Three Essays on Corporate Governance using RDD applied to Close Votes on Shareholder Proposals

Dissertation

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Für Oma

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Summary

This dissertation addresses different causal effects of corporate governance on selected company characteristics. Corporate governance describes the rules, structures, and mechanisms separating power and responsibilities between stakeholders within corporations. Potential stakeholders in corporations include managers, board members, shareholders, employees, and auditors. My dissertation focuses on three different effects caused by changes in the balance of power between shareholders and managers. Gompers et al. (2003) describe the two extremes of this specific power-sharing relationship as democracies or dictatorships. Shareholders in democracy companies have strong rights, including the possibility to easily and quickly replace directors. In dictatorship companies, the shareholders' ability to replace directors or to decide on major company decisions such as approving a merger is rather limited. The rules of this power-sharing relationship are specified in the state laws and in a company's bylaws and charter. Examples of such governance provisions (which can be implemented or not) are poison pills or the ability of shareholders to call a special meeting. A poison pill, in its simplest form, is a right assigned to shareholders to buy one additional share for each share they already own at a steep discount if another shareholder accumulates more than a specified number of stocks. The shareholder triggering the poison pill is excluded from this right, which lowers her share of stocks immediately. This poison pill makes a hostile takeover, in which one investor accumulates the majority of voting rights, impossible. The ability of shareholders to call a special meeting, also known as extraordinary general meeting, is also a powerful right for shareholders because they can use it to redeem takeover defenses or to replace board members.

In the past years, a large number of academic papers investigated different consequences associated with this power-sharing relationship. Earlier studies, such as Gompers et al. (2003), find correlations between corporate governance variables and a large number of company characteristics, including stock prices. Many empirical papers on corporate governance rely on cross-sectional regressions to gain a better understanding of the topic. Unfortunately, the results of cross-sectional regressions potentially suffer from estimation biases resulting from reverse causality and the omission of unobserved firm characteristics that drive both corporate governance and other company characteristics. The three essays in my dissertation avoid these estimation biases and use quasi-exogenous shocks to the governance of companies to ensure causality of the observed effects.

My dissertation addresses three research questions: (i) What is the causal effect of stronger shareholder rights on equity risk? (ii) Does the financial value of stronger shareholder rights depend on media coverage? (iii) What is the causal effect of stronger shareholder rights on employee satisfaction?

The first project, *Corporate Governance and Equity Risk*, is joint work with Axel Kind. The project was presented at the University of Konstanz, the University of St. Gallen, the 2016 DGF Conference in Bonn, the 2017 EFMA Conference in Athens, and the 2018 DGF Conference in Trier. We use a Regression Discontinuity Design applied to shareholder proposals that fail or pass by a small margin and obtain causal estimates of the influence of corporate-governance provisions on three forward-looking measures of equity risk extracted from option prices: (i) total volatility, (ii) idiosyncratic volatility, and (iii) equity beta. We use option-implied risk measures because they are less noisy than their historical counterparts. The former reflect aggregate market ex-

pectations, whereas the latter represent single realizations. We find that an improvement of the Governance Index by Gompers et al. (2003) by one point increases the expected stock-return volatility by 5%, on average. We are not only the first to show causality for this relation, we also show that the corresponding effects found in previous studies using cross-sectional regressions (see, e.g., Ferreira and Laux, 2007) overestimated the true effect. The smaller effect suggests that cross-sectional regressions are biased due to omitted variables or reverse causality. In addition, we find that the rise in volatility after governance improvements is higher for items included in the Entrenchment Index by Bebchuk et al. (2009). While previous studies (see, e.g. Bebchuk et al., 2009) make a similar finding for higher stock returns, we are the first to compare the two indices from a risk perspective. Finally, we perform an analysis of heterogeneous treatment effects and alternative dependent variables and find that changes in "managerial quiet life" are the main drivers of the positive link between governance and equity risk. This quiet life refers to a situation where the managers of a company are shielded from market pressure and therefore avoid risky projects and avoid confrontation with stakeholders.

The second project, *Does Corporate Governance Matter for Companies in the Spotlight?*, is joint work with Patrick Hauf. The project was presented at a joint research seminar with the University of St. Gallen, the 3rd Workshop in Empirical Accounting and Finance in Tübingen in 2017, and the 2017 Paris Financial Management Conference in Paris. The research question is whether shareholders' desire for stronger shareholder rights depends on media coverage and whether the financial value of stronger shareholder rights depends on media coverage. Although media coverage is a central source of information for the formation of public opinion and the decision making processes of shareholders, research on the influence of the media on corporate governance issues is scarce (Zingales, 2000). We introduce the research question with a short theoretical model and show empirically that high media coverage decreases shareholders' desire to impose stricter shareholder rights using a cross-sectional regression. In addition, we apply an extended Regression Discontinuity Design to close shareholder votes and find that increased shareholder rights are more valuable for firms with low media coverage. The methodology is similar to the one of the first project, but we extend the existing methodology from a two-dimensional setting (votes in favor and stock prices) to a three dimensional setting (including media coverage) to estimate the size and significance of stronger shareholder rights depending on media coverage. To do so, we analyze the length and tone of more than one hundred thousand firm specific newspaper articles about U.S. companies within the period 2002-2014. The results suggest that press scrutiny acts as a partial substitute for stronger shareholder rights, decreasing the value of stronger shareholder rights.

The third project, *The Causal Effect of Corporate Governance on Employee Satisfaction*, is joint work with Marco Menner. The project was presented at research seminars at the University of Konstanz and the 4th Workshop in Empirical Accounting and Finance in 2018. We investigate whether an increase in shareholder rights has a causal effect on employee satisfaction. From a financial perspective, employee satisfaction is an important intangible asset that leads to positive abnormal returns (see, e.g., Edmans, 2011). In addition, employee satisfaction matters from a social responsibility perspective. Stress at the workplace causes extensive annual costs to a society (see, e.g., Goh et al., 2015). Additionally, shareholders are not the only stakeholders in a company and the well-being of employees is an increasingly important goal for companies. Recent political initiatives, such as the "Accountable Capitalism Act" from U.S. Senator Elizabeth War-

ren in August 2018, are designed to change the governance of companies in favor of employees. Our results help to understand the effects of corporate governance on employee satisfaction in the first place. Similar to my first project, we ensure causality by using close shareholder votes as quasi-exogenous shocks to the corporate governance of a company. We use data provided by the U.S. job search and review website Glassdoor to quantify employee satisfaction in our empirical study. GlassDoor provided us with a dataset that contains more than 5 million employee satisfaction reports on U.S. companies between 2008 and 2017. An increase in shareholder rights by one point on the scale of the Entrenchment Index by Bebchuk et al. (2009) causes a decrease in employee satisfaction of approximately 10%. We identify deterioration in firm culture, decreasing popularity of the CEO, decreasing number of employees, and lowering of capital expenditures as channels that drive our results. Our work adds a new perspective on corporate governance, which has long-term financial consequences for shareholders and non-financial consequences for employees. Overall this work complements my other two projects by emphasizing consequences associated with a company's corporate governance setup.

Zusammenfassung

Diese Dissertation befasst sich mit kausalen Effekten von Corporate Governance auf verschiedene abhängige Variablen. Der Begriff Corporate Governance stammt aus dem englischen und beschreibt die Regeln, Strukturen und Mechanismen zwischen verschiedenen Beteiligten in einem Unternehmen. Diese Beteiligten sind unter anderem Aktionäre, Mitglieder des Aufsichtsrates, Manager, Angestellte und Wirtschaftsprüfer. Der Schwerpunkt meiner Arbeit liegt auf dem Machtverhältnis zwischen Aktionären und Managern, außerdem beschränke ich mich in dieser Arbeit auf börsengelisteten Firmen in den USA. Gompers et al. (2003) haben Firmen, die sich an den Extremen dieses Machtverhältnisses zwischen Aktionären und Managern befinden, einst mit Demokratien und Diktaturen verglichen. In Firmen, die einer Demokratie ähneln, haben Aktionäre starke Rechte und können das Management schnell und einfach entlassen. In Firmen, die einer Diktatur ähneln, hat das Management sehr starke Rechte und kann nur sehr schwer entlassen werden. Die Regeln dieses Machtverhältnisses sind zum einen im Gesetz, zum anderen in den Statuten der Unternehmen festgelegt. Ein Beispiel für eine solche Regelung ist die "Poison Pill". Die Poison Pill, wörtlich übersetzt Giftpille, ist eine Möglichkeit für das Management, zu verhindern, dass ein Aktionär mehr als einen festgelegten Anteil an Aktien (oft 20% der ausstehenden Aktien) überschreitet. Das Management ist so vor feindlichen Übernahmen, die in der Regel das Auswechseln des Managements enthalten, geschützt. Die Folgen der verschiedenen Machtverhältnisse wurden in den letzten 20 Jahren im Rahmen vieler wissenschaftlicher Studien untersucht. Unter anderem haben Gompers et al. (2003) eine positive Korrelation zwischen starken Rechten der Aktionäre und dem Wachstum von Aktienkursen festgestellt. Viele bisherige Studien haben klassiche Regressionsanalysen benutzt um Zusammenhänge zu zeigen. Die Ergebnisse dieser Methode können durch vernachlässigte Variable oder durch umgekehrte Kausalität verfälscht werden. Ein wesentlicher Beitrag dieser Dissertation ist, dass alle Projekte kausale Zusammenhänge zeigen, die sich aus früheren Studien nicht ableiten lassen.

Die drei Studien in meiner Dissertation nutzen unerwartete Änderungen an dem beschriebenen Machtverhältnis zwischen Managern und Aktionären, um die Auswirkungen auf verschiedene Kennzahlen zu beobachten. Diese Methode stellt einen kausalen Zusammenhang sicher, der sich aus einer Korrelation alleine nicht ergibt. Konkret werden in der Dissertation drei Forschungsfragen beantwortet: (i) Was ist der kausale Effekt von stärkeren Aktionärsrechten auf das Risiko von Eigenkapital? (ii) Hängt der finanzielle Mehrwert von stärkeren Aktionärsrechten von der Berichterstattung durch Medien ab? (iii) Gibt es einen kausalen Effekt von stärkeren Aktionärsrechten auf das Wohlbefinden der Mitarbeiter im Unternehmen?

Das erste Projekt, auf Deutsch "Corporate Governance und das Risiko von Eigenkapital", ist ein Gemeinschaftsprojekt mit Axel Kind. Wir haben das Projekt bei Forschungsseminaren an der Universität Konstanz und der Universität St. Gallen vorgestellt, sowie auf der DGF Konferenz in Bonn 2016, der EFMA Konferenz in Athen 2017 und der DGF Konferenz 2018 in Trier. Wir nutzen eine Regressions-Diskontinuitäts-Analyse angewandt auf Abstimmungen an der Hauptversammlung, um einen kausalen Zusammenhang nachweisen zu können. Dabei betrachten wir Abstimmungen, die mit einer knappen Mehrheit angenommen oder abgelehnt werden und beobachten die folgenden Änderungen in verschiedenen Maßen für das Risiko von Eigenkapital. Die Maße für das Eigenkapitalrisiko extrahieren wir aus Preisen von gehandelten Optionen. So ist sichergestellt, dass es sich um aggregierte Erwartungen vieler Marktteilnehmer handelt,

nicht um historische Daten oder einzelne Realisationen. Wir untersuchen die folgenden abhängigen Variablen: (i) die Volatilität von Aktienkursen, (ii) die idiosynkratische Komponente der Volatilität und (iii) den Beta-Faktor aus dem Capital Asset Pricing Model. Eine Verstärkung der Aktionärsrechte um einen Punkt auf der Skala des Governance Index (G-Index) von Gompers et al. (2003) führt zu einer signifikanten Erhöhung der Volatilitäten um etwa 5%. Diese Erhöhung ist noch stärker für Aspekte der Corporate Governance, die im Entrenchment Index von Bebchuk et al. (2009) enthalten sind. Frühere Studien, die klassische Regressionen verwenden, finden ähnliche, aber größere Effekte. Wir sind die ersten, die einen kausalen Zusammenhang zeigen können und die den G-Index und den E-Index aus der Sicht von Eigenkapitalrisiko miteinander vergleichen. Darüber hinaus zeigen wir mit weiteren Analysen, dass die Erhöhung der Volatilität dadurch entsteht, dass das Management der Unternehmen weniger vor äußeren Einflüssen geschützt ist.

Das zweite Projekt "Spielt Corporate Governance eine Rolle für Firmen im Rampenlicht der Medien?" ist ein Gemeinschaftsprojekt mit Patrick Hauf. Wir haben das Projekt bei einem gemeinsamen Forschungsseminar der Universitäten Konstanz und St. Gallen, sowie auf der Paris Financial Management Conference 2017 und dem 3rd Workshop in Empirical Accounting and Finance in Tübingen 2017 vorgestellt. Wir untersuchen die Forschungsfrage, ob die positiven Effekte von stärkeren Aktionärsrechten, die in früheren Studien gezeigt wurden, weniger ausgeprägt sind, wenn ein Unternehmen unter starker Beobachtung durch die Medien steht. Wir führen die Forschungsfrage mit einem kurzen theoretischen Modell ein, anhand dessen wir zeigen, warum wir einen kleineren Effekt erwarten. Für die empirische Untersuchung nutzen wir eine klassische Regressionsanalyse um zu überprüfen, ob Aktionäre ein größeres Verlangen nach stärkeren Aktionärsrechten haben, abhängig von der Beobachtung des Unternehmens durch die Medien. Darüber hinaus nutzen wir, ähnlich wie im ersten Projekt, eine Regressions-Diskontinuitäts-Analyse. Um den Unterschied der Auswirkungen von stärkeren Aktionärsrechten auf Firmen mit und ohne ausgeprägte Berichterstattung zu untersuchen, haben wir die Regressions-Diskontinuitäts-Analyse um eine Dimension erweitert. So können wir nicht nur die Größe des zusätzlichen Effektes quantifizieren, sondern gleichzeitig auch die statistische Signifikanz. Um die Berichterstattung von Unternehmen zu messen, nutzen wir über 100.000 ausgewählte Zeitungsartikel in den vier großen U.S. Tageszeitungen aus den Jahren zwischen 2002 und 2014. Wir werten dabei den Ton innerhalb der Artikel, die Länge der Artikel und die Anzahl der Artikel pro Unternehmen aus. Die empirischen Ergebnisse bestätigen unsere theoretischen Vorhersagen, dass Corporate Governance als Kontrollmechanismus weniger relevant ist, wenn die Firmen unter starker Beobachtung durch die Medien stehen.

Das dritte Projekt "Der Kausale Effekt von Corporate Governance auf Mitarbeiterzufriedenheit" ist ein Gemeinschaftsprojekt mit Marco Menner. Wir haben das Projekt bei Forschungsseminaren der Universität Konstanz und beim 4th Workshop in Empirical Accounting and Finance 2018 vorgestellt. Wir untersuchen die Forschungsfrage, ob stärkere Aktionärsrechte einen Einfluss auf die Zufriedenheit von Mitarbeitern im Unternehmen haben. Aus einer rein finanziellen Sichtweise ist Arbeitnehmerzufriedenheit ein immaterieller Vermögenswert. Frühere Studien, wie zum Beispiel die von Edmans (2011), haben gezeigt, dass dieser immaterielle Vermögensgegenstand zu erhöhten Aktienrenditen führt und daher für Aktionäre von finanziellem Vorteil ist. Darüber hinaus ist Arbeitnehmerzufriedenheit aus volkswirtschaftlicher Sicht wichtig. Stress am Arbeitsplatz sorgt nicht nur für gesundheitliche Schäden bei den Angestellten, sondern führt auch

zu Kosten in Milliardenhöhe für die Gesellschaft (siehe z.B. Goh et al, 2015). Auch die Politik beschäftigt sich zunehmend mit den Interessen von Teilhabern an Unternehmen, die keine Aktionäre sind. So hat beispielsweise U.S. Senator Elizabeth Warren im August 2018 einen Gesetzesentwurf eingebracht, der die Corporate Governance von Unternehmen stark verändern soll, um unter anderem die Interessen von Mitarbeitern deutlich zu stärken. Unsere Forschung hilft, die Effekte von Corporate Governance auf die Arbeitnehmerzufriedenheit besser zu verstehen. Ähnlich wie im ersten Projekt nutzen wir eine Regressions-Diskontinuitäts-Analyse, angewendet auf knappe Abstimmungsergebnisse, die das Machtverhältnis zwischen Aktionären und Managern verschieben. Wir nutzen für diese empirische Untersuchung Daten des U.S. Karriereportals GlassDoor. Diese Website enthält mehr als 5 Millionen Erfahrungsberichte von Arbeitnehmern. Die Stärkung der Aktionärsrechte führt zu einer Verringerung von etwa 10% bei der Arbeitnehmerzufriedenheit der Belegschaft. Weitere Ergebnisse zeigen, dass sich Reduzierungen in den folgenden Bereichen: Firmenkultur, Wertevorstellungen innerhalb der Belegschaft, Zufriedenheit mit dem Top-Management, Arbeitsplatzabbau, sowie verringerte Investitionen mit wachsender Unzufriedenheit einhergehen. Das Projekt ist das erste, das einen kausalen Zusammenhang von Aktionärsrechten und Arbeitnehmerzufriedenheit herstellt und leistet damit einen wichtigen Beitrag zum Verständnis von Corporate Governance und seinen Konsequenzen.

1 Corporate Governance and Equity Risk[1]

1.1 Introduction

In this paper we study the causal effect of corporate governance on different established measures of equity risk, namely total stock-return volatility, idiosyncratic volatility, and equity beta. The relevance of this research question naturally arises from the central role played by equity risk for investment analysis,[2] portfolio decisions, risk management, and cost-of-capital calculations.

The influence of corporate governance on equity risk is a priori non-trivial. Some authors (e.g., Ashbaugh, Collins, and LaFond, 2004; Cheng, Collins, and Huang, 2006) suggest that good corporate governance should mitigate the risks associated with the agency conflicts between managers and shareholders. According to this view, corporate governance should lower equity risk and discount rates. This view appears to be widespread also among financial consultants who rate firms in terms of their governance (e.g., GMI Ratings, ISS QualityScore, S&P's Corporate Governance Score, and Thomson Reuters' Governance Rating). In the words of Dimensional Investing, an asset management firm focusing on corporate governance, "... stronger governance practices generally will be reflected in higher stock prices through a combination of lower discount rates and higher cash flows."[3]

On the other hand, academics have presented several arguments for a positive effect of corporate governance on equity risk. Bertrand and Mullainathan (2003) and John, Litov, and Yeung (2008) argue that low investor protection (poor governance) can allow a "quiet-life" situation for managers who may then avoid investing in risky projects in spite of positive NPVs. While shareholders benefit from such risky projects as they can easily reduce the additional project-specific risk by diversification, managers do not have this opportunity and thus do not realize profitable but risky projects. In fact, according to a survey by Graham et al. (2005), 78% of executives are willing to sacrifice a firm's long-term value just to increase short-term profits. Amihud and Lev (1981) support this view by studying conglomerate mergers and showing that entrenched managers engage in value-destroying deals to stabilize income streams. Cuñat et al. (2017) argue that shareholder rights increase both the probability of a takeover and the corresponding premiums,[4] which in turn should increase stock-return volatility. Finally, Ferreira and Laux (2007) conjecture that the higher takeover probability in companies without antitakeover provisions provides an incentive for investors to collect private information, which should trigger higher stock-return volatility.

Empirical evidence on the relation between corporate governance and equity risk is sparse, inconclusive, and potentially flawed by endogeneity concerns. While Parigi et al. (2014) find a positive

[1]We thank Ralf Elsas, Marcel Fischer, Joachim Grammig, Patrick Hauf, Jens Carsten Jackwerth, Marco Poltera, Stefan Ruenzi, Christian Schlag, Erik Theissen, Torsten Twardawski, Christophe Volonté, Nadja Younes, Iana Zborshchyk, one anonymous referee, and participants at the research seminar of University of Konstanz, University of St. Gallen, 2016 DGF Conference in Bonn, 2017 EFMA Conference in Athens, and 2018 DGF Conference in Trier for valuable comments.

[2]A number of commonly-used performance measures adjust excess returns by taking into account equity beta (see, e.g., Jensen's Alpha), total volatility (see, e.g., the Sharpe Ratio), or idiosyncratic volatility (see, e.g., the Treynor-Black Ratio).

[3]https://us.dimensional.com/about-us/corporate-governance.

[4]Other authors, such as Sokolyk (2011), find no significant relation between the existence of antitakeover provisions included in the G-Index and either a firm's takeover probability or takeover premiums.

relationship between shareholder rights and equity beta, Derwall and Verwijmeren (2007) report a negative dependence between the two variables. Similarly, with respect to the relation between stock volatility and shareholder rights, Ferreira and Laux (2007) and Li, Jahera Jr, and Yost (2013) show a positive correlation, while Derwall and Verwijmeren (2007) find the opposite result. Given that the above studies rely on cross-sectional regressions, they potentially suffer from estimation biases resulting from reverse causality and the omission of unobserved firm characteristics that drive both corporate governance and equity risk. For example, managers in high-risk firms may adopt poorer governance provisions, e.g., entrenchment measures (staggered and dependent boards, poison pills, etc.), to reduce the likelihood of being fired due to poor performance. Further, managers with lower skills or higher risk aversion – two characteristic which are basically unobservable (omitted variables) or difficult to measure (measurement errors) – may both invest in safer projects and adopt poorer governance provisions to reduce the risk of being either fired or acquired.[5]

To overcome these endogeneity issues and measure the causal effect of corporate governance on equity risk we employ – similar to Cuñat et al. (2012) and others[6] – a Regression Discontinuity Design (RDD) applied to close votes on governance-related shareholder proposals. As the outcomes of close votes, i.e., proposals that fail or pass by a small margin (e.g., 49% or 51%), can hardly be anticipated and are uncorrelated with firm characteristics,[7] they are akin to independent random events. Thus, close votes on shareholder proposals serve as plausible exogenous shocks to selected corporate-governance characteristics. Instead of relying on realized volatilities and betas, we extract forward-looking measures of equity risk from option prices. This procedure has three decisive advantages. First, implied risk measures are less noisy than their historical counterparts. The former reflect aggregate market expectations of future stock returns, whereas the latter represent single realizations of the same quantities. In fact, the high predictive power of option implied volatilities and betas compared to other sophisticated forecast methods is confirmed by several studies (see, e.g., Busch et al., 2011; Chang et al., 2011). Second, implied measures of equity risk can be easily computed in high frequency and in close proximity to shareholder-proposal votes at annual meetings, which makes them less affected by confounding events and news unrelated to changes in corporate governance. Third, the comparison of an implied risk measure just before and just after the vote on governance-related proposals is particularly interesting because – by construction – both refer to the same future period, i.e., until the options' expiration date. This allows us to isolate the influence of corporate-governance changes on equity risk from other effects.

The paper contributes to the extant literature along the following lines. First, it presents evidence of a positive causal link between governance provisions and stock-return volatility. The average governance provision included in the Governance Index of Gompers et al. (2003) (G-Index) is found to increase stock-return volatility by ca. 5%, i.e., for the median firm, from 30% to 31.5%. This effect is positive and significant but much smaller than the 20% increase reported by Ferreira

[5] An excellent treatment of the drawbacks of cross-sectional regressions to estimate the effects of corporate governance can be found in Cremers et al. (2016).

[6] Other papers that use RDD applied to shareholder proposals include, Armstrong et al. (2013), Flammer (2015), and Chemmanur and Tian (2018).

[7] A statistical comparison of firms that either pass or fail by a small margin does not support the existence of systematic differences in firm characteristics between those two groups.

and Laux (2007) based on cross-sectional regressions.[8]
Second, we show that the increase in volatility is fully attributable to higher idiosyncratic volatility and not to equity betas which remain fairly constant. In this respect, we are unable to confirm the positive relation between corporate governance and equity betas obtained by Parigi et al. (2014) in cross-sectional regressions.
Third, we contribute to the debate on the relative importance of different governance provisions (see, e.g., Bebchuk et al., 2009) by studying whether items that are value enhancing also effect equity risk. Particularly, we show that provisions included in the E-Index of Bebchuk et al. (2009) trigger particularly large increases in stock-return volatility between 5.7% and 8.6%. Conversely, governance provisions outside the E-Index (including the subset comprised in the G-Index) do not lead to significant changes in equity risk.
Finally, we shed light on the channels that may lie behind the observed influence of corporate governance on equity risk. Specifically, we test three plausible channels that can cause stronger corporate governance to increase equity risk: a reduction of *Managerial Quiet Life*, a higher *Information Flow*, and a higher *Takeover Probability*. Our results show that the influence of corporate governance on equity risk is particularly strong for companies with a high number of institutional blockholders and low competitive pressure. This indicates that the increase in equity risk is likely driven by a reduction in the quiet life of managers who are confronted with institutional investors with stronger intervention possibilities. As we do not find the effect to be stronger for companies characterized by high information asymmetries or a high probability of becoming a takeover target, neither an improved information flow nor a higher takeover probability seem to drive our results.
The main findings are robust to several changes in the specification of the baseline model. In particular, results are statistically and economically stable when considering (i) possible biases due to manipulation of voting outcomes by management as suggested by Bach and Metzger (2017), (ii) polynomials of order zero, one, and two, (iii) different time frames around the annual meeting, and (iv) realized betas instead of option-implied betas. The use of RDD already limits concerns regarding systematic differences in company characteristics between treated and untreated firms. In fact, treated companies (with closely-passed proposals) and untreated ones (with closely-failed proposals) do not statistically differ along common firm characteristics. Different placebo tests run by using artificial cutoff points exclude the possibility that the measured effects are spurious and based on a correlation between equity risk and votes in favor of a proposal.
The remainder of the paper is organized as follows. Section 1.2 describes the Regression Discontinuity Design as well as the methods employed to obtain implied equity-risk measures from option prices. Section 1.3 introduces the sample and presents the data used in the empirical analysis. Section 1.4 presents and discusses the empirical findings, including robustness checks and an analysis of the potential channels that may drive the results. Section 1.5 concludes.

[8]The difference between the results of this paper and those of Ferreira and Laux (2007) is not attributable to the different time period. In fact, our results change only slightly when running the analysis either on the period 1997-2001 (included in Ferreira and Laux, 2007) or 2002-2016 (outside their sample).

1.2 Methodology

1.2.1 Regression Discontinuity Design and Shareholder Proposals

In this section, we describe the methodology used to estimate the effect of corporate-governance provisions on several measures of equity risk. Following Cuñat et al. (2012) and others, we use close votes on governance-related shareholder proposals as exogenous shocks to a firm's corporate governance. The focus on the outcome of shareholder proposals is appealing for several reasons. First, shareholder proposals are likely to provide a variety of important shareholders' concerns about the management of a company. In fact, both the requirements for sponsoring resolutions and their costs are fairly low. According to §8b of Section 240.14a, Title 17 of the Code of Federal Regulation (CFR), a shareholder is eligible to file a proposal if she is registered in the shareholder's book and has been holding shares in excess of $2,000 or 1% of the voting shares at least for one year. Further, under Rule 14a-8, the company (and not the proposal sponsor) bears the cost of preparing and distributing the resolution in the proxy statement.

Second, unlike management proposals, which can be strategically placed in (and withdrawn from) meetings by management, resolutions filed by shareholders are not subject to a selection bias induced by the agenda setter. In fact, boards of directors may likely exclude proposals for which they expect a rejection in the shareholder assembly (see, e.g., Cuñat et al., 2012). This argument is reflected by the very high approval rates of management proposals (Maug and Rydqvist, 2009)[9] and leads to a selection bias, i.e., a variation in the cross section of voting outcomes based on self-censored data.

Third, and most importantly, the discontinuity in the relation between the votes in favor of shareholder proposals (the so called "forcing variable") and their subsequent implementation probability at the threshold level of success induces an exogenous shock in firm governance. As this governance shock is as good as random (Cuñat et al., 2012), it can thus be used to measure the impact of governance provisions on selected firm characteristics.

The Regression Discontinuity Design (RDD) used in this paper exploits the above properties of shareholder proposals. It allows us to observe changes in corporate governance triggered by close votes and to deal with market expectations prior to annual meetings. The discontinuity arises from the fact that the success of a proposal is a binary function that depends on the percentage of votes in favor, $v \in [0, 1]$, a continuous variable, and the cutoff point, $\bar{v} = 50\%$. In a nutshell, the approach compares changes of selected risk measures following governance-related shareholder proposals that pass in close votes to corresponding changes following the same governance-related proposals that, however, fail in close votes. Despite the possible lagged implementation of approved shareholder proposals, an immediate market reaction is expected. For example, the passage of resolutions on the abolishment of anti-takeover provisions are a strong signal for weaker future takeover protection. As they will likely induce potential acquirers to start a screening activity and, possibly, embark in negotiations, they will fuel takeover rumors and lead to an immediate rise in stock-return volatility.

In formal terms, we define a given equity-risk measure, M, as a function of the votes in favor of a shareholder proposal, v: $M(v)$. Given the binary nature of votes, the above function can be

[9] In their US-sample of 13,405 management-sponsored proposals between 1994 and 2003, Maug and Rydqvist (2009) report an average of 82.8% favorable votes and a success rate of 98.5%.

expressed as

$$M(v) = M_1 \text{ if } v > \bar{v}, \text{ (proposal passes)}$$
$$M(v) = M_0 \text{ if } v \leq \bar{v}. \text{ (proposal fails)}$$

For the sake of simplicity, but without loss of generality, we assume $M_1 > M_0$. The purpose of our study is to estimate the difference in equity risk between the two states, i.e., $\tau = M_1 - M_0$, which represents the increase in equity risk attributable to governance provisions. Unfortunately, τ is not directly observable by the reaction of equity risk to the passage of successful proposals because market participants will, to some extent, anticipate voting outcomes and adjust their risk expectations, $E[M|v]$, accordingly. The actual reaction following a vote is correctly expressed as

$$\Delta M(v) = M(v) - E[M|v],$$

where $E[M|v]$ captures the expected level of equity risk conditional on the expected votes in favor of a proposal. Reasonably, $E[M|v]$ assumes values between M_0 and M_1 and is a continuous and strictly increasing function of the number of votes in favor, v. For example, a shareholder proposal that is considered to have no chance of passing leads to $E[M|v] = M_0$ and should trigger no market reaction when it actually fails. The same holds for a proposal that is successful but was already expected to pass by a large majority. On the contrary, a proposal with a 50% chance of being successful implies $M_0 < E[M|\bar{v}] < M_1$ and should thus lead to a positive (negative) change in equity risk if the vote passes (fails). Figure 1 illustrates the relation between votes, market expectations, and observed reactions around the day of the vote.

Since $E[M|v]$ is continuous, one can assume that $E[M|\bar{v} - \epsilon] \approx E[M|\bar{v} + \epsilon]$ for small $\epsilon > 0$, which implies similar market expectations for proposals that fail or pass by a very small margin. By using this equality one can show that the effect of corporate governance on equity risk, τ, can be recovered from the difference between observed changes in equity risk after shareholder votes that pass by a small margin, $\Delta M(\bar{v} + \epsilon)$, and those that fail by a small margin, $\Delta M(\bar{v} - \epsilon)$:

$$\begin{aligned}\tau &= M(\bar{v} + \epsilon) - M(\bar{v} - \epsilon) \\ &\approx \Big(M(\bar{v} + \epsilon) - E[M|\bar{v} + \epsilon]\Big) - \Big(M(\bar{v} - \epsilon) - E[M|\bar{v} - \epsilon]\Big) \\ &= \Delta M(\bar{v} + \epsilon) - \Delta M(\bar{v} - \epsilon). \end{aligned} \tag{1}$$

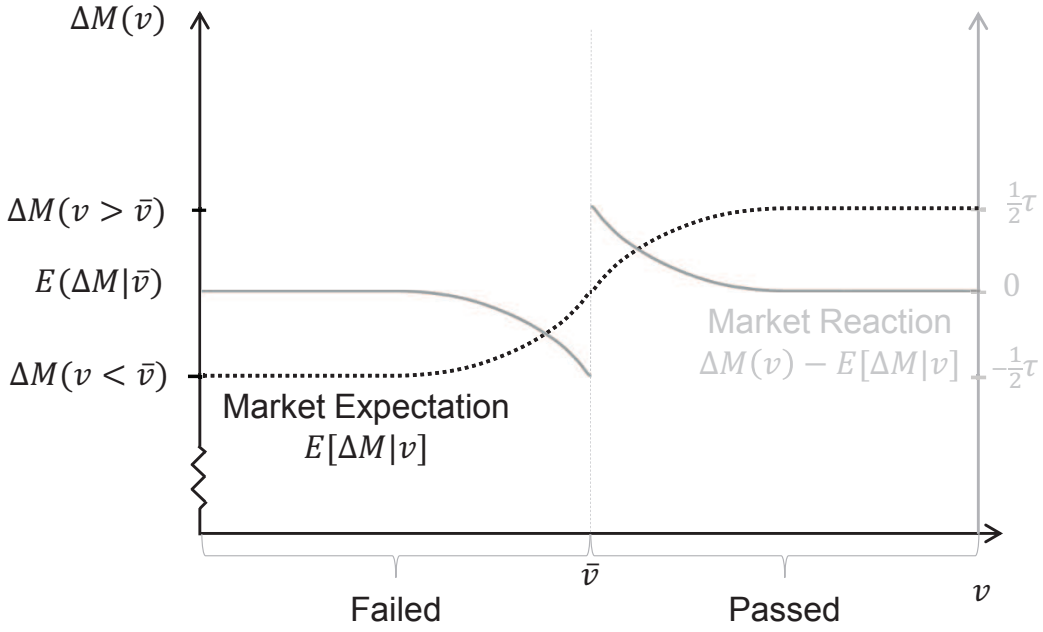
According to Lee and Lemieux (2010), three requirements need to be satisfied in order to use voting outcomes as quasi-random experiments in RDD: (i) No systematic differences in company characteristics on either side of the cutoff, (ii) no precise manipulation of votes, and (iii) a sharp cutoff point.

To check the possibility that inference is biased by preexisting differences between companies with failed or passed proposals, we compare the differences in means for selected firm characteristics. As described in Section 1.3.1 no significant difference is detected in our sample.

In spite of the possible manipulation of shareholder proposals by managers (as suggested by Bach and Metzger, 2017), for the following reasons we feel confident in ruling out that precise manipulation of votes represents a serious issue for this study. First, visual inspection of Figure 2 in Section 1.3 does not seem to indicate the presence of a jump in the density function of voting results around the cutoff point. In fact, also formal McCrary (2008) tests do not reject

Figure 1: Market Reaction to Shareholder Proposals

This figure illustrates prior expectations and observed realizations of changes in a given risk measure, ΔM, around votes on governance-related shareholder proposals in relation to votes in favor, v. τ is the influence of the governance provision on the risk measure. The black dotted line indicates the expected risk-measure change before the vote. The solid gray line depicts the market reaction to the vote. It is zero when the outcome was expected by a vast majority of market participants and this information is already processed. Around the threshold, $\bar{v}$, the market reaction to a very close approval (failure) of the proposal is half of the total effect because it is partially anticipated.



the hypothesis of a smooth distribution around the cutoff point. As argued by Lee (2008), the absence of a distinct jump at the cutoff point is a strong indicator of the difficulties to precisely control the forcing variable. The difference in the significance of McCrary (2008) tests between Bach and Metzger (2017) and this paper is likely attributable to differences in the samples. In particular, our sample starts earlier (1997-2016 vs. 2003-2016) and focuses on firms with liquid options which are thus larger and under stronger public scrutiny. Second, to systematically influence votes and act as a pivotal agent, management would need to accurately anticipate the voting behavior of all other shareholders and buy or borrow additional shares before the last cum-voting day (according to Kind and Poltera, 2017, 46 days before the annual meeting on average), which seems a very hard task given the fairly long time horizon, the huge number of private investors, and the large market capitalization of companies in our sample.[10] Finally, even when assuming the existence of manipulation by management as suggested by Bach and Metzger (2017) and considering the worse-case sharp bound of Gerard et al. (2015) designed for capturing the treatment effect in RDD regressions with manipulation of the forcing variable, the results do not disappear.

While shareholder proposals are generally non-binding,[11] we find – similar to Ertimur et al.

[10] As the average company in our sample has a market capitalization of USD 26.7 billion, management would need additional stock worth USD 534 million just to push the voting result from 51 to 49 percent.

[11] In some U.S. states, shareholder votes that amend the corporate bylaws to redeem a poison pill are actually

(2010) – a sharp and significant upward jump in the probability of their implementation at the 50% threshold. According to the data provided by SharkRepellent, 52.1% (62.1%) of G-Index (E-Index) proposals that passed by a 5% margin were implemented or followed by a binding management proposal in the next annual meeting. In contrast, the corresponding numbers for failed proposals are only 7.6% for G-Index proposals and 15.4% for E-Index proposals.

1.2.2 Quantification of Market Reactions

In this section we describe a suitable methodology to measure the causal effect of corporate governance on equity risk, τ, based on a limited number of votes on governance-related shareholder proposals. Ideally, one would like to estimate τ by using a very high number of votes that pass and fail by a very small margin, for example $v \in [50\%, 50.1\%]$ and $v \in [49.9\%, 50\%]$, respectively. Unfortunately, as the number of available votes in limited, it is advisable and more promising to extract information from proposals farther away from the cutoff point.
The following regression represents a parsimonious and simple way to estimate τ:

$$\Delta M_j = \alpha + \tau D_j + \varepsilon_j, \tag{2}$$

where ΔM_j, the dependent variable, is the observed change of a given equity-risk measure following proposal j, D_j is a binary variable assuming a value of one if the proposal passed and zero if it failed, and ε_j is the error term, with $E(\varepsilon_j) = 0$. α can be either positive or negative, depending on the average change in equity risk following votes on shareholder proposals in our sample. Unfortunately, this regression approach ignores the dependency between the observed change in equity risk and the votes in favor of a proposal, which potentially leads to an underestimation of the true effect (see Lee and Lemieux, 2010). To address this issue, we follow Lee and Lemieux (2010) and modify Equation (2) to include polynomial functions of the fraction of votes in favor of a given proposal, v_j, minus the cutoff point, $\bar{v}$:[12]

$$\Delta M_j = \alpha + \tau \cdot D_j + (1 - D_j) \cdot \sum_{i=1}^{d} \beta_{li}(v_j - \bar{v})^i + D_j \cdot \sum_{i=1}^{d} \beta_{ri}(v_j - \bar{v})^i + \varepsilon_j, \tag{3}$$

where β_l and β_r indicate the parameters of the polynomials up to degree d left (failed proposals) and right (passed proposals) of the cutoff $\bar{v}$, respectively. The binary variable D_j $(1 - D_j)$ make sure that passed (failed) proposals are included in the estimation of the polynomial to the left (right) of the cutoff. By construction all polynomials are equal to zero at the cutoff point. Thus, the discontinuity effect at the cutoff is captured by τ.
Importantly, this enhanced regression method allows us to exploit the information embedded in proposals that are farther away from the cutoff point. Furthermore, it offers an unbiased measure of the causal effect of corporate governance on equity risk at the cutoff point, i.e., the so-called

binding for the board of directors. For example, the validity of poison-pill bylaws has been established by courts in Georgia and Oklahoma. However, this is not the case in Delaware where the majority of S&P 500 companies are incorporated. A detailed discussion on this topic can be found in McDonnell (2008) and Coffee Jr (1996).

[12] Lee and Lemieux (2010) provide a discussion on parametric and non-parametric RDD models to account for the dependency of the measured effect on the forcing variable.

local average treatment effect (LATE).
However, the use of polynomials has also two disadvantages. First, the number of parameters in the regression increases with the order of the polynomial, which can decrease the significance of the results. Second, according to Lee and Lemieux (2010), high-order polynomials tend to overestimate the true effect.
For these reasons, Lee and Lemieux (2010) recommend the use of polynomials of degree zero (comparison of means) for all windows within ± 5 percentage points around the 50% voting threshold. Based on all the considerations above, we use as baseline models of our empirical analysis polynomials of order one for $\pm 5 p.p.$ windows and polynomials of degree zero (i.e., no polynomials as in Equation 2) for the $\pm 3 p.p.$ windows. As a robustness check, we also report results obtained using polynomials of degree two.

1.2.3 Measures of Equity Risk

In the empirical analysis, we focus on risk measures extracted from option prices. This has three reasons. First, risk measures backed out from option prices (e.g., implied volatilities) are less noisy than their historical counterparts (e.g., the standard deviation of equity returns) because the former reflect aggregate market expectations of future stock returns, whereas the latter represent single realizations of the same quantities. Second, implied measures of equity risk can be easily computed in high frequency and in close proximity to annual meetings, which makes them less affected by confounding events and news unrelated to changes in corporate governance. Third, the comparison of an implied risk measure just before and just after the vote on governance-related issues is particularly interesting because – by construction – both refer to the same future period, i.e., the time until options' maturity. This allows us to isolate the influence of corporate-governance changes on equity risk from other effects.
To draw a comprehensive picture on the impact of corporate governance on both the systematic and the unsystematic part of equity risk, we consider three measures of equity risk: (i) total volatility, σ_{tot}, (ii) idiosyncratic volatility, σ_{idio}, and (iii) equity beta, β. Accordingly, relative changes in equity risk are indicated by $\Delta M \in \{\Delta\sigma_{tot}, \Delta\sigma_{idio}, \Delta\beta\}$.

Total Volatility
The total volatility of a firm's equity is computed as the average implied volatility extracted from a set of suitable stock options. To account for the well-documented empirical phenomena of volatility smirks in single-stock options and an increasing term-structure of volatility (see, e.g., Das and Sundaram, 1999; Toft and Prucyk, 1997), we only consider at-the-money options with standardized maturities.
More specifically, in the baseline setting, we compute for each governance proposal the relative change in total volatility as the difference of average implied volatility obtained from all at-the-money call options traded in a four-day period just before and just after a vote. We exclude the day of the vote, for two reasons. First, we are interested in studying permanent changes in equity risk and not transitory ones on the day of the vote. Second, it is unclear at what time of the day the results of the shareholder proposal become known to the market, as this varies substantially across companies. For example, some companies disclose the outcomes of shareholder votes on

the same day through newswire and real-time broadcast while others do not rely on such services. Thus, in the case of total volatility, the dependent variable used in Regressions (2) and (3) is computed as

$$\Delta\sigma_{tot,j} = \frac{\sum_{i=1}^{T} \sigma_{j,i} - \sum_{i=-T}^{-1} \sigma_{j,i}}{\sum_{i=-T}^{-1} \sigma_{j,i}} \tag{4}$$

where $\sigma_{j,i}$ indicates the (annualized) implied volatility of the at-the-money option written on firm j's shares i days after the vote. T describes the number of days around the vote. In the baseline setting we choose $T = 4$. Thus, $\Delta\sigma_{tot,j}$ measures the relative change of implied volatility over the annual meeting of firm j.

Idiosyncratic Volatility

In addition to changes in total implied volatility, we investigate whether corporate governance has an effect on firm-specific volatility. We obtain a measure of idiosyncratic volatility by adjusting the observed relative change in implied volatility for relative changes in implied market volatility.

$$\Delta\sigma_{idio,j} = \frac{1 + \Delta\sigma_{tot,j}}{1 + \Delta\sigma_M} - 1, \tag{5}$$

where $\Delta\sigma_M$ indicates the relative change in implied volatility obtained from Equation (4) and index options. If, for example, the total implied volatility of a firm increases by 3% following the passage of a proposal and the market volatility increases by 1% in the same time frame, the relative change in idiosyncratic volatility is $\frac{1.03}{1.01} - 1 \approx 0.02$, an increase of approximately 2%.

Systematic Risk

To measure changes in companies' systematic risk, we follow the methodology of Chang et al. (2011) which is based on previous work by Carr and Madan (2001) and Bakshi et al. (2003). Their method allows us to obtain an estimate of beta as a function of the option-implied variance and skewness of stock returns and market-index returns. In particular, for each of the four days before and after an annual meeting, we extract implied variance and skewness from prices of both index options and single-stock options. A detailed description of the methodology can be found in the appendix. The percentage change in beta is computed from daily option-implied betas as

$$\Delta\beta_j \ = \frac{\sum_{i=1}^{T} \beta_{j,i} - \sum_{i=-T}^{-1} \beta_{j,i}}{\sum_{i=-T}^{-1} \beta_{j,i}}, \tag{6}$$

where $\beta_{j,i}$ is the option-implied beta of company j on day i.

As single-stock options suffer from low liquidity, for purposes of robustness we also use realized betas obtained from standard market-model regressions based on stock and index returns in the six months prior and after the vote, excluding a five-day window around the vote.

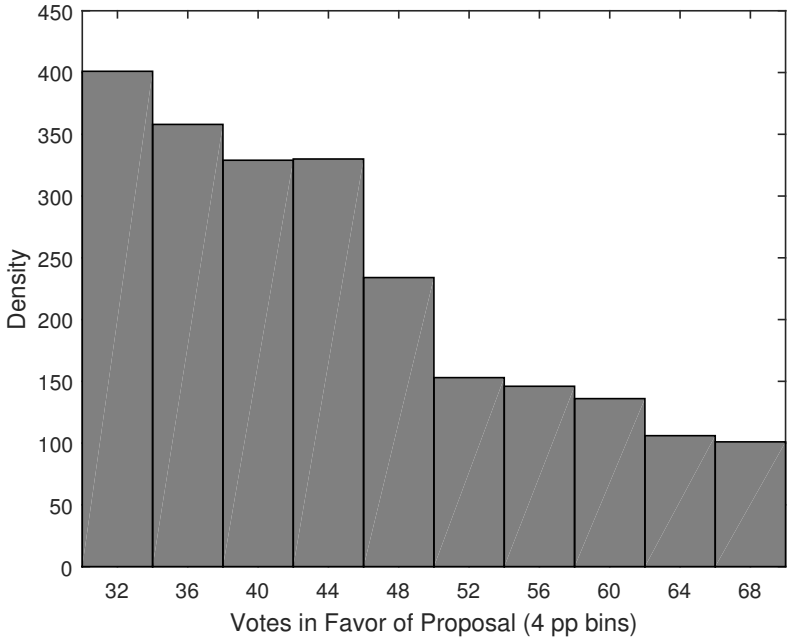
1.3 Data and Sample

1.3.1 Data on Shareholder Proposals

The sample used in the study covers all shareholder proposals in S&P 1500 firms between January 1997 and April 2016. An initial sample of shareholder proposals between 2001 and 2016 with information on the votes in favor is obtained from the SharkRepellent database. The data additionally include the date of the meeting, company details, a description of the proposal, its status (e.g., "voted on", "omitted", or "withdrawn"), and details on the sponsor. To increase the sample size and be able to use shareholder proposals with missing items, we hand-collect 10-Q company filings from the SEC's EDGAR database and enlarge the sample by shareholder proposals in the years 1997-2001. Figure 2 shows the frequency of proposals in relation to the votes in favor. In compliance with the no-manipulation assumption of RDD, there is no strong discontinuity around the cutoff point of 50%.

Figure 2: Distribution of votes in favor of Shareholder Proposals

Figure 2 shows the frequency of votes between 30% and 70% in favor of shareholder proposals in our initial data set (N = 2,294).



In the empirical analysis, we only consider shareholder proposals that comply with the following four criteria.

First, we only include close-vote shareholder proposals, i.e., resolutions that pass or fail by a margin of 5 percentage points or less. By applying this restriction, we follow the related literature (see, e.g., Cuñat et al., 2012; Flammer, 2015; Cheng et al., 2013)[13] and make sure to

[13]Cuñat et al. (2012) argue (and show) that market participants are able to accurately anticipate the outcome of ballots when the votes in favor of a proposal are more than 5 p.p. away from the cutoff point.

Table 1: Descriptions of Shareholder Proposals

This table provides an overview of the contested shareholder proposals, i.e., proposals that pass or fail by a margin of less than five percentage points, in our final sample. All the proposals are filed by shareholders of S&P1500 companies in the period 1997-2016. 'E-Index' denotes proposals affecting the Entrenchment Index by Bebchuk et al. (2009), which is a subset of the provisions in the Governance Index by Gompers et al. (2003) . 'G-Index' indicates all proposals affecting the Governance Index, but not included in the E-Index. 'Other' refers to proposals on governance topics not included in the Governance Index.

Description	Category	Proposals
Repeal classified board	E-Index	91
Repeal poison pill	E-Index	51
Golden parachute	E-Index	23
Eliminate supermajority provision	E-Index	19
Total	E-Index	184
Call special meeting	G-Index	54
Right to act by written consent	G-Index	49
Adopt cumulative voting	G-Index	15
Adopt confidential voting	G-Index	4
Total	G-Index	306
Majority vote to elect directors	Other	95
Advisory vote on compensation	Other	73
Separate CEO/Chairman	Other	33
Other	Other	144
Total	All	651

use only proposals that reveal some new information to financial markets and can thus be seen as exogenous shocks to the governance structure of a corporation.

Second, we require for each proposal the availability of a complete set of essential information: (i) the exact meeting date, (ii) the percentage of votes in favor of the proposal, and (iii) a description of the proposal.

Third, we exclude all events with two or more governance related close-vote shareholder proposals with opposite outcomes. If all close-vote proposals influence a governance index in the same direction, we count them as one event but adjust the observed change in the equity-risk measure by dividing it by the number of proposals.

Fourth, as we are interested in the impact of corporate governance on equity risk, we only consider those proposals that specifically address governance issues. To this aim, we manually screen the their content and categorize them into coherent subgroups, depending on whether the proposals address any of the 6 governance provisions included in the E-Index, any of the 24 provisions of the G-Index, or other governance items. Table 1 provides a breakdown of the final sample by content. The majority of the 651 shareholder proposals included in our final sample address G-Index provisions (306), including 184 E-Index provisions. The three most frequent types of shareholder proposals promote the introduction of majority votes to elect board directors

(95), the repeal of classified boards (91), and the introduction of advisory votes on managerial compensation (73).
Table 2 describes the sample by means of seven selected variables: Capital Expenditures, EBITDA, Number of Institutional Shareholders with at least 5%, Market Capitalization, Total Assets, Return on Equity, and Tobins Q. To control if the results might be driven by preexisting differences between companies with failed or passed proposals, we comparing the differences in means for the above variables. None of the differences are statistically significant: Capital Expenditures (p-value = 0.49), EBITDA (p = 0.16), Number of Institutional Shareholders with at least 5% (p = 0.19), Market Capitalization (p = 0.43), Total Assets (p = 0.22), Return on Equity (p = 0.91), Tobins Q (p = 0.29).

Table 2: Descriptive Statistics

This table provides descriptive statistics of selected firm characteristics related to the 651 observations in our final sample of governance-related shareholder proposals that fail or pass by a maximum margin of five percentage points (G-Index and Other). All accounting variables are from Compustat: 'Total Assets' (at), 'Market Value' (mkvalt), 'EBITDA' (ebitda), 'Capital Expenditures' (capex), 'Tobin's Q' (defined as Market Value of Assets (at+mkvalt-ceq) divided by the sum of Total Assets (at) and Balance Sheet deferred taxes and Investment Tax Credit (txditc)). 'Return on Equity' is the ratio of Net Income (ni) to Market Value (mkvalt). 'Ownership by top five institutional shareholders' is the sum of shares held by top five institutional shareholders divided by total shares outstanding in percent. Ownership data is obtained from Thomson Reuters and 14A company filings. All values are in 1996 US Dollars. The number of observations (N) changes due to missing data.

	N	Mean	Std. Dev.	10th Per.	90th Per.
Total Assets ($millions)	651	96,234	295,880	1,986	128,835
Market Value ($millions)	575	26,735	41,324	1,201	87,003
EBITDA ($millions)	541	4,241	7,606	172.2	9,880
Capital Expenditures ($millions)	515	1,386	2,944	27.0	2,719
Tobin's Q	439	1.85	1.32	0.99	3.17
Return on Equity	514	0.04	0.12	-0.02	0.11
Ownership by top five shareholders (in %)	464	25.2	8.1	16.36	35.2
Institutional shareholders that own at least 5%	464	1.75	1.44	0	4

1.3.2 Data on Options, Stocks, and Risk-Free Rates

For the computation of option-implied volatilities, we obtain data from OptionMetrics IV DB and use in the baseline setting all available standardized at-the-money call options with 30-day maturity.[14] To calculate the idiosyncratic component of the implied volatility, we use – as a reference for implied market volatility – the Chicago Board Options Exchange Volatility Index (VIX). This index is based on implied volatilities obtained from S&P 500 options with a 30-day maturity. For 1990 onwards, daily VIX-data are available from the CBOE website.

[14] We use short-term options because they are more liquid than their long-term counterparts. While the implementation of successful proposals is unlikely realized within 30 days, expected changes in volatility will occur immediately due to rumors and anticipation effects.

For the computation of option-implied betas, the implied higher moments of stock returns are extracted from non-standardized single-stock options as provided by OptionMetrics IV DB. In line with Chang et al. (2011), we use implied volatilities of all available in-the-money options with closest maturity below and above 60 days. Each option in the database is associated with an implied volatility that is extracted using a binomial tree for the pricing of American options. Whenever we have less than two options with implied volatilities, the corresponding proposal is excluded. As a proxy for the risk-free interest rate used to estimate beta, we use the three-month treasury bill rates as provided by the Federal Reserve of St. Louise. All stock prices are obtained from CRSP.

1.4 Results

1.4.1 G-Index Provisions and Equity Risk

We start the analysis by investigating the influence of governance provisions included in the G-Index on equity risk. Figure 3 depicts the RDD regression with polynomials of degree one. It represents the empirical counterpart of Figure 1 and shows the presence of a discontinuity in (the relative change of) stock-return volatility at the 50% voting threshold.

Figure 3: Empirical Effect of Shareholder Proposals on Implied Volatility

This figure shows an RDD regression with polynomials of degree one (see Equation (3)) for changes in total volatility around shareholder proposals that address governance provisions included in the G-Index of Gompers et al. (2003). The solid lines denote the estimated polynomials of order one for failed proposals (left of the 50% cutoff) and passed proposals (right of the 50% cutoff). The round circles connected by the dashed line indicate average changes in implied volatility obtained using three bins of 1.66 percentage points on each side of the cutoff.

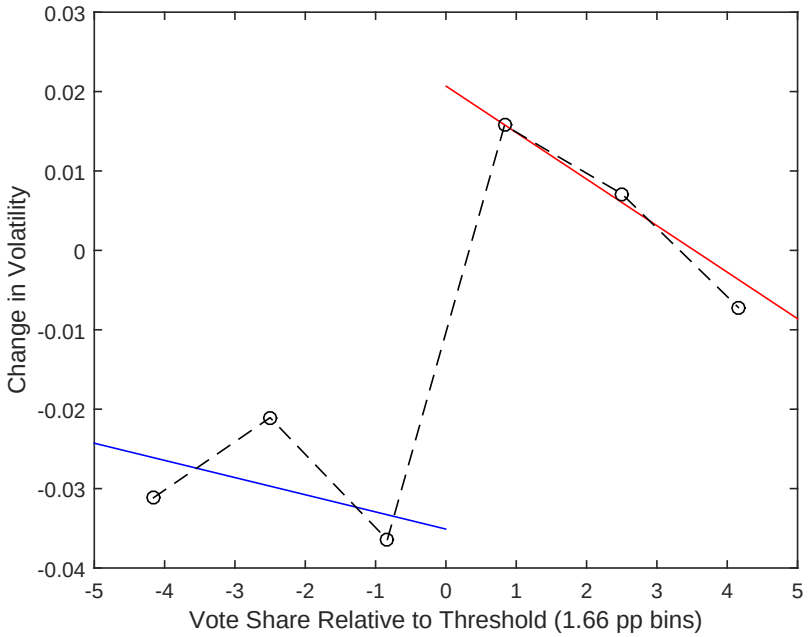


Table 3 presents a broader set of regression results. They show that a positive shock in a firm's G-Index leads to higher (expected) values of both total volatility and idiosyncratic volatility. Based on shareholder proposals that lie in a 5-percentage-point window around the threshold and regression polynomials of degree one, total volatility is found to increase by +5.57% (t-value: 2.59) and idiosyncratic volatility by +4.55% (t-value: 2.06). Thus, both effects are significant at the 5%-level. Table 3 also reports the results obtained by a conservative comparison of the

Table 3: The Impact of G-Index Provisions on Equity Risk

This table shows the results of RDD regressions (see Equation (3)) for changes in three option-implied measures of equity risk ('Total Volatility', 'Idiosyncratic Volatility', and 'Systematic Risk' as measured by beta) around shareholder proposals that address governance provisions included in the G-Index of Gompers et al. (2003). τ captures the treatment effect by measuring the difference between the relative change of a risk measure depending on whether a shareholder proposal succeeds or fails. 'Poly. degree' refers to the degree of the polynomials used in the RDD regressions. 'Window size' of ±5 (±3) indicates that all proposals with votes in favor within 5 (3) percentage points around the majority threshold are considered. t-values are displayed in parenthesis. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Relative Change in a Risk Measure (in %)						
	Total Volatility		Idiosyncratic Volatility		Systematic Risk	
	(1)	(2)	(3)	(4)	(5)	(6)
τ	5.57***	4.79***	4.55**	2.57*	-1.32	0.49
	(2.59)	(3.53)	(2.06)	(1.86)	(-0.08)	(0.04)
α	-3.51**	-3.29***	-3.31**	-2.79***	-11.1	-4.23
	(-2.51)	(-3.66)	(-2.32)	(-3.05)	(-1.17)	(-0.57)
β_f	-22	-	-25	-	-524	-
	(-0.40)		(-0.44)		(-1.38)	
β_p	-59	-	-108*	-	612	-
	(-1.07)		(-1.94)		(1.41)	
Poly. degree	1	0	1	0	1	0
Window size (in p.p.)	± 5	± 3	± 5	± 3	± 5	± 3
R-squared	0.037	0.058	0.016	0.017	0.020	0.001
Observations	306	201	306	201	200	143

mean implied volatilities in a three-percentage-point window to the left and the right of the 50% threshold. With this specification, total volatility is found to increase by 4.79% (t-value: 3.53). With a reaction of +2.57% (t-value: 1.86), also the effect of G-Index provisions on idiosyncratic volatility is positive and reaches statistical significance at the 10% level. The smaller effects obtained in Regressions (2) and (4) compared to Regressions (1) and (3) are likely due to the well-known underestimation of the true causal effect when neglecting the functional relation between the voting outcome and market expectations (see, e.g., Lee and Lemieux, 2010). In fact, although not statistically significant, the negative coefficients β_f and β_p (combined with the negative α) indicate that proposals with votes farther away from the threshold trigger smaller changes in equity risk, which is sensible as the effect is partially anticipated by market participants. While the explanatory power of the regressions is rather low ($R^2 = 0.037$ in Regression (1)) it is similar to the study conducted by Cuñat et al. (2012) on stock returns and using the same specification ($R^2 = 0.024$). All regressions deliver a negative and significant value for α. This complies with the idea that generally uncertainty builds up before annual meetings and declines afterward.

Regressions (5) and (6) evidence that the acceptance of governance-related proposals does not exert a significant impact on implied betas. Thus, the results suggest that G-Index provisions lead to higher equity risk, which is, however, attributable to an increase in idiosyncratic risk and not to higher systematic risk.

1.4.2 What Matters in Corporate Governance?

Economist have dedicated considerable resources on learning about the economic importance of different corporate-governance provisions. Most prominently, Gompers et al. (2003) and Bebchuk et al. (2009) have developed two indexes that aim at capturing the most important features of a firm's governance.
In this section, we contribute to this debate by assessing the relative importance of different types of corporate-governance items on the basis of their influence on equity risk. To this purpose, we consider different sets of shareholder proposals, depending on whether they address issues included in the G-Index of Gompers et al. (2003) or the smaller Entrenchment Index (E-Index) of Bebchuck et al. (2009).
Table 4 reports the sign, size, and significance of the effect of eight different sets of corporate governance measures on total volatility (Models (1) and (2)) and idiosyncratic volatility (Models (3) and (4)). Provisions related to corporate governance are found to increase total volatility by 3.07% (t-value: 1.91) on average. This effect increases to 5.57% (t-value: 2.59) and 8.63% (t-value: 3.56) when we focus on provisions included in the G-Index and E-Index, respectively. Based on these results, we support the view that the governance items included in the Entrenchment Index proposed by Bebchuk et al. (2009) are important for a company even from an equity-risk perspective. Interestingly, governance items not included in the E-Index – even those included in the G-Index – do not seem to have a significant impact on equity risk. Conservative regressions based on polynomials of degree zero (Model (2) in Table 4) draw a very similar picture, although the coefficients are – as expected – generally smaller.
The regressions carried out on idiosyncratic volatility (Models (3) and (4)) confirm that the described increase in stock-return volatility stems from its idiosyncratic part. Unreported regressions on equity beta indicate no significant effects. Only the provisions included in the E-Index lead to a significant increase in firm-specific volatility by 7.26% (t-value: 2.44) or 4.74% (t-value: 2.51), depending on the regression specification used. The fact that in Model (3) also G-Index provisions trigger higher volatilities is likely due to the fact that all E-Index provisions are also included in the G-Index. In fact, no set of governance provisions outside the E-Index is found to have a significant effect on idiosyncratic volatility.

1.4.3 Robustness

In this section we address potential concerns on the validity of our findings by changing the specifications used in the baseline RDD regression models and running placebo regressions.

Alternative Model Specifications

Table 5 shows additional regression results obtained with alternative model specifications. In Panel I, we change both the window sizes around the threshold (3 p.p. or 5 p.p) and the degree of

Table 4: The Impact of Different Governance Provisions on Equity Risk

This table shows the results of RDD regressions (see Equation (3)) for changes in option-implied 'Total Volatility' and 'Idiosyncratic Volatility' around shareholder proposals that address governance provisions included in different subgroups. τ captures the treatment effect by measuring the difference between the relative change of a risk measures depending on whether a shareholder proposal succeeded or failed. Subscript *All* indicates all governance proposals, *G-Index* indicates proposals included in the *G-Index* of Gompers et al. (2003), and *E-Index* the proposals included in the Entrenchment Index of Bebchuk et al. (2009). 'Poly. degree' describes the degree of the polynomials used to estimate the effect. 'Window size' of ±5 (±3) means that all proposals with votes in favor within 5 (3) percentage points around the majority threshold are considered. *t*-values are displayed in parenthesis. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Relative Change in a Risk Measure (in %)				
	Total Volatility		Idiosyncratic Volatility	
	(1)	(2)	(3)	(4)
τ_{All}	3.07*	2.22**	0.92	0.49
	(1.91)	(2.25)	(0.60)	(0.51)
$\tau_{G\text{-}Index}$	5.57***	4.79***	4.55**	2.57*
	(2.59)	(3.53)	(2.06)	(1.86)
$\tau_{E\text{-}Index}$	8.63***	5.73***	7.26**	4.74**
	(3.56)	(3.72)	(2.44)	(2.51)
$\tau_{All\ -\ G\text{-}Index}$	0.37	-0.43	-3.06	-1.63
	(0.15)	(-0.30)	(-1.41)	(-1.21)
$\tau_{All\ -\ E\text{-}Index}$	0.38	0.73	-1.73	-1.32
	(0.18)	(0.59)	(-0.96)	(-1.19)
$\tau_{G\text{-}Index\ -\ E\text{-}Index}$	0.67	3.63	1.18	-0.58
	(0.17)	(1.48)	(0.36)	(-0.29)
Poly. degree	1	0	1	0
Window size (in p.p.)	± 5	± 3	± 5	± 3

the polynomials (0, 1, and 2). All observed effects related to both total and idiosyncratic volatility are positive and, most of them, significant. The measured effects lie between 1.2% and 6%, except the very large effects obtained with a polynomial of degree two. As mentioned in Section (1.2.2), we explain the latter finding by the potential overestimation bias of RDD regressions with higher-order polynomials and small window sizes. The smallest effects are observed when using the large window of 5 percentage points and a polynomial of degree zero. This finding complies with the plausible hypothesis that the effect diminishes for proposals farther away from the cutoff point because market participants are able to anticipate their outcomes. The effect on systematic risk is never significant.

