Shareholder Litigation and Readability in Financial Disclosures: Evidence from a Natural Experiment[1]

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Abstract

We examine the causal impact of the threat of shareholder litigation on the linguistic complexity of financial disclosures in form 10-Ks using a shock-based research design. Using the Ninth Circuit Court of Appeals ruling, *Re: Silicon Graphics Inc.*, of 1999, that led to an unexpected and sudden reduction in the threat of shareholder litigation for firms headquartered only in the Ninth Circuit, and difference-in-differences empirical technique, we find that compared to propensity score-matched peer firms not headquartered in the Ninth Circuit, treated firms (i.e., the Ninth Circuit firms), significantly improve the readability of their financial disclosures after this ruling. Such results are robust to different linguistic complexity measures, matching techniques, empirical specifications, and multidimensional fixed effects that control for both the time-invariant and time-varying unobservable confounders, and are consistent with theoretical models in firm disclosure that predict a negative causal link between the threat of shareholder class action litigations and transparency in disclosures. Finally, we document similar results using a different legislative shock in the state of Nevada in 2001.

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1. Introduction

Researchers in both finance and accounting have long recognized that the relation between the threat of shareholder litigation and corporate disclosures is endogenously determined (Healy and Palepu, 2001; Field, Lowry, and Shu, 2005; Lowry, 2009; Hanley and Hoberg, 2012; Leuz and Wysocki, 2016). On the one hand, the threat of shareholder litigation can serve as a critical deterrent tool, nudging corporations to enhance transparency *ex-ante* in their disclosures. On the other hand, shareholder litigations are often triggered by voluntary disclosures that can be perceived as *ex-post* misleading. Modeling the relation between the threat of shareholder litigation and corporate disclosures can also be challenging if they are jointly determined by some characteristics unobservable to empiricists. Furthermore, measurement errors in quantifying linguistic complexity, that could arguably measure both value-relevant and obfuscating information (Bushee, Gow, and Taylor, 2018), could bias the coefficient estimates. In this paper, we attempt to address these and other endogeneity problems by using several identification techniques that exploit an exogenous shock of an unanticipated court ruling that reduced the threat of litigation only for a particular subset of firms in the US.

Recently, Crane and Koch (2018) have provided conclusive empirical evidence that in 1999, the Ninth Circuit Court of Appeals ruling, *Re: Silicon Graphics Inc.,* led to an unexpected and sudden reduction in the threat of litigation for firms headquartered in the Ninth Circuit that resulted in the number of shareholder class-action lawsuits in the Ninth Circuit plunging 43% compared to a 14% rise in other circuits.[2] Also, legal scholars (Johnson, Neslon, and Pritchard, 1999; Gibney, 2000; Wilson, 2002) have pointed out that this ruling made it harder for the shareholders of firms located in the Ninth Circuit (*i.e., the firms headquartered in the US states:*

[2] Crane and Koch (2018) provide a detailed background of the 1999 Silicon Graphics Inc. ruling.

Alaska, Washington, Oregon, Idaho, Montana, California, Nevada, Arizona, and Hawaii) to bring a shareholder class action lawsuit as it required the litigants to establish that the defendants acted with "deliberate recklessness."[3] We exploit this geographic and time-series exogenous variation in the threat of shareholder litigation, in a difference-in-differences empirical setup and find that compared to the control firms (i.e., the non-Ninth Circuit firms matched on the closest estimated propensity score based on pre-treatment observable firm characteristics), the treated firms (i.e., the Ninth Circuit firms), significantly improve their readability, after the Ninth Circuit Court of Appeals ruling. We rely on widely used measures in natural language processing (NLP) to capture readability in the texts of SEC filings.[4] Such results are robust to the use of different matching techniques and readability measures, various observable controls, and to the use of multidimensional fixed effects that control for the existence of plausible unobserved confounders.[5] Finally, we conduct a similar matching-based, fixed-effect difference-in-differences analysis using a legislative shock on the risk of shareholder litigation in the state of Nevada and find consistent results. Such similar findings, using a different natural experiment, are reassuring as they address the general criticisms of single shock-based designs to some extent.

Our paper contributes to the existing literature on the relation between the threat of shareholder litigation and voluntary information in corporate disclosures by incorporating non-numerical, textual forms of disclosure that have largely been ignored in the earlier literature (Core, 2001), and have only recently garnered attention in accounting and finance (Loughran and

[3] Note that "deliberate recklessness" requires the plaintiffs to prove that the "intent" of the defendant was to cause harm to the shareholders' wealth and is, therefore, a stricter requirement than simply "recklessness."
[4] Loughran and McDonald (2016), Das (2014) and Kearney and Liu (2014) provide comprehensive surveys on the use of natural language processing (NLP) and textual analysis in finance and accounting literature.
[5] We use nine different readability measures that have been used in the extant literature to alleviate the concern of measurement error.

McDonald, 2016). While discussing the role of hard versus soft information in financial markets, Liberti and Petersen (2019) note,

"A typical firm's 10K filing can run into hundreds of pages. Its financial statements (e.g., its income statement and balance sheet) take up half a dozen pages at most. However, a large fraction of the vast studies that try to explain the changes in equity values with firm data relied only on these accounting numbers and macroeconomic data. This changed when academics started including textual information in regressions by coding the text into numerical scores." (p.24).

Our empirical design controls for several hard and quantitative accounting and financial information (*using proxies such as market value, market-to-book, return on assets, earnings growth, sales growth, negative net income, stock return, stock volatility, etc.*) and focuses on the soft information, estimating the causal impact of litigation risk on the readability of form 10-K filings, which are arguably the most important financial disclosure documents for publicly listed firms and are also among the most often cited SEC filings in securities class action litigants' complaints (Rogers, Van Buskirk and Zechman, 2011). It is worth noting that readability is distinct from the quantity or degree of disclosure. Greater disclosure in the narratives of firms' filings does not necessarily mean that more value-relevant information is disseminated, as more text can also be used to obfuscate information (Bushee, Gow, and Taylor, 2018). However, more readable 10-Ks can enhance transparency and relevant information in disclosures (Loughran and McDonald, 2014; Hwang and Kim, 2017; Bonsall and Miller, 2017).

The extant theoretical and empirical literature is also divided on the nature of the association between litigation risk and disclosure. While Lowry (2009) described this pervasive tension in the literature ten years ago as,

"... we are still left with the same question: what is the nature of the relation between disclosure and litigation risk?" (p. 159),

more recently, Leuz and Wysocki (2016), note in their survey paper,

"…the evidence regarding the effects of litigation on disclosure is mixed and also quite subtle or nuanced…" (p.552).

Our study contributes to the ongoing debate in the extant literature regarding the relation between litigation risk and financial disclosure by providing a credible causal inference. This is because the use of geographic and time-series exogenous variation in the threat of shareholder litigation and different readability measures leads to our empirical design being less susceptible to different sources of endogeneity, such as reverse causality and measurement error (Roberts and Whited, 2013). Our shock-based research design, using difference-in-differences with carefully balanced covariate propensity score matching identification strategy and multidimensional fixed effects, also provides a methodological contribution within the textual analysis literature (Atanasov and Black, 2016).

Our work is also related to the recent theoretical developments in the behavioral finance literature that highlight the role of verbal communication in disclosures (Hirshleifer, 2015) and the evolving discussion on the need for regulation of corporate disclosures (Admati and Pfleiderer, 2000; Goldstein and Leitner, 2018).

Finally, our study is related to recent papers by Rogers, Van Buskirk, and Zechman (2011), Hanley and Hoberg (2012), and Bourveau, Lou, and Wang (2018), that have analyzed narratives in disclosures in relation to litigation risk. Rogers, Van Buskirk, and Zechman (2011) analyze the disclosure tone of twenty randomly selected firms that were litigated and provide evidence that the use of positive tone in narratives increases litigation risk. In contrast, our paper analyzes the

readability of narratives in 10-Ks for a comprehensive sample of publicly listed firms, using a quasi-natural experiment and an exogenous shock to the threat of litigation, to establish causality. Hanley and Hoberg's (2012) study is restricted to IPO related litigations and the analyses of IPO prospectuses. Using textual analyses of IPO prospectuses, the authors find that greater disclosure reduces the likelihood of IPO related litigations. Our study looks at the risk of all types of shareholder class action litigations. More recently, Bourveau, Lou, and Wang (2018) have used the staggered adoption of universal demand (UD) laws to study the impact of the risk of derivative lawsuits, a special kind of shareholder lawsuits, on the quantity of disclosure. They find that firms significantly increase their disclosure after such state-level laws are passed. In contrast, other than the methodological differences, our study analyzes the impact of the risk of all kinds of shareholder class action litigations on the readability of disclosures, as measured with readability indices, which is distinct from the quantity of disclosure. Lastly, a current work by Huang, Roychowdhury, and Sletten (2019), forthcoming in the Accounting Review, is closest to our study as the authors also use the Ninth-Circuit shock, but they focus on real earnings management (REM) by firms, instead of readability of financial disclosures, and find that firms headquartered in the Ninth-Circuit increase their real earnings management (REM), post-shock.

The remainder of the article is organized as follows. Section 2 develops the testable hypotheses. Section 3 provides details of the data used and presents the descriptive statistics. Section 4 describes the empirical methodology for estimating the causal effects of the threat of litigation and presents the main results. Section 5 presents several robustness tests. Section 6 tests our main findings using another natural experiment. And, finally, we conclude in Section 7.

2. Hypotheses Development

What is the relation between shareholder litigation risk and transparency in disclosures? The theoretical literature not only provides us with some useful insights but also raises intriguing questions for more empirical work targeted at identifying the causal nature of such a relation. We test the following three competing hypotheses related to the threat of shareholder litigation and readability (transparency) in financial disclosures.

Deterrent Hypothesis: Shareholder class action lawsuits are costly for firms. According to Cornerstone Research (2017), the total settlement costs for securities class action lawsuits during the period 1996-2016 was more than 93 billion dollars, with an average of $57.7 million. Litigation costs include not only direct costs such as legal and settlement costs but also incorporate indirect costs such as reputational and opportunity costs (Karpoff and Lott, 1993). Therefore, the risk of shareholder litigation can prove to be a *deterrent* that causes firms' managers to increase transparency in their firm's disclosures. Greater transparency in disclosures could also reduce the probability of shareholder litigations *ex-ante* by reducing the chances of omission of a material fact or negative news. The prediction from such a *"deterrent hypothesis"* is a positive association between the threat of shareholder litigation and disclosure readability, since cheap talk (Crawford and Sobel, 1982), noisy communication, or obfuscating language (Bushee, Gow, and Taylor, 2018) could elicit shareholders' suspicion and instigate class action litigations.

Full Disclosure Hypothesis: Although the theoretical models such as that of Verrecchia (1982) and Dye (1986) emphasize that firms bear certain costs in making verifiable disclosures, the *"unraveling and the full disclosure"* results from the theoretical models along the lines of Grossman (1981) show that if an informed party can disclose verifiable information costlessly, it would always do so in equilibrium, otherwise the absence of disclosure could be interpreted as bad

news. Anecdotal and empirical evidence also suggests that optimistic, forward-looking voluntary corporate disclosures in obfuscating language can *ex-post* be perceived as misleading or overconfident and, therefore, that can trigger litigations (Banerjee, Humphery-Jenner, Nanda, and Tham, 2018). Based on the *"full disclosure hypothesis,"* one might argue that in a less litigious environment, the benefits of transparent disclosures exceed its costs, and hence one should expect a negative relation between the risk of shareholder litigation and transparency in disclosures.

Irrelevance Hypothesis: Jensen (1993) argues that the legal and regulatory systems put in place are often "far too blunt" to alter the behavior of self-interested managers. Helland (2006) finds little evidence on the impact of class action securities litigations, as many are frivolous, and most are settled. The prediction from such a line of thinking is that no relation would exist between the threat of shareholder litigation and readability in voluntary corporate textual disclosures.

While the *"deterrent"* and *"full disclosure"* hypotheses predict opposite relation for the threat of shareholder litigation and the transparency in voluntary corporate disclosures in the texts of SEC filings, as proxied with different readability measures, the "irrelevance" hypothesis predicts no relation at all. In the remainder of the paper, we empirically test these competing hypotheses using an exogenous legal shock.

3. Data and Descriptive Statistics

The sample examined in this paper includes all the publicly traded domestic firms headquartered in the U.S. with information on readability measures available during the period 1994–2014. We omit the year 1999 as the ruling occurred in the middle of 1999.[6] Below, we present and describe the summary statistics of the main dependent and independent variables used in our empirical tests.

Dependent Variables

The main dependent variables in our various empirical specifications are the widely used natural language processing (NLP) and linguistics readability indices that have been successfully applied in the extant finance and accounting literature. Although these readability formulae often have theoretical underpinnings from linguistics and cognitive psychology, Loughran and McDonald (2014) rightly note that,

"What is meant by 'readability' is difficult to define precisely…" (p.1643).

Therefore, we create several different and widely accepted readability measures from the Form 10-K that is filed annually with the SEC by publicly listed firms. We focus on 10-K filings, since they are arguably the most critical disclosure filing type that is accessed most frequently on EDGAR, and is also one of the most frequently mentioned company filing in the securities class action litigation complaints (Rogers, Van Buskirk and Zechman, 2011; Bozanic, Dietrich, and Johnson, 2017). We discuss each of the readability measures below:

1. Coleman-Liau Readability Index – Linguists Meri Coleman and T. L. Liau designed the Coleman-Liau formula in 1967. We create Coleman-Liau Readability measures for the narratives

[6] The exact date of this Ninth Circuit Court of Appeals ruling, *Re: Silicon Graphics Inc.*, was July 2nd, 1999.

in 10-Ks using the formula: ***5.88 (the number of characters divided by the number of words) – 29.6 (the number of sentences divided by the number of words) – 15.8***. Higher values of the Coleman-Liau Index imply lower readability.

2. Flesch Reading Ease Index (Flesch, 1948) – This readability index was originally developed by Rudolph Flesch in 1948, and has been computed using the formula: ***206.835 – 1.015 (the number of words divided by the number of sentences) – 84.6 (the number of syllables divided by the number of words)***. The Flesch Reading scores vary from 0 and 100. The higher the score, the easier the text is to read. For instance, while scores between 90 and 100 are considered comprehensible by an average 5th grader, scores between 0 and 30 are considered understandable by an average college graduate.

3. Flesch-Kincaid Readability Index – The Flesch-Kincaid Readability Index modifies the original Flesch Reading Ease Index and has been computed using the following formula: ***0.39 (the number of words divided by the number of sentences) + 11.8(the number of syllables divided by the number of words) – 15.59***. The higher the Flesch-Kincaid score, the more difficult the text is to read. For example, a score of 12 is interpreted as a text that a 12th grader would be able to understand.

4. RIX Readability Index – RIX Readability Index, which is another widely used readability measure has been computed using the formula: ***Number of words of length 7 characters or more divided by the number of sentences.*** The higher the RIX Readability score, the more difficult the text is to read.

5. Gunning Fog Readability Index (Gunning, 1952) – The Gunning Fog Readability Index was developed by Robert Gunning in 1952 and uses the following formula: ***0.4 (the number of***

words divided by the number of sentences) + 100 (the number of complex words divided by the number of words). The higher the Gunning Fog score, the more difficult the text is to read.

6. Automated Readability Index (Senter and Smith, 1967) – The Automated Readability Index computes the grade-level readability and has been calculated using the formula: ***4.71 (the number of characters divided by the number of words) + 0.5 (the number of words divided by the number of sentences) – 21.43***. Again, the higher the Automated Readability score, the more difficult the text is to read.

7. Smog Readability Index (Mc Laughlin, 1969) – The Smog Readability Index was created by G. Harry McLaughlin in 1969 and uses the following formula: ***1.043 x Sqrt (number of complex words x 30/number of sentences) + 3.1291***. The higher the Smog Readability score, the more difficult is the text to comprehend.

8. Lasbarhets Readability Index (Björnsson, 1968) – This readability index is also known as the LIX Readability Index, and has been widely used to estimate readability of western European languages including English. Lasbarhets Readability Index has been calculated using the formula**:** ***(the number of words divided by the number of sentences) + (the number of words over 6 letters multiplied by 100 and then divided by the number of words)***. The higher the Lasbarhets Readability score, the more difficult the text is to read.

9. Bog Index – StyleWriter's Bog Index is the readability index that has been most recently developed as a result of the recent developments in computational linguistics. An important advantage of the Bog Index is its ability to capture the plain English attributes that have been underscored in the SEC's Plain English Handbook. Bog Index uses the following formula: ***Bog Index = Sentence Bog + Word Bog – Pep***, where the three components on the right-hand side attempt to capture the attributes that could *"bog readers down."* Therefore, higher values of the

Bog Index indicate poor readability. Wright (2009) and Bonsall, Leone, Miller, and Rennekamp (2017) provide a detailed description of this readability measure. Other recent papers in finance and accounting literature that have successfully used this readability measure are Hwang and Kim (2017), Bonsall and Miller (2017), Miller (2010), and Rennekamp (2012).

We follow the approach of Li (2008), Miller (2010), Loughran and McDonald (2011, 2014) and Hwang and Kim (2017) in retrieving, cleaning and parsing the 10-K filings.[7] Both Python scripts and Perl packages have been used to create the different readability measures, except the Bog Index, which has been computed using StyleWriter version 4.0 software.[8] Table 1 provides the summary statistics of these different readability measures.

[Insert Table 1 here]

Panel A of Table 1 provides the summary statistics of the nine readability indices for all publicly listed firms included in our study during the period 1994–2014. Panel B and Panel C report the summary statistics by separating the companies into firms headquartered in the Ninth Circuit and firms located outside the Ninth Circuit, respectively. Since Compustat only reports the current headquarters' location, we programmatically extract the information on historical states of incorporation of firms in 1998 from the header sections of the 10-Ks. Figure 1 highlights the geographical location of the US states that come within the Ninth Circuit.

[Insert Figure 1 here]

Different indices of readability have been developed independently by various theoretical linguistic researchers, at different times, and are often based on different theoretical motivations.

[7] Professor Bill McDonald has provided several useful documentations on retrieving, cleaning and parsing SEC filings on his website: https://www3.nd.edu/~mcdonald/

[8] http://www.editorsoftware.com/StyleWriter.html

To ensure that all these measures are at least picking up some common aspects of readability, we provide the correlation matrix amongst these measures in Table 2.

[Insert Table 2 here]

Table 2 reports high correlations, all significant at the 1% level, between all these measures, which suggests that these measures, although different in their computations and theoretical bases are predominantly picking up similar aspects of readability.

Main Independent Variables

For the main independent variables and controls used in this study, the balance sheet data and auditor information are from Compustat, and firm-level price and returns data have been collected from the Center for Research in Security Prices (CRSP). We also collect data on institutional ownership from the Thomson Financial 13F institutional holdings database. Table 3 provides the summary statistics of the main independent variables for the sample examined in the paper.

[Insert Table 3 here]

While Panel A of Table 3 provides the summary statistics of the control variables for all firms considered in the study, Panels B and C partition the firms based on their headquarters' location within and outside the Ninth Circuit, respectively. The next section discusses our identification strategy and presents the main results.

4. Identification Methodology and Main Results

In order to formally test the competing hypotheses related to the threat of shareholder litigations and readability in financial disclosures, as discussed in the preceding sections, we use the Ninth Circuit Court of Appeals ruling, *Re: Silicon Graphics Inc.*, that led to an unexpected and sudden reduction in the threat of litigation for firms headquartered in the Ninth Circuit as a *quasi-natural experiment*. The following difference-in-differences specification with year and firm fixed effects is tested:

$$Readability_{i,k,t} = \beta_0 + \delta * Treatment_{k,t} + \beta_1 * X_{i,t-1} + \alpha_i + \alpha_t + \varepsilon_{i,k,t}$$

where, *Treatment = Post 1999 Dummy * Ninth Circuit Dummy*

The dependent variable in the specification above is one of the nine measures of readability of 10-Ks. The subscripts *i*, *k*, and *t* indicate the firm *i*, location of the firm headquarters in state *k*, and time *t*, respectively. The main independent variable of interest is Treatment, which is an interaction of two dummies: whether it is pre- vs. post- 1999 and whether the firm is headquartered in the Ninth Circuit (*i.e., headquartered in the US states: Alaska, Washington, Oregon, Idaho, Montana, California, Nevada, Arizona, and Hawaii*). The specification also controls for other firm-level observable characteristics, $X_{i,t-1}$ and year (α_t) and firm (α_i) fixed effects to control for time-varying and time-invariant unobservable factors, respectively. Following the prior literature, the other observable firm-level controls include lagged values of size (natural logarithm of market value), return on assets (ROA), earnings growth, sales growth, loss indicator (negative net income), market-to-book, big-8 auditor dummy, stock return, stock volatility, and institutional ownership. We control for firm size and market-to-book following several other researchers in textual analyses (Tetlock, Saar-Tsechansky, and Macskassy, 2008; Loughran and McDonald, 2011). Rogers, Van Buskirk and Zechman (2011) find that earnings and sales growth, return on

assets, volatility, and loss indicator are correlated with both textual tone and the litigation risk. Hence, we include them as control variables as well. We also control for audit quality of the 10-Ks using the Big-8 auditor codes. We control for stock return as anecdotal evidence suggests that class-action shareholder litigations are often a result of a stock price drops that catch investor attention. Finally, we control for institutional ownership since Bird and Karolyi (2016) find that institutional ownership can causally impact firm disclosure. We omit the year 1999 as the ruling occurred in the middle of 1999, and analyze the pre-years (1994-1998) and post-years (2000-2014). The results are reported in Table 4.

[Insert Table 4 here]

Panel A of Table 4 presents the results for the full sample for nine different models with various readability indices as the dependent variable. We run separate regressions for each of these measures of readability, given the high correlations between these measures as reported in Table 2. We find that in all these models, except for model 5, the coefficients on the interaction of Post 1999 Dummy x Ninth Circuit Dummy are negative and significant at the 1% level. This means that the firms in the Ninth Circuit significantly improved the readability in the narratives of 10-Ks as compared to firms outside the Ninth Circuit, once the risk of litigation dropped for these firms due to this unanticipated Ninth Circuit Court of Appeals ruling. The coefficient on the interaction of Post 1999 Dummy x Ninth Circuit Dummy in model 5 is also significant at the 1% level, but it is positive. This is because, in the case of Flesch Reading Ease Index, the higher is the index value, the lower is the degree of difficulty in understanding the intended message of the text. In all the nine models we have also included both the year and firm fixed effects to control for unobserved heterogeneity (Gormley and Matsa, 2014) and have computed the standard errors by clustering at the firm level (Petersen, 2009). Overall, such results strongly support the *full disclosure hypothesis*,

and the theoretical models that predict a negative association between the threat of litigation and more transparent disclosures.

Panel B of Table 4 repeats the difference-in-differences estimation of the 1999 Ninth Circuit Court of Appeals decision on readability without the controls and the fixed effects. The results are statistically and economically similar to the baseline estimates of Panel A, indicating that the results are not driven by the choice of control variables.

Propensity Score Matching

Although the Ninth Circuit Court of Appeals ruling was unexpected (Crane and Koch, 2018) and it is unlikely that firms chose their headquarters in anticipation of this ruling, it is plausible that the choice of headquarter location is a function of certain firm level observable characteristics. Therefore, the next set of tests are conducted using a defined control group that has been selected using the nearest neighbor propensity score matching (Rosenbaum and Rubin, 1983) based on pre-treatment firm-level characteristics in 1998 such as market value, market-to-book, dividend payer indicator, ROA, and stock return. In addition, we also match on industry in 1998, as industry can determine the choice of headquarter's location. Therefore, in the following difference-in-differences regressions, we match each treated firm to a control firm that has the closest propensity to be in the Ninth Circuit and is in the same industry (2-digit SIC code). Matching has been done with replacement to produce better matches and to reduce bias in the estimates (Roberts and Whited, 2013). Panel A of Table 5 reports the covariate balance table that shows that the treated and the control firms are similar in the pre-treatment observable firm-level characteristics.

[Insert Table 5 here]

Interestingly, Panel B of Table 5 reports that the treated and the control firms are also similar in their pre-treatment outcome variables (i.e., only one out of the nine readability measures shows significant differences at the 1% level before the shock). This indicates that treatment and control groups are similar before the treatment, with the similar average characteristics of observed covariates, and therefore plausibly also in unobserved characteristics. Table 6 repeats the base regressions of Table 4 with this propensity score matched control sample.

[Insert Table 6 here]

Note that the results in Table 6, Panel A are consistent with our baseline regressions and are statistically significant in almost all the models in the presence of both firm and year fixed effects. Moreover, the results shown in Table 6, Panel B confirm that our results are not driven by our choice of covariates. The next section conducts several robustness checks for our primary results.

5. Additional Analyses and Robustness Checks

The main results in the prior section report a significant negative causal relation between the threat of shareholder class action litigations and more transparent disclosures, as measured with various readability measures. Even though we have used an identification strategy that relies on an external legal shock, one potential source of endogeneity could be measurement error (Roberts and Whited, 2013). The concern here is whether the readability indices used in the study are accurately proxying for readability and transparency. We have tried to address this issue using nine different measures of readability, but in this section, we attempt to mitigate such concerns even further by employing a widely used multivariate statistical procedure, principal component analysis (PCA) that was formally introduced by Hotelling (1933). Using vector space transformation, we extract the orthogonal principal components from eight readability measures by withholding their normalized and uncorrelated components and creating an index that comprises all these different readability measures. Then, we re-run our main tests using this index of indices, and the results are reported in Table 7. Note that the results are consistent with our main results and are significant at the 1% and 5% levels for the full and the matched samples, respectively as shown in Panel A of Table 7. We have also included firm and year fixed effects to control for unobservable characteristics and the standard errors have been clustered at the firm level. Panel B of Table 7 corroborates that our results are not influenced by the choice of controls.

[Insert Table 7 here]

The Private Securities Litigation Reform Act ("PSLRA") of 1995 made the filing of frivolous lawsuits more difficult for all firms (Klock, 2015). Moreover, although firms' SEC filings are available on EDGAR since 1994, 1996 was the first year when SEC made electronic filings mandatory by all public companies in the U.S. Another event during our sample period that

could potentially influence our results was the July 30, 2002 adoption of the Sarbanes-Oxley Act ("SOX"). Adoption of SOX, not only forced firms to improve transparency in their disclosures (Cohen, Dey and Lys, 2005; Beneish, Billings and Hodder, 2008) but also discouraged risk-taking (Bargeron, Lehn and Zutter, 2010). Finally, the regulatory uncertainty caused by the financial crisis in 2008 could also influence our empirical findings. To make sure that our results are not driven by such confounding events, we re-run our primary specifications for just the 1996-2002 sub-sample, omitting the year of the Ninth Circuit ruling. The results are reported in Table 8.

[Insert Table 8 here]

All the nine models in Table 8 confirm that our primary results from Table 4 stay consistent both in terms of significance and magnitude.

Another plausible concern could be that readability is changing for firms that were located in the Ninth Circuit not in response to the unanticipated reduction in the risk shareholder class action litigations due to this external legal shock in 1999, but as a result of some other observable or unobservable characteristic or event that impacts the firms headquartered only in the western part of the United States. For example, technology firms that have a higher likelihood to be involved in securities class action lawsuits, also have a greater propensity to be clustered geographically in the western part of the United States. Moreover, technology firms are also inherently more complex, which could result in the use of complicated language in the narratives of their 10-K disclosures. We try to mitigate such concerns in several ways. *First*, following Crane and Koch (2018), we attempt to address such potential shortcomings by only including firms headquartered in the states on the border of the Ninth Circuit (*i.e., Montana, Idaho, Nevada, and Arizona in the Ninth (treated) and North Dakota, South Dakota, Wyoming, Utah and New Mexico*

in the non-Ninth (control)). See figure 2 for the intuition of this empirical approach, that uses geographical proximity for identification.

[Insert Figure 2 here]

Second, we focus on the Bog Index for our readability measure, as it is a multi-faceted measure of readability and is less susceptible to the firm-level complexity. For instance, Bonsall and Miller (2017) note that,

"Studies examining readability face the alternative explanation that firm complexity leads to less readable reports. The Bog Index from StyleWriter should mitigate much of the criticism… ….because its grounding in plain English principles such as the minimization of passive voice should not be theoretically related to firm fundamentals." (p.627).

And, *third*, in addition to firm and year fixed effects, we also include industry-by-year and state-by-year fixed effects to control for unobserved heterogeneity across industries over time, and to control for political, economic and business cycles that could have potentially coincided with the 1999 Ninth Circuit ruling. We re-run our main specifications with the above-mentioned constraints and results are reported in Table 9.

[Insert Table 9 here]

Note that even though we are just left with less than 3% of our original observations with such strict constraints, which greatly reduces the power of our tests, the results are still consistent with our main results and are significant at the 1% (*Model 1, with industry-by-year fixed effects*) or the 10% levels (*Model 2, with both industry-by-year and state-by-year fixed effects fixed effects*), using the most advanced readability measure (i.e., the Bog Index). Finally, in order to reinforce the internal validity of our difference-in-differences estimators, we have also conducted falsification tests by repeating the main analysis on both three years prior and three years later than

the actual onset of the legal shock in 1999. We do not find any significant results (unreported). In the following section, we confirm and complement our main findings using a different natural experiment.

6. Another Natural Experiment

In 2001, Nevada legislators passed an amendment of the Nevada corporate law (Nevada Revised Statutes 78.138(7):7) that provided extra protection for managers and directors of the firms that were incorporated in the state of Nevada. It stated that the directors and the officers of the firms incorporated in Nevada could only be held liable if their, "(1) act or failure to act constituted a breach of his or her fiduciary duties as a director or officer; and (2) such breach involved intentional misconduct, fraud or a knowing violation of law."[9] This corporate law change significantly increased the pleading standards on the plaintiffs, thereby, suddenly reducing the risk of shareholder litigations for the firms incorporated in Nevada (Donelson and Yust, 2014; Barzuza and Smith, 2014).[10]

In this section, we use this unexpected legislative shock on the threat of shareholder litigation to confirm and complement our main findings. The results are presented in Table 10.

[Insert Table 10 here]

The table provides difference-in-differences estimations of the effect of the 2001 Nevada corporate law change on the readability of firms' 10-K filings with the SEC.[11] While Model 1 presents the results on the full sample, Model 2 re-conducts the test using a propensity score-matched sample. Similar to the main tests, here matching has been done based on pre-treatment firm-level characteristics in the year 2000, such as market value, market-to-book, dividend payer indicator, ROA, and stock return. Moreover, we also hard match on the industry. Following Table 7, the dependent variable is Readability Index, created using principal component analysis (PCA)

[9] https://www.leg.state.nv.us/NRS/NRS-078.html#NRS078Sec138

[10] Barzuza (2012) provides a detailed description of the 2001 Nevada corporate law change, which was, at least to some extent, unexpected.

[11] We omit the year 2001 since this legislative change in Nevada happened in 2001.

from the eight readability measures, including Automated Readability Index, Flesch-Kincaid Readability Index, Gunning Fog Readability Index, Smog Readability Index, Lasbarhets Readability Index, RIX Readability Index, Coleman-Liau Readability Index, and Bog Index. These variables are defined in Section 3, Data and Descriptive Statistics, of the paper. While Panel A of Table 10 presents the results with the control variables and the fixed effects, Panel B presents the estimates without any controls. As can be seen from both Models 1 and 2, and Panels A and B, we find that as compared to the propensity score-matched peer firms that were not incorporated in the state of Nevada, the treated firms (i.e., the firms that were incorporated in the state of Nevada), significantly improved the readability in their financial disclosures after the 2001 Nevada corporate law change. Such results not only confirm but also support our main findings using an entirely different natural experiment.

7. Conclusion

Exploiting an exogenous shock of a Ninth Circuit Court of Appeals ruling, that reduced the threat of shareholder class action litigations only for a subset of U.S. firms, we find causal evidence that a reduction in the threat of litigation leads to more transparent disclosures by firms as proxied with the readability of the narratives in 10-K filings. Such results are not driven by time-varying, and time-invariant firm-level unobservable characteristics, and are also not dependent on the unobserved heterogeneity across industries over time or political, economic or business cycles that could have coincided with the 1999 Ninth Circuit Court of Appeals ruling. The results are also robust to nine different textual measures of readability, including Bog Index from StyleWriter, which is arguably less susceptible to the endogenous relation between readability and firm complexity, and to various matching techniques and empirical specifications. Finally, we use a different shock-based setup to confirm and support our main findings.

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Figure 1 The Ninth Circuit

The map highlights (in yellow) the nine states that belong to The United States Courts for the Ninth Circuit, which includes Alaska (AK), Arizona (AZ), California (CA), Hawaii (HI), Idaho (ID), Montana (MT), Nevada (NV), Oregon (OR), and Washington (WA). The Ninth Circuit ruling, *Re: Silicon Graphics Inc.*, in the year 1999 led to an unexpected and sudden reduction in the threat of litigation for firms headquartered in these states.

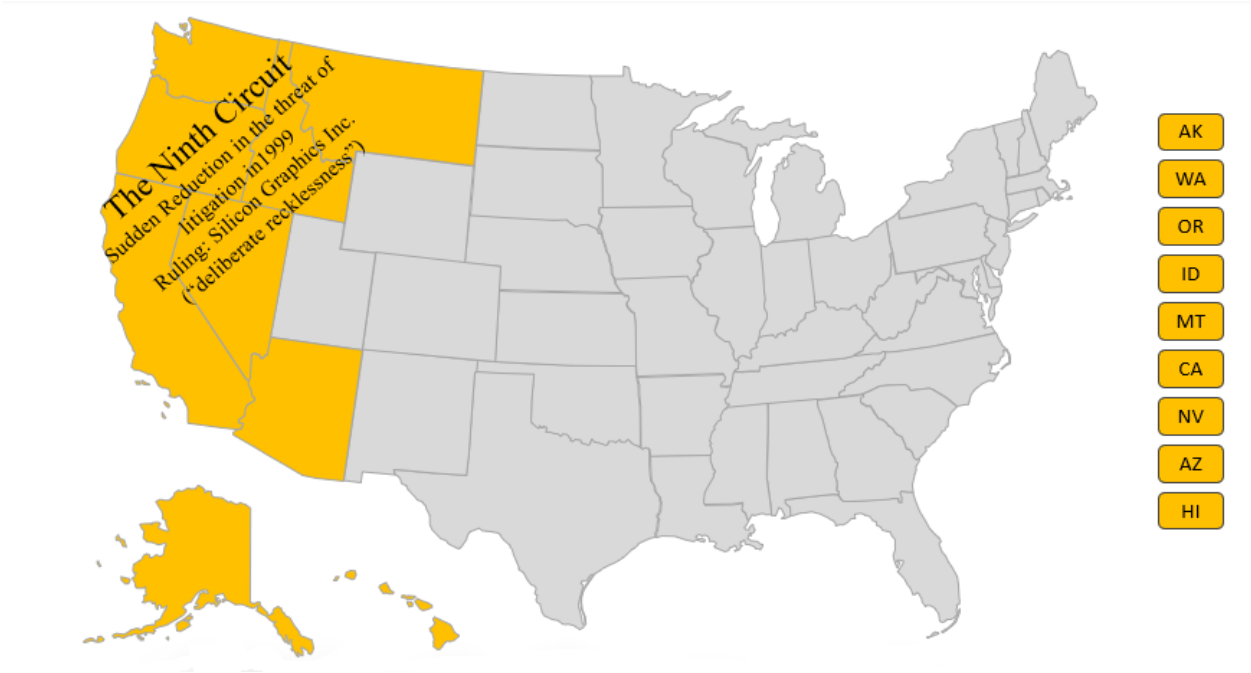

Figure 2 Border States

The four states highlighted in yellow are the treated group that belong to The United States Courts for the Ninth Circuit. They are Arizona (AZ), Idaho (ID), Montana (MT), Nevada (NV). The five states highlighted in dark grey are the control group that shares a border with the four states in the treated group, but do not belong to The United States Courts for the Ninth Circuit. They are New Mexico (NM), Wyoming (WY), North Dakota ND) and South Dakota (SD), and Utah (UT).

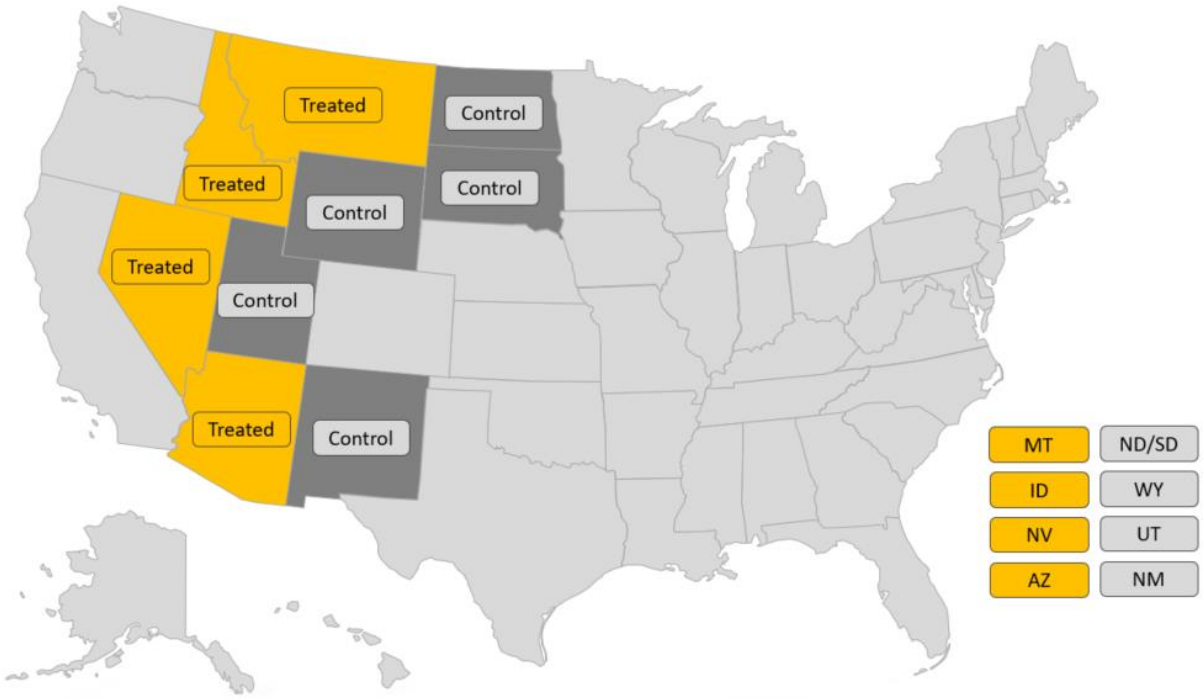

Table 1 Summary Statistics on Readability Measures

The table presents summary statistics for the nine readability measures used in our baseline sample from 1994-2014. These variables are defined in Section 3, Data and Descriptive Statistics, of the paper. Panel A presents results for the full sample. Panel B presents results for firms headquartered in The Ninth Circuit, and hence are subject to the 1999 Ninth Circuit ruling in *Re: Silicon Graphics*. Panel C presents results for firms headquartered outside The Ninth Circuit, and hence are not subject to the 1999 ruling. The unit of observation is firm-year.

	Observations	Mean	Std. dev.	Min.	25th Percentile	Median	75th Percentile	Max.
				Panel A: All Firms				
Automated Readability Index	85,020	22.261	1.347	13.884	21.462	22.124	22.855	45.809
Flesch-Kincaid Readability Index	85,020	15.570	1.144	8.777	14.889	15.548	16.197	27.854
Gunning Fog Readability Index	85,020	19.870	1.177	12.837	19.157	19.834	20.513	32.235
Smog Readability Index	85,020	17.283	0.817	11.158	16.779	17.270	17.759	23.839
Flesch Reading Ease Index	85,020	26.672	4.312	0.016	23.747	26.434	29.359	48.392
Lasbarhets Readability Index	85,020	59.881	2.847	41.927	58.161	59.849	61.522	97.576
RIX Readability Index	85,020	8.628	0.924	2.792	8.063	8.588	9.134	23.803
Coleman-Liau Readability Index	85,020	22.356	0.863	19.258	21.842	22.265	22.749	36.968
Bog Index	85,020	82.366	7.768	47.000	77.000	82.000	87.000	211.000
				Panel B: Firms in Ninth Circuit				
Automated Readability Index	28,791	22.291	1.371	13.884	21.472	22.140	22.886	36.063
Flesch-Kincaid Readability Index	28,791	15.554	1.156	8.777	14.865	15.519	16.162	25.351
Gunning Fog Readability Index	28,791	19.837	1.200	12.837	19.103	19.790	20.474	30.029
Smog Readability Index	28,791	17.257	0.826	11.158	16.743	17.238	17.726	23.119
Flesch Reading Ease Index	28,791	26.671	4.347	0.371	23.734	26.457	29.460	48.392
Lasbarhets Readability Index	28,791	59.901	2.896	41.927	58.131	59.847	61.564	84.130
RIX Readability Index	28,791	8.624	0.934	2.792	8.044	8.578	9.126	17.465
Coleman-Liau Readability Index	28,791	22.431	0.872	19.258	21.890	22.350	22.850	31.542
Bog Index	28,791	82.686	7.776	48.000	78.000	83.000	88.000	127.000
				Panel C: Firms NOT in Ninth Circuit				
Automated Readability Index	56,229	22.245	1.334	15.065	21.457	22.116	22.840	45.809
Flesch-Kincaid Readability Index	56,229	15.578	1.137	9.430	14.901	15.565	16.217	27.854
Gunning Fog Readability Index	56,229	19.887	1.165	13.360	19.183	19.857	20.533	32.235
Smog Readability Index	56,229	17.296	0.812	11.665	16.800	17.287	17.775	23.839
Flesch Reading Ease Index	56,229	26.673	4.294	0.016	23.753	26.421	29.309	47.997
Lasbarhets Readability Index	56,229	59.870	2.821	42.798	58.176	59.849	61.502	97.576
RIX Readability Index	56,229	8.630	0.918	3.383	8.072	8.594	9.137	23.803
Coleman-Liau Readability Index	56,229	22.318	0.855	19.306	21.818	22.227	22.696	36.968
Bog Index	56,229	82.202	7.759	47.000	77.000	82.000	87.000	211.000

Table 2 Correlation of Readability Measures

The table presents the pairwise correlation of the nine readability measures used in our baseline sample from 1994-2014. These variables are defined in Section 3, Data and Descriptive Statistics, of the paper. Results are all significant at 1% level (p-values not reported).

	Automated Readability Index	Flesch-Kincaid Readability Index	Gunning Fog Readability Index	Smog Readability Index	Flesch Reading Ease Index	Lasbarhets Readability Index	RIX Readability Index	Coleman-Liau Readability Index	Bog Index
Automated Readability Index	1.0000								
Flesch-Kincaid Readability Index	0.8592	1.0000							
Gunning Fog Readability Index	0.8602	0.9622	1.0000						
Smog Readability Index	0.8460	0.9583	0.9955	1.0000					
Flesch Reading Ease Index	-0.6277	-0.8577	-0.8172	-0.8269	1.0000				
Lasbarhets Readability Index	0.8631	0.9336	0.9258	0.9242	-0.8542	1.0000			
RIX Readability Index	0.8967	0.9623	0.9483	0.9486	-0.8044	0.9825	1.0000		
Coleman-Liau Readability Index	0.3109	-0.0201	0.0324	0.0359	-0.2039	0.1877	0.0841	1.0000	
Bog Index	0.3414	0.5423	0.4847	0.5068	-0.6406	0.5307	0.5106	0.0407	1.0000

Table 3 Summary Statistics on Control Variables

The table presents summary statistics for the control variables used in our baseline sample from 1994-2014. *Size* is measured as the dollar market equity value (in thousands) of the firm. *ROA* is return on assets, calculated as EBITDA/total assets. *Earnings Growth* is the change in net income divided by the total assets. *Sales Growth* is the change in sales dividend by the total assets. *Loss* indicator equals to 1 if the net income is negative, and zero otherwise. *Market to Book* is calculated as (book value of debt + market value of equity) / (book value of debt + book value of equity). *Stock Volatility* is the standard deviation of daily stock returns, measured over a 365-day period. *Stock Return* is natural log of annualized stock return adjusted by inflation. *Big-8 Auditor* indicator equals to one if the auditor codes are between 1 and 8, and zero otherwise. *Institutional ownership* is the total institutional ownership as a percentage of shares outstanding. Panel A presents results for the full sample. Panel B presents results for firms headquartered in The Ninth Circuit, and hence are subject to the 1999 Ninth Circuit ruling in Re: Silicon Graphics. Panel C presents results for firms headquartered outside The Ninth Circuit, and hence are not subject to the 1999 ruling. The unit of observation is firm-year.

	Observations	Mean	Median	Std. dev.
		Panel A: All Firms		
Size (Market Value '000)	80,131	2773.293	243.753	14374.780
ROA	80,131	0.029	0.093	7.535
Earnings Growth	80,131	0.005	0.003	1.170
Sales Growth	80,131	0.018	0.011	0.594
Loss Indicator	80,131	0.313	0.000	0.464
Market to Book	80,131	0.034	0.017	1.045
Stock Volatility	80,131	0.502	0.400	0.388
Stock Return	80,131	1.179	1.066	0.900
Big-8 Auditor Indicator	80,131	0.738	1.000	0.440
Institutional Ownership	80,131	0.362	0.298	0.338
		Panel B: Firm in Ninth Circuit		
Size (Market Value '000)	27,490	3513.187	266.320	17937.590
ROA	27,490	0.065	0.105	0.796
Earnings Growth	27,490	0.007	0.004	1.566
Sales Growth	27,490	0.022	0.011	0.895
Loss Indicator	27,490	0.324	0.000	0.468
Market to Book	27,490	0.020	0.017	1.116
Stock Volatility	27,490	0.522	0.427	0.378
Stock Return	27,490	1.207	1.067	0.980
Big-8 Auditor Indicator	27,490	0.817	1.000	0.387
Institutional Ownership	27,490	0.405	0.385	0.338
		Panel C: Firms NOT in Ninth Circuit		
Size (Market Value '000)	52,641	2386.908	233.104	12086.560
ROA	52,641	0.010	0.086	9.279
Earnings Growth	52,641	0.004	0.002	0.895
Sales Growth	52,641	0.017	0.011	0.343
Loss Indicator	52,641	0.307	0.000	0.461
Market to Book	52,641	0.042	0.017	1.005
Stock Volatility	52,641	0.491	0.385	0.393
Stock Return	52,641	1.165	1.066	0.856
Big-8 Auditor Indicator	52,641	0.697	1.000	0.460
Institutional Ownership	52,641	0.339	0.254	0.336

Table 4 Difference-in-Differences Regression: The Effect of Litigation Threat on Readability in Financial Disclosure

The table presents a difference-in-differences estimation of the effect of the 1999 ruling on the readability of firms' 10K filings with SEC. Each model estimates the effect on a different readability measure, including Automated Readability Index, Flesch-Kincaid Readability Index, Gunning Fog Readability Index, Smog Readability Index, Flesch Reading Ease Index, Lasbarhets Readability Index, RIX Readability Index, Coleman-Liau Readability Index, and Bog Index. These variables are defined in Section 3, Data and Descriptive Statistics, of the paper. Panel A presents estimates including control variables, year fixed effect, and firm fixed effect. Panel B presents the simple difference-in-difference estimates excluding control variables and fixed effects. The main variable of interest is the interaction term of two indicator variables: Ninth Circuit x Post-1999. Ninth circuit takes a value of 1 if the firm is headquartered in the Ninth Circuit. Post-1999 takes a value of 1 if the observation is after 1999. *Size* is measured as the dollar market equity value (in thousands) of the firm. *ROA* is return on assets, calculated as EBITDA/total assets. *Earnings Growth* is the change in net income divided by the total assets. *Sales Growth* is the change in sales dividend by the total assets. *Loss* indicator equals to 1 if the net income is negative, and zero otherwise. *Market to Book* is calculated as (book value of debt + market value of equity) / (book value of debt + book value of equity). *Stock Volatility* is the standard deviation of daily stock returns, measured over a 365-day period. *Stock Return* is natural log of annualized stock return adjusted by inflation. *Big-8 Auditor* indicator equals to one if the auditor codes are between 1 and 8, and zero otherwise. *Institutional ownership* is the total institutional ownership as a percentage of shares outstanding. Standard errors are clustered at the firm level and reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10% levels.

	(1) Automated Readability Index	(2) Flesch-Kincaid Readability Index	(3) Gunning Fog Readability Index	(4) Smog Readability Index	(5) Flesch Reading Ease Index	(6) Lasbarhets Readability Index	(7) RIX Readability Index	(8) Coleman-Liau Readability Index	(9) Bog Index
Panel A: Full Sample with Controls and Year/Firm Fixed Effects									
Ninth Circuit x Post 1999	-0.244***	-0.169***	-0.243***	-0.173***	0.747***	-0.612***	-0.175***	-0.157***	-0.930***
	(0.043)	(0.034)	(0.037)	(0.026)	(0.112)	(0.087)	(0.029)	(0.029)	(0.196)
LN (Market Value)	0.014	0.023***	0.006	0.003	-0.252***	0.062***	0.008	0.046***	0.056
	(0.009)	(0.007)	(0.008)	(0.005)	(0.023)	(0.018)	(0.006)	(0.006)	(0.042)
ROA	0.000***	0.000	0.000	0.000	0.001	0.000	0.000	-0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.002)
Earnings Growth	-0.001	0.001	0.000	0.000	-0.002	-0.000	0.000	-0.002	0.008
	(0.003)	(0.002)	(0.002)	(0.002)	(0.007)	(0.007)	(0.002)	(0.002)	(0.011)
Sales Growth	0.001	-0.001	-0.000	-0.000	-0.004	-0.000	-0.000	0.003	0.003
	(0.003)	(0.002)	(0.003)	(0.002)	(0.009)	(0.005)	(0.002)	(0.002)	(0.021)
Loss Indicator	0.077***	0.089***	0.080***	0.058***	-0.263***	0.214***	0.073***	-0.025***	0.786***
	(0.014)	(0.011)	(0.012)	(0.008)	(0.033)	(0.027)	(0.009)	(0.008)	(0.056)
Market to Book	-0.005	-0.003	-0.002	-0.002	0.009	-0.005	-0.002	-0.001	-0.013
	(0.004)	(0.003)	(0.004)	(0.003)	(0.012)	(0.008)	(0.003)	(0.001)	(0.021)
Volatility	-0.057***	-0.006	-0.022*	-0.013	-0.024	-0.015	-0.007	-0.048***	0.429***
	(0.015)	(0.011)	(0.012)	(0.008)	(0.036)	(0.028)	(0.009)	(0.009)	(0.067)
Stock Return	-0.019***	-0.015***	-0.014***	-0.010***	0.074***	-0.045***	-0.013***	-0.012***	-0.095***
	(0.005)	(0.003)	(0.004)	(0.003)	(0.011)	(0.009)	(0.003)	(0.003)	(0.020)
Big-8 Auditor Indicator	-0.011	0.021	0.024	0.022	-0.204***	0.147***	0.038**	0.005	0.909***
	(0.028)	(0.022)	(0.024)	(0.017)	(0.077)	(0.056)	(0.019)	(0.019)	(0.132)
Institutional Ownership	0.010	0.000	-0.028	-0.017	0.048	-0.072	-0.009	-0.004	-0.197
	(0.035)	(0.027)	(0.030)	(0.021)	(0.088)	(0.071)	(0.023)	(0.021)	(0.157)
Constant	21.791***	14.682***	19.154***	16.752***	31.424***	57.726***	7.994***	22.278***	75.457***
	(0.077)	(0.061)	(0.064)	(0.043)	(0.179)	(0.147)	(0.049)	(0.046)	(0.302)
Year Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	80,131	80,131	80,131	80,131	80,131	80,131	80,131	80,131	80,131
adj. R-sq	0.409	0.531	0.512	0.543	0.725	0.554	0.517	0.481	0.764
Panel B: Full Sample without Controls and Year/Firm Fixed Effects									
Ninth Circuit x Post 1999	-0.237***	-0.308***	-0.336***	-0.243***	1.476***	-0.833***	-0.247***	-0.062***	-1.576***
	(0.035)	(0.029)	(0.031)	(0.022)	(0.107)	(0.075)	(0.024)	(0.023)	(0.195)
Post 1999	0.218***	0.254***	0.227***	0.165***	-1.373***	0.739***	0.205***	0.131***	2.053***
	(0.034)	(0.030)	(0.031)	(0.022)	(0.109)	(0.074)	(0.024)	(0.023)	(0.205)
Ninth Circuit	0.053**	0.626***	0.425***	0.330***	-3.434***	1.262***	0.389***	-0.260***	4.754***
	(0.022)	(0.019)	(0.020)	(0.014)	(0.069)	(0.048)	(0.015)	(0.015)	(0.126)
Constant	22.203***	15.077***	19.547***	17.031***	29.424***	58.860***	8.318***	22.527***	78.393***
	(0.022)	(0.019)	(0.020)	(0.014)	(0.069)	(0.048)	(0.015)	(0.015)	(0.129)
Observations	85,020	85,020	85,020	85,020	85,020	85,020	85,020	85,020	85,020
adj. R-sq	0.002	0.037	0.015	0.019	0.081	0.022	0.020	0.023	0.052

Table 5 Propensity Score-Matched Sample – Covariate Balance

The table presents the mean covariate balance of both the matching variables (Panel A) and outcome (readability) variables (Panel B). Matching is done based on observable firm characteristics in 1998 (one year prior to the 1999 ruling). *Size* is measured as the dollar market equity value (in thousands) of the firm. *Market to Book* is calculated as (book value of debt + market value of equity) / (book value of debt + book value of equity). *Dividend Payer* is an indicator variable equal to 1 if the firm paid a dividend in the prior year, and zero otherwise. *ROA* is return on assets, calculated as EBITDA/total assets. *Stock Return* is natural log of annualized stock return adjusted by inflation. Readability measures are defined in Section 3, Data and Descriptive Statistics, of the paper. N is at firm level.

	Treated	N (Firm)	Control	N (Firm)	t-statistics	p-value
			Panel A: Covariate Balance			
LN (Market Value)	4.85	884	4.87	884	0.23	0.82
Market to Book	2.99	884	2.70	884	-0.32	0.75
Dividend Payer Indicator	0.35	884	0.34	884	-0.30	0.76
ROA	0.02	884	0.03	884	0.28	0.78
Stock Return	0.95	884	0.95	884	0.06	0.95
			Panel B: Outcome Variables - Readability (NOT matched)			
Automated Readability Index	22.32	884	22.30	884	-0.40	0.69
Flesch-Kincaid Readability Index	15.33	884	15.23	884	-1.79	0.07
Gunning Fog Readability Index	19.75	884	19.67	884	-1.34	0.18
Smog Readability Index	17.18	884	17.12	884	-1.37	0.17
Flesch Reading Ease Index	27.82	884	28.33	884	2.39	0.02
Lasbarhets Readability Index	59.67	884	59.41	884	-1.80	0.07
RIX Readability Index	8.53	884	8.45	884	-1.69	0.09
Coleman-Liau Readability Index	22.61	884	22.66	884	1.14	0.25
Bog Index	81.28	884	80.29	884	-2.59	0.01

Table 6 Difference-in-Differences Regression on Propensity Score-Matched Sample: The Effect of Litigation Threat on Readability in Financial Disclosure

The table presents a difference-in-differences estimation of the effect of the 1999 ruling on the readability of firms' 10K filings with SEC. The regression is estimated on a propensity score matched sample. Matching is conducted based on pre-treatment firm-level characteristics in 1998 such as market value, market-to-book, dividend payer indicator, ROA, stock return, and industry indicator. Each model estimates the effect on a different readability measure, including Automated Readability Index, Flesch-Kincaid Readability Index, Gunning Fog Readability Index, Smog Readability Index, Flesch Reading Ease Index, Lasbarhets Readability Index, RIX Readability Index, Coleman-Liau Readability Index, and Bog Index. These variables are defined in Section 3, Data and Descriptive Statistics, of the paper. Panel A presents estimates including control variables, year fixed effect, and firm fixed effect. Panel B presents the simple difference-in-difference estimates excluding control variables and fixed effects. The main variable of interest is the interaction term of two indicator variables: Ninth Circuit x Post-1999. Ninth circuit takes a value of 1 if the firm is headquartered in the Ninth Circuit. Post-1999 takes a value of 1 if the observation is after 1999. *Size* is measured as the dollar market equity value (in thousands) of the firm. *ROA* is return on assets, calculated as EBITDA/total assets. *Earnings Growth* is the change in net income divided by the total assets. *Sales Growth* is the change in sales dividend by the total assets. *Loss* indicator equals to 1 if the net income is negative, and zero otherwise. *Market to Book* is calculated as (book value of debt + market value of equity) / (book value of debt + book value of equity). *Stock Volatility* is the standard deviation of daily stock returns, measured over a 365-day period. *Stock Return* is natural log of annualized stock return adjusted by inflation. *Big-8 Auditor* indicator equals to one if the auditor codes are between 1 and 8, and zero otherwise. *Institutional ownership* is the total institutional ownership as a percentage of shares outstanding. Standard errors are clustered at the firm level and reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10% levels.

	(1) Automated Readability Index	(2) Flesch-Kincaid Readability Index	(3) Gunning Fog Readability Index	(4) Smog Readability Index	(5) Flesch Reading Ease Index	(6) Lasbarhets Readability Index	(7) RIX Readability Index	(8) Coleman-Liau Readability Index	(9) Bog Index
Panel A: Matched Sample with Controls and Year/Firm Fixed Effects									
Ninth Circuit x Post 1999	-0.143*	-0.094	-0.146**	-0.103**	0.484**	-0.378**	-0.100*	-0.119**	-0.593*
	(0.080)	(0.063)	(0.067)	(0.046)	(0.205)	(0.158)	(0.052)	(0.054)	(0.348)
LN (Market Value)	0.045**	0.040**	0.036**	0.024**	-0.299***	0.090**	0.019	0.058***	0.065
	(0.021)	(0.016)	(0.017)	(0.012)	(0.052)	(0.042)	(0.014)	(0.013)	(0.097)
ROA	-0.001	-0.003***	-0.003***	-0.002***	0.017***	-0.009***	-0.003***	0.001	-0.020***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.005)	(0.001)	(0.000)	(0.001)	(0.005)
Earnings Growth	-0.005	-0.007	-0.010	-0.006	-0.019	-0.016	-0.007	0.017**	0.154**
	(0.011)	(0.011)	(0.010)	(0.007)	(0.058)	(0.029)	(0.008)	(0.008)	(0.062)
Sales Growth	0.002	-0.000	0.002	0.001	-0.008	0.003	0.000	0.006***	-0.022***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.009)	(0.004)	(0.002)	(0.001)	(0.006)
Loss Indicator	0.095***	0.098***	0.098***	0.071***	-0.325***	0.252***	0.084***	-0.003	1.089***
	(0.034)	(0.027)	(0.028)	(0.019)	(0.079)	(0.065)	(0.022)	(0.018)	(0.136)
Market to Book	-0.003	-0.000	0.001	0.001	-0.002	0.002	0.000	-0.002*	0.006
	(0.004)	(0.002)	(0.002)	(0.001)	(0.006)	(0.004)	(0.002)	(0.001)	(0.007)
Volatility	-0.007	0.033	0.031	0.028	-0.110	0.096	0.034	-0.048**	0.547***
	(0.040)	(0.031)	(0.032)	(0.022)	(0.089)	(0.075)	(0.025)	(0.023)	(0.171)
Stock Return	-0.023**	-0.016*	-0.018**	-0.013**	0.070***	-0.039*	-0.012*	-0.015**	-0.046
	(0.011)	(0.008)	(0.009)	(0.006)	(0.025)	(0.021)	(0.007)	(0.007)	(0.043)
Big-8 Auditor Indicator	0.008	0.019	0.023	0.015	-0.216	0.128	0.028	0.034	0.739***
	(0.057)	(0.044)	(0.048)	(0.034)	(0.163)	(0.112)	(0.037)	(0.044)	(0.267)
Institutional Ownership	-0.265**	-0.164**	-0.221**	-0.146**	0.201	-0.457**	-0.155**	-0.011	-0.782*
	(0.103)	(0.082)	(0.087)	(0.059)	(0.245)	(0.202)	(0.067)	(0.062)	(0.433)
Constant	21.563***	14.391***	18.796***	16.517***	32.397***	57.249***	7.833***	22.357***	74.577***
	(0.153)	(0.120)	(0.126)	(0.086)	(0.370)	(0.296)	(0.098)	(0.097)	(0.622)
Year Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	16,401	16,401	16,401	16,401	16,401	16,401	16,401	16,401	16,401
adj. R-sq	0.360	0.471	0.462	0.496	0.687	0.507	0.467	0.444	0.753
Panel B: Matched Sample without Controls and Year/Firm Fixed Effects									
Ninth Circuit x Post 1999	-0.180**	-0.136**	-0.157**	-0.108**	0.621***	-0.483***	-0.131***	-0.108**	-0.690*
	(0.073)	(0.061)	(0.065)	(0.045)	(0.219)	(0.155)	(0.050)	(0.049)	(0.395)
Post 1999	0.085	0.542***	0.372***	0.285***	-2.806***	1.219***	0.371***	-0.232***	4.436***
	(0.052)	(0.042)	(0.045)	(0.031)	(0.152)	(0.109)	(0.035)	(0.035)	(0.275)
Ninth Circuit	0.148**	0.178***	0.173**	0.123***	-0.895***	0.526***	0.147***	0.062	0.924**
	(0.072)	(0.064)	(0.067)	(0.047)	(0.236)	(0.159)	(0.051)	(0.049)	(0.448)
Constant	22.169***	15.013***	19.459***	16.968***	29.439***	58.714***	8.257***	22.629***	78.212***
	(0.051)	(0.044)	(0.046)	(0.032)	(0.163)	(0.111)	(0.035)	(0.035)	(0.309)
Observations	16,674	16,674	16,674	16,674	16,674	16,674	16,674	16,674	16,674
adj. R-sq	0.001	0.032	0.012	0.015	0.064	0.023	0.021	0.020	0.052

Table 7 Difference-in-Differences Regression with Principal Component Analyses (PCA): The Effect of Litigation Threat on Readability in Financial Disclosure

The table presents a difference-in-differences estimation of the effect of the 1999 ruling on the readability of firms' 10K filings with SEC. The regression is estimated on full sample (model 1), and a propensity score matched sample (model 2: matching is conducted based on pre-treatment firm-level characteristics in 1998 such as market value, market-to-book, dividