure shows the density of the vote share. Each dot is the density within the derived bin width. The solid line is the fitted density. The sample includes all shareholder governance-related proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management and the board of directors to the shareholders. This plot provides indirect evidence that the identifying assumption for a regression discontinuity design holds. There is no indication that firms are able to manipulate the forcing variable.



**Figure C2. Placebo tests for discontinuity in other baseline covariates:** This figure shows the average baseline covariates including profitability, firm size, Tobin's Q, lifecycle status, dividend yield, net investment to capital, institutional holdings, corporate governance, and the corporate culture for firms with a close vote on an annual meeting proposal. If the proposal passes as is indicated by being above the passing threshold, then it is significantly more likely to be implemented by the firm. Each circle is the average within the derived bin width. Solid lines are tted values from regressions on either side of the discontinuity. The sample includes all governance-related proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management and the board of directors to the shareholders.

**Table CI**  
**Robustness Check: Alternative Thresholds from Passing Margin**

This table shows estimates of the average change in corporate culture following an increase in shareholder governance; the robustness check varies the distance from the discontinuity. For these analyses, 5%, and 20% cut-offs are considered. The point estimates are in standard deviations to facilitate interpretation. A vector of firm controls, which include firm size, profitability, Tobin's Q, and the firm's lifecycle status. The sample includes all pro-shareholder proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management to the shareholders. In addition, for a firm to be included at least 100 current employee survey responses per year are required; a year is defined based upon firm-specific annual meeting dates. A thorough description of the measures of corporate culture and how they are derived is included in [Appendix B](#). \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Panel A. Alternative Thresholds		Within 5% of		Within 20% of	
Dependent Variable = RESULTS-ORIENTATION		Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance		1.45 (3.02)***	1.38 (3.00)***	0.04 (0.19)	0.04 (0.16)
Firm Controls		Yes	Yes	Yes	Yes
Year Fixed Effects		Yes	Yes	Yes	Yes
Observations		83	83	362	362
Panel B. Alternative Thresholds		Within 5% of		Within 20% of	
Dependent Variable = INTEGRITY		Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance		-2.00 (2.96)***	-2.00 (2.96)***	-0.99 (3.59)***	-1.00 (3.62)***
Firm Controls		Yes	Yes	Yes	Yes
Year Fixed Effects		Yes	Yes	Yes	Yes
Observations		83	83	362	362
Panel C. Alternative Thresholds		Within 5% of		Within 20% of	
Dependent Variable = CUSTOMER-ORIENTATION		Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance		-1.27 (1.79)*	-1.55 (2.32)**	-0.16 (0.57)	-0.16 (0.57)
Firm Controls		Yes	Yes	Yes	Yes
Year Fixed Effects		Yes	Yes	Yes	Yes
Observations		83	83	362	362
Panel D. Alternative Thresholds		Within 5% of		Within 20% of	
Dependent Variable = COLLABORATION		Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance		-1.79 (2.34)**	-1.88 (2.40)**	-0.22 (0.76)	-0.22 (0.76)
Firm Controls		Yes	Yes	Yes	Yes
Year Fixed Effects		Yes	Yes	Yes	Yes
Observations		83	83	362	362

**Table CII**  
**Robustness Check: Alternative Minimum for Employee Reviews Per Firm**

This table shows estimates of the average change in corporate culture following an increase in shareholder governance; the robustness check varies the minimum number of reviews necessary to include an observation in the analyses. The point estimates are in standard deviations to facilitate interpretation. Test-statistics calculated using robust standard errors, clustered at the firm level, are in parentheses. The exact specification is as follows:  $\Delta Culture_i = \alpha + \beta Implement_i + f(vote_i - pass) + \gamma Z_i + \epsilon_i$ , where an indicator variable for the discontinuity,  $T_i = I[vote_i \geq pass]$ , serves as an instrument for  $Implement_i$ . The vector of firm controls,  $Z_i$ , includes firm size, profitability, Tobin's Q, and the firm's lifecycle status. The sample includes all pro-shareholder proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management to the shareholders. A year is defined based upon firm-specific annual meeting dates. A thorough description of the measures of corporate culture and how they are derived is included in [Appendix B](#). \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Panel A. Within 10% of Threshold (Optimal Bandwidth)	50 Reviews		250 Reviews	
Dependent Variable = RESULTS-ORIENTATION	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	0.87 (2.78)***	0.36 (2.94)***	0.65 (3.87)***	0.23 (2.56)**
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	227	227	130	130
Panel B. Within 10% of Threshold (Optimal Bandwidth)	50 Reviews		250 Reviews	
Dependent Variable = INTEGRITY	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	-1.12 (2.71)***	-0.59 (1.99)**	-0.32 (2.99)***	-0.11 (1.79)*
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	227	227	130	130
Panel C. Within 10% of Threshold (Optimal Bandwidth)	50 Reviews		250 Reviews	
Dependent Variable = CUSTOMER-ORIENTATION	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	-0.54 (1.33)	-0.13 (0.76)	-0.21 (1.63)	-0.16 (2.07)**
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	227	227	130	130
Panel D. Within 10% of Threshold (Optimal Bandwidth)	50 Reviews		250 Reviews	
Dependent Variable = COLLABORATION	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	-0.64 (2.59)***	-0.12 (0.85)	-0.35 (2.52)**	-0.32 (2.20)**
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	227	227	130	130

Table CIII

**Robustness Check: Alternative Time Period to Observe Change in Culture**

This table shows estimates of the average change in corporate culture following an increase in shareholder governance; the robustness check varies the time period from one year to as long as three years after the governance increase. The point estimates are in standard deviations to facilitate interpretation. Test-statistics calculated using robust standard errors, clustered at the firm level, are in parentheses. The exact specification is as follows:  $\Delta Culture_i = \alpha + \beta Implement_i + f(vote_i - pass) + \gamma Z_i + \epsilon_i$ , where an indicator variable for the discontinuity,  $T_i = I[vote_i \geq pass]$ , serves as an instrument for  $Implement_i$ . The vector of firm controls,  $Z_i$ , includes firm size, profitability, Tobin's Q, and the firm's lifecycle status. The sample includes all pro-shareholder proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management to the shareholders. A year is defined based upon firm-specific annual meeting dates. When less than three years are available the maximum time period observed is used. A thorough description of the measures of corporate culture and how they are derived is included in [Appendix B](#). \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Panel A. Within 10% of Threshold (Optimal Bandwidth)				
RESULTS-ORIENTATION	2 Years		3 Years	
	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	1.27 (1.84)*	0.96 (2.86)***	1.31 (1.73)*	0.84 (2.69)***
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	183	183	183	183
Panel B. Within 10% of Threshold (Optimal Bandwidth)				
Dependent Variable = INTEGRITY	2 Years		3 Years	
	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	-1.07 (2.98)***	-0.59 (3.08)***	-1.18 (2.36)**	-1.03 (3.11)***
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	183	183	183	183
Panel C. Within 10% of Threshold (Optimal Bandwidth)				
Dependent Variable = CUSTOMER-ORIENTATION	2 Years		3 Years	
	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	-0.25 (0.35)	-0.39 (1.76)*	-0.68 (1.41)	-0.21 (0.84)
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	183	183	183	183
Panel D. Within 10% of Threshold (Optimal Bandwidth)				
Dependent Variable = COLLABORATION	2 Years		3 Years	
	Linear	Quadratic	Linear	Quadratic
Increase in Shareholder Governance	-0.55 (1.55)	-1.18 (2.84)***	-0.88 (1.66)*	-0.35 (2.05)**
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	183	183	183	183



Table CIV

**Robustness Check: Alternative Event Window for Value Via Corporate Culture**

This table shows estimates of the average change in abnormal equity returns following an increase in shareholder governance; the robustness check extends the event period from the day of the annual meeting vote to the week after the annual meeting vote. Abnormal equity returns are calculated using Fama French and Momentum factors. *T*-statistics calculated using robust standard errors clustered by firm are in parentheses. Firm controls include firm size and Tobin's *Q*. The discontinuity sample includes all pro-shareholder proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management to the shareholders. A thorough description of the corporate culture measures is included in [Appendix B](#). Observations within 10% of the passing threshold on each side are analyzed; the 10% cut-off minimizes the sum of squared errors between various polynomial estimates. The model fit is selected from an analysis of the information criterion gain between models; in all cases, a linear model is preferred. A change in corporate culture is defined as the simultaneous increase in results-orientation and decrease in collaboration, customer-orientation, and integrity. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Short-term Equity Returns	Two Instrumental Variable Discontinuity Framework				OLS
	(1)	(2)	(3)	(4)	(5)
Dependent Variable = MARKET-ADJUSTED RETURNS	[Event Week]	[Event Week]	[Event Week]	[Event Week]	[Event Week]
Increase in Shareholder Governance	1.22%	3.65%	1.48%	2.84%	1.54%
	(1.83)*	(2.18)**	(1.87)*	(1.79)*	(2.26)**
Change in Corporate Culture		-3.43%		-2.39%	-1.23%
		(2.44)**		(1.28)	(2.53)**
Shea's Partial $R^2$ for Increase in Shareholder Governance	49%	32%	34%	25%	N.A.
Shea's Partial $R^2$ for Change in Corporate Culture	N.A.	20%	N.A.	25%	N.A.
Proposal Variation	Support	Support	CEO	CEO	N.A.
Distance from Threshold	10%	10%	10%	10%	10%
Model	Linear	Linear	Linear	Linear	N.A.
Firm Controls	Yes	Yes	Yes	Yes	Yes
Industry-by-Time Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	183	183	183	183	183

**Table CV**  
**Robustness Check: McCrary's Test**

This table illustrates the results of a test suggested by [McCrary \(2008\)](#), which provides indirect evidence that the identifying assumption for a regression discontinuity design holds. The insignificant discontinuity estimate means one cannot reject the null hypothesis that firms are unable to manipulate the vote share. The tests are conducted for four different subsamples and in each case, the results suggest that the identifying assumption of continuity in the vote share holds and the regression discontinuity design is valid. The sample includes all governance-related proposals brought to a vote for S&P firms between 2005 and 2011. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

	All	Proposals that Shift	Proposals that Shift	Proposals that Shift
	Proposals	Power to Shareholders	Power to Shareholders	Power to Shareholders
McCrary's Test for Discontinuity			Brought by	Based on Shares
			Management	Outstanding
Bin Size from optimal-calculation	0.55	0.76	1.23	1.42
Bandwidth from optimal-calculation	8.28	7.03	7.91	8.03
Discontinuity Estimate of Forcing Variable	0.032	-0.251	0.869	0.672
Test Statistic	(0.20)	(0.93)	(1.03)	(0.82)
Observtions	2910	1291	230	242
	All	Proposals that Shift	Proposals that Shift	Proposals that Shift
	Proposals	Power to Shareholders	Power to Shareholders	Power to Shareholders
McCrary's Test for Discontinuity			Brought by	Based on Shares
			Management	Outstanding
Discontinuity Estimate of Forcing Variable	0.032	-0.251	0.869	0.672
	(0.20)	(0.93)	(1.03)	(0.82)
Observtions	2910	1291	230	242

Table CVI

**Robustness Check: Placebo Tests for Discontinuity in other Baseline Covariates**

This table shows estimates of the discontinuity in the average baseline covariates including profitability, firm size, Tobin's Q, lifecycle status, dividend yield, net investment to capital, institutional holdings, corporate governance, and the corporate culture for firms with a close vote on an annual meeting proposal. If the proposal passes as is indicated by being above the passing threshold, then it is significantly more likely to be implemented by the firm. The sample includes all governance-related proposals brought to a vote for S&P firms between 2005 and 2011. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Within 10% of Threshold (Optimal Bandwidth)			
Dependent Variable = PLACEBO COVARIATES	Linear	Quadratic	Cubic
Profitability	0.01 (0.15)	-0.02 (0.50)	0.01 (0.44)
Tobin's Q	-0.23 (0.37)	-0.07 (0.20)	0.31 (0.88)
Firm Size	-0.32 (0.30)	-0.44 (0.72)	-0.83 (1.60)
Lifecycle Status	0.02 (0.04)	0.16 (1.00)	0.09 (0.60)
Dividend Yield	-0.49 (0.08)	1.07 (0.27)	1.20 (0.32)
Net Investment to Capital	0.00 (0.05)	0.05 (1.09)	0.04 (0.87)
Institutional Ownership	0.01 (0.10)	0.04 (1.32)	0.04 (1.02)
Entrenchment Index	-0.32 (0.44)	0.39 (0.97)	0.50 (1.81)*
Adaptability	-0.24 (0.24)	-0.64 (1.08)	0.06 (0.37)
Collaboration	0.05 (0.16)	0.15 (1.13)	0.16 (1.12)
Customer-Orientation	0.66 (0.11)	-1.09 (0.24)	0.04 (0.73)
Detail-Orientation	-0.02 (0.34)	0.04 (1.00)	-1.04 (0.34)
Integrity	0.03 (0.36)	0.06 (1.70)*	0.05 (1.40)
Results-Orientation	-0.07 (0.11)	0.57 (1.41)	0.52 (1.51)
Transparency	0.07 (0.27)	0.20 (0.32)	0.05 (1.40)

**Table CVII**  
**Robustness Check: Tests of Individual Aspects of Culture**

This table shows estimates of the average change firm value as measured through abnormal equity returns on the day a pro-shareholder governance proposal is passed. The table decomposes the net return into the effect attributable to an individual aspect of culture and the effect attributable to all other transmission mechanisms. Abnormal equity returns are calculated using Fama French and momentum factors. *T*-statistics calculated using robust standard errors clustered by firm are in parentheses. Firm controls include firm size and Tobin's *Q*. The discontinuity sample includes all pro-shareholder proposals brought to a vote for S&P firms between 2005 and 2011 that if implemented would shift power from management to the shareholders. A year is defined based upon firm-specific annual meeting dates. A thorough description of the corporate culture measures is included in [Appendix B](#). Observations within 10% of the passing threshold on each side are analyzed. \*\*\* Significant at the 1% level; \*\* Significant at the 5% level; \* Significant at the 10% level.

Short-term Equity Returns	(1)	(2)	(3)	(4)
Dependent Variable = MARKET-ADJUSTED RETURNS	[Event Day]	[Event Day]	[Event Day]	[Event Day]
Increase in Shareholder Governance	-0.39%	0.28%	0.50%	0.89%
	(0.51)	(0.40)	(0.73)	(1.59)
Change in Results-orientation	1.81%			
	(2.03)**			
Change in Integrity		-5.23%		
		(1.48)		
Change in Collaboration			-1.97%	
			(2.22)**	
Change in Customer-Orientation				-1.38%
				(0.99)
Shea's Partial $R^2$ for Increase in Shareholder Governance	37%	47%	37%	46.1%
Shea's Partial $R^2$ for Change in Corporate Culture	10%	4%	11%	4.7%
Distance from Threshold	10%	10%	10%	10%
Model	Cubic	Quadratic	Cubic	Quadratic
Firm Controls	Yes	Yes	Yes	Yes
Attributes of Culture Controls	Yes	Yes	Yes	Yes
Industry-by-Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	183	183	183	183