Panel II shows the estimated effects using different time windows for the estimation of the option-implied risk measures around the annual meetings. The results for total and idiosyncratic volatility lie between 2.1% and 6%. The lower effects for the 3-day window might be explained by the fact that market participants may be able to make better estimates of the voting outcome (and incorporate this information into prices) as the meeting approaches. This does not contradict the finding of Cuñat et al. (2012) who observe no clear spike in stock-returns in the days prior to a close vote on a shareholder proposal because the improved forecast holds for both failed and passed proposals. Again, no effect on systematic risk is detected.

Table 5: Robustness

This table shows the results of RDD regressions (see Equation (3)) for changes in three option-implied measures of equity risk ('Total Volatility', 'Idiosyncratic Volatility', and 'Systematic Risk' as measured by beta) around shareholder proposals that address governance provisions included in the G-Index of Gompers et al. (2003). The treatment effect, τ, represents the difference between relative changes in risk measures depending on the success or failure of shareholder proposals. In Panel I, the degree of the polynomials used in the regression varies from 0 to 2. In Panel II, the number of days around the annual meeting used to extract option implied risk measures varies from 3 to 5. 'Window size' of ± 5 (± 3) means that all proposals with votes in favor within 5 (3) percentage points around the majority threshold are considered. 'Days around vote' specifies the number of days around the annual meeting used to extract option implied risk measures. 'Poly. degree' describes the degree of the polynomials used to estimate the effect. t-values are displayed in parenthesis. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Relative Change in a Risk Measure (in %)						
	Total Volatility		Idiosyncr. Volatility		Systematic Risk	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel I: Degrees of Polynomial						
$\tau_{deg=0}$	3.57***	4.79***	1.18	2.57*	2.52	0.49
	(3.23)	(3.53)	(1.04)	(1.86)	(0.30)	(0.04)
$\tau_{deg=1}$	5.57***	3.78	4.55**	4.74*	-1.32	-0.53
	(2.59)	(1.38)	(2.06)	(1.71)	(-0.08)	(-0.02)
$\tau_{deg=2}$	5.27	11.5***	7.14**	12.4***	-7.40	-14.5
	(1.60)	(2.75)	(2.13)	(2.92)	(-0.32)	(-0.43)
Window size (in p.p.)	$\pm$ 5	$\pm$ 3	$\pm$ 5	$\pm$ 3	$\pm$ 5	$\pm$ 3
Days around vote	4	4	4	4	4	4
Panel II: Days Around Vote						
$\tau_{dav=3}$	5.37**	4.48***	4.39**	2.12	-4.11	-0.73
	(2.56)	(3.36)	(1.99)	(1.56)	(-0.25)	(-0.07)
$\tau_{dav=4}$	5.57***	4.79***	4.55**	2.57*	-1.32	-0.49
	(2.59)	(3.53)	(2.06)	(1.86)	(-0.08)	(0.04)
$\tau_{dav=5}$	4.73**	4.32***	3.78*	2.25	2.29	3.80
	(2.19)	(3.18)	(1.67)	(1.61)	(0.13)	(0.30)
Poly. degree	1	0	1	0	1	0
Window size (in p.p.)	$\pm$ 5	$\pm$ 3	$\pm$ 5	$\pm$ 3	$\pm$ 5	$\pm$ 3

Placebo Tests

Table 6 shows the results of RDD regressions obtained by using artificial voting cutoffs at 40% (Panel I) and 60% (Panel II). Columns (1) and (3) of Panel I (Panel II) compare the change in total and idiosyncratic volatility, respectively, of proposals with votes in favor between 35% and 40% (55% and 60%) to those with votes in favor between 40% and 45% (60% and 65%). Columns (2) and (4) show the same effects for differences in means computed in window of 3 percentage points. Thus, apart from the different cutoff levels, Table 6 replicates the regressions presented in (the upper part of) Table 4. The fact that none of the regression coefficients related to the discontinuity effect at the artificial cutoff levels are statistically significant excludes the possibility that the previous results were spurious and driven by a correlation between votes in

favor of a proposal and implied volatility.

Table 6: Placebo Tests

This table shows the results of placebo RDD regressions (see Equation (3)) that use two artificial cutoffs: 40% (Panel A) and 60% (Panel B). Implied risk measures are extracted from 30-day options traded in a four-day period just before and after votes on governance proposals. The results are obtained using a regression discontinuity design (RDD) applied to votes on shareholder proposals. The treatment effect, τ, represents the difference between relative changes in risk measures depending on the success or failure of shareholder proposals. τ captures the (spurious) treatment effect by measuring the difference between the relative change of a risk measures depending on whether a shareholder proposal succeeded or failed. Subscript *All* refers to all governance proposals, *G-Index* indicates proposals included in the *G-Index* of Gompers et al. (2003), and *E-Index* the proposals included in the Entrenchment Index of Bebchuk et al. (2009). 'Poly. degree' describes the degree of the polynomials used to estimate the effect. 'Window size' of ±5 (±3) means that all proposals with votes in favor within 5 (3) percentage points around the majority threshold are considered. *t*-values are displayed in parenthesis. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Relative Change in a Risk Measure (in %)				
	Total Volatility		Idiosyncratic Volatility	
	(1)	(2)	(3)	(4)
Panel I: 40% Cutoff				
τ_{All}	-1.40	0.11	-2.06	-1.12
	(-0.60)	(0.07)	(-0.88)	(-0.72)
$\tau_{G\text{-}Index}$	-0.84	-0.18	-0.44	-1.09
	(-0.30)	(-0.10)	(-0.18)	(-0.73)
$\tau_{E\text{-}Index}$	0.42	-1.42	1.01	-1.67
	(0.07)	(-0.32)	(0.19)	(-0.48)
Panel II: 60% Cutoff				
τ_{All}	-1.03	0.13	-2.77	-1.48
	(-0.36)	(0.07)	(-0.96)	(-0.77)
$\tau_{G\text{-}Index}$	1.09	2.07	-1.19	0.30
	(0.31)	(0.95)	(-0.36)	(0.13)
$\tau_{E\text{-}Index}$	-3.15	-0.49	-1.34	0.03
	(-0.85)	(-0.20)	(-0.34)	(-0.01)
Poly. degree	1	0	1	0
Window size (in p.p.)	± 5	± 3	± 5	± 3

Potentially Manipulated Shareholder Votes

Bach and Metzger (2017) and Gerard, Rokkanen, and Rothe (2015) (GRR) argue that manipulation of the running variable is problematic for RDD because observations left and right of the cutoff are not comparable due to self selection. In the context of shareholder proposals, Bach and Metzger (2017) suggest that a fraction of ca. 11% of close shareholder proposals might be rigged by management. Although, as explained in Section 1.2, we do not consider this to be a serious problem for our sample, we nonetheless check the robustness of the results by implementing the methodology of GRR (as suggested by Bach and Metzger, 2017, to deal with voting manipulation). We follow GRR and consider two unobservable types of shareholder proposals: *always-assigned* proposals ($A = 1$), which are manipulated by management and always fail,[15] and *potentially-assigned* proposals ($A = 0$), which are truly random and thus comply with the

[15]To avoid confusion, it is important to note that the original paper by GRR focuses on the manipulation in

RDD assumptions. The ratio of always-assigned proposals over all the failed proposals is defined by $\Theta := P(A = 1|v < \bar{v})$. Following the suggestion of Bach and Metzger (2017) and in compliance with the fact that in our sample management recommendations are always against the acceptance of shareholder proposals, we rule out that manipulations ever favor shareholder proposals. In Theorem 1, GRR propose to empirically estimate the *worst case* treatment effect (τ_{WC}), i.e., as follows:

$$\tau_{WC} = E[\Delta M(v) : v > \bar{v}] - E[\Delta M_j(v) : v < \bar{v}, \Delta M(v) > Q_{\Delta M: v<\bar{v}}(\Theta)]. \tag{7}$$

Thus, the *worst case* treatment effect is obtained by eliminating those observations with the largest impact on the original treatment effect. It is estimated by considering only failed proposals that are followed by a change in risk measure above a certain Θ quantile.
As the name suggests, the *worst case* treatment effect, τ_{WC}, is a very conservative (and possibly not very realistic) procedure to deal with the possibility of manipulated votes. In particular, there is no clear reason, why the rigged proposals would trigger particularly pronounced market reactions. By assuming that market participants are aware of the managerial capability to rig undesired proposals, they should expect this outcome and no change in risk measure should be observed. For this reason, we propose, as an alternative and more plausible way to deal with voting manipulation in RDD, a *perfect foresight* treatment effect, τ_{PF}, which excludes a proportion of Θ failed proposals with the market reaction closest to zero:

$$\tau_{PF} = E[\Delta M(v) : v > \bar{v}] - E(\Delta M(v) : v < \bar{v}, |\Delta M(v)| > Q_{|\Delta M|: v<\bar{v}}(\Theta)] \tag{8}$$

The *Perfect Foresight* treatment effect excludes the Θ quantile of failed proposals with the lowest absolute market reactions.
Table 7, shows the results of the different RDD treatment effects for the G-Index (Panel I) and the E-Index (Panel II) based on the 11% (Θ) of rigged close-vote shareholder proposals suggested by Bach and Metzger (2017). The effect of G-Index provisions on total volatility (Panel I, Models (1)-(2)) remains statistically significant even under the GRR worst case scenario. Interestingly, the treatment effect under the assumption of perfect manipulation foresight is slightly larger than in the baseline regression model. Very similar results, but with larger effects, are obtained for E-Index provisions (Panel II, Models (1)-(2)). Thus, the main results of this study do not change even after accounting in a severe manner for the extent of managerial manipulation suggested in Bach and Metzger (2017). With respect to the effect of corporate governance provisions on idiosyncratic volatility, we observe that it remains positive but not highly statistically significant for the worst-case treatment effect.

1.4.4 Analysis of the Channels Driving the Results

In addition to showing that stronger shareholder rights increase equity risk, we shed light on the channels that may drive this result. In particular, following extant literature, we test three possible channels: (i) a reduction in the *Quiet life* of managers, (ii) an improvement of the

favor of votes and not, as in our case, against them. Based on the findings of Bach and Metzger (2017), in our setting of shareholder proposals, we are concerned with the possibility that managers may manipulate votes to let the proposals fail.

Table 7: Voting Manipulation by Management

This table shows the results of different treatment effects assuming 11% of rigged shareholder proposals, as suggested by Bach and Metzger (2017). The *Worst Case* treatment effect (τ_{WC}) is estimated using Equation (7) and follows the methodology of Gerard, Rokkanen, and Rothe (2015) for Regression Discontinuity Designs with manipulated running variables. The *Perfect Foresight* treatment effect (τ_{PF}) is estimated using Equation (8). The baseline treatment effect, τ, is displayed for convenience and is the same as in Table 4. Panel I (*G-Index*) shows results for the proposals included in the *G-Index* of Gompers et al. (2003) and Panel II (*E-Index*) for the proposals included in the Entrenchment Index of Bebchuk et al. (2009). 'Poly. degree' indicates the degree of the polynomials used to estimate the effect. 'Window size' of ±5 (±3) means that all proposals with votes in favor within 5 (3) percentage points around the majority threshold are considered. *t*-values are displayed in parenthesis. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Relative Change in a Risk Measure (in %)				
	Total Volatility		Idiosyncratic Volatility	
	(1)	(2)	(3)	(4)
Panel I: G-Index				
τ	5.57***	4.79***	4.55**	2.57*
	(2.59)	(3.53)	(2.06)	(1.86)
τ_{PF}	6.05***	5.20***	4.87**	2.93**
	(2.66)	(3.64)	(2.11)	(2.01)
τ_{WC}	3.37*	2.87**	2.60	0.54
	(1.65)	(2.24)	(1.26)	(0.42)
Panel II: E-Index				
τ	8.63***	5.73***	7.26**	4.74**
	(3.56)	(3.72)	(2.44)	(2.51)
τ_{PF}	9.33***	6.25***	7.69**	5.21**
	(3.65)	(3.87)	(2.48)	(2.62)
τ_{WC}	5.99***	3.66***	4.92*	2.40
	(2.64)	(2.67)	(1.74)	(1.38)
Poly. degree	1	0	1	0
Window size (in p.p.)	± 5	± 3	± 5	± 3

Information Flow, and (iii) a rise of the *Takeover Probability*.

The *Quiet life* hypothesis of Bertrand and Mullainathan (2003) and John et al. (2008) argue that stronger shareholder rights may disrupt the cozy business habits of managers and hinder them from enjoying their usual quiet life at the top of their companies. Instead of benefiting from firm resources, putting little effort in the management of the firm, and avoiding risk, managers are forced by shareholders to seek higher performance, increase managerial efforts, and take on higher risks.

According to the *Information Flow* hypothesis of Ferreira and Laux (2007), stronger shareholder rights reduce information asymmetries between firm insiders and outsiders and improve the information flow from the company to shareholders. Consequently, stock prices incorporate in a timelier manner new information and are thus more volatile.

Finally, the *Takeover Probability* hypothesis of Cuñat et al. (2017) suggests that additional shareholder rights simply increase the probability of a takeover and thereby raise the uncertainty about the cash flows and, consequently, equity risk.

To test these three channels, we focus on possible heterogeneous effects in the sample and exploit the information embedded in the cross-section of firms with votes on shareholder proposals. More specifically, we test whether the observed effect of corporate governance on equity risk, τ, is more pronounced in companies with characteristics associated with a particular channel. For example, if quite life is a relevant channel, we expect τ to be larger for companies in less competitive industries – where the quite-life problem is more likely to be salient.

Similar to Horsch et al. (2017), we split our sample using the median company characteristics as thresholds and test whether the difference between the coefficients of the two subsamples of close-votes (H = subsample with above-median company characteristics; L = subsample with below-median company characteristics), $\Delta\tau = \tau_H - \tau_L$, is statistically significant. Thus, this approach can be accurately described as a difference-in-differences-in-differences (DiDiD) research design. We estimate the parameter $\Delta\tau$ in one regression as follows

$$\begin{aligned}\Delta M_j = \alpha_L &+ B_j^H \cdot \Delta\alpha_H \\ &+ D_j \cdot \tau_L + D_j \cdot B_j^H \cdot \Delta\tau \\ &+ (1 - D_j) \cdot \sum_{i=1}^{d} \beta_{li}^L (v_j - \bar{v})^i + D_j \cdot \sum_{i=1}^{d} \beta_{ri}^L (v_j - \bar{v})^i \\ &+ (1 - D_j) \cdot B_j^H \cdot \sum_{i=1}^{d} \Delta\beta_{li}^H (v_j - \bar{v})^i + D_j \cdot B_j^H \cdot \sum_{i=1}^{d} \Delta\beta_{ri}^H (v_j - \bar{v})^i + \varepsilon_j,\end{aligned} \tag{9}$$

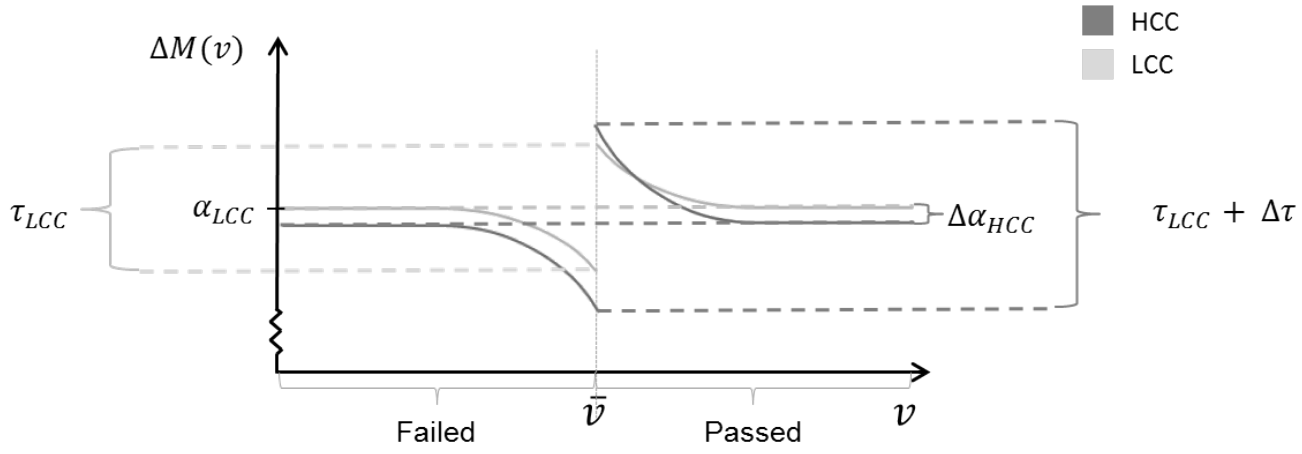
where B_j^H is a binary variable equal to one if the proposal belongs to the subsample with above-median company characteristic and zero otherwise. $\alpha_{\Delta H}$ captures the possibility that H companies have systematically different changes in risk measures around the annual meeting, independently of whether the proposal passes or fails. For our purposes, the variable of interest is $\Delta\tau$, which captures the additional effect that corporate governance has on H companies compared to L companies. Figure (4) illustrates this research design.

Following Giroud and Mueller (2011), we expect the quite-life problem to be more pronounced in industries with low competition, i.e., in sectors where financial slack allows managers to survive even without excessive managerial efforts. By postulating (as in Giroud and Mueller, 2011) that product-market competition and internal governance mechanisms are substitutes, a positive and significant difference between the effect in low-competition firms and high-competition firms would comply with the idea that the transmission channel between corporate governance and equity risk is actually related with the quite-life problem.

Based on the quite-life argument, we would also expect the effect to be larger for companies with a high number of institutional blockholders. This prediction is based on Cremers and Nair (2005) who show that blockholders and G-Index governance provisions are complements rather than substitutes. Thus, an exogenous improvement of the G-Index should have a more disruptive and stronger effect in companies with several institutional blockholders. Further, as noted by Edmans (2014), unhappy shareholders have three possibilities of directly influencing the of a company: launch a takeover bid, change the board of directors via a proxy fight, or engage in informal negotiations with firm management. All of these interventions reduce the managers' quite life and are most likely carried out by institutional blockholders. Thus, if it is a reduction in quite life that induces exogenous improvements of corporate governance to increase equity

Figure 4: Market reaction to shareholder proposals for companies with different levels of company characteristics

This figure shows theoretical equity risk reactions around votes on governance-related shareholder proposals for companies with different levels of company characteristics (CC). The dark lines indicate reactions for companies with high company characteristic (H), the light lines reactions of companies with low company characteristic (L). Market reactions can differ systematically for L and H companies, independent of whether the proposal failed or passed ($\Delta\alpha_H$). The additional market reaction for passed proposals compared to failed proposals within the L subgroup is given by τ_L. H companies experience the overall effect $\tau_L + \Delta\tau$. The difference between the two effects ($\Delta\tau$) is our variable of interest.



risk, we expect the effect to be largest in companies with several blockholders.

If the findings are driven by changes in the information flow between the company and shareholders, we would expect the effect to be particularly strong in companies where information asymmetries are large, i.e., in firms followed by several analysts and characterized by a high dispersion of earnings-per-share (EPS) forecasts.

Finally, if the results are caused by an increase in the likelihood of being taken over, we should observe higher effects for companies with features that make them appealing as a takeover target. For instance, the effect should be larger for firms with low leverage and operating in an industry with high takeover activity (see, e.g., Palepu, 1986).[16]

Table 8 shows the empirical results related to the three channels. The positive and weakly significant value of $\Delta\tau$ for the subsamples constructed based on the variable *Competition* (Panel I) means that the increase in equity risk upon governance improvements is especially strong for companies operating in industries with low levels of competition where quite life is more likely an issue. Similarly, the effect is stronger for companies with a high number of institutional blockholders who are more likely to be able to make use of the improved governance structures and intervention possibilities. No difference in the magnitude of the effect can be detected for subgroups of firms related to the information-flow channel (Table 8, Panel II) and the takeover-probability channel (Table 8, Panel III).

The fact that the only significant differences between the above-median and below-median subgroups refer to firm characteristics related to the quite-life problem – Competition and Number

[16]We measure industry-specific takeover activity by the number of takeover targets divided by the number of companies in the Compustat universe for each 2-digit SIC code-year combination.

Table 8: Analysis of Channels via Heterogeneous Effects

This table shows the different effect that governance provisions have on equity risk in firms with selected characteristics below (Low) and above the median (High) in the sample of close votes on shareholder proposals related to governance provisions included in the Entrenchment Index of Bebchuk et al. (2009). In accordance with Equation (9), $\Delta\tau$ measures the additional effect that one subsample has over and above the other. The company characteristics used to form the subsamples are related to the the three channels under scrutiny: Quite Life, Information Flow, and Takeover Probability. *Competition* is measured by the Herfindahl-Hirschman Index based on 2-digit SIC codes and the Compustat Universe. *Num. Inst. Blockholders* indicates the number of institutional Blockholders (min. 5% ownership). *Analyst Dispersion* measures the standard deviation of annual EPS forecasts. *Number of Analysts* measures the number of analysts reporting expected earnings of a company. *Leverage* is measured by the Compustat items (DLTT + DLC)/SEQ. *M&A Intensive Industry* classifies companies within industries with a high level of takeover activity, measured by the number of takeovers with US targets within a year-2-digit SIC code group divided by the total number of companies in the Compustat universe for the corresponding year-SIC code combination. 'Poly. degree' indicates the degree of the polynomials used to estimate the effect. 'Window size' of ±5 (±3) means that all proposals with votes in favor within 5 (3) percentage points around the majority threshold are considered. *t*-values are displayed in parenthesis. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Panel I: Quiet Life	Competition (Low - High)		Num. Inst. Blockholders (High - Low)	
$\Delta\tau$	5.32	4.67*	7.88*	5.48*
	(1.24)	(1.73)	(1.71)	(1.87)
Panel II: Information Flow	Analyst Dispersion (High - Low)		Number of Analysts (High - Low)	
$\Delta\tau$	4.98	-3.06	-0.08	-0.03
	(0.55)	(-0.56)	(-0.78)	(-0.53)
Panel III: Takeover Probability	Leverage (Low - High)		M&A Intensive Industries (High - Low)	
$\Delta\tau$	-6.09	-2.99	-0.33	0.89
	(-1.39)	(-1.11)	(-0.08)	(0.33)
Poly. degree	1	0	1	0
Window size (in p.p.)	± 5	± 3	± 5	± 3

of Institutional Blockholders – suggests that the observed higher risk of firms upon governance improvements is most likely due to an increase in managerial performance pressure, i.e., a reduction of the managers' quite life. Conversely, our results do not support the view that the positive effect of corporate governance on equity risk is induced by either the information-flow channel or the takeover-probability channel.

1.5 Conclusion

In this paper we employ a Regression Discontinuity Design applied to shareholder proposals that pass or fail by a small margin to measure the causal effect of corporate governance on three measures of equity risk: (i) total volatility, (ii) idiosyncratic volatility, and (iii) equity beta. Close votes on shareholder proposals serve as plausible exogenous shocks to selected corporate-governance characteristics. When a governance-related shareholder proposal passes by a small margin, the changes of both total and idiosyncratic volatility are found to be significantly larger

than those observed for similar proposals that, however, fail by a small margin. The average increase in total volatility attributable to a one-point improvement in the G-Index amounts to ca. 5.6%; The same effect on idiosyncratic volatility is ca. 4.6%. While positive and significant, the magnitudes of these effects are well below those obtained by Ferreira and Laux (2007), who, however, use simple cross-sectional regressions and do not specifically account for endogeneity issues. In our sample, governance provisions included in the Entrenchment Index have a particularly high effect on both total volatility (+8.6%) and idiosyncratic volatility (+7.3%). Thus, similar to the findings of Bebchuk et al. (2009) on the relation between firm governance and equity prices, our analysis reveals that also the influence of corporate governance on equity risk is mainly attributable to the six governance provisions of the E-Index. Finally, changes in corporate governance do not seem to have a significant effect on a firm's systematic risk as measured by CAPM's beta.

The results are robust to a variety of model specifications, such as the order of the polynomials in the RDD regressions and the time frames around the annual meeting. Placebo tests carried out using artificially shifted voting thresholds do not lead to significant results, which mitigates concerns of spurious effects and reinforces the validity of the findings. Furthermore, managerial manipulation of voting outcomes does not seem to be a serious issue in our sample as no discontinuity of voting outcomes around the threshold is detected by statistical tests and even the use of RDD regressions that explicitly account for manipulation of the forcing variable do not change the results in a qualitative manner.

Additional analyses on subsamples indicate that the increases in equity risk upon governance improvements are stronger in firms that face lower product-market competition and have more institutional investors, which suggests that the effect is caused by a higher performance pressure on managers, i.e., a reduction of their "quiet life". Conversely, we do not find evidence supporting the view that the increase in equity risk is related to a better information flow from the company to financial markets or a higher probability of becoming a takeover target.

The findings of the paper are important for shareholders, managers, proxy advisors, and regulators. Strikingly, the rather intuitive view that better corporate governance reduces equity risk by enhancing managerial monitoring and lowering the likelihood of abuse of power is not supported by the data. On the contrary, higher levels of corporate governance increase shareholder wealth but do not lower the risk of equity investments. In this respect, the idea that tighter regulatory rules on corporate governance are suitable for reducing equity risk is questionable. The findings of this paper are compatible with the "quiet-life" hypothesis, according to which an increase in corporate governance may end the "quiet life" of top managers and induce them to take on more risk in business decisions and investment projects. Whether or not the increase in volatility leads to changes in cost of capital cannot be answered in a conclusive way given the debate on the relationship between (idiosyncratic) volatility and equity returns in the asset-pricing literature (see, e.g., Goyal and Santa-Clara, 2003; Ang, Hodrick, Xing, and Zhang, 2009; Hou and Loh, 2016).

1.6 Appendix

The methodology used to estimate option-implied betas follows Chang, Christoffersen, Jacobs, and Vainberg (2011) (henceforth CCJV), Carr and Madan (2001), and Bakshi et al. (2003). The log returns of stock i, R_i, are assumed to follow a standard one-factor model of the form

$$R_i = \alpha_i + \beta_i R_m + \epsilon_i,$$

where R_m are log market returns and ϵ_i is the idiosyncratic error term which is assumed to be independent of market returns and have a mean of zero. In line with CCJV, we use the estimates of skewness and variance suggested by Bakshi et al. (2003)[17] to express β_i as a function of skewness and variance of stock and market returns. Additionally, we follow CCJV's assumption of $\text{Skew}_{\epsilon,i} = 0$, which leads to:

$$\beta_i = \left(\frac{\text{Skew}_i}{\text{Skew}_m}\right)^{1/3} \left(\frac{\text{Var}_i}{\text{Var}_m}\right)^{1/2}.$$

where variance and skewness can be written as:

$$\text{Skew} = \frac{e^{rt}\text{Cubic} - 3E[R]e^{rt}\text{Quad} + 2E[R]^3}{\text{Var}^{3/2}} \tag{10}$$

$$\text{Var} = e^{rt}\text{Quad} - E[R]^2. \tag{11}$$

Cubic and Quad denote discounted expected values of squared and cubed returns

$$\text{Quad} = e^{-rt}E[R^2]$$
$$\text{Cubic} = e^{-rt}E[R^3],$$

and can be interpreted as prices of options written on squared and cubic stock returns. Bakshi et al. (2003) show that Quad and Cubic can be expressed as functions of European call and put options with strike price K, volatility σ, risk-free rate r, and time to maturity t:

$$\text{Quad} = \int_0^S \frac{2(1 + \ln\left[\frac{S}{K}\right])}{K^2} P(t, K, \sigma, r)dK + \int_S^\infty \frac{2(1 - \ln\left[\frac{K}{S}\right])}{K^2} C(t, K, \sigma, r)dK, \tag{12}$$

$$\text{Cubic} = \int_0^S \frac{-6\ln\left(\frac{S}{K}\right) - 3\ln\left(\frac{S}{K}\right)^2}{K^2} P(t, K, \sigma, r)dK + \int_S^\infty \frac{6\ln\left(\frac{K}{S}\right) - 3\ln\left(\frac{K}{S}\right)^2}{K^2} C(t, K, \sigma, r)dK. \tag{13}$$

The last missing component to compute Skew and Var in Equations (10) and (11) is $E[R]$, which can be approximated as follows

$$E[R] = e^{rt} - 1 - \frac{e^{rt}}{2}\text{Quad} - \frac{e^{rt}}{6}\text{Cubic}.$$

[17] See Theorem 1 in Bakshi et al. (2003).

We use trapezoidal numerical integration for the estimation of the integrals in Equations (12) and (13). Call and put prices are calculated by using the Black-Scholes model. As explained and empirically verified in CCJV, the use of Black-Scholes does not assume that options are actually priced according to this model; The model only provides a translation (or mapping) between volatilities and option prices. The risk-free interest rate and stock prices can be readily observed. On the contrary, volatility is not observable and crucially depends on the moneyness. We use the same approach as CCJV to estimate the volatility smile of stock and index options based on implied volatilities of traded options with different strike prices. In particular, we use implied volatilities of traded put and call options of different moneyness and apply an interpolation-extrapolation technique to gain data for all moneyness levels between 1% and 300%.[18] We extrapolate the implied volatility of the highest (lowest) observed moneyness to all levels above (below) it. For all intermediate values, cubic splines are used to interpolate implied volatility. Since options are only traded at specific maturities, we linearly interpolate the implied volatilities next to the 60-day maturity for each traded strike price. In rare cases, where only the implied volatilities of the shorter/longer time to maturity can be observed, we approximate the 60-day maturity by adjusting it by a factor estimated by the differences at other levels of moneyness. We chose the 60-day maturity because liquidity is largest for short-term options, which can be problematic especially for single-stock options.

[18] As OptionMetrics includes both call and put options for each combination of time to maturity and strike, we have the freedom to choose between call and put options. In line with CCJV, we use out-of-the-money options because they have higher liquidity.

2 Does Corporate Governance Matter for Companies in the Spotlight?[19]

2.1 Introduction

Almost twenty years ago, Zingales (2000) provided the readers of the *Journal of Finance* with an overview of new and exciting developments in the field of corporate finance. In it, he highlights the role of the media as a governance mechanism, writing *"[...] the structure and the control of the media industry, which shapes the formation of public opinion and thus the creation of reputation, have been largely ignored in the growing literature on corporate governance comparisons across countries; however, this plays no secondary role"*. Since then, only few empirical studies, such as Dyck et al. (2008), who study the reversal of corporate governance violations in Russia in response to increased press coverage, make suspected media effects visible.[20] Albeit with the Enron scandal in 2001 and the influential studies of Gompers et al. (2003) and Bebchuck et al. (2009), the significance of a firm's governance is nowadays beyond dispute, research connecting corporate governance and media coverage was retarded until recently due to limited availability of digitalized press articles, governance information, and low quality text mining software to comprehensively capture firm-relevant news.

In this paper, we investigate the influence of a company's media coverage on the importance of corporate governance studying a broad set of companies in the S&P 1500. Thereby our work adds a novel perspective to the optimality of stronger shareholder rights and leads to a better understanding of corporate governance, its effects on managerial behavior, and firm value. By contrasting the cost of stronger shareholder rights and the costs associated with managerial misbehavior, our stylized model predicts the value of additional shareholder rights to decrease with higher media coverage.

We argue that media coverage increases the hurdle for managers to extract private benefits from the firm. Higher media attention will augment the probability that misconduct becomes public. Additionally, broad and persistent media coverage of misbehavior will increase the reputation damage for the manager, pressure the board to force a CEO turnover, and signal potential raiders that value can be generated by replacing the current management. Similarly, strong shareholder rights reduce the probability of erratic manager behavior. In particular, they open new channels to discipline the management by, e.g., making hostile takeovers and thus CEO firings more likely (Cuñat et al., 2015; Martin and McConnell, 1991). This is costly to the manager since it results

[19]This project is joint work with Patrick Hauf. We thank Timo Dimitriadis, Marcel Fischer, Günther Franke, Po-Hsin Ho, Jens Ihlow, Jens Carsten Jackwerth, Axel Kind, Olaf Korn, Marco Menner, Felix Meyerinck, Marco Poltera, Jonas Romer, Simon Stehle, Bertram Steininger, Torsten Twardawski, Nadja Younes, and Johannes Zaia for their helpful comments. Moreover, we thank the session participants of the 2017 Paris Financial Management Conference (FRA, December 17), all participant of the seminar with St. Gallen (CH, May 2017) and the seminar Tübingen (GER, March 2017) for valuable comments. Last, we thank all research assistants at our chairs, especially Manuel Griessinger, for spending multiple hours searching through SEC filings to gather the information we need.

[20]Other early studies include Farrell and Whidbee (2002) who find media coverage in the *Wall Street Journal* to increases the probability of a forced CEO turnover, Miller (2006) who uses accounting fraud to confirm the media's role as a "watchdog" for managers, and Joe et al. (2009) who measure media pressure by the appearance on the *The Business Weeks* "Worst Boards List" to explain corporate-governance changes initiated by the management.

in a loss of power and raises concerns with respect to the manager's skills. However, increased shareholder rights are also associated with costs to the shareholders. First, e.g., calling in a special meeting requires time and resources. Second, the increased threat of losing her job might tempt the manager to sacrifice long-term value to boost short-term firm profits (Graham et al., 2005). Thus, looking at media coverage and shareholder rights jointly, we expect the value of additional shareholder rights to diminish with a higher press scrutiny.

We evaluate over one hundred thousand firm-specific newspaper articles published in major US newspapers with weekday circulation in terms of quantity and tone and find a negative correlation between high media coverage and votes in favor for governance related shareholder proposals. The effect is most striking for provisions affecting the G-Index by Gompers et al. (2003). This index counts the incidence of twenty-four, mostly anti-takeover related, governance rules to describe the level of corporate governance.

In addition, we use an RDD applied to close votes on governance proposals to measure the *causal* impact of corporate governance on firm value, depending on the level of media coverage. Whether a shareholder proposal fails or passes by a small margin (e.g., 49% or 51%) cannot be anticipated by market participants and is uncorrelated with firm characteristics. Therefore close votes can be used as independent random events and exogenous shocks to corporate governance characteristics (Cuñat et al., 2012). We measure the stock price reaction around such an exogenous shock and compare the stock market reactions of companies with high media coverage to the reaction occurring at companies with low media coverage. We observe significantly different effects underlining that the value of corporate governance depends on media coverage. Similarly, Gillan and Starks (2003) identify block holders as an external corporate governance mechanism lowering the importance of internal corporate governance. Giroud and Mueller (2010) obtain similar results for companies facing fierce competition and explain their finding by less managerial slack which, in turn, makes corporate governance less important.

We offer a media-based explanation to the puzzling effect that supposedly value enhancing governance proposals are often rejected by the shareholders. By not separating between different levels of media coverage, previous studies, e.g. Cuñat et al. (2012), find a positive market reaction following passed close votes. Against the background of their finding, it is astonishing that similar proposals receive a majority vote in some companies, while failing in others.[21] Our findings suggest that the value of additional corporate governance is not positive across all companies, but differs depending on the level of media coverage. Based on these insights, shareholders and institutional proxy voting advisors can reflect on their planned voting decision or recommendation, respectively.

Our work contributes to the corporate governance literature in several dimensions. First, we add to the empirical literature postulating press scrutiny as a governance mechanism. Most of the research done so far introduces the media as a monitoring mechanism that sheds light on management decisions. Core et al. (2008) and Kuhnen and Niessen (2012) investigate the relationship between negativity of press articles and CEO compensation. Liu and McConnell (2013) and Borochin and Cu (2018) study acquisitions and the likelihood to abandon value-reducing acquisition attempts given negative media coverage. While the aforementioned papers use media coverage as a corporate governance channel influencing managerial behavior, the empirical part

[21] E.g., in the year 2003, we count 80 shareholder proposals asking to declassify the board, but only 72.5% receive a majority vote.

of this paper focuses on the shareholders' response to media coverage. By putting the shareholders at the center, this paper also differs from the recent papers of Dai et al. (2015) who find media coverage to reduce insider' trading profits and Lauterbach and Pajuste (2017) who find that negative sentiment in the media toward dual class shares propels the abortion of dual class structures in Europe.

This paper can therefore be considered as a complement to aforementioned and earlier studies such as Knyazeva (2007) who show that media coverage influences investment decisions, debt and equity issuances, and cash holdings. The latter study also examines the closely related monitoring function of analysts and finds, in line with our argument for media coverage, a partial substitution effect between analyst coverage and corporate governance. However, media coverage and analyst coverage operate through different channels. While analyst reports are mostly targeted at sophisticated investors, newspaper articles are written for a much broader audience, also including regulators, non-sophisticated investors and friends and family of the manager. Hence, the media's impact on the manager's reputation and its disciplining power is supposed to be stronger.

Second, we extend the theoretical model of Dyck et al. (2008) by explicitly incorporating the role of shareholder rights. The presented 2-period setup allows us to motivate the partial substitution effect between corporate governance and media coverage more throughly. It underlines the significance of the companies' current external governance for the shareholders when taking the decision for more shareholder control.

Third, we add to the literature studying the determinants of shareholder votes (see, e.g., Ertimur et al., 2010). Apart from factors related to the type of propositions and firm characteristics, we underline the significance of the press. Hence, our work adds media coverage to the list of voting determinants found in previous studies by Gordon and Pound (1993), Thomas and Cotter (2007), and Ertimur et al. (2010).

Fourth, we contribute to the extensive strand of literature studying the value of shareholder rights (e.g., Gompers et al., 2003; Cuñat et al., 2012; Bebchuk et al., 2013). By running a RDD explicitly accounting for media coverage, we join the scholars challenging the purely value-enhancing role of shareholder rights such as Giroud and Mueller (2010).

The remainder of the paper is organized as follows. Section 2 introduces a simple model which clarifies the potential effects of shareholder rights and media coverage on firm value. Section 3 explains the different methodologies used in the empirical analysis. Section 4 presents the data. The empirical results are shown and discussed in Section 5. Section 6 concludes.

2.2 The Role of Media Coverage in Corporate Governance

To motivate our empirical analysis, we present a stylized 2-period setup to discuss the relationship between media coverage, corporate-governance changes, and shareholder value.

2.2.1 The Periods

The first period consists of the shareholder's evaluation process with respect to the company's optimal governance setup and ends with her vote at the annual meeting where she must decide between stronger shareholder rights (SSR) or the status quo with weaker shareholder rights (WSR). In the second period, the manager decides whether she extracts company resources

for private benefits (PB). Potential legal private benefit extractions include empire building, corporate jets, caring about a decent handicap, and donations, whereas, e.g., fraud is an illegal mechanism.
We extend the model of Dyck et al. (2008) in which the manager misbehaves whenever her personal benefits exceed the associated expected costs by considering media coverage *and* shareholder rights. Consequently, we define the probability δ that the manager extracts personal benefits (PB) by

$$\delta := Prob[PB > E[CoRP]], \tag{14}$$

where $E[CoRP]$ is the cost the manager expects due to reputation loss or punishment. To cut down on words, we will refer to δ as the probability of managerial misbehavior from now on. Further, shareholders will face a cost c_{MB} in period 2 in case the manager chooses private benefits over company well-being.
The manager's expected costs $E[CoRP]$ depend on the probability (p) that her personal benefit extraction is noticed, because we expect no punishment of any kind when her misbehavior remains "unnoticed". Similar to Dyck et al. (2008), we make the expected costs more explicit by

$$E[CoRP] = p * \sum_{i=1}^{n} \pi_i * RP_i, \tag{15}$$

where π_i is the probability that the manager faces a reputation loss or punishment with respect to group i after the misbehavior is discovered. RP_i measures the severity of the reputation damage and the punishment with respect to group i. Relevant groups include the board of directors, which might ultimately consider to dismiss the manager, future potential employers of the manager, friends of the manager, her family, or the general public. In severe cases of managerial misbehavior such as fraud, the state court constitutes another group (litigation). An overview of the two periods is depicted in Figure 5.

2.2.2 The shareholder's decision problem without media coverage

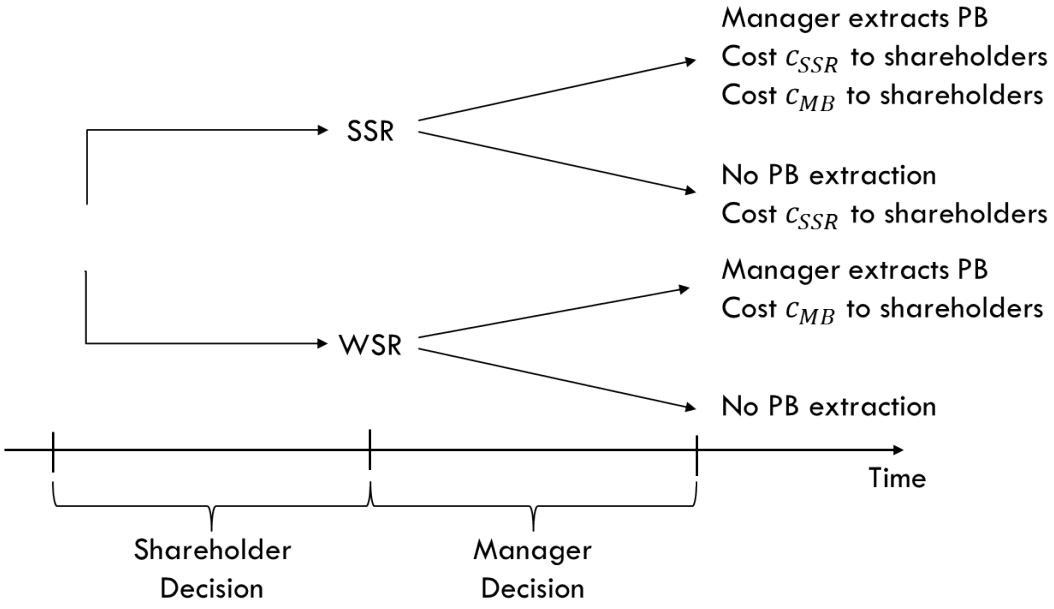
Previous studies (e.g., DeAngelo and Rice, 1983; Ryngaert, 1988, Gompers et al., 2003) suggest that increased shareholder rights (SR), especially less anti-takeover provisions, lead to higher managerial discipline.[22] Additionally, as strong shareholder rights make hostile takeovers more likely, the manager's job security is affected (Cuñat et al., 2017; Martin and McConnell, 1991b). Both effects increase the hurdle for the manager to engage in the misuse of shareholder wealth, thus reducing the probability of misbehavior, δ:

$$\frac{\partial \delta}{\partial SR} < 0 \tag{16}$$

The likelihood that the manager will extract personal benefits depends on the shareholders decision for or against stronger shareholder rights in period 1. By Equation (16), the probability

[22] In our model, a high value of SR coincides with strong shareholder rights, whereas a company with weak shareholder rights is assumed to have a low value of SR.

Figure 5: Two-period model - decision tree



of misuse will be lower in a setting with stronger shareholder rights (SSR) than in a setting with weaker shareholder rights (WSR),

$$\delta_{SSR} * (1 + \alpha) \quad = \quad \delta_{WSR} \quad \text{for some } \alpha > 0. \tag{17}$$

On the negative side, stronger shareholder rights create incentives for the management to become more short-term orientated (Stein, 1988; Laffont and Tirole, 1988; Lipton, 1979; Koppes et al., 1998). This managerial myopia phenomenon is stimulated by the fact that board decisions, such as firings, also tend to adopt a short-term perspective when it comes to evaluating the manager's ability. Accordingly, empirical studies find a strong relationship between recent stock performance and the probability of a (forced) CEO turnover (e.g. Kaplan and Minton, 2006; Ertugrul and Krishnan, 2011; Eisfeldt and Kuhnen, 2013; Jenter and Lewellen, 2014). Managers therefore have an incentive to avoid long-term projects despite positive net present values in order to push quarterly results. In fact, 78% of executives are willing to sacrifice long-term value to increase short-term earnings according to a survey by Graham et al. (2005). Further, strong shareholder rights lead to less negotiating power for managers in case of hostile takeover attempts, leading to lower takeover premiums (Ryngaert, 1988).[23] In order to account for the negative aspects of increased shareholder rights, we quantify the sum of costs associated with stronger shareholder rights with c_{SSR}.[24]

[23]The empirical evidence is mixed, for an opposing view see Cuñat et al. (2017).

[24]Costs of improved shareholder proposals might not be intuitive, given the positive effects the vast majority of empirical studies associates with improved shareholder rights. But given that 48.9% of all shareholder proposals in the SharkRepellent Database classified as "Shareholder Rights" fail to reach a majority, shareholders must see a negative aspect in stronger shareholder rights.

2.2.3 The shareholder's decision problem with media coverage

In order to determine the effect of media coverage (MC)[25] on the likelihood of managerial misbehavior, we analyze Equation (15) in more detail. Reporters track companies over time, analyze management decisions and, from time to time, publish stories about greedy or shirking managers. In particular, monitoring by the press increases the probability that the misuse of corporate resources is noticed (p):

$$\frac{\partial p}{\partial MC} > 0. \tag{18}$$

Further, journalists clarify on previously published facts through press articles. While annual reports can be long, technical, and confusing, media reports are appealing to a wider audience. Thus the chance that shareholders become aware of managerial misbehavior and take action increases. Further, when the mass media reports about bad conduct in the firm, the manager will suffer a reputation loss eventually spilling over to friends, family, and coworkers, also damaging their reputation. Additionally, the board members have their own reputation at risk. As a consequence, when they perceive their company as closely monitored by the media, the probability π_i that group i will take action following a manager's misbehavior are augmented. Hence, we see that the incentives and therefore also the likelihood to act upon managerial dishonesty, π_i, will grow with media coverage:

$$\frac{\partial \pi_i}{\partial MC} > 0. \tag{19}$$

Last, a steady high level of media coverage increases the chance that the manager's misbehavior is not only discussed in a single but several newspaper articles, thus leaving a lasting impression on the reader and resulting in a severe reputation loss. The latter will also limit future employment opportunities:

$$\frac{\partial RP_i}{\partial MC} > 0. \tag{20}$$

Altogether, media coverage affects all variables on the right hand side of Equation (15) in the same direction while not altering the personal benefits. All else equal, there is a higher likelihood of managerial misbehavior in companies with low media coverage (LC) than in companies with high media coverage (HC).

Similar to Equation (17), we directly formalize this finding by:

$$\delta^{HC} * (1 + \Theta) = \delta^{LC} \quad \text{for some } \Theta > 0. \tag{21}$$

[25] Similar to SR, a high value of MC coincides with high media coverage. A company that is hardly discussed in the media is characterized by a low score in MC.

2.2.4 The shareholder's decision rationale

We are now able to state a clear decision rule for rational shareholders. Let V_j describe the company value at the beginning of period j, $j \in \{1, 2, 3\}$.[26] Further, following the argument from above, we write δ, the probability that management will extract private benefits at the cost of the shareholders, explicitly in dependence of shareholder rights chosen in period 1 and the level of (exogenous) media coverage. Shareholders choose between strong and weak shareholder rights depending on the expected company value:

$$E[V_3|SSR] = V_1 - c_{SSR} - \delta_{SSR}^{(MC)} \cdot c_{MB} \tag{22}$$

$$E[V_3|WSR] = V_1 - \delta_{WSR}^{(MC)} \cdot \ c_{MB}. \tag{23}$$

The equations imply a decision for strong shareholder rights if $E[V_3|SSR] > E[V_3|WSR]$, which is the case if

$$c_{SSR} < \left(\delta_{WSR}^{(MC)} - \delta_{SSR}^{(MC)}\right) \cdot \ c_{MB} \tag{24}$$

or, equivalently, using Equation (17), if

$$c_{SSR} < \alpha * \delta_{SSR}^{(MC)} \cdot c_{MB} \tag{25}$$

As Equation (25) holds for different levels of media coverage, we can derive two distinct decision rules for high and low media coverage firms. Shareholders of a low media coverage firm will vote for stronger shareholder rights, if

$$\begin{aligned} c_{SSR} &< \alpha * \delta_{SSR}^{LC} \cdot c_{MB} \\ &=: z^{LC}, \end{aligned}$$

i.e., when the cost of increased shareholder rights (left-hand side) is lower than the expected cost associated with an increased chance of facing a misbehaving management (right-hand side). Similarly, shareholders of a high media coverage firm base their decision on the following inequality:

$$\begin{aligned} c_{SSR} &< \alpha * \delta_{SSR}^{HC} \cdot c_{MB} \\ &\overset{(21)}{=} \alpha * \frac{\delta_{SSR}^{LC}}{(1+\Theta)} \cdot c_{MB} \\ &= \frac{z^{LC}}{(1+\Theta)} := z^{HC} \end{aligned} \tag{26}$$

Since $z^{HC} < z^{LC}$, the shareholders in high coverage firms are less tolerant in accepting the costs of stronger governance. More specifically, in situations where $c_{SSR} \in (z^{HC}, z^{LC})$, it is optimal for shareholders of low coverage firms to increase shareholder rights whereas this is not optimal for shareholders in high coverage firms, all else equal. This motivates hypothesis I.

[26] The beginning of period 3 value coincides with the company value at the end of period 2.

Hypothesis I: Media coverage is negatively related to shareholder votes in favor of governance proposals increasing shareholder rights.

We motivate our second hypothesis by a simple thought experiment. Suppose shareholder rights were randomly assigned to companies. Then companies with low media coverage benefit on average to a larger degree from the assignment of an increase in shareholder rights compared to companies with high media coverage. In our model, we see that whenever c_{SSR} is in the interval (z^{HC}, z^{LC}), only companies with low coverage benefit from an increase in shareholder rights while companies with high coverage suffer from an increase in shareholder rights. This leads to hypothesis II.

Hypothesis II: The average abnormal return resulting from an exogenous shock on the corporate governance is higher for low coverage firms.

2.3 Data

Besides standard stock and accounting data, our empirical analysis requires data on firm-specific press coverage and general meetings. In the following, we introduce the newspaper article and the shareholder proposal data in more detail and present descriptive statistics.

2.3.1 Media Coverage

We obtain newspaper articles for all firms that have been part of the S&P 1500 within the period 2002-2014 from Nexis. The data gathering includes a series of manual steps. First, for each of the company names in our sample, we check for the company name as it appears in Nexis. For some companies, we end up with a series of different company names because of a renaming or merger. Having identified all relevant company names, we use the company search function available in Nexis to obtain company-related articles. Following Hillert et al. (2014), we include the four major U.S. newspapers with weekday circulation into our search requests: USA Today (USAT), New York Times (NYT), Washington Post (WP), and the Wall Street Journal (WSJ). As Bajo and Raimondo (2016) argue that reputable newspapers have the strongest effect on investor perceptions, we consider this a sensible a choice.

Table 9 provides descriptive statistics. With 289,413 articles, *The New York Times* (NYT) contributes most to our sample. It also has broadest coverage of firms. Following Loughran and McDonald (2014), we calculate the fraction of negative words for each article and report it in the last column.

2.3.2 Shareholder Proposals

We analyze votes on shareholder proposals obtained from the SharkRepellent database. Our sample covers all annual meetings of S&P 1500 firms between January 2002 and December 2014 and includes information on votes in favor, the date of the meeting, company details, and a description of the proposal. Where possible, we complete missing data using hand-collected

Table 9: Descriptives statistics: Newspaper Sample

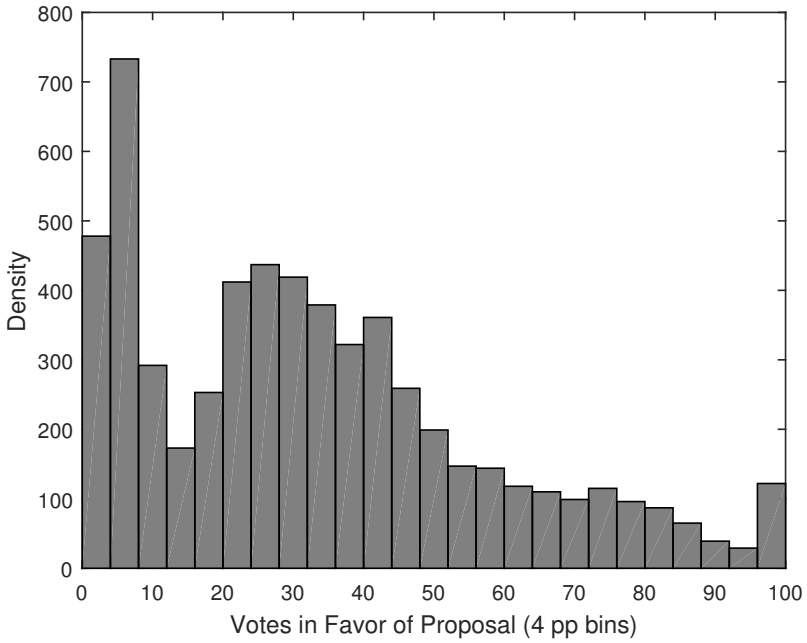
Source	Nr. of Articles	Nr. of companies covered	Tone
NYT	289,413	2,279	0.0213
USAT	78,117	1,134	0.0185
WP	192,333	1,594	0.0180
WSJ	151,405	2,259	0.0276
Average number of words per article			526
Average number of articles per year			54,712

Notes: This table reports descriptive statistics for our newspaper sample covering the years 2002 to 2014. Newspaper articles are taken from Nexis and cover an extended S&P1500 universe. Numbers refer to the raw database before merging it to other databases. *Tone* is calculated as the average over the ratio of negative words to total words in all newspaper articles using the word lists by Loughran and McDonald (2011).

10-Q company filings from the SEC's EDGAR database. Additionally, we manually screen all proposals and flag them as G-Index relevant if the proposals address any of the 24 provisions contained in the G-Index introduced by Gompers et al. (2003). After merging, we have a total of more than 1,800 governance proposals stemming from more than 500 firms. The level of the G-Index allows to quantify the balance of power between shareholders and management. As this balance is crucial for future success or failure, G-Index proposals should be most important to shareholders. Additionally, the G-Index allows us to use a larger sample of proposals compared to other indices.[27] In our overall sample, more than 40% of the governance-proposals are classified as anti-takeover provisions (e.g., poison pills) and around one quarter are board-related (e.g., demand more independent directors).
Figure 6 shows the frequency of all shareholder proposals in relation to the votes in favor.
For the RDD study, we further reduce our sample of shareholder proposals to comply with the following criteria. First, we limit our sample to provisions affecting the G-Index. This allows us compare our results to previous findings of Cuñat et al. (2012), who also use G-Index relevant proposals. Second, we focus on close-vote proposals, i.e., those that pass or fail by a margin of 5 percentage points or less to ensure that only proposals which reveal new information to financial markets are included in our sample (see, e.g., Cuñat et al., 2012; Flammer, 2015; Cheng et al., 2013). Third, we exclude all events with two or more G-Index-related close-vote shareholder proposals with opposite outcomes. If multiple close-vote proposals influence the G-Index in the same direction, we count them as one event but divide the observed market reaction by the number of proposals. In total, we count over 110 close vote proposals for the margin of 5 percentage points across 73 companies.

[27]E.g. the Entrenchment Index by Bebchuk et al. (2009) only consists of 6 provisions.

Figure 6: Distribution of votes in favor of Shareholder Proposals



Notes: This figure shows the density of votes in favor (in %) for governance related shareholder proposals (N = 5,888) in our initial data set.

2.4 Methodology

This section presents the methodology underpinning our study. First, we introduce our measure for media coverage. Second, we discuss our cross-sectional regressions. Third, we explain the Regression Discontinuity Design in detail.

2.4.1 Measuring media coverage

From the model presented section 2.2, we expect high media coverage to influence the voting decisions of shareholders. However, media coverage is strongly related with different firm characteristics such as size, industry, or index membership.[28] Since we are not interested in measuring the effect of, e.g., size, on shareholder voting, it is necessary to isolate the true effect of media coverage. Therefore, we take the approach of Hillert et al. (2014) and estimate the following baseline regression Equation (27):

$$\begin{aligned} \log(1+nrarticles) &= \beta_0 + \beta_1\ Log\ Market\ Value + \beta_2 NASDAQ + \beta_3 SP500 \\ &\quad + \log(1+Analysts) + \epsilon_{media}, \end{aligned} \tag{27}$$

where *nrarticles* is the number of firm-specific articles in the four major US newspapers in the year before the annual meeting. *Log Market Value* is the logarithm of the companies' market

[28]For a detailed discussion of factors influencing media coverage, see Hillert et al. (2014).

capitalization at the annual meeting and is added to account for the size effect on coverage. *NASDAQ* and *SP500* are dummies that are 1 if the firm is a constituent of the NASDAQ or S&P500, respectively. Both dummies account for the fact that the press discusses companies in popular indices more often. *Analysts* counts the average number of analysts with earnings per share estimate for the company's coming financial year in the year before the meeting. The residual of the regression, ϵ_{media}, after being standardized, is our proxy for media coverage.
Although Hillert et al. (2014) show that this regression approach provides stable results when slightly altering the regression specification, we also run our analysis with residuals of different specifications. In alternative specification I, we add year dummies to our baseline Equation (27). In specification II, we add SIC 2-digit industry dummies to our baseline specification. In specification III, we include year and industry dummies to the baseline.[29] To show the strong similarity, we report the correlations in Table 10. All correlations are close to 90% or above. Further, we report the correlations of the baseline coverage variable with several company characteristics in the appendix. None of the correlations is above 14%. Hence, the media coverage variable is unlikely to capture any of these company-related effects.

Table 10: Correlations for measures of media coverage

	baseline	Spec I	Spec II	Spec III
baseline	1	0.984	0.912	0.897
Spec I		1	0.896	0.912
Spec II			1	0.984
Spec III				1

Notes: This table reports pearson correlation coefficients between the different measures for media coverage. The baseline regression is given by Equation (27). In alternative specification I, we add year dummies. In specification II, we add industry dummies to the baseline. In specification III, we add year and industry dummies to the baseline specification. All correlations are significant at the 1% significance level.

Additionally, we calculate the negative tone of the press articles by calculating the fraction of negative to total words in the respective articles following Loughran and McDonald (2011). By controlling for tone in the cross-sectional regressions, we can be confident that it is the amount of coverage and not concentrated reporting of scandals associated with negative press leading to the relationship between coverage and observed shareholder votes.[30]

[29] These dummies help to account for potential differences in media coverage across years and industries.

[30] It would be desirable to control for other characteristics of the news articles such as the content type (e.g., article about an acquisition/management team/product) or other mood dimensions than negativity (e.g., fraction of positive words). However, since it is difficult to automatically classify articles by content type and other mood dimensions are prone to severe measurement errors (positive words are more often negated than negative words in financial context whereas terms like "not terrible earnings" are rare (see, e.g. Loughran and McDonald, 2011)), we focus on the established negativity measure (Tetlock, 2007; Tetlock et al., 2008; Dougal et al., 2012; Garcia, 2013; Ferguson et al., 2015).

2.4.2 Cross-sectional regressions

In order to analyze the shareholder votes at the general meeting, we run pooled OLS regressions. The dependent variable for the votes in favor, *vote_pct*, takes on values between 0% and 100% and is regressed on media coverage and a series of controls. With the selection of controls, we mainly follow Ertimur et al. (2010). Although we only focus on governance-related shareholder proposals, we observe years with multiple shareholder proposals per firm. Thus, we not only account for trends in voting behavior by adding year fixed effects, but also cluster standard errors on firm level. Further, in order to control for unobserved heterogeneity, we always report a regressions in which we include industry dummies.

We perform several robustness checks to underpin the major conclusions from the cross-sectional analyses. We transform the dependent variable with a logit function to counteract the boundedness of votes in % and obtain qualitative equal results. In another analysis, we add firm-fixed instead of industry-fixed effects in the sample covering all observations from 2002 to 2014.[31] Additionally, to disseminate the concern that our proxy is blurred by vacuous short articles, we use, instead of the number of firm-specific articles, the total number of words therein as proxy for media coverage (cf. Bushee et al., 2010). Last, although our coverage proxy is by construction orthogonal to analyst coverage, we additionally account for analyst coverage in robustness checks which are contained in the appendix.

2.4.3 Regression Discontinuity Design

We use a Regression Discontinuity Design (RDD) to estimate the market value of strong corporate governance for companies with different levels of media coverage. We follow Cuñat et al. (2012) and use close votes on shareholder proposals as exogenous shocks to a firm's corporate governance. These proposals are appealing for several reasons.

First, shareholder proposals can address a variety of topics that are of concern for the shareholders of the company. The requirements for filing resolutions and their costs are small, therefore all groups of shareholders can initiate a proposal.[32] Each proposal only contains a single issue, which allows us to classify each potential change in corporate governance precisely. Second, unlike management proposals, shareholder proposals are not subject to a selection bias induced by the management. Third, the passing of a generally non-binding proposal increases the implementation probability significantly.[33] The SharkRepellent database provides information on the actions following shareholder proposals and 52.1% of G-Index relevant proposals that passed within 5% of the majority threshold were implemented afterwards or put to a binding management proposal in the following annual meeting. Thus, the discontinuity in the relation between the votes in favor of shareholder proposals and their subsequent implementation probability at

[31] Firm-fixed effects significantly reduces the degrees of freedom and involve the danger of overfitting. Therefore, we only report firm-fixed effects as robustness check for the specification including our full sample of observations.

[32] According to §8b of Section 240.14a, Title 17 of the Code of Federal Regulation (CFR), every shareholder can file a proposal if she is registered in the shareholder's book and has been holding shares of at least $2,000 or 1% of the voting shares at least for one year.

[33] In some U.S. states some shareholder votes are binding (e.g., bylaw changes concerning poison pills Georgia and Oklahoma). However, this is not the case in Delaware where the majority of companies are incorporated. For a discussion on this topic see McDonnell (2008) and Coffee Jr (1996).

the threshold level of success induces an exogenous and random shock to the firm's governance (Cuñat et al., 2012; Ertimur et al., 2010).
While the RDD applied to close shareholder votes has the disadvantage of a small sample size and uncertain implementation following the annual meeting, we consider it the best methodology to ensure the identification of the causal effect of governance on stock price. While cross-sectional regressions have the advantage of large sample sizes as they also include non-close votes, RDD, if applicable, provides superior inference as it avoids possible methodological shortcomings, such as omitted variables and reversed causality.[34] Alternative exogenous shocks to the corporate governance of companies are state anti-takeover laws. Unfortunately, these law changes occurred at the end of the 1980's and recent papers such as Karpoff and Wittry (2018) and Catan and Kahan (2016) question the usability of these legal changes as exogenous shocks. Yet, without a shock on media coverage, our RDD setup cannot guarantee a causal interpretation of the media coverage effect. Nevertheless, by discriminating between the causal effect of governance on shareholder value based on media coverage, this paper underlines the sensitivity of governance-related firm value implications to company characteristics.
The RDD described in this section allows us to observe changes in corporate governance, market reactions, and deal with market expectations prior to general meetings. The exogenous shock to the firm's governance arises from the binary function of passing or failing of shareholder proposals at the cutoff $\bar{v} = 50\%$, depending on votes in favor (v), a continuous variable.
In a nutshell, we compare stock market reactions around shareholder proposals that pass by a small margin to reactions around (equivalent) shareholder proposals that fail by a small margin. More formally, we measure the (cumulative abnormal) stock return around the annual meeting depending on the votes in favor of a shareholder proposal, $r(v)$:

$$r(v) = r_1 \text{ if } v > \bar{v}, \text{ (proposal passes)} \tag{28}$$
$$r(v) = r_0 \text{ if } v \leq \bar{v}. \text{ (proposal fails)} \tag{29}$$

The value of passing is given by the difference in returns, i.e., $\tau := r_1 - r_0$, which represents the change in stock prices attributable to improved governance. Unfortunately, we cannot observe τ directly for two reasons: First, each annual meeting with a close shareholder proposal is only a single realization of either r_1 or r_0. Second, market participants will anticipate voting outcomes to some extent and adjust their return expectations. Since we do not know the market's expectation of the percentage of votes for and against the proposal, we approximate it using the realized voting outcome. The observable reaction around a vote is given by

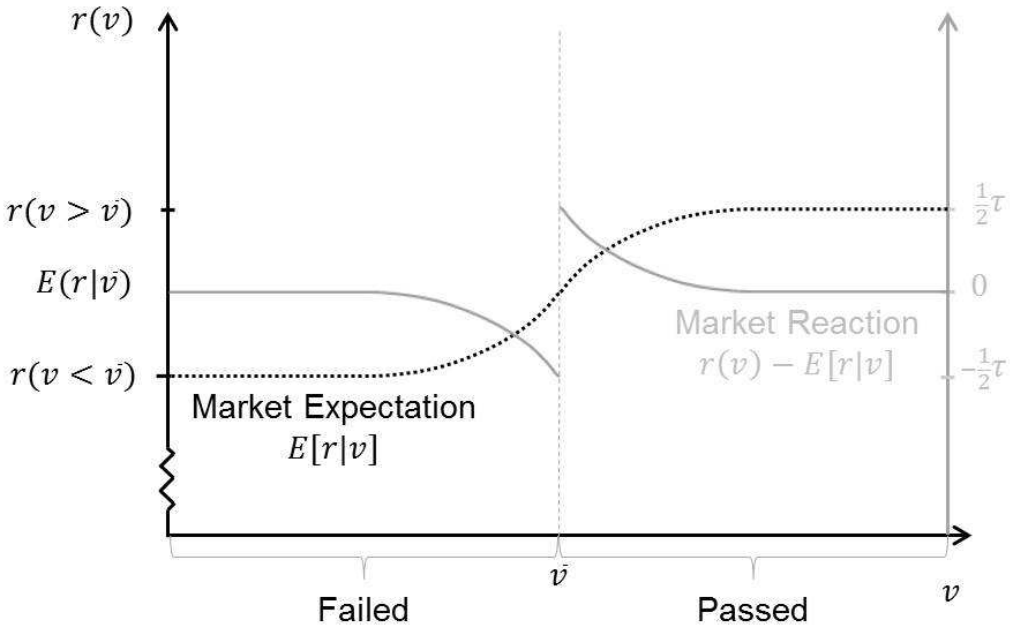
$$\Delta r(v) = r(v) - E[r|v], \tag{30}$$

where $E[r|v]$ is the expected stock return conditional on the votes in favor of the shareholder proposal. $E[r|v]$ is a continuous function of these votes and assumes values between r_0 and r_1. An extreme example is a proposal that is expected to fail by a large margin. This proposal leads to $E[r|v] = r_0$ and no market reaction should follow when it actually fails. The same holds for a shareholder proposal that passes by a large margin and was expected to do so by all market

[34] Cremers et al., (2017) provide an excellent summary of the potential shortcomings of cross-sectional regressions in the context of company value and corporate governance.

participants. Interesting for our setting are proposals with a ca. 50% chance of passing, which implies $r_0 < E[r|\bar{v}] < r_1$ and should therefore lead to a change in stock price once the proposal passes or fails.[35] Figure 7 illustrates the relation between prior expectations, votes in favor, and observed stock market reactions.

Figure 7: Market Reaction to Shareholder Proposals



Notes: This figure shows expectations and stock price reactions around votes on shareholder proposals. The black dotted line indicates the expected stock price before the vote. The solid gray line illustrates the market reaction around the vote. It is zero when the outcome is entirely anticipated by market participants. A market reaction around the threshold ($\bar{v}$) following a passed proposal is half of the total effect τ because it is partially included in the stock prices prior to the vote and vice versa for proposals which fail by a small margin.

Since $E[r|v]$ is a continuous function, we can assume that $E[r|\bar{v}-\epsilon] \approx E[r|\bar{v}+\epsilon]$ for a small ϵ, $\epsilon > 0$, which ex ante leads to similar expectations for returns around shareholder proposals that pass or fail by small margin. We use this equality to derive the effect of corporate governance on stock returns (τ). τ equals the difference between observed stock returns following shareholder proposals that pass in a close vote, $\Delta r(\bar{v}+\epsilon)$, and those that fail in a close vote, $\Delta r(\bar{v}-\epsilon)$:

$$\begin{aligned}\tau &= r(\bar{v}+\epsilon) - r(\bar{v}-\epsilon) \\ &\approx \Big(r(\bar{v}+\epsilon) - E[r|\bar{v}+\epsilon]\Big) - \Big(r(\bar{v}-\epsilon) - E[r|\bar{v}-\epsilon]\Big) \\ &= \Delta r(\bar{v}+\epsilon) - \Delta r(\bar{v}-\epsilon). \end{aligned} \tag{31}$$

Empirically, we quantify τ by the following regression

$$\Delta r_j = \alpha + D_j^F \gamma^F (v_j - \bar{v}) + \tau D_j^P + D_j^P \gamma^P (v_j - \bar{v}) + \epsilon_j, \tag{32}$$

[35] For simplification, we assume $r_0 < r_1$ in this example. The same argument can be made for $r_0 > r_1$.

where the dependent variable $\Delta r_j(v)$ is the stock return around the annual meeting that includes proposal j, $D_j^{P(F)}$ is a binary variable assuming a value of one if the proposal passes (fails) and zero if it fails (passes). α can be positive or negative and captures the average return around all annual meetings, independent of the vote outcome. We select $(v - \bar{v})$ as our independent variable to capture the entire increase in returns (τ) at the cutoff point $\bar{v}$. ϵ_j is the error term. The $\gamma^{F(P)}$ are constants controlling for the dependency between votes in favor for failed (passed) proposals. This is important since close, but not extremely close (e.g. 46%), votes might be partially anticipated, which would lead to less distinct abnormal returns Cuñat et al. (2012). Without an adjustment, this relation will lead to an underestimation of the true effect (Lee and Lemieux, 2010). In an ideal world, we would have sufficient data within a very close interval such as 49.9 - 50.1% and could forgo adjustments. Unfortunately, a limited number of observations forces us to a trade-off between sample size and width of the margin around the cutoff point.
We refine the RDD setting in order to investigate whether the value of corporate governance is dependent on high (HC) or low (LC) media coverage and measure the coverage effect by: $\tau_{\Delta LC} := \tau_{LC} - \tau_{HC}$. We estimate this parameter using

$$\begin{aligned}\Delta r_j = {} & \alpha_{HC} + D_j^F D_j^{HC} \gamma^{F,HC}(v_j - \bar{v}) + D_j^P \tau_{HC} + D_j^P D_j^{HC} \gamma^{P,HC}(v_j - \bar{v}) \\ & + D_j^{LC} \alpha_{\Delta LC} + D_j^F D_j^{LC} \gamma^{F,LC}(v_j - \bar{v}) + D_j^P D_j^{LC} \tau_{\Delta LC} + D_j^P D_j^{LC} \gamma^{P,LC}(v_j - \bar{v}) + \epsilon_j, \end{aligned} \tag{33}$$

in which $D_j^{LC(HC)}$ is a binary variable equal to one if the proposal belongs to a company with low (high) media coverage. $\alpha_{\Delta LC}$ captures the potential effect that companies with different levels of media coverage have systematically different returns around annual meetings, independent of the outcome of the vote. $\tau_{\Delta LC}$ is our variable of interest and estimates the effect on top of τ_{HC} occurring for companies with low media coverage compared to companies with high media coverage.[36] Figure 8 illustrates this model.
To address the requirements proposed by Lee and Lemieux (2010) for a valid RDD, we further check for (i) no systematic differences in company characteristics between passed and failed proposals, and (ii) no precise manipulation of votes.[37] To ensure the first requirement, a comparison of company characteristics for passed and failed proposals is given in Table 11. We find no significant differences for almost all variables.[38] Only the Herfindahl-Hirschman Index (hhi) and the analyst variable are significant at the 5% level. However, the concern that our major results for media coverage are driven by competition or mirror analyst coverage can be lessened as their correlation coefficient is extremely low.[39] Due to the possible manipulation of shareholder proposals by managers (see Bach and Metzger, 2017), we run the McCrary (2008) density test. Specifically, we employ the conventional and robust method suggested in Cattaneo et al. (2016) and find no statistical evidence of systemic manipulation of votes in favor of shareholder propos-

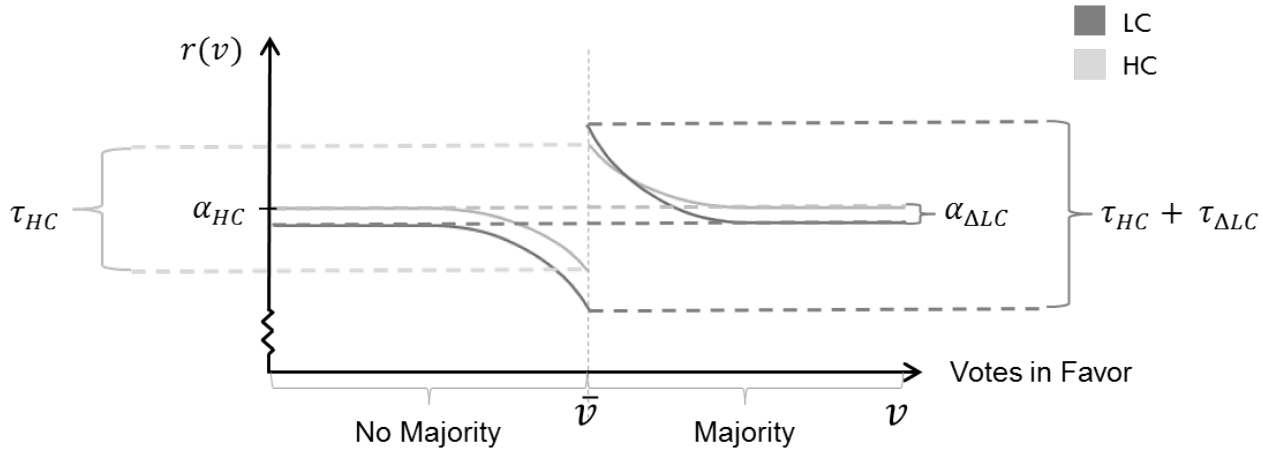
[36] In Equation (31), the overall effect associated with the passage of a closely passed governance proposal is denoted by τ. We now allow the effect to vary based on coverage. τ_{HC} is set as baseline and measures the passage effect for high coverage firms, whereas the effect for low coverage firms is given by $\tau_{HC} + \tau_{\Delta LC}$.

[37] The existence of a sharp cutoff point at the majority threshold of 50% follows from previous studies (e.g., Ertimur et al., 2010) and the examination of the proposals' implementation in our sample discussed in section 2.4.3.

[38] We test for differences in median as the Shapiro-Wilk test rejects the normality assumption for all variables. In this case, the usage of a t-test is inadequate.

[39] -0.01 for the hhi, and 0.06 for analyst coverage. See also Table 21 in the appendix.

Figure 8: Theoretical Market Reaction to Shareholder Proposals for Companies with Different Levels of Media Coverage



Notes: This figure shows observed stock price reactions around votes on governance-related shareholder proposals for companies different levels of media coverage. The dark lines indicate reactions for companies with low media coverage (LC), the light lines reactions of companies with high media coverage (HC). Market reactions can differ systematically for LC and HC companies ($\alpha_{\Delta LC}$). The additional market reaction for passed proposals compared to failed proposals is given by τ_{HC}. Companies with low media coverage experience the overall effect $\tau_{HC} + \tau_{\Delta LC}$.

als.[40] From a non-statistical point of view, we also presume that precise manipulation of votes is unrealistic. In order to efficiently and systematically influence votes and act as the pivotal investor, one would need to accurately anticipate the voting behavior of *all* other shareholders, which seems to be a very hard task, especially given a large number of private investors. And even if a fraction of shareholder proposals, say 11% as suggested by Bach and Metzger (2017), are rigged by management towards failing, it leads to lower expectations of passing which in turn increases the market reactions following passed proposals and reduces those of failed proposals.

[40]We thank Mathias Cattaneo, Michael Jansson, and Xinwei Ma for their code.

Table 11: RDD - Preexisting Differences

Variable	Median-P	Median-F	Prov-P	Prov-F	Diff	p-value
Log Market Value	9.66	9.7	54	64	-0.04	0.52
Leverage	0.7	0.67	54	64	0.03	0.8
# of Articles Prior Year	50.5	63.5	54	64	-13	0.77
Coverage	0.74	0.87	54	64	-0.12	0.89
Log Book to Market	-0.8	-0.81	52	63	0.01	0.6
Tone	0.02	0.02	53	61	0	0.32
Herfindahl-Hirschman Index	0.09	0.07	49	54	0.02	0.05
Advertising Expenses	521.03	1000	25	25	-478.97	0.5
R&D Expenses	228	386.9	33	42	-158.9	0.15
Capital Expenditures	772.5	761.53	52	64	10.97	0.86
CAR prior Month	0.01	0.01	54	64	0	0.73
CAR prior Day	0	0	51	59	0	0.51
Return on Assets	0.04	0.04	54	64	0	0.7
Analysts	17	14	51	62	3	0.04

Notes: This table reports related company characteristics for the close vote sample (firms with proposals obtaining between 45 and 55 percentage points votes in favor) year (where not differently indicated) prior to the annual meeting. We analyze whether there is a structural difference (Diff) between the subsample where votes just passed (Median-P) and the subsample where they just failed (Median-F). *# of Articles Prior Year* is the number of news articles for the corresponding firm in the year prior to the general meeting. Prov-P(F) indicates the number of provisions passed (failed). p-value refers to the Wilcoxon rank test for differences in medians. See Table 20 in the appendix for a description of the different variables.

2.5 Results

This section presents and discusses our empirical results. We start with the cross-sectional analyses concerning the shareholders' voting behavior. In the second part we present RDD results to determine the value of corporate governance depending on media coverage, including robustness and placebo checks.

2.5.1 Cross Sectional Analysis

In a first step, we run cross-sectional regressions to determine the effect of news coverage on the voting outcome for governance-related proposals. For the classification, we use the broad proposal category "Corporate Governance" in SharkRepellent. We regress the voting result (votes in %) on media coverage and a number of controls motivated by prior research.[41] Table 12 displays the results.

[41] In particular, see Ertimur et al. (2010). Table 20 in the appendix lists the different control variables.

Table 12: Hypothesis Vote Outcome (baseline): Governance-related proposals

	Dependent variable:			
	Vote in %			
	(1)	(2)	(3)	(4)
Institutional Ownership in %	0.108	0.115	0.215***	0.260***
	(0.089)	(0.106)	(0.070)	(0.076)
Institutional Blockholder	1.404	−1.415	−2.144	−3.825*
	(2.048)	(2.293)	(1.573)	(2.113)
Log Market Value	−1.043	0.280	−1.936***	−1.985**
	(0.783)	(1.050)	(0.711)	(0.847)
Leverage	−3.123	−4.245	−4.678	−6.521
	(4.438)	(5.522)	(5.004)	(7.105)
Log Book to Market	0.747	0.823	−0.388	−1.834
	(1.424)	(1.680)	(1.097)	(1.429)
Return on Assets	9.373	11.973	5.158	2.107
	(15.247)	(16.859)	(9.372)	(11.885)
Market Adj. CAR prior Year	0.019	−1.104	−1.137*	−1.323**
	(1.005)	(1.370)	(0.599)	(0.550)
Industry Adj. CAR prior Year	0.953	2.145*	1.201**	1.314**
	(0.836)	(1.206)	(0.566)	(0.534)
G-Index Score	1.018***	1.114***		
	(0.373)	(0.386)		
E-Index Score				2.312***
				(0.586)
Union Sponsor	11.081***	11.804***	8.697***	5.822***
	(1.560)	(1.586)	(1.174)	(1.613)
Institutional Sponsor	2.601	1.849	7.083***	6.717***
	(3.439)	(3.079)	(1.967)	(2.294)
Defense	26.119***	26.383***	22.675***	20.341***
	(1.777)	(2.236)	(1.381)	(1.698)
Voted Before	0.243	−0.379	−0.054	0.883
	(1.191)	(1.402)	(0.847)	(1.188)
Negative Tone Change	0.014	0.665	1.078	1.133
	(0.894)	(0.923)	(0.735)	(0.988)
Coverage	−1.379***	−1.696***	−1.987***	-1.713***
	(0.530)	(0.566)	(0.451)	(0.573)
Constant	22.573*	8.221	25.966**	−1.173
	(13.401)	(16.819)	(10.995)	(14.652)
Observations	733	733	1,839	1,017
R^2	0.44	0.51	0.44	0.46
Adjusted R^2	0.43	0.46	0.42	0.42
F Statistic	38.046***	10.925***	18.198***	11.927***
Year & Industry FE	NO	YES	YES	YES

*p<0.1; **p<0.05; ***p<0.01

Notes: This table reports standard OLS regressions for specific subsets of the election data. (1) and (2) control for the G-Index (thereby truncating the data as the G-Index is not available for observation after 2007), (3) does not control for G-Index (thereby extending the observation period until 2014), (4) includes the E-Index (thereby truncating the data as the E-Index is not available for observation before 2008). *Coverage* is the residual of the baseline regression (27). Standard errors clustered on firm level are reported in parentheses.

Regression (1) and (2) control for the G-Index Score. Unfortunately, the G-Index of Gompers et al. (2003) is only available up to the year 2008. Regression (3) drops the G-Index control and therefore increases our sample size by including all observed voting decisions up to the year 2014. Regression (4) includes the E-Index score of Bebchuk et al. (2009) as a control for corporate governance. Unfortunately, we only have data on the relevant governance provisions starting in 2007, truncating the first years of the sample. Media coverage (*Coverage*) is significant in all four settings. A one standard deviation increased level of media coverage lowers votes for stronger shareholder rights by close to 2% (Regression (3)). In line with Ertimur et al. (2010), the proposal-related characteristics *Defense* and *Union Sponsor* are the major determinants of the voting outcome. For shareholder proposals lowering the anti-takeover protection (*Defense*), the votes in favor increase by more than 20%. In case the proponent is a union (*Union Sponsor*), votes in favor increase by more than 8%. From the company-related characteristics, besides media coverage, we find *E-* and *G-Index Score*, *Institutional Ownership in %*, *Log Market Value*, *Industry Adj. CAR prior Year*, as well as *Market Adj. CAR prior Year* to have a significant effect on the voting outcome in at least one of the specifications. However, among the company related characteristics, the coverage measure is the only effect that is significant in all regressions (1)-(4).

The insignificance of *Negative Tone Change* shows that governance-related shareholder votes are unaffected by changes in the press' pessimism. Hence, the decision of newspaper journalists to cover a company in greater detail is more pivotal to the shareholder vote than the tone chosen in presenting the content. We see two possible explanations. First, shareholder votes are unaffected by tone-induced sentiment. Second, following negative press, two opposing effect cancel each other out. Some shareholders react by showing their loyalty to the management whereas others try to weaken the management by installing stronger oversight.

In a next step, we concentrate on G-Index relevant proposals in Table 13. This limits our sample but has a stronger focus on shareholder rights. Our results indicate that the coverage effect remains significant and increases in magnitude to 2.8% in Regression (3). By narrowing down our sample to G-Index relevant proposals, the variable *Defense* loses relevance as the defense dummy is nested in the G-Index proposals. Further, the proponent type loses relevance. Last, observing *Voted Before*, we see that proposals that were already voted upon in the prior year, tend to get less support in the future. Altogether, our results provide empirical evidence for a negative relationship between votes in favor and media coverage, supporting hypothesis H1.[42]

[42] As detailed in section 2.4, we conduct a battery of robustness checks (logit transformation of dependent variable including industry or firm-fixed effects in combination with year dummies, usage of alternative coverage proxy based on word count, adding controls for analyst coverage). The outputs are all contained in the appendix and underline our major findings. Further, the restriction on provisions that are anti-takeover related is a robustness check to ensure that a (possibly different) composition of provisions due to prior media coverage is driving our results. In unreported checks, we further limit our sample to specific anti-takeover provisions as classified by SharkRepellent and results remains stable.

Table 13: Hypothesis Vote Outcome (baseline): G-Index relevant proposals only.

	Dependent variable:			
	Vote in %			
	(1)	(2)	(3)	(4)
Institutional Ownership in %	0.312**	0.285*	0.454***	0.544***
	(0.129)	(0.154)	(0.087)	(0.104)
Institutional Blockholder	−0.846	−1.868	−0.830	−0.546
	(3.361)	(4.149)	(2.701)	(3.691)
Log Market Value	−0.795	0.967	−1.216	0.281
	(1.181)	(1.579)	(0.950)	(0.933)
Leverage	−5.493	1.846	−2.431	−7.451
	(6.314)	(10.086)	(7.443)	(8.757)
Log Book to Market	0.320	1.172	0.845	−0.407
	(1.986)	(2.382)	(1.481)	(1.830)
Return on Assets	−22.314	−13.247	−6.300	−5.073
	(20.686)	(24.933)	(12.771)	(12.601)
Market Adj. CAR prior Year	0.949	1.700	−0.601	−0.207
	(1.910)	(2.962)	(0.969)	(0.700)
Industry Adj. CAR prior Year	−0.203	0.246	0.850	0.738
	(1.870)	(2.656)	(0.964)	(0.643)
G-Index Score	2.013***	1.717**		
	(0.521)	(0.674)		
E-Index Score				5.111***
				(0.776)
Union Sponsor	−0.401	2.159	1.556	2.407
	(2.900)	(3.517)	(2.290)	(3.849)
Institutional Sponsor	3.742	2.259	14.895***	11.622***
	(4.276)	(5.095)	(2.513)	(2.676)
Defense	4.043	6.082	12.299***	19.544***
	(3.531)	(4.411)	(2.811)	(4.132)
Voted Before	−4.056**	−4.433*	−6.071***	−6.415***
	(1.906)	(2.418)	(1.535)	(1.739)
Negative Tone Change	−0.565	0.314	0.343	0.172
	(0.715)	(0.899)	(0.869)	(1.573)
Coverage	−2.338***	−2.527***	−2.823***	−1.913**
	(0.739)	(0.934)	(0.595)	(0.787)
Constant	27.614	15.156	33.414**	−28.585
	(19.702)	(23.304)	(14.812)	(17.699)
Observations	289	289	701	375
R^2	0.28	0.41	0.46	0.66
Adjusted R^2	0.24	0.25	0.40	0.59
F Statistic	7.063***	2.661***	7.176***	9.185***
Year & Industry FE	NO	YES	YES	YES

*p<0.1; **p<0.05;***p<0.01

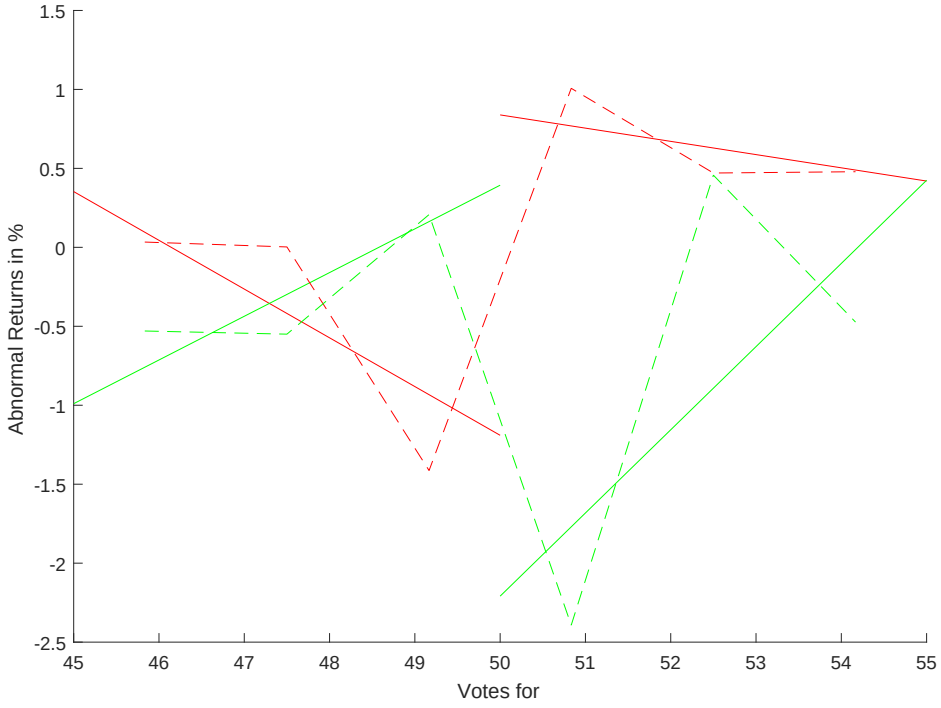
Notes: This table reports standard OLS regressions for specific subsets of the election data: (1) and (2) control for the G-Index (thereby truncating the data as the G-Index is not available for observation after 2007), (3) does not control for G-Index (thereby extending the observation period until 2014), (4) includes the E-Index (thereby truncating the data as the E-Index is not available for observation before 2008). *Coverage* is the residual of the baseline regression (27). Standard errors clustered on firm level are reported in parantheses.

Before presenting the results of the Regression Discontinuity Design, we briefly broach the issue of the market of corporate control. Most provisions in the corporate governance index by Gompers et al. (2003) are related to the market of corporate control in which more shareholder rights are equivalent to less takeover protection. It is possible that higher takeover activity and rumors in a specific industry will increase media attention and at the same time alter the attractiveness of governance provisions. Following this line of argument, our coverage variable might be a proxy for the market of corporate control. Hence, we extend our baseline regression (27) by controlling for takeover activity. We add a takeover index that counts the number of takeover targets within a industry-year combination using 2-digit SIC codes relative to the total number of companies within the same industry-year combination. We provide the reader with the results in the appendix, Table 25 and 26.

2.5.2 Results - Regression Discontinuity Design

In this section, we graphically and statistically explore the value implications of corporate governance provisions depending on media coverage.

Figure 9: Empirical Market Reaction to Shareholder Proposals for Companies with Different Levels of Media Coverage



Notes: This figure shows observed stock price reactions ±1 days around votes on governance-related shareholder proposals for companies with different levels of media coverage. The figure includes G-Index relevant proposals in our sample. The red lines indicate reactions for companies with low media coverage, the green lines reactions of companies with high media coverage. The Dashed lines indicate average returns based on 1.66% bins.

Figure 9 gives a graphical representation of the close votes entering the Regression Discontinuity Design analysis explained in section 2.4. The dashed lines show the average returns around the annual meeting for companies with high (green) and low (red) media coverage using three bins on each side of the majority cutoff. The solid lines approximate the observed market reactions using polynomials of degree one. We compare the polynomials at the cutoff and find a positive market reactions for companies with low media coverage around the 50% cutoff (red). Hence, low coverage companies experience a positive shock if the proposal passes by a small margin compared to proposals that fail by a small margin. Companies with high media coverage show an opposite reaction where failed proposals lead to a positive reaction compared to passed proposals. The difference between these (positive and negative) market reactions is the additional value of corporate governance for companies with low media coverage compared to companies with high media coverage, equaling $\tau_{\Delta LC}$ according to our notation. The fact that companies with low media coverage experience a positive shock following a passed governance proposals

while companies with high media coverage experience a negative shock supports the model-based prediction that corporate governance matters stronger for companies with low external monitoring by the media.
Table 14 displays the major results using different quintiles and close vote intervals.

Table 14: The Impact of G-Index Provisions and Media Coverage

Dependent variable: Cumulative Abnormal Returns						
Window size (in days)	[0,0]	[0,1]	[-1,1]	[0,0]	[0,1]	[-1,1]
$\tau_{\Delta LC}$ in %	2.52	4.44	7.01**	3.60*	7.41**	9.30**
	(1.66)	(1.60)	(2.44)	(1.89)	(2.07)	(2.60)
τ_{HC} in %	-1.93*	-3.89**	-4.96**	-2.62**	-5.76**	-7.16***
	(-1.99)	(-2.16)	(-2.66)	(-2.15)	(-2.53)	(-3.15)
R-squared	0.195	0.165	0.166	0.323	0.251	0.262
Observations	71	69	69	48	47	47
Number of Quantiles	2	2	2	3	3	3
Close vote intervall						
(percentage points around 50%)	± 3	± 3	± 3	± 3	± 3	± 3

Notes: This table shows the impact of governance provisions that increase shareholder rights using the G-Index of Gompers et al. (2003) on stock returns. Results for a window size of 5% around the cutoff are reported. Stock returns are adjusted for market returns subtracting the daily value-weighted holding period return. The effect, $\tau_{\Delta LC}$, represents the difference between the treatment effects of low media coverage v.s. high media coverage firms. A positive value indicates that increased shareholder rights are more valuable to low coverage firms. t-values are displayed in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

In our baseline setting, we use a 3% window around the cutoff, therefore comparing abnormal returns associated with passed proposals (50-53%) to abnormal returns associated with failed (47-50%) proposals. The differences in returns between passed and failed proposals is larger for below-median coverage companies than for above-median coverage companies. This is indicated by the positive values for $\tau_{\Delta LC}$ in the first row and can be interpreted as the coverage effect. The size of this effect is always positive and amounts to significant 7.01% when considering a $[-1, 1]$-window around the annual meeting. The effect increases when comparing companies in the tercile with the highest media coverage with the tercile with lowest media coverage. We also observe larger effects for the larger window size of $[-1, 1]$ compared to $[0, 0]$ which can be due to two reasons. First, market participants obtain more information as the annual meeting approaches and can already better predict the outcome for some decisions the day prior the meeting. This will lead to a price change before the meeting, but a lower effect after the result was announced. Second, it is possible that the voting result of the shareholder proposal is only available after markets close. In this case, the effect will be captured on the day following the annual meeting. Third, information on the voting results might only diffuse slowly. By looking at τ_{HC}, we find negative market reactions following passed proposals for companies with high media coverage in line with our graphical analysis. This indicates that high coverage companies, on average, suffer from additional shareholder rights. We obtain significant results in most of

our settings. Hence, firms with low media coverage benefit to a larger extent from stronger shareholder rights confirming hypothesis II.

Table 15: Robustness - Size of close vote intervall

Dependent variable: Cumulative Abnormal Returns						
Window size (in days)	[0,0]	[0,1]	[-1,1]	[0,0]	[0,1]	[-1,1]
$\tau_{\Delta LC}$ in %	1.61	2.57	4.43**	1.74	4.01	5.71**
	(1.37)	(1.36)	(2.23)	(1.07)	(1.60)	(2.22)
τ_{HC} in %	-0.77	-1.84	-2.58**	-0.54	-2.65	-3.76**
	(-1.03)	(-1.51)	(-2.01)	(-0.50)	(-1.63)	(-2.25)
R-squared	0.046	0.055	0.075	0.073	0.116	0.128
Observations	118	116	116	79	78	78
Number of Quantiles	2	2	2	3	3	3
Close vote intervall						
(percentage points around 50%)	± 5	± 5	± 5	± 5	± 5	± 5

Notes: This table shows the impact of improving different sets of governance provisions using a larger window size of 5% around the cutoff. Stock returns are adjusted for market returns subtracting the daily Value-Weighted Holding Period Return. The treatment effect, $\tau_{\Delta LC}$, represents the difference between returns between high and low coverage firms following a passed shareholder proposal. t-values are displayed in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

Table 15 shows robustness checks using a larger window size of 5% around the cutoff. All effects have the anticipated sign and, again, the [-1,1] window is strongly significant. We explain the slightly lower effects by the proposals that receive votes further away from the cutoff (e.g. 45%). As indicated by the graphical representation in Figure 9, the effect stems from proposals very close to the cutoff (+-2.5%). Voting outcomes further away from the cutoff might have been anticipated by some market participants prior to the annual meeting, thereby lessening the effect. In addition, we performed a robustness check using the number of words instead of the number of articles written on a company (see section 2.4.2). The results can be found in Table 16. Altogether, the results support the model's prediction that companies with low media coverage experience larger benefits from additional shareholder rights. More specifically, we find firms with low coverage to gain in value with increasing shareholder rights whereas firms with high media coverage lose value.

Table 16: Robustness - Words

Dependent variable: Cumulative Abnormal Returns						
Window size (in days)	[0,0]	[0,1]	[-1,1]	[0,0]	[0,1]	[-1,1]
$\tau_{\Delta LS}$ in %	1.66	5.81**	7.81***	3.03	8.27**	10.7***
	(1.08)	(2.09)	(2.75)	(1.59)	(2.33)	(3.03)
τ_{HS}	-1.61	-4.47**	-5.40***	-2.96**	-6.13**	-7.65***
	(-1.55)	(-2.42)	(-2.86)	(-2.39)	(-2.67)	(-3.33)
R-squared	0.147	0.150	0.170	0.287	0.268	0.292
Observations	71	69	69	48	47	47
Number of Quantiles	2	2	2	3	3	3
Close vote intervall						
(percentage points around 50%)	± 3	± 3	± 3	± 3	± 3	± 3

Notes: This table shows the impact of governance provisions that increase shareholder rights using the G-Index of Gompers et al. (2003) on stock returns. Abnormal media coverage is based on the number of words instead of the number of articles. Stock returns are adjusted for market returns subtracting the daily value-weighted holding period return. The effect, $\tau_{\Delta LC}$, represents the difference between the treatment effects of low media coverage v.s. high media coverage firms. A positive value indicates that increased shareholder rights are more valuable to low coverage firms. t-values are displayed in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

2.5.3 Placebo Checks

In the following, we show that the separation of our sample into high and low media coverage firms does not lead to significance abnormal returns by construction, independent of the majority cutoff. Further, we disseminate the concern that our coverage effect is a size effect or another company characteristic.

Placebo Cutoff

Table 17 and 18 show robustness checks to ensure our results are not driven by company size or votes in favor of the proposal, independent of the majority cutoff. We use the $[-1, 1]$-CAR base case in both robustness checks. Panel I and II of Table 17 show estimated effects using cutoffs of 40% and 60%. Column (2) and (4) of Panel I compare the effect of proposals that fail with votes in favor between 35% and 40% to those who fail with votes in favor of 40% to 45%. Column (1) and (3) do the same, but use a close vote interval of 3% instead of 5%. The analysis is comparable to the results presented in Table 14. The results are non-significant in all settings. Panel II also shows no significant effects for proposals around a cutoff of 60%. Hence, our results are related to the majority vote and are not rooted in the correlation between votes in favor and returns.

Table 17: Placebo - Cutoffs

Dependent variable: Cumulative Abnormal Returns [-1,1]				
	(1)	(2)	(3)	(4)
	Panel I: 40% Cutoff			
$\tau_{\Delta LC}$ in %	-1.76%	-2.35%	-0.40%	-1.85%
	(-0.85)	(-1.51)	(-0.15)	(-0.89)
τ_{HC}	0.65%	1.10%	0.19%	1.61%
	(0.43)	(0.99)	(0.10)	(1.10)
Number of Quantiles	2	2	3	3
Close vote intervall				
(percentage points around 40%)	± 3	± 5	± 3	± 5
	Panel II: 60% Cutoff			
$\tau_{\Delta LC}$ in %	-1.09	-1.36	0.46	-0.29
	(-0.38)	(-0.71)	(0.13)	(-0.12)
τ_{HC}	0.87	0.49	-1.39	-0.81
	(0.37)	(0.34)	(-0.47)	(-0.45)
Number of Quantiles	2	2	3	3
Close vote intervall				
(percentage points around 60%)	± 3	± 5	± 3	± 5

Notes: This table shows the impact of governance provisions that increase shareholder rights using the G-Index of Gompers et al. (2003) on stock returns. We report results for two placebo cutoffs: the effects at 40% and 60% on stock returns adjusted for market returns subtracting the daily value-weighted holding period return. The effect, $\tau_{\Delta LC}$, represents the difference between the treatment effects of low media coverage v.s. high media coverage firms. A positive value indicates that increased shareholder rights are more valuable to low coverage firms. Media coverage is the residual of the baseline regression (27). t-values are displayed in parenthesis. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

Placebo Size

Table 18 shows estimated effects for the same sample as in our main RDD analysis (Table 14), but instead of distinguishing the companies based on news coverage, we split our sample into large and small companies using market capitalization. This way we can exclude the possibility that our observations are driven by a correlation between the size of the companies and stock returns around the annual meeting, which is not captured in our media coverage adjustment for company size. The results displayed in Table 18 are non-significant in all settings. Hence, our coverage variable does not reflect a size effect.

Placebo Company-Related Characteristics

Table 19 shows the results as in Table 14, but we sort our sample based on company characteristics which have a high correlation with media coverage.[43] The results allow us to disseminate concerns regarding omitted variables. If, for example R&D Expenses (correlation 0.14) increase media

[43]See Table 21 in the appendix. We provide placebo checks for all variables which show a correlation coefficient exceeding 0.1.

Table 18: Placebo - Size

Dependent variable: Cumulative Abnormal Returns [-1,1]				
	(1)	(2)	(3)	(4)
$\tau_{\Delta LS}$ in %	-1.82	-0.39	-0.52	-1.49
	(-0.60)	(-0.20)	(-0.13)	(-0.58)
τ_{HS}	-1.02	-0.44	-2.45	-0.12
	(-0.50)	(-0.31)	(-0.98)	(-0.06)
Number of Quantiles	2	2	3	3
Close vote intervall				
(percentage points around 50%)	± 3	± 5	± 3	± 5
R-squared	0.091	0.050	0.114	0.092
Observations	69	116	47	78

Notes: This table shows the impact of improving different sets of governance provisions using company size to classify our sample. Stock returns are adjusted for market returns subtracting the daily Value-Weighted Holding Period Return. The treatment effect, $\tau_{\Delta LS}$, represents the difference between returns between high and low size firms following a passed shareholder proposal. t-values are displayed in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

coverage and decrease the value of shareholder rights, we will observe lower values for shareholder rights in companies with high media coverage, even without any causal link between media coverage and the value of shareholder rights. In this situation we should also observe a strong correlation between media coverage and R&D Expenses. In addition we should observe more pronounced effects in the value of shareholder rights when sorting our RDD sample to R&D Expenses. As we neither observe strong correlations, nor significant effects of similar size in Table 19, it is unlikely that our major results are caused by any of those inspected variables.

Table 19: The Impact of G-Index Provisions depending on Company Characteristics

Dependent variable: Cumulative Abnormal Returns			
	[0,0]	[0,1]	[-1,1]
	Leverage Ratio		
$\tau_{\Delta L}$ in %	1.94	4.71	3.99
	(1.24)	(1.61)	(1.29)
	Book-to-Market Ratio		
$\tau_{\Delta L}$ in %	0.09	-2.31	-1.26
	(0.06)	(-0.78)	(-0.40)
	Return on Assets		
$\tau_{\Delta L}$ in %	-0.19	-2.29	-3.73
	(-0.12)	(-0.81)	(-1.26)
	Capital Expenditures		
$\tau_{\Delta L}$ in %	1.10	3.57	3.74
	(0.70)	(1.21)	(1.24)
	R&D Expenses		
$\tau_{\Delta L}$ in %	-0.62	0.33	-0.62
	(-0.29)	(0.09)	(0.16)
Close vote intervall			
(percentage points around 50%)	± 3	± 3	± 3

Notes: This table shows the impact of governance provisions that improve the G-Index of Gompers et al. (2003) on stock returns. Stock returns are adjusted for market returns subtracting the daily Value-Weighted Holding Period Return. The results are obtained using a Regression Discontinuity Design applied to votes on shareholder proposals ±3% around the majority cutoff. The treatment effect, $\tau_{\Delta L}$, represents the difference between returns of companies above and below the median level of the above indicated company characteristic. t-values are displayed in parentheses. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

2.6 Conclusion

In this paper, we show that media coverage lowers the importance of corporate governance and its positive effects on firm value. Cross-sectional regressions document that shareholders in companies with low media coverage more often vote in favor of additional shareholder rights. In addition, we apply a Regression Discontinuity Design to close shareholder proposals to capture the causal effect of corporate governance on shareholder value. Our results indicate that the value of additional shareholder rights is higher for companies with less media coverage. Following a closely passed shareholder proposal, companies with low media coverage show 5% higher market returns than companies with high media coverage. In particular, the value of firms with high media coverage decrease with the close passage of a proposal demanding stronger shareholder rights suggesting that additional shareholder rights are not generally in the interest of the companies' shareholders. In sum, our work stresses that the trade-off between the advantages and the disadvantages of elevated corporate governance is related to the degree of media coverage.

2.7 Appendix

Table 20: **Definition of Control Variables**

VARIABLE	DEFINITION
Market Data	
Market Adj. CAR prior Year	Cumulative abnormal return in the year (to be more specific, in the time span between 370 days and 10 days) before the general meeting using the firms' stock return and subtracting the daily Value-Weighted Holding Period Return.
Industry Adj. CAR prior Year	Cumulative abnormal return in the year (to be more specific, in the time span between 370 days and 10 days) before the general meeting using the firms' stock return and subtracting the median sic2-digit industry return.
CAR prior Day	Market adjusted stock return one day before the general meeting.
CAR prior Month	Market adjusted stock return one month before the general meeting.
Company Data	
Leverage	Debt divided by total assets.
Log Market Value	The log of the number of shares outstanding times the price of the stock (in million US Dollar).
Log Book to Market	The log of the number of shares outstanding times book value per share divided by the market capitalization of the stock.
Return on Assets	Net income divided by total assets.
Advertising Expenses	Advertising expenses
R&D Expenses	Expenses for research and development
Capital Expenditures	Capital expenditures
nrofemployees	Number of employees.
Shareholder Proposal Data	
Vote Percentage	Percentage of votes in favor of the shareholder proposal.
Defense (Dummy)	One if the shareholder proposal is categorized as anti-takeover provision in SharkRepellent (e.g. a poison pill), 0 elsewhere. This is indicated by the field "antitakeover_reduce".

Voted Before (Dummy)	One if the same provision was already voted upon at the prior general meeting.
Union Sponsor (Dummy)	Shareholder proposal is filed by a union.
Institutional Sponsor (Dummy)	Shareholder proposal is filed by an institutional investor.
Other	
Institutional Ownership in %	Stock holding of institutional owners in percent.
Institutional Blockholder (Dummy)	One if the company has at least one institution investor that holds more than 5% of its stock.
G-Index Score	G-Index is the level of corporate governance based on Gompers et al. (2003).
E-Index Score	E-Index is the level of corporate governance following Bebchuk et al. (2009).
Tone	Negative news tone following Loughran and McDonald (2011).
Negative Tone Change	Tone in the year of the general meeting divided by the tone two years before the same meeting.
Herfindahl-Hirschman Index	Herfindahl-Hirschman Index to measure the level of competition per industry segment based on SIC 2-digit.
Analysts	Average number of analysts with earnings per share forecasts for the next year measured over the year prior to the annual meeting.

Notes: This table explains the variable used in the study as controls.

Table 21: Correlations Media Coverage and Controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Coverage (1)	1	0.02	0.07	-0.03	0.14	-0.10	0.01	-0.09	-0.01	-0.14	0.13	0.02	0.14	0.03	-0.01	0.06
Log Market Value (2)		1	-0.27	-0.34	0.01	-0.08	-0.25	0.06	0.12	0.25	0.47	0.58	0.54	0.01	-0.06	0.68
Log Book to Market (3)			1	-0.02	0.03	-0.002	0.03	-0.17	-0.16	-0.45	0.03	-0.06	-0.12	0.05	0.01	-0.16
Institutional Ownership in % (4)				1	-0.11	0.01	0.39	0.01	0.02	0.01	-0.32	-0.32	-0.38	0.02	0.17	-0.12
Leverage (5)					1	0.01	-0.03	-0.04	-0.12	-0.24	-0.05	-0.04	0.03	0.02	-0.03	-0.09
Tone (6)						1	-0.01	0.005	0.01	-0.02	-0.04	-0.07	-0.05	-0.11	0.05	-0.04
Institutional Blockholder (Dummy) (7)							1	0.03	0.21	-0.02	-0.18	-0.25	-0.26	0.03	0.03	-0.20
CAR prior Year (Market) (8)								1	0.77	0.11	0.001	0.02	-0.01	-0.09	0.01	-0.02
CAR prior Year (Industry) (9)									1	0.14	0.02	0.01	0.03	-0.002	0.04	0.09
Return on Assets (10)										1	0.05	0.07	0.13	-0.05	0.05	0.18
Capital Expenditures (11)											1	0.46	0.19	-0.03	-0.03	0.36
Advertising Expenses (12)												1	0.56	0.01	-0.12	0.34
R&D Expenses (13)													1	-0.03	-0.14	0.45
CAR prior Month (14)														1	-0.02	0.00
Herfindahl-Hirschman Index (15)															1	0.01
Analysts (16)																1

Notes: This table reports pearson correlation coefficients baseline specification for media coverage given by Equation (27) and several control variables we use in our main analysis.

Table 22: Hypothesis Vote Outcome (Robustness Logit Transformation): Governance-related proposals

	Dependent variable:		
	Inverse Logit(Vote in %)		
	(1)	(2)	(3)
Institutional Ownership in %	0.0003	0.001***	0.0001
	(0.0003)	(0.0002)	(0.0003)
Institutional Blockholder	−0.003	−0.005	−0.005
	(0.005)	(0.004)	(0.004)
Log Market Value	0.001	−0.005***	0.007
	(0.002)	(0.002)	(0.005)
Leverage	−0.010	−0.010	0.006
	(0.013)	(0.012)	(0.026)
Log Book to Market	0.002	−0.001	0.004
	(0.004)	(0.003)	(0.005)
Return on Assets	0.030	0.013	0.009
	(0.040)	(0.022)	(0.023)
Market Adj. CAR prior Year	−0.003	−0.003*	−0.002**
	(0.003)	(0.001)	(0.001)
Industry Adj. CAR prior YEAR	0.005*	0.003**	0.001
	(0.003)	(0.001)	(0.001)
G-Index Score	0.003***		
	(0.001)		
Union Sponsor	0.029***	0.021***	0.017***
	(0.004)	(0.003)	(0.003)
Institutional Sponsor	0.005	0.016***	0.013**
	(0.007)	(0.005)	(0.006)
Defense	0.063***	0.054***	0.048***
	(0.005)	(0.003)	(0.003)
Voted Before	−0.001	0.0002	0.004**
	(0.003)	(0.002)	(0.002)
Negative Tone Change	0.002	0.003	0.003*
	(0.002)	(0.002)	(0.002)
Coverage	−0.004***	−0.005***	−0.003*
	(0.001)	(0.001)	(0.002)
Constant	0.524***	0.564***	0.493***
	(0.040)	(0.026)	(0.070)
Observations	733	1,839	1,839
R^2	0.509	0.441	0.612
Adjusted R^2	0.462	0.417	0.533
F Statistic	10.837***	18.067***	7.759***
Year FE	YES	YES	YES
Industry FE	NO	YES	NO
Firm FE	NO	NO	YES

*p<0.1; **p<0.05; ***p<0.01

Notes: This table reports standard OLS regressions for specific subsets of the election data. The limited dependent variable *Vote Percentage* is tranformed with the inverse logit function. Regressions (1) controls for the G-Index, (thereby truncating the data as the G-Index is not available for observation after 2007) and (2) and (3) do not control for G-Index (thereby extending the observation period until 2014). Media coverage is the residual of the baseline regression. Industry fixed effects are based on the 2-digit SIC. Standard errors clustered on firm level and reported in parantheses.

Table 23: Hypothesis Vote Outcome (Robustness): Governance-related proposals and Word Count

	Dependent variable:		
	Vote in %		
	(1)	(2)	(3)
Institutional Ownership in %	0.114	0.116	0.224***
	(0.091)	(0.108)	(0.071)
Institutional Blockholder	1.284	−1.458	−2.269
	(2.039)	(2.284)	(1.582)
Log Market Value	−1.202	0.196	−2.152***
	(0.775)	(1.055)	(0.700)
Leverage	−3.512	−5.584	−5.918
	(4.482)	(5.592)	(4.944)
Log Book to Market	0.631	0.556	−0.627
	(1.397)	(1.676)	(1.076)
Return on Assets	10.053	12.076	6.481
	(15.377)	(16.979)	(9.400)
Market Adj. CAR prior Year	0.172	−0.973	−1.011*
	(1.019)	(1.373)	(0.608)
Industry Adj. CAR prior YEAR	0.784	1.944	1.087*
	(0.845)	(1.226)	(0.586)
G-Index Score	1.052***	1.183***	
	(0.376)	(0.386)	
Union Sponsor	11.215***	11.836***	8.786***
	(1.572)	(1.591)	(1.179)
Institutional Sponsor	2.663	1.850	6.901***
	(3.415)	(3.064)	(1.970)
Defense	26.327***	26.531***	22.840***
	(1.773)	(2.239)	(1.387)
Voted Before	0.269	−0.408	−0.099
	(1.208)	(1.412)	(0.853)
Negative Tone Change	−0.109	0.525	0.895
	(0.979)	(0.989)	(0.769)
Words-Coverage	−0.948**	−1.214**	−1.447***
	(0.475)	(0.492)	(0.353)
Constant	23.013*	8.117	27.262**
	(13.591)	(16.999)	(11.046)
Observations	733	733	1,839
R^2	0.44	0.51	0.44
Adjusted R^2	0.43	0.46	0.42
F Statistic	37.603***	10.827***	18.004***
Year & Industry FE	NO	YES	YES

*p<0.1; **p<0.05; ***p<0.01

Notes: This table reports standard OLS regressions for specific subsets of the election data. (1) and (2) control for the G-Index (thereby truncating the data as the G-Index is not available for observation after 2007), (3) does not control for G-Index (thereby extending the observation period until 2014). Words-Coverage is the residual of the baseline regression (27), where we used, instead of the number of articles, the number of words in articles in the previous year. Standard errors clustered on firm level and reported in parantheses.

Table 24: Hypothesis Vote Outcome (Robustness): Governance-related proposals and Analysts

	Dependent variable:		
	Vote in %		
	(1)	(2)	(3)
Institutional Ownership in %	0.107	0.107	0.224***
	(0.099)	(0.112)	(0.072)
Institutional Blockholder	0.269	−2.335	−1.837
	(2.174)	(2.423)	(1.633)
Log Market Value	−1.554	−1.104	−1.619*
	(1.063)	(1.402)	(0.871)
Leverage	−1.058	0.238	−3.815
	(5.110)	(6.559)	(5.426)
Log Book to Market	1.562	2.180	−0.176
	(1.620)	(1.774)	(1.134)
Return on Assets	19.866	24.519	6.298
	(18.093)	(19.537)	(10.468)
Market Adj. CAR prior Year	0.343	−0.174	−1.227**
	(1.083)	(1.406)	(0.569)
Industry Adj. CAR prior YEAR	0.590	1.370	1.280**
	(0.915)	(1.232)	(0.590)
G-Index Score	1.219***	1.068***	
	(0.414)	(0.406)	
Union Sponsor	10.949***	12.024***	8.651***
	(1.718)	(1.671)	(1.252)
Institutional Sponsor	1.701	1.856	7.122***
	(3.444)	(3.031)	(2.028)
Defense	26.354***	26.508***	22.258***
	(1.993)	(2.445)	(1.483)
Voted Before	−0.270	−1.091	−0.428
	(1.271)	(1.561)	(0.964)
Negative Tone Change	−0.713	0.145	1.235*
	(0.897)	(1.045)	(0.731)
Coverage	−1.189**	−1.891***	−1.936***
	(0.587)	(0.613)	(0.454)
Analysts	0.082	0.262	−0.134
	(0.154)	(0.251)	(0.156)
Constant	24.719	19.039	23.010*
	(15.051)	(18.639)	(12.085)
Observations	623	623	1,638
R^2	0.461	0.542	0.452
Adjusted R^2	0.447	0.488	0.424
F Statistic	32.372***	10.127***	16.467***
Year & Industry FE	NO	YES	YES
	*p<0.1; **p<0.05; ***p<0.01; ****p<0		

Notes: This table reports standard OLS regressions for specific subsets of the election data. (1) and (2) control for the G-Index (thereby truncating the data as the G-Index is not available for observation after 2007), (3) does not control for G-Index (thereby extending the observation period until 2014). *Coverage* is the residual of the baseline regression (27). *Analysts* is the average number of analysts with earnings foreceasts in the prior year. Standard errors clustered on firm level and reported in parantheses.

Table 25: Hypothesis Vote Outcome (baseline): Governance-related proposals - Coverage with Takeover Control

	Dependent variable:		
	Vote in %		
	(1)	(2)	(3)
Institutional Ownership in %	0.078	0.104	0.210***
	(0.090)	(0.110)	(0.072)
Institutional Blockholder	0.836	−1.443	−1.968
	(2.181)	(2.313)	(1.632)
Log Market Value	−1.120	0.080	−2.099***
	(0.809)	(1.087)	(0.716)
Leverage	−1.427	−2.735	−3.152
	(4.435)	(5.628)	(5.167)
Log Book to Market	1.194	0.974	−0.345
	(1.478)	(1.715)	(1.141)
Return on Assets	14.321	13.604	5.599
	(15.601)	(17.042)	(9.645)
Market Adj. CAR prior Year	−0.528	−1.084	−1.146*
	(1.030)	(1.468)	(0.641)
Industry Adj. CAR prior YEAR	1.610*	2.239	1.189**
	(0.919)	(1.401)	(0.592)
G-Index Score	1.059***	1.155***	
	(0.382)	(0.394)	
Union Sponsor	10.753***	11.581***	8.805***
	(1.606)	(1.619)	(1.232)
Institutional Sponsor	2.238	1.919	7.384***
	(3.723)	(3.285)	(2.042)
Defense	26.606***	26.404***	23.452***
	(1.771)	(2.244)	(1.438)
Voted Before	−0.411	−1.113	−0.557
	(1.201)	(1.456)	(0.907)
Negative Tone Change	0.011	0.793	1.339*
	(0.938)	(0.952)	(0.726)
Coverage TO	−1.474***	−1.611***	−1.905***
	(0.542)	(0.585)	(0.461)
Constant	23.895*	14.192	41.831***
	(13.723)	(16.923)	(10.898)
Observations	679	679	1,680
R^2	0.441	0.505	0.435
Adjusted R^2	0.428	0.459	0.412
F Statistic	34.850***	11.098***	18.274***
Year & Industry FE	NO	YES	YES

*p<0.1; **p<0.05; ***p<0.01

Notes: This table reports standard OLS regressions for specific subsets of the election data. (1) and (2) control for the G-Index (thereby truncating the data as the G-Index is not available for observation after 2007), (3) does not control for G-Index (thereby extending the observation period until 2014). *Coverage TO* is the residual of the baseline regression (27) when extended by an industry-specific takeover index. Standard errors clustered on firm level are reported in parenthesis.

Table 26: Hypothesis Vote Outcome (baseline): G-Index relevant proposals only - Coverage with Takeover Control

	Dependent variable:		
	Vote in %		
	(1)	(2)	(3)
Institutional Ownership in %	0.279**	0.253*	0.448***
	(0.135)	(0.152)	(0.089)
Institutional Blockholder	−1.950	−1.461	−0.498
	(3.500)	(4.110)	(2.782)
Log Market Value	−1.099	0.282	−1.506
	(1.228)	(1.587)	(0.946)
Leverage	−4.573	3.854	0.185
	(6.449)	(10.243)	(7.680)
Log Book to Market	0.368	1.975	0.912
	(2.045)	(2.408)	(1.559)
Return on Assets	−22.848	−5.198	−1.886
	(21.904)	(25.630)	(12.597)
Market Adj. CAR prior Year	−0.116	0.581	−0.896
	(2.015)	(3.189)	(1.055)
Industry Adj. CAR prior YEAR	0.912	1.740	0.826
	(2.172)	(2.975)	(1.054)
G-Index Score	2.044***	1.644**	
	(0.519)	(0.652)	
Union Sponsor	−1.894	0.817	0.949
	(2.900)	(3.533)	(2.329)
Institutional Sponsor	3.185	1.211	15.305***
	(4.348)	(5.007)	(2.737)
Defense	3.578	4.706	11.824***
	(3.674)	(4.469)	(2.840)
Voted Before	−4.626**	−5.411**	−6.690***
	(1.939)	(2.424)	(1.598)
Negative Tone Change	−0.872	−0.093	0.325
	(0.662)	(0.880)	(0.875)
Coverage TO	−2.267***	−2.446**	−2.728***
	(0.766)	(0.945)	(0.597)
Constant	32.994	21.544	35.200**
	(20.196)	(23.927)	(14.688)
Observations	270	270	643
R^2	0.259	0.395	0.446
Adjusted R^2	0.216	0.243	0.381
F Statistic	5.932***	2.598***	6.899***
Year & Industry FE	NO	YES	YES

*p<0.1; **p<0.05;***p<0.01

Notes: This table reports standard OLS regressions for specific subsets of the election data: (1) and (2) control for the G-Index (thereby truncating the data as the G-Index is not available for observation after 2007), (3) does not control for G-Index (thereby extending the observation period until 2014). *Coverage TO* is the residual of the baseline regression (27) when extended by an industry-specific takeover index. Standard errors clustered on firm level are reported in parentheses.

Table 27: RDD - Preexisting Differences Coverage Cut

Variable	M-HC	M-LC	Prov-HC	Prov-LC	Diff	p-value
Log Market Value	9.79	9.68	59	59	0.11	0.88
Leverage	0.74	0.65	59	59	0.09	0.02
Log Book to Market	-0.66	-0.95	56	59	0.3	0.01
Tone	0.02	0.02	58	56	0	0.98
Herfindahl-Hirschman Index	0.07	0.08	49	54	-0.01	0.56
Advertising Expenses	1000	441	26	24	559	0.14
R&D Expenses	380.65	238.5	34	41	142.15	0.63
Capital Expenditures	793	732	58	58	61	0.51
CAR prior Month	0	0.01	59	59	-0.01	0.58
CAR prior Day	0	0	55	55	0	0.54
Return on Assets	0.03	0.05	59	59	-0.01	0.11
Analysts	16	16	57	56	0	0.32

Notes: We look at all close votes i.e. votes with between 45 and 55 percentage points votes in favor and analyze whether there is a structural difference between the subsamples with high and low media coverage. The median of the high(low) coverage subsample is *M-HC* (*L-HC*). *Prov-HC*(LC) indicates the number of provisions falling into the corresponding subsample. p-value refers to the Wilcoxon rank test for differences in medians. For a description of variable, see Table 20 in the appendix.

3 Corporate Governance and Employee Satisfaction[44]

3.1 Introduction

In this paper, we investigate the causal effect of shareholder rights on employee satisfaction. We find a 10% decrease in employee satisfaction following shareholder proposals that pass by a small margin in favor of stronger shareholder rights compared to failed shareholder proposals. Employee satisfaction is relevant for financial and non-financial reasons. From a financial perspective, human capital is an intangible asset. The importance of this asset increased dramatically in the past decades, as companies changed from capital-intensive processing of raw materials to the development of highly sophisticated products and services (Zingales, 2000). The competitive advantages of modern products result to a large extent from the creativity of their developers.

Symitsi et al. (2018) show that one additional point on a five-point scale of employee satisfaction is associated with an abnormal annual stock return of 1.5% and a 0.5% higher Return on Assets. Edmans (2011) and Goenner (2008) also find positive abnormal long-term returns for companies with high employee satisfaction. Sophisticated long-term investors are aware of the importance of the workforce and urge managers to act accordingly. In his letter to CEOs, Larry Fink, founder and CEO of Exchange Traded Fund (ETF) giant BlackRock, criticized companies for underinvesting in skilled workforces (2015) and reminded CEOs that "[c]ompanies must benefit all of their stakeholders, including shareholders, employees, [...]" (2018). Larry Fink is not the only investor interested in employee satisfaction. According to a 2017 Institutional Investor study by Edelman, 69 percent of investors answered that they care about how a company treats its employees.

In addition to the impact on shareholder value, employee satisfaction is important from a social responsibility perspective. Stress at the workplace causes more than 120,000 deaths per year in the U.S. and leads to annual costs in excess of $180 billion (Goh et al., 2015). Additionally, stakeholders with interests other than the stock price, such as unions, political groups, and employees themselves, prefer higher employee satisfaction.

Employee satisfaction is also at the center of the current political attention. Recent legislative initiatives such as the "Accountable Capitalism Act"[45] introduced by U.S. Senator Elisabeth Warren in August 2018 force companies to increase the focus on the well being of employees. This legislation would weaken shareholder rights (see, e.g., Lipton, 2018) and includes a mandatory shift from shareholder primacy to stakeholder governance, including a 40% board representation by employees for large corporations.[46]

The effect of stronger shareholder rights on employee satisfaction is a priori not clear. On the one hand, classic corporate finance is shareholder-centric and expects managers to maximize stock prices instead of employee satisfaction, which implies a negative relation between share-

[44]This project is joint work with Marco Menner. We thank Andrew Chamberlain, Marcel Fischer, Patrick Hauf, Jens Ihlow, Jens Carsten Jackwerth, Axel Kind, Nawid Siassi, Malte Nussberger, Johannes Zaia, Glassdoor, Inc. and all their employees, participants of the research seminar of University of Konstanz, and 4th Workshop in Empirical Banking and Finance for valuable comments.

[45]Available at: https://www.warren.senate.gov/imo/media/doc/Accountable%20Capitalism%20Act.pdf

[46]The stakeholder principal itself is not new, but it is not mandatory. See, e.g. the Supreme Court of Delaware ruling in the Unocal v. Mesa Petroleum case in 1985.

holder rights and employee satisfaction.[47] An increase in employee satisfaction usually comes at the expense of the company, therefore stronger shareholder rights (which align the interests of shareholders and managers) might lead to a decrease in employee satisfaction. Another possible reason for a negative effect is stock-market pressure to deliver short-term results, even at the expense of long-term shareholder value (short-termism). Stein (1988) introduces the problem of short-termism with a theoretical model. Bertrand and Mullainathan (2003) confirm this problem empirically and find decreasing wages following increased takeover pressure. According to a survey by Graham, Harvey, and Rajgopal (2005), 78% of CFOs are willing to sacrifice long-term projects despite a positive NPV in order to increase short-term earnings.

On the other hand, one can expect a positive relation between stronger shareholder rights and employee satisfaction. The combination of (i) increasing investments in ETFs (see, e.g., Batts, 2018), (ii) sufficient resources of institutional investors to investigate and appreciate the value of employee satisfaction as an intangible asset, and (iii) institutional investors' influence on CEOs, such as the Larry Fink's letters to CEOs, suggest an improved employee satisfaction.[48] In their theoretical paper, Marinovic and Varas (2017) suggest a negative relation between stronger shareholder rights and short-termism, which can potentially explain an increase in employee satisfaction following the approval of stronger shareholder rights.

Positive and negative effects should be measurable in employee satisfaction immediately after the management expects a change in the shareholder rights, even when the actual modification of the charter or bylaws occurs only months later. Assuming the number of anti-takeover provisions is reduced, then management can mitigate the increasing takeover vulnerability in the coming month with strong financial results. In order to achieve such results in the upcoming quarterly reports, managers have an incentive to cut costs as soon as possible.

Empirical evidence on the relation between corporate governance and employee satisfaction is sparse, caused by limited data on company specific employee satisfaction. We overcome this problem by using data provided by Glassdoor, a website where, after creating an account, employees can anonymously review their employer. The information in this dataset is relevant for two reasons. First, it allows us to measure the level of employee satisfaction for each company at different points in time. Second, satisfaction scores from Glassdoor are available online. This visibility makes employee satisfaction more important to stakeholders because it attracts or discourages potential employees.

We measure the changes in employee satisfaction around quasi-exogenous shocks to the corporate governance of companies. Specifically, we employ a Regression Discontinuity Design (RDD) to close votes on shareholder proposals. This methodology allows us to ensure a causal interpretation of the results. As the outcome of a close vote, e.g. a proposal that passes with 50.5% or fails with 49.5%, is uncorrelated with firm characteristics and cannot be anticipated, it is akin to an exogenous shock and hence overcomes potential endogeneity issues of cross sectional regressions. Our main finding of a decrease in employee satisfaction is robust to different windows around the majority threshold, alternative measures of employee satisfaction, and various time periods

[47] Jeff Tryka, an equity analyst at Delafield Hambrecht, described this view by: "[Costco's] management is focused on [...] employees to the detriment of shareholders. To me, why would I want to buy a stock like that?" - BusinessWeek on 8.28.2003

[48] Another increasingly influential group affecting shareholder votes with similar analytic resources are proxy advisory firms. For an overview of this industry see Copland, Larcker, and Tayan (2018).

to measure employee satisfaction. The companies with close passed and failed proposals show no significant pre-existing differences and we find no discontinuity in the density of votes in favor of shareholder proposals, which could suggest manipulation of the votes.

We contribute to the existing literature in several ways. First, we identify stronger shareholder rights as a source of employee dissatisfaction. This finding is important for investors with long-term financial interests and stakeholders with non-financial interests, such as managers who have an interest in the well-being of their workforce, unions, law makers, and employees themselves.

Second, we extend the list of consequences of stronger shareholder rights. Previous studies mainly focus on quantitative aspects, such as stock prices (Gompers et al., 2003; Bebchuk et al., 2013; Cuñat et al., 2012), equity risk (Ferreira and Laux, 2007), and compensation (Core et al., 1999). Our findings are among the first (see, e.g. Li et al., 2008) to show causal effects of corporate governance on intangible assets, in this case employee satisfaction. A better understanding of the effects on employee satisfaction caused by changes in corporate governance contribute to the current legislative discussions which focus on the stakeholder principal, such as the Accountable Capitalism Act.

Third, we contribute to the existing discussion on short-termism. Scholars (e.g., Jordan et al., 2016), corporate lawyers (e.g., Lipton, 2017), and politicians (e.g., Warren, 2018) observe an ongoing focus of executives and board members on short-term results, which damages the long-term success of companies and the well-being of the economy. Empirical evidence for this stock-market driven short-termism is rare and some scholars, such as Roe (2018), question whether economically relevant short-termism exists at all. Others, such as Bebchuk (2013a), find no evidence that weaker shareholder rights have positive long-term effects. Given a positive relation between employee satisfaction and the long-term success of companies (see, e.g., Edmans, 2011) we provide evidence of a causal relationship between stronger shareholder rights and short-termism.

Previous studies that investigate the relation between corporate governance and characteristics connected to employee satisfaction include Cronqvist et al. (2009), who use Swedish data and show that stronger governance leads to lower wages. Liskovich (2016) uses data from the Texas Workforce Commission and shows that board destaggerings lead to a replacement of high-wage employees with low-wage employees. Popadak (2014) uses the similarity in written employee reviews to show a decrease in a proxy for corporate culture following stronger shareholder rights.

The remainder of this paper is organized as follows. Section 2 describes the methods we use to quantify employee satisfaction and the Regression Discontinuity Design. Section 3 describes our employee satisfaction and shareholder proposal data. We show and discuss results including robustness checks and placebo checks in Section 4. Section 5 concludes.

3.2 Methodology

In this section, we explain how we quantify employee satisfaction and the Regression Discontinuity Design (RDD) employed to quantify the effect that stronger shareholder rights have on employee satisfaction.

3.2.1 Quantification of Employee Satisfaction

Our empirical study is based on employee satisfaction scores (ES) between 1 and 5 assigned by individual employees on their company. For our analysis, we are interested in the change of employee satisfaction (ΔES_i) around an annual meeting i. To obtain ΔES_i, we require aggregated measures in employee satisfaction for the company that holds annual meeting i in a specific time period before and after the meeting.
We start by defining $\overline{ES}_i(-T, 0)$ as the average employee satisfaction within T months prior and $\overline{ES}_i(0, T)$ as the average employee satisfaction within T months after annual meeting i:

$$\overline{ES}_i(-T,0) = \frac{1}{N_i^-}\sum_{j=1}^{N_i^-} ES_{i,j}(-T,0) \quad \text{and} \quad \overline{ES}_i(0,T) = \frac{1}{N_i^+}\sum_{j=1}^{N_i^+} ES_{i,j}(0,T), \tag{34}$$

where $ES_{i,j}(-T, 0)$ is the $j-th$ review out of N_i^- total reviews on employee satisfaction for the company with annual meeting i within T months prior the annual meeting and $ES_{i,j}(0, T)$ is the $j-th$ review out of N_i^+ total reviews on employee satisfaction for the company with annual meeting i within T months after the annual meeting. We further compute an employee satisfaction index score $\overline{ES}_I(-T, 0)$ within T months prior and an employee satisfaction index score $\overline{ES}_I(0, T)$ within T months after annual meeting i. The index scores are computed analogous to Equation (34) but use reviews on employee satisfaction for *all* U.S. companies in the Glassdoor database within the relevant time periods.
We then measure the change in employee satisfaction ΔES_i as the difference between the index-adjusted satisfaction measure within T months after the annual meeting and the index-adjusted satisfaction measure within T months before the annual meeting:

$$\Delta ES_i = \frac{\overline{ES}_i(0,T)}{\overline{ES}_I(0,T)} - \frac{\overline{ES}_i(-T,0)}{\overline{ES}_I(-T,0)} \tag{35}$$

For our study, we use a window of T= 6 months before and after the annual meeting. We discard annual meetings for which we have less than 30 employee satisfaction reviews within that 6 months before and that 6 months after the annual meeting available. We choose a minimum of 30 reviews and 6 month windows to balance between statistical stability of the employee satisfaction averages and our sample size. Our results are robust to using 9 month windows with a minimum of 45 reviews. Using 3 month windows with a minimum of 15 reviews reduces the significance, yet does not change the direction of our results.
For further robustness, we (i) use an absolute instead of a relative index-adjustment, i.e. define

$$\Delta ES_i = \overline{ES}_i(0,T) - \overline{ES}_I(0,T) - \Big(\overline{ES}_i(-T,0) - \overline{ES}_I(-T,0)\Big) \tag{36}$$

and (ii) ignore the index-adjustment altogether, i.e. define

$$\Delta ES_i = \overline{ES}_i(0,T) - \overline{ES}_i(-T,0). \tag{37}$$

Both approaches do not change our main results.

3.2.2 Regression Discontinuity Design and Shareholder Proposals

We follow Cuñat et al. (2012) and use close votes on shareholder proposals as exogenous shocks to the governance of a company. This methodology, known as Regression Discontinuity Design (RDD), has several advantages.

First, shareholder proposals concern, by definition, aspects of the corporate governance that are within the control of shareholders. This advantage ensures not only a better understanding of corporate governance, it also allows stakeholders to act on our findings. Other aspects of corporate governance, such as the legal environment or institutional ownership, are certainly important, yet can hardly be influenced by shareholders or managers.

Second, shareholder proposals are not subject to a selection bias. The requirements and costs to file a shareholder proposal are very low, therefore all types of shareholders can file a proposal and recommend a course of action for the company. According to the relevant regulation[49], shareholders can submit a proposal if they owned stocks worth $2,000 for at least one year and intend to hold their stocks through the date of the meeting. Unless the Securities and Exchange Commission (SEC) allows otherwise, companies have to include all shareholder proposals that comply with the formal requirements in their proxy statement.[50] The costs for the distribution of the proposal are borne by the company. While management proposals have some advantages in our research setting compared to shareholder proposals, they can be placed and strategically withdrawn by management. This managerial power leads selection bias for proposals at the annual meeting. Potentially, managers allow proposals in favor of stronger shareholder rights only in times of good economic performance when their job is not at risk.

Third, close votes in favor (forcing variable) of a shareholder proposal induce an exogenous shock to selected aspects of the corporate governance of a company. The voting outcome is a continuous variable between 0 and 100%, yet the success of shareholder proposals is a binary variable that jumps at the majority threshold. While market participants and managers can anticipate a tendency of the vote outcome prior to the annual meeting, the exact outcome of the votes in favor is only revealed after counting the votes at the annual meeting. A focus on small window sizes around the threshold ensures a surprise element. Although the effect of a proposal that passes with a large margin should be the same as of a proposal that passes with a small margin, we exclude non-close votes because we are unable to determine when the management became aware of this information.

Fourth, shareholder proposals can only contain a single issue. This aspect of shareholder proposals allows us to classify the change in corporate governance very accurately. Other exogenous shocks, such as legal changes, simultaneously introduce several changes, which makes it impossible to isolate the effect of a selected governance characteristic.

Fifth, the RDD is not biased by managers who anticipate the outcome of shareholder proposals and act on these expectations.

We exploit these advantages with employee satisfaction as the dependent variable. In a nutshell, we measure the changes in employee satisfaction around annual meetings with close votes

[49] Title 17 §240.14a-8 of the Code of Federal Regulation (CFR) defines shareholder proposals and the procedure to include the proposal and an accompanying supporting statement in the proxy statement of the shareholder meeting.

[50] The list of potential reasons to exclude a proposal is limited to 13 aspects and can be found in CFR Title 17 §240.14a-8 (i) Question 9.

and compare these changes in two cases: The proposal fails or passes. In formal terms, we define $\Delta ES(v)$ as the change of employee satisfaction, depending on the votes in favor of a close governance-related proposals (v) and the cutoff $\bar{v}$. In our case, the cutoff is the majority threshold. Due to the binary outcome of the vote, we can write this function as:

$$\begin{aligned} \Delta ES(v) &= \Delta ES^{(\text{Passed})} \text{ if } v > \bar{v} \text{ (proposal passed)} \\ \Delta ES(v) &= \Delta ES^{(\text{Failed})} \text{ if } v \leq \bar{v} \text{ (proposal failed)} \end{aligned} \tag{38}$$

We define our variable of interest, τ, as the difference in changes in employee satisfaction for passed and failed proposals:

$$\tau := \Delta ES^{(\text{Passed})} - \Delta ES^{(\text{Failed})} \tag{39}$$

Empirically, we apply a regression with $\Delta ES(v)$ as the dependent variable and the outcome of the vote as the explanatory variable. In a perfect world we could estimate the effect τ using a sufficient number of votes within a very small margin, e.g. $v \in [49.5\%, 50.5\%]$, as these votes provide the best shock. For our smallest sample around the majority threshold ($\pm 3\%$), we use the following regression, which provides a simple and clean way to estimate τ:

$$\Delta ES_i = \alpha + \tau D_i + \epsilon_i, \tag{40}$$

where ΔES_i is the observed change in employee satisfaction following the annual meeting i. The intercept α captures the average change in employee satisfaction around all shareholder proposals in our sample, independent of the vote outcome. D_i is a binary variable with $D_i = 1$ if the proposal passed and zero, otherwise. The error term ϵ_i captures changes in employee satisfaction caused by all reasons other than the outcome of the vote, such as the loss of a key customer, the failure of air conditioning, or the announcment of additional employee benefits. These events do not mitigate our effect, because they are, on average, the same in companies with shareholder proposals that pass or fail by a small margin. The coefficient τ provides an unbiased estimate of the effect stronger shareholder rights have on employee satisfaction around the majority cutoff, known as the Local Average Treatment Effect (LATE).
In addition to a window size of $\pm 3\%$ around the majority threshold, we estimate the effect using window sizes of $\pm 5\%$ and $\pm 7\%$ to increase our sample size. For the larger window sizes, we follow Lee and Lemieux (2010) and add polynomials in Equation (40) to control for the dependency between the observed change in employee satisfaction and the distance of votes in favor to the majority threshold. Vote outcomes with $\bar{v} \pm 5\%$ still have a random component, but managers can better anticipate the outcome in advance, which mitigates the unexpected shock. Without any adjustment, Equation (40) would underestimate the true effect, because vote outcomes away from the cutoff can be anticipated better in advance of the annual meeting, lowering the observed effect around the annual meeting itself (see, Lee and Lemieux, 2010). We extend Equation (40) with a polynomial of degree one on both the left side and the right side of the cutoff:

$$\Delta ES_i = \alpha + \tau D_i + (1 - D_i) \cdot \beta^{(Failed)} \cdot (v_i - \bar{v}) + D_i \cdot \beta^{(Passed)} \cdot (v_i - \bar{v}) + \epsilon_i, \tag{41}$$

where $\beta^{(Failed)}$ ($\beta^{(Passed)}$) captures the relation of the distance between votes v to the cutoff $\bar{v}$ and the reaction in employee satisfaction left (right) of the cutoff. The discontinuity effect is captured in τ, since both polynomials equal zero at the cutoff ($v = \bar{v}$).

According to Lee and Lemieux (2010), three assumptions are required to apply a RDD to close shareholder votes: (i) No systemic differences in characteristics for companies with passed and failed proposals, (ii) no precise manipulation of votes, and (iii) a sharp cutoff point.
We test assumption (i) by comparing characteristics of companies with failed shareholder proposals to characteristics of companies with passed proposals. The results are shown in Section 3.3.2. We find that differences in these company characteristics are not statistically significant for our sample of companies with votes close to the cutoff. We ensure assumption (ii) by running the conventional McCrary (2008) density (p = 0.45) test, as well as the robust method (p = 0.98) suggested by Cattaneo et al. (2016) and find no statistical evidence of precise manipulation.[51] The McCrary tests control for manipulation around the majority cutoff based on the density of the votes in favor of the proposals. In addition to this result, we are convinced that precise manipulation of voting outcomes is unrealistic for large companies, despite recent findings by Bach and Metzger (2017). Their results suggest the possibility of systemic manipulation of shareholder votes at annual meetings by management. In order to manipulate the voting outcome, managers first need to anticipate the voting behavior of shareholders accurately. This seems nearly impossible given the large number of private investors and the inability to forecast close votes in general, as seen in the Brexit referendum and the U.S. presidential election in 2016. In a second step, managers need to control sufficient votes prior to the cum-voting date of the annual meeting, which is on average 46 days before the annual meeting (see, e.g. Kind and Poltera, 2017). The average company in our sample has a market capitalization above $25 billion, which implies that managers would have to control voting rights corresponding to shares worth more than $250 million in order to change the outcome of a proposal from 50.5 % to 49.5%. While shareholder proposals are not binding, the majority threshold provides a sharp cutoff for the probability of implementation, which ensures assumption (iii). We use SharkRepellent data on the subsequent implementation of close proposals (±5%) and classify by hand whether each proposal was implemented or not. The vast majority (53%) of passed proposals was implemented or followed by a binding management proposal. The corresponding number for failed proposals is 9%. Unreported results show that removing passed proposals that have not been implemented from our sample does not change the findings of our paper.
Although the RDD described in this section has the disadvantage of uncertain implementation and a small sample size, we consider it to be the best empirical setting to quantify a causal effect of corporate governance on employee satisfaction. Cross-sectional regressions benefit from large sample sizes but potential omitted variables and reversed causality compromise any causal relationship.[52] The alternative quasi-natural experiment in corporate governance uses changes in anti-takeover legislation at the end of the 1980's (see, e.g. Bertrand and Mullainathan, 2003; Giroud and Mueller, 2010). Yet, recent papers, including Karpoff and Wittry (2018), question the exogenous shock provided by these legal changes, because the legal changes wre forestalled by court rulings or lobbying efforts of affected companies. In addition, large datasets on employee satisfaction in the 1980's are not available.

[51] We thank Mathias Cattaneo, Michael Jansson, and Xinwei Ma for their code.
[52] For a paper on the potential problems of cross-sectional regressions applied in corporate governance see Cremers et al., 2017.

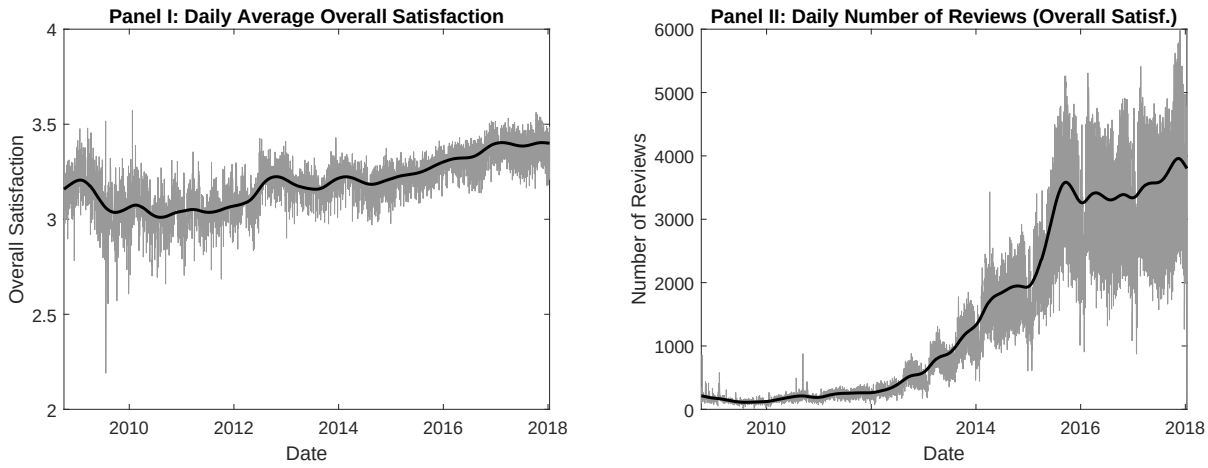
3.3 Data

In this section, we introduce the employee satisfaction and shareholder proposal data that we use in our study.

3.3.1 Data on Employee Satisfaction

We use company review data provided by Glassdoor, Inc. to measure employee satisfaction. Glassdoor was founded in 2007 and is, with around 60 million daily visits (of which 78% are U.S.-based), the second largest U.S. job and recruitment site after Indeed.com. After email verification on the Glassdoor website, employees can anonymously rate their employer. Only after submitting a review, employees have access to information on reviews, salary, and interview reports of other companies.
Our main study uses scores on the *Overall Satisfaction* of employees for their company, which is the main criterion that can be rated on the Glassdoor website. The *Overall Satisfaction* scores range from 1 (low satisfaction) to 5 (high satisfaction). The Glassdoor database contains more than 5 million *Overall Satisfaction* reviews on different U.S. companies with 12 to 5,982 reviews per day. Figure 10 shows a time series of daily average review values in the Glassdoor database (Panel I) and a time series of the number of reviews on each day (Panel II).

Figure 10: Glassdoor Data



Notes: This figure shows the daily average *Overall Satisfaction* across all companies in the Glassdoor database (Panel I) and the daily number of total reviews in the Glassdoor database (Panel II) in grey. The black line represents a kernel-smoothed function through the data.

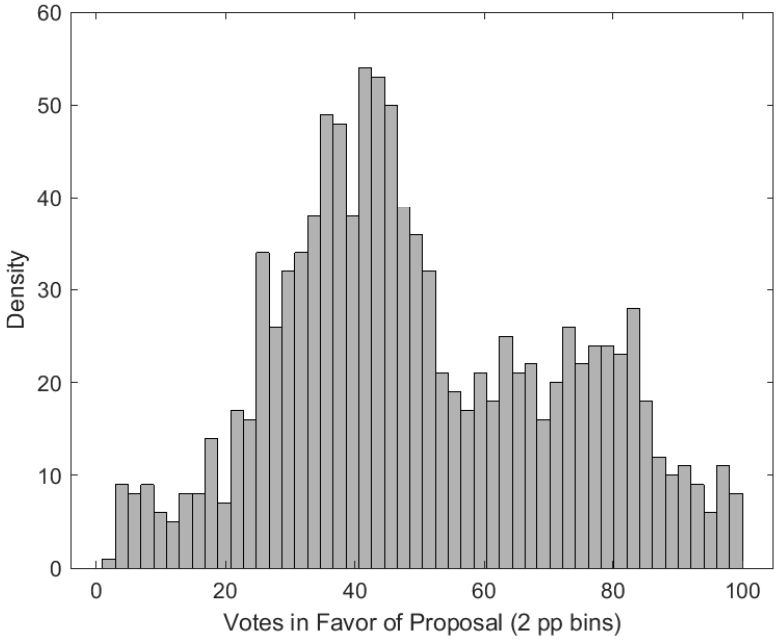
While the number of reviews considerably increases during our sample period, the average overall satisfaction increases only slightly through our sample period with several local turning points. For narrow voting outcomes between 45% and 55%, our main study makes use of a total number

of 12,171 *Overall Satisfaction* scores.
In addition to the *Overall Satisfaction*, employees can rate other criteria. We investigate whether our main result is driven by one of the four criteria, *Culture and Values*, *CEO Opinion*, *Career Opportunities*, and *Compensation and Benefits*. While *CEO Opinion* is either set to a value of 1 if the employee approves the CEO, or set to 0 if there is no opinion on the CEO, or set to -1 if there is disapproval of the CEO, the other three criteria can again be rated with a score between 1 and 5. Results are given in Section 3.4.2.

3.3.2 Data on Shareholder Proposals

Our sample of shareholder proposals covers all companies in the S&P 1500 between January 2008 and December 2017. The data is provided by the SharkRepellent database and contains company details, a description of the proposal, the date of the annual meeting, and votes in favor of the proposal. We completed missing information using the SEC's EDGAR database. Our initial dataset includes 1,480 shareholder proposals. Figure 11 shows the density of votes in favor of all governance-related shareholder proposals. The density shows that the majority

Figure 11: Distribution of Votes in Favor of Shareholder Proposals



Notes: This figure shows the density of votes in favor (in %) of G-Index related shareholder proposals (N = 1,103) in our initial data set.

of proposals does not reach majority support and that few proposals have very little support (below 20%) or very high support (above 80%). We only consider shareholder proposals in our

empirical study that comply with the following criteria: First, we limit our dataset to ordinary annual general meetings and exclude all proposals at special meetings. This ensures that our results are not driven by effects caused by the unusual circumstances around special meetings. Second, we exclude annual meetings with opposing close-vote outcomes. If two governance proposals are subject to a vote in the same meeting and one fails while the other passes, we cannot separate the effects caused by the individual proposals. We keep proposals if two (that is the maximum in our sample) close votes both pass or fail, but divide the corresponding change in employee satisfaction by a factor of two to adjust for the larger effect caused by two proposals.[53] Third, we only focus on shareholder proposals that affect the Entrenchment Index (E-Index) by Bebchuk et al. (2009).[54] We manually screen all governance related shareholder proposals and classify each proposal whether it is relevant for the E-Index or not. Each proposal in our final sample potentially changes this index by a value of one in favor of stronger shareholder rights. For robustness, we also use the broader Governance Index (G-Index) by Gompers et al., 2003, which does not change our findings.[55] Fourth, we focus on close-vote shareholder proposals, i.e. proposals that fail or pass by 5 percentage points or less. In addition, we report all results using 3 and 7 percentage point vote windows. The bandwidth choice for vote windows around the majority threshold is due to the surprise element only present in close votes (see, Section 3.2.2). In addition, companies with proposal outcomes away from the 50% cutoff differ significantly in many aspects other than whether the proposal passed or failed.

Table 28 shows the mean differences in characteristics between companies with passed or failed shareholder proposals using different windows for vote outcomes.[56] All characteristics are measured prior to the relevant annual meeting. The results show that votes in favor of proposals and, for example, company size and the level of the E-Index are correlated. This correlation can be problematic when using larger window sizes around the threshold: Companies with a high E-Index score move towards the average level of shareholder rights following a passed proposal. In contrast, companies with a low E-Index score move away from the average level of shareholder rights. Moving towards or away from the average level of shareholder rights can have different consequences. Therefore, we focus on close shareholder proposals where companies in the passed- and failed-sample have similar preexisting E-Index scores. Other variables, such as employee satisfaction or R&D density, show no clear pattern. All pre-existing differences in company characteristics, including employee satisfaction, between companies with passed and failed proposals are not statistically significant for the close votes that we use in our sample ($\pm 3, 5, 7$ p.p.).

Windows for vote outcomes that are further away from the cutoff, including [30%,40%] vs. [60%,70%] show significant differences for multiple company characteristics. Companies with votes further away from the cutoff can also vary in non-measurable items, such as shareholder's satisfaction with managers. A proposal designed to increase shareholder rights at the expense of

[53] Unreported results show that removing annual meetings for which we observe more than one proposal from our sample altogether does not change our findings.

[54] The E-Index quantifies the level of shareholder rights by counting whether an anti-takeover provision, such as a staggered board or a poison pill, is implemented (+1) or not (+0). The score varies between 0 for strong shareholder rights and 6 for weak shareholder rights.

[55] The six provisions in the E-Index are a subset of the 24 provisions in the G-Index.

[56] Figure 13 in the Appendix shows company characteristics depending on the outcome of the vote for the entire sample.

Table 28: Preexisting Differences and Company Characteristics

		Near Cutoff			Away from Cutoff	
		[47,53]	[45,55]	[43,57]	[35,40] vs. [60,65]	[30,40] vs. [60,70]
Log Total Assets	Mean Passed	10.225	10.145	10.127	9.395	9.383
	N	43	64	78	57	105
	Mean Failed	10.363	10.343	10.342	10.867	10.783
	N	59	112	163	120	211
	Difference Mean	-0.138	-0.198	-0.215	-1.472***	-1.400***
Capital Exp. / Total Assets	Mean Passed	0.046	0.045	0.046	0.063	0.056
	N	42	60	72	56	102
	Mean Failed	0.041	0.040	0.040	0.042	0.044
	N	57	109	157	115	202
	Difference Mean	0.005	0.005	0.006	0.021**	0.012**
Log EBIT	Mean Passed	6.988	6.866	6.976	6.421	6.187
	N	43	64	78	57	105
	Mean Failed	7.170	7.350	7.424	7.919	7.700
	N	59	112	163	120	211
	Difference Mean	-0.182	-0.484	-0.448	-1.498***	-1.513***
Log EBITDA	Mean Passed	7.987	7.835	7.826	6.957	6.901
	N	43	63	76	57	102
	Mean Failed	7.787	7.839	7.926	8.434	8.343
	N	59	111	162	118	207
	Difference Mean	0.200	-0.004	-0.100	-1.477***	-1.442***
EBIT / Total Assets	Mean Passed	0.090	0.086	0.088	0.091	0.090
	N	43	64	78	57	105
	Mean Failed	0.099	0.108	0.108	0.094	0.094
	N	59	112	163	120	211
	Difference Mean	-0.009	-0.022	-0.020*	-0.003	-0.004
Log Number of Employees	Mean Passed	3.682	3.343	3.317	2.737	2.639
	N	43	64	78	57	105
	Mean Failed	3.462	3.524	3.616	3.930	4.006
	N	59	112	163	120	211
	Difference Mean	0.220	-0.181	-0.299	-1.193***	-1.367***
Log Sales	Mean Passed	9.802	9.550	9.530	8.819	8.758
	N	43	64	78	57	105
	Mean Failed	9.617	9.694	9.758	10.136	10.163
	N	59	112	163	120	211
	Difference Mean	0.185	-0.144	-0.228	-1.317***	-1.405***
R&D / Total Assets	Mean Passed	0.038	0.042	0.039	0.053	0.041
	N	22	32	36	26	41
	Mean Failed	0.035	0.033	0.032	0.049	0.047
	N	26	52	74	59	109
	Difference Mean	0.003	0.009	0.007	0.004	-0.006
Log Net income	Mean Passed	5.722	5.523	5.520	5.132	4.868
	N	43	64	78	57	105
	Mean Failed	5.580	6.113	6.322	6.799	6.652
	N	59	112	163	120	211
	Difference Mean	0.142	-0.590	-0.802	-1.667***	-1.784***
Employee Satisfaction	Mean Passed	3.206	3.191	3.208	3.534	3.583
	N	19	25	28	11	19
	Mean Failed	3.162	3.197	3.230	3.336	3.334
	N	25	49	77	58	115
	Difference Mean	0.044	-0.006	-0.022	0.198	0.249**
Log Number of Reviews	Mean Passed	4.194	4.248	4.195	3.217	3.025
	N	19	25	28	11	19
	Mean Failed	4.694	4.624	4.725	5.082	5.025
	N	25	49	77	58	115
	Difference Mean	-0.500	-0.376	-0.530**	-1.865***	-2.000***
E-Index Level	Mean Passed	1.735	1.951	2.129	3.200	3.225
	N	40	57	68	39	72
	Mean Failed	2.381	2.308	2.243	1.404	1.514
	N	52	98	144	120	190
	Difference Mean	-0.646*	-0.357	-0.114	1.696***	1.711***

Notes: This table shows means of log values. t-values are displayed in parenthesis. Significant differences in means at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively. N describes the number of observations in the sample of companies with passed/failed proposals.

manager rights should have less support at the annual meeting when shareholders are convinced by the abilities and good intentions of the management. If we include proposals with vote outcomes further away from the cutoff in our sample, we potentially measure changes in employee satisfaction caused by other differences in the sample such as company size and not whether the proposal passed or failed.

3.4 Results

This section presents our main results, robustness checks, placebo checks, as well as alternative dependent variables to identify the channels between corporate governance and employee satisfaction.

3.4.1 Corporate Governance and Employee Satisfaction

Table 29 shows the relative change in employee satisfaction, as computed in Equation (35), for passed proposals compared to the relative change following failed proposals (τ). We estimate all effects (τ) using the regression in Equation (40) for the 3% vote window and using the regression in Equation (41) for window sizes of 5% and 7%. Panel I includes shareholder proposals relevant for the E-Index, Panel II additionally includes proposals in the broader G-Index by Gompers et al. (2003). The change in employee satisfaction for companies with passed proposals is 8 to 17 percent lower compared to companies with failed proposals, which equals approximately one standard deviation of the employee satisfaction measure in our sample. Based on a previous study by Symitsi et al. (2018), this difference of 8 to 17 percent in employee satisfaction translates into a reduced annual abnormal return of 0.4 - 0.8%.[57] All t-values are below minus 2 in our base case (Panel I in Table 29), which includes 5,005, 12,171, and 18,233 individual reviews for the 3%, 5%, and 7% window. The average effects are larger for proposals included in the E-Index (Panel I) compared to proposals in the broader G-Index (Panel II) which is in line with previous studies. Bebchuk et al. (2009) show that the positive stock price effect of stronger shareholder rights is mainly caused by the six provisions in the E-Index while Kind and Menninger (2018) make a similar finding for the negative effect of stronger shareholder rights on equity risk. Therefore, we use the E-Index in all further analysis. The effect when using the 3% window size (column 1) around the threshold has less statistical significance than when using larger window sizes, which we assign to the lower number of observations.

Our estimates for τ are conservative since they were to increase if we would control for the fact that employees who write a review partly take the situation prior to the annual meeting into account.[58]

In addition to the change in the average level of employee satisfaction, we analyze the change in the standard deviation of employee satisfaction scores and the change in the number of reviews within companies following close shareholder votes. Results are given in Table 30. A larger standard deviation would suggest that different parts of the workforce are affected to a different

[57] The number is based on a difference of approximately 0.40 on the GlassDoor 5 point-scale for the average company with a overall satisfaction if 3.2 and 1.5% per point in Symitsi et al. (2018).

[58] If we assume that the average review is based on the situation after the annual meeting with fraction $\eta \in [0, 1]$ and based on the situation prior to the meeting with $(1 - \eta)$. Then the adjusted effect is given by $\Delta ES_{Adjusted} = \frac{\Delta ES}{\eta}$

Table 29: Results - Base Case

Dependent Variable: Change in Employee Satisfaction						
	I. E-Index			**II. G-Index**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	-0.08*	-0.15**	-0.16***	-0.05**	-0.07*	-0.04
	(-2.05)	(-2.07)	(-2.98)	(-2.11)	(-1.87)	(-0.98)
α	0.03	0.04	0.01	0.03*	0.04*	0.02
	(1.18)	(1.30)	(0.43)	(1.81)	(1.85)	(1.02)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
Number of Months	6	6	6	6	6	6
Min. Number of Reviews	30	30	30	30	30	30
Economic Adjustment	YES	YES	YES	YES	YES	YES
adj. R-squared	0.151	0.051	0.146	0.083	0.026	-0.002
Annual Meeting Observations	19	35	48	39	67	91
Number of Observed Reviews	5,005	12,171	18,233	17,587	27,420	41,729

Notes: This table shows the effect of stronger shareholder rights included in the E-Index of Bebchuk et al. (2013) and the G-Index of Gompers et al. (2003) on employee satisfaction. We adjust employee satisfaction for average employee satisfaction in the U.S. during the same period. All effects are obtained using a Regression Discontinuity Design (RDD) applied to close votes on shareholder proposals at annual meetings. 'Poly. degree' describes the degree of the polynomials used in the RDD. 'Window size' $\pm W\%$ specifies that proposals with votes in favor within W percentage points around the majority threshold are considered in the estimation. 'Number of Months' describes the time frame before and after the annual meeting to estimate the change in employee satisfaction. 'Min. Number of Reviews' defines the minimum number of employee reviews required to be included in our sample. 'Economic Adjustment' specifies whether the changes in employee satisfaction are adjusted for nationwide changes in employee satisfaction. The treatment effect, τ, represents the difference between changes (before and after) in employee satisfaction of companies with passed and failed proposals. t-values are displayed in parenthesis. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

degree by the increase in shareholder rights. We find no such effect (Panel I). A significant increase in the number of reviews for companies with a passed shareholder proposal (for which we observe a lower level of employee satisfaction) would indicate that reviews are mainly written by dissatisfied employees. Again, we find no significant effect (Panel II).

Table 30: Results - Changes in Standard Deviation and Number of Reviews

E-Index - Dependent Variables: Change in Standard Deviation of ES (Panel I) and Change in Number of Reviews (Panel II)

	I. Standard Deviation			**II. Number of Reviews**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	0.037	0.065	0.024	0.22	7.16	8.14
	(1.48)	(1.52)	(0.71)	(0.05)	(0.38)	(0.45)
α	-0.026	-0.042**	-0.023	5.81*	-1.48	-2.64
	(-1.59)	(-2.13)	(-1.46)	(1.97)	(-0.17)	(-0.30)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
Number of Months	6	6	6	6	6	6
Min. Number of Reviews	30	30	30	30	30	30
Economic Adjustment	YES	YES	YES	YES	YES	YES
adj. R-squared	0.062	0.057	0.025	-0.059	0.001	0.056
Annual Meeting Observations	19	35	48	19	35	48
Number of Observed Reviews	5,005	12,171	18,233	5,005	12,171	18,233

Notes: This table shows the effect of stronger shareholder rights included in the E-Index of Bebchuk et al. (2013) on the standard deviation of employee satisfaction (Panel I) and on the number of company reviews (Panel II). We adjust the standard deviation of employee satisfaction for the average standard deviation of employee satisfaction in the U.S. during the same period. Further, we adjust the number of company reviews for the average number of company reviews in the US during the same period. All effects are obtained using a Regression Discontinuity Design (RDD) applied to close votes on shareholder proposals at annual meetings. 'Poly. degree' describes the degree of the polynomials used in the RDD. 'Window size' $\pm W\%$ specifies that proposals with votes in favor within W percentage points around the majority threshold are considered in the estimation. 'Number of Months' describes the time frame before and after the annual meeting to estimate the change in each variable. 'Min. Number of Reviews' defines the minimum number of employee reviews required to be included in our sample. 'Economic Adjustment' specifies whether the changes in our variable are adjusted for nationwide changes in that variable. The treatment effect, τ, represents the difference between changes (before and after) in our variable of companies with passed and failed proposals. t-values are displayed in parenthesis. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

3.4.2 Alternative Measures of Employee Satisfaction and Channels

Glassdoor provides us with review information on *Culture and Values, CEO Opinion, Career Opportunities,* and *Compensation and Benefits.*[59] We use these variables in our RDD for a better understanding why changes in corporate governance lead to the observed decrease in employee satisfaction. The results are shown in Table 31. We observe a strong decrease in *Culture and Values* (Panel I). While it is unclear what each individual reviewer understands by *Culture and Values*, Frances Frei and Anne Morriss suggest a summary for readers of the Harvard Business Review: *"Culture tells us how to respond to an unprecedented service request. It tells us whether to risk telling our bosses about our new ideas, and whether to surface or hide problems."*[60] Assuming a sufficient number of reviewers has a similar understanding of *Culture and Values*, then its decrease is a clear indication that stronger shareholder rights reduce a valuable intangible asset. We further observe a decrease in *CEO Opinion* (Panel II). This result supports the idea that stronger shareholder rights increase performance pressure on top managers, who then pass

[59]Not all variables were available from 2008, therefore the sample size is smaller than in our main result.
[60]May 10, 2012; available at https://hbr.org/2012/05/culture-takes-over-when-the-ce

Table 31: Results - Channels and Alernative Measures of Employee Satisfaction

E-Index - Alternative Dependent Variables

	I. Culture & Values			**II. CEO Opinion**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	-	-0.39**	-0.36*	-0.42	-1.42**	-1.01**
	-	(-2.43)	(-2.05)	(-1.44)	(-2.12)	(-2.13)
α	-	0.01	-0.02	0.11	0.25	0.02
	-	(0.30)	(-0.62)	(0.61)	(0.87)	(0.08)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
Number of Months (T)	6	6	6	6	6	6
Min. Number of Reviews	30	30	30	30	30	30
Economic Adjustment	YES	YES	YES	YES	YES	YES
adj. R-squared	-	0.230	0.120	0.062	0.051	0.085
Annual Meeting Observations	<10	19	29	17	31	43
Number of Observed Reviews	-	8,240	13,337	3,970	9,742	14,106

	III. Career Opportunities			**IV. Compens. & Benefits**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	-0.02	-0.11	-0.10*	-0.01	-0.05	-0.04
	(-0.57)	(-1.43)	(-1.88)	(-0.46)	(-1.02)	(-1.01)
α	0.00	0.01	-0.02	0.01	0.01	-0.01
	(0.13)	(0.38)	(-0.62)	(0.52)	(0.65)	(-0.52)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
Number of Months (T)	6	6	6	6	6	6
Min. Number of Reviews	30	30	30	30	30	30
Economic Adjustment	YES	YES	YES	YES	YES	YES
adj. R-squared	-0.041	-0.016	0.149	-0.049	-0.050	0.019
Annual Meeting Observations	18	33	45	18	33	45
Number of Observed Reviews	4,601	11,146	16,531	4,588	11,130	16,525

	V. Number of Employees			**VI. Capital Expenditures**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	-0.089	-0.33**	-0.12	-0.51**	-0.68**	-0.58**
	(-0.87)	(-2.26)	(-0.94)	(-2.48)	(-2.36)	(-2.47)
α	0.05	0.87	0.09	0.40***	0.53***	0.41***
	(0.78)	(1.06)	(1.20)	(3.33)	(3.25)	(2.98)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
adj. R-squared	0.022	0.127	0.011	0.180	0.160	0.124
Annual Meeting Observations	36	63	91	30	50	72

Notes: This table shows the effect of stronger shareholder rights included in the E-Index of Bebchuk et al. (2013) on different measures of employee satisfaction and alternative dependent variables. We adjust all employee satisfaction measures for the corresponding average employee satisfaction in the U.S. during the same period. Number of Employees shows the log-changes of the average number of employees reported in Datastream in the three years prior to the shareholder proposal to the same number 3 years after the proposal. Capital Expenditures is calculates in accordance. All effects are obtained using a Regression Discontinuity Design (RDD) applied to close votes on shareholder proposals at annual meetings. 'Poly. degree' describes the degree of the polynomials used in the RDD. 'Window size' $\pm W\%$ specifies that proposals with votes in favor within W percentage points around the majority threshold are considered in the estimation. 'Number of Months' describes the time frame before and after the annual meeting to estimate the change in employee satisfaction. 'Min. Number of Reviews' defines the minimum number of employee reviews required to be included in our sample. 'Economic Adjustment' specifies whether the changes in employee satisfaction are adjusted for nationwide changes in employee satisfaction. The treatment effect, τ, represents the difference between changes (before and after) in employee satisfaction of companies with passed and failed proposals. t-values are displayed in parenthesis. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

on that pressure to their subordinates. For *Career Opportunities* (Panel III), we only observe a small decrease, which allows us to exclude the possibility that our results are mainly driven by bad economic outlooks for some companies. A bad economic outlook that simultaneously affects employee satisfaction and votes in favor of the proposal should especially reduce career opportunities, yet we only find a small effect. For *Compensation and Benefits* (Panel IV), we find a negative, yet insignificant effect. This result ensures the effect on employee satisfaction is not substantially driven by reduced compensation. In contrast, Cronqvist et al. (2009) find a significant drop in compensation following an increase in shareholder rights. We believe the difference between our effect and their significant effect is because they use a different country for their study (Sweden and U.S.). Additionally, employees who complete a review on the Glassdoor website in the months following the annual meeting most likely have contracts that date back to periods prior to the annual meeting, which also explains our insignificant effect.
We use log-changes in the number of employees reported in the annual filings to investigate whether the drop in employee satisfaction is accompanied by layoffs (Panel V). We observe a decrease in the number of employees for all three window sizes, with only results for the 5% window being significant. In addition, we observe a significant decease in capital expenditures (Panel VI). Both reductions suggest that stronger shareholder rights cause managers to reduce costs at the expense of long-term profits. This reduction in long-term investments allows two explanations for a decrease in employee satisfaction. First, because employees are frustrated by outdated equipment and fear layoffs, the drop in both variables could be responsible for the decrease in employee satisfaction. Alternatively, the decreases in the three measures, employee satisfaction, capital expenditures, and workforce could all be a direct consequence of increased short-termism by managers.
In conclusion, decreases in corporate culture, satisfaction with the CEO, number of employees, and capital expenditures suggest that stronger shareholder rights lead to a reduced focus on long-term success factors, including employee satisfaction.

3.4.3 Robustness

In our main study, we compute the change in employee satisfaction ΔES_i around annual meeting i by accounting for a *relative* employee satisfaction index-adjustment, see Equation (35). For robustness, we repeat our main study but compute the change in employee satisfaction by (i), using Equation (36), which accounts for an *absolute* employee satisfaction index-adjustment and by (ii), using Equation (37), which ignores the index-adjustment altogether. Table 32 shows the results. Our results are robust in that we, for all settings, find negative effects (τ) that are at least significant at the 10% level. We further investigate if our results are robust to alternative time periods to measure employee satisfaction in Equation (35). Column 1-3 in Table 33 show the same estimation as in our main result, except that we include employee reviews within 3-month time periods prior and after the annual meeting. We reduce the minimum number of employee reviews required accordingly by a factor of 0.5 to ensure a similar sample size to our main result. The results are negative for all combinations and similar to our main result in terms of size. Only the 3% window size around the threshold (column 1) is significant at the 5% level. We believe the reduction in number of available reviews caused by the bisection of the time periods increases the variance of the means, which reduces the significance of the results. Column (4-6)

show the same effect using a time window of 9 month. Again, we adjust the minimum number of employee reviews required by the same factor as the time period (1.5). For all window sizes, we observe decreases in employee satisfaction around 10%, which are all significant at the 10% level. The longer time period adds more noise by including additional events that are unrelated to the shareholder proposal to systemically affect employee satisfaction of a company.

Table 32: Results - Robustness Economic Adjustment

E-Index - Dependent Variable: Change in Employee Satisfaction						
	I. Absolute Economic Adjustment			**II. No Economic Adjustment**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	-0.23*	-0.45*	-0.49***	-0.23*	-0.42*	-0.47**
	(-1.99)	(-2.01)	(-2.86)	(-1.79)	(-1.76)	(-2.53)
α	0.09	0.13	0.03	0.12	0.18	0.07
	(1.15)	(1.28)	(0.41)	(1.42)	(1.61)	(0.76)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
Number of Months	6	6	6	6	6	6
Min. Number of Reviews	30	30	30	30	30	30
Economic Adjustment	YES	YES	YES	NO	NO	NO
adj. R-squared	0.141	0.044	0.140	0.109	0.030	0.094
Annual Meeting Observations	19	35	48	19	35	48
Number of Observed Reviews	5,005	12,171	18,233	5,005	12,171	18,233

Notes: This table shows the effect of stronger shareholder rights included in the E-Index of Bebchuk et al. (2013) on employee satisfaction when using an absolute economic adjustment to measure changes in employee satisfaction using Equation (36) (Panel I), and when using no economic adjustment estimated with Equation (37) to measure changes in employee satisfaction (Panel II). All effects are obtained using a Regression Discontinuity Design (RDD) applied to close votes on shareholder proposals at annual meetings. 'Poly. degree' describes the degree of the polynomials used in the RDD. 'Window size' $\pm W\%$ specifies that proposals with votes in favor within W percentage points around the majority threshold are considered in the estimation. 'Number of Months' describes the time frame before and after the annual meeting to estimate the change in employee satisfaction. 'Min. Number of Reviews' defines the minimum number of employee reviews required to be included in our sample.'Economic Adjustment' specifies whether the changes in employee satisfaction are adjusted for nationwide changes in employee satisfaction. The treatment effect, τ, represents the difference between changes (before and after) in employee satisfaction of companies with passed and failed proposals. t-values are displayed in parenthesis. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

Table 33: Results - Robustness Time

E-Index - Dependent Variable: Change in Employee Satisfaction						
	I. Short Time Interval			**II. Long Time Interval**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	-0.09**	-0.10	-0.10	-0.06*	-0.12*	-0.10*
	(-2.44)	(-1.31)	(-1.38)	(-2.04)	(-1.77)	(-1.83)
α	0.05**	0.04	0.02	0.01	0.04	0.00
	(2.32)	(1.08)	(0.43)	(0.75)	(1.36)	(0.07)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
Number of Months (T)	3	3	3	9	9	9
Min. Number of Reviews	15	15	15	45	45	45
Economic Adjustment	YES	YES	YES	YES	YES	YES
adj. R-squared	0.199	-0.006	0.011	0.149	0.062	0.024
Annual Meeting Observations	21	37	52	19	35	47
Number of Observed Reviews	2,495	6,124	9,361	7,297	17,722	26,426

Notes: This table shows the effect of stronger shareholder rights included in the E-Index of Bebchuk et al. (2013) on employee satisfaction. We adjust employee satisfaction for average employee satisfaction in the U.S. during the same period. All effects are obtained using a Regression Discontinuity Design (RDD) applied to close votes on shareholder proposals at annual meetings. 'Poly. degree' describes the degree of the polynomials used in the RDD. 'Window size' $\pm W\%$ specifies that proposals with votes in favor within W percentage points around the majority threshold are considered in the estimation. 'Number of Months' describes the time frame before and after the annual meeting to estimate the change in employee satisfaction. 'Min. Number of Reviews' defines the minimum number of employee reviews required to be included in our sample. 'Economic Adjustment' specifies whether the changes in employee satisfaction are adjusted for nationwide changes in employee satisfaction. The treatment effect, τ, represents the difference between changes (before and after) in employee satisfaction of companies with passed and failed proposals. t-values are displayed in parenthesis. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

3.4.4 Placebo Checks

We perform a series of placebo tests to ensure that our results are not driven by effects other than the passing of the proposal. In Table 34, we replicate the main result with artificial voting cutoffs at 25% and 75% instead of the majority threshold (Panel I and Panel II) or with artificial event dates 12 and 24 month prior to the annual meeting (Panel III and Panel IV). All results are close to zero and non-significant.

Table 28 and Figure 13 show a non-significant difference in various company characteristics for close votes. Based on our main results alone, we cannot rule out the possibility that these small differences drive the change in employee satisfaction, independent of a shareholder proposal and whether it failed or passed. It is also possible that the votes in favor of the proposal approximate an omitted variable which is correlated with changes in employee satisfaction. If one of these possibilities is the case, we should observe similar effects to our main result at different cutoffs away from 50%. Since we do not observe any effect at the 25% or 75% cutoff, we can rule out these alternative explanations of our main finding. The results from the artificial event date (Panel III and Panel IV) ensure that companies with passed proposals do not have increasing employee satisfaction consistently over time, independent of the shareholder proposal.

Figure 12 depicts the change in employee satisfaction around various cutoffs. The abrupt decrease in employee satisfaction around the 50% cutoff is clearly visible. We only observe changes in

employee satisfaction different from zero at the 50% cutoff or in areas where the number of observations is below $N = 10$.

Table 34: Placebo Checks

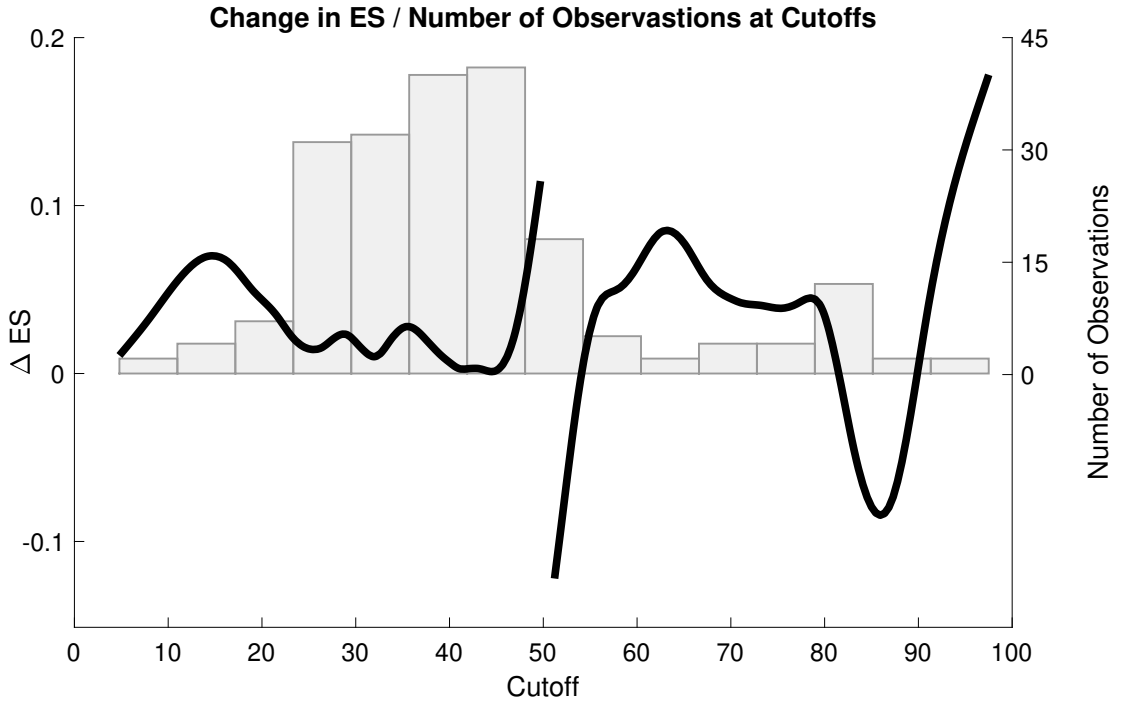
E-Index - Dependent Variable: Change in Employee Satisfaction

	I: 25% Cutoff			**II. 75% Cutoff**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	0.01	0.01	0.01	-	-0.11	-0.07
	(0.31)	(0.32)	(0.29)	-	(-0.80)	(-0.52)
α	-0.01	-0.01	0.00	-	0.04	0.04
	(-0.43)	(-0.46)	(0.17)	-	(0.33)	(0.33)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
Number of Months (T)	6	6	6	6	6	6
Min. Number of Reviews	30	30	30	30	30	30
Economic Adjustment	YES	YES	YES	YES	YES	YES
adj. R-squared	-0.043	-0.051	-0.049	-	-0.078	-0.237
Annual Meeting Observations	23	38	51	< 10	10	13
Number of observed Reviews	17,515	28,363	37,197	-	1,576	1,888

	III. Annual Meeting - 6 Months			**IV. Annual Meeting -12 Months**		
	(1)	(2)	(3)	(4)	(5)	(6)
τ	0.00	0.06	0.09	-0.01	-0.11	-0.05
	(0.13)	(0.80)	(1.50)	(-0.16)	(-1.64)	(-0.81)
α	-0.03	-0.02	-0.01	0.02	0.02	0.01
	(-1.24)	(-0.56)	(-0.58)	(1.34)	(0.72)	(0.38)
Poly. degree	0	1	1	0	1	1
Window size (in p.p.)	± 3	± 5	± 7	± 3	± 5	± 7
Number of Months (T)	6	6	6	6	6	6
Min. Number of Reviews	30	30	30	30	30	30
Economic Adjustment	YES	YES	YES	YES	YES	YES
adj. R-squared	-0.065	0.026	0.235	-0.069	0.221	0.094
Annual Meeting Observations	17	31	43	16	29	42
Number of observed Reviews	4,272	10,560	15,055	3,865	9,173	13,099

Notes: This table shows the effect of stronger shareholder rights included in the E-Index of Bebchuk et al. (2013) on employee satisfaction. In the top of the table, we use other cutoffs instead of the majority threshold as placebo checks. In the bottom, we use the majority threshold but shift the event date by 12 month (column 1-3) and 24 month (column 4-6). We adjust employee satisfaction for average employee satisfaction in the U.S. during the same period. All effects are obtained using a Regression Discontinuity Design (RDD) applied to close votes on shareholder proposals at annual meetings. 'Poly. degree' describes the degree of the polynomials used in the RDD. 'Window size' $\pm W\%$ specifies that proposals with votes in favor within W percentage points around the majority threshold are considered in the estimation. 'Number of Months' describes the time frame before and after the annual meeting to estimate the change in employee satisfaction. 'Min. Number of Reviews' defines the minimum number of employee reviews required to be included in our sample. 'Economic Adjustment' specifies whether the changes in employee satisfaction are adjusted for nationwide changes in employee satisfaction. The treatment effect, τ, represents the difference between changes (before and after) in employee satisfaction of companies with passed and failed proposals. t-values are displayed in parenthesis. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively.

Figure 12: Change in Employee Satisfaction and Number of Observations at Different Cutoffs



Notes: This figure shows a smoothed function through the observed employee satisfaction values (black line) at different cutoffs. Further, the number of observed proposals at different cutoff buckets is illustrated (light grey histogram).

3.5 Conclusion

In this paper we use shareholder proposals that pass or fail by a small margin as exogenous shocks to the corporate governance of a company and measure the subsequent change in employee satisfaction. The Regression Discontinuity Design allows us to observe a negative causal effect of stronger shareholder rights on employee satisfaction. We quantify employee satisfaction using employee reviews provided by the U.S. career website Glassdoor. Our dataset includes more than 5 million individual reviews in the time period 2008-2017. Employee satisfaction drops by approximately 10% following a shareholder proposal that passes within a small margin ($\pm 5\%$ around the majority threshold) compared to a similar proposal that fails within the same small margin. From a financial perspective alone, this implies a drop in abnormal annual returns of 0.6%. Each shareholder proposal in our sample affects one of the six provisions in the Entrenchment Index by Bebchuk et al. (2013) in favor of stronger shareholder rights.

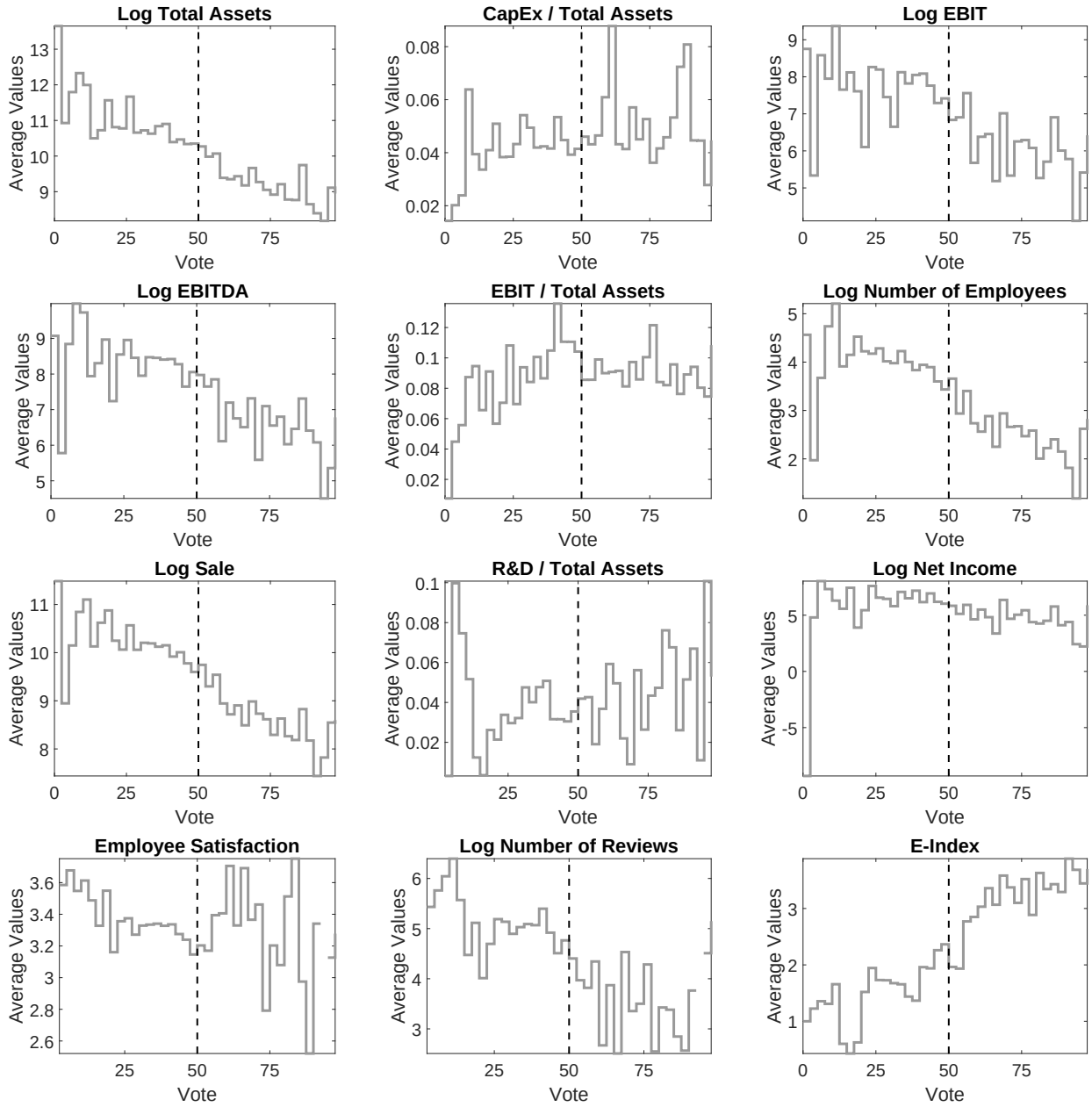
Our results are robust to different model specifications, such as various window sizes around the majority threshold, alternative methods to adjust for employee satisfaction in all U.S. companies, and different time periods used to estimate employee satisfaction. Placebo checks, using artificial event dates or thresholds other than the majority, do not lead to significant effects, which excludes alternative explanations of our results.

We repeat the RDD using alternative dependent variables to understand why stronger share-

holder rights have a negative effect on employee satisfaction. Decreases in four of these variables, corporate culture, satisfaction with top management, number of employees, and capital expenditures, suggest that stronger shareholder rights increase managers' focus on short-term results and away from long-term investments, including employee satisfaction as an intangible asset.
Our findings are important to shareholders, managers, politicians, and employees. Shareholders can take the decrease in employee satisfaction into account when making their future voting decisions, especially when they have interests beyond short-term stock price maximization. In contrast to classic corporate finance, which expects managers to serve shareholders by increasing the stock price, institutional investors expect managers to also serve other stakeholders, such as their workforce. The general public, represented by politicians, has an interest in high employee satisfaction because stress at the workplace causes high costs for society (see, e.g., Goh et al., 2015). Our findings especially help employees who own stocks with voting rights of the company they work at to make informed decisions on their future votes related to shareholder rights. In contrast to the positive effects on their portfolio following stronger shareholder rights, our results allow them to take the negative non-financial effects at their workplace into account. We are among the first to show a causal effect of corporate governance on an intangible asset that is associated with long-term performance of a company. Thereby our work provides empirical evidence of a causal relationship between corporate governance and managerial short-termism.

3.6 Appendix

Figure 13: Preexisting Differences



Notes: This figure shows averages of different company characteristics (of which some are log-scaled) for various voting outcomes. The sample consists of all companies within our initial dataset of S&P 1500 companies with votes on governance related shareholder proposals between 2008 and 2017.

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Eigenabgrenzung

Das erste Kapitel, “Corporate Governance and Equity Risk”, ist ein Gemeinschaftsprojekt mit Axel Kind, der der Betreuer meiner Promotion ist. Die Arbeit mit Daten und das Programmieren wurden von mir selbstständig durchgeführt, alle anderen Bereiche, wie das Schreiben und die Ideenfindung sind in gemeinschaftlicher Arbeit entstanden. Das zweite Kapitel, “Does Corporate Governance Matter for Companies in the Spotlight?”, ist ein Gemeinschaftsprojekt mit Patrick Hauf, der ebenfalls Doktorand an der Universität Konstanz ist. Hier sind alle Teile des Projektes gemeinschaftlich entstanden, die individuellen Leistungen betragen je 50%. Das dritte Kapitel, “Corporate Governance and Employee Satisfaction”, ist ein Gemeinschaftsprojekt mit Marco Menner, der ebenfalls Doktorand an der Universität Konstanz ist. Hier sind alle Teile des Projektes gemeinschaftlich entstanden, die individuellen Leistungen betragen je 50%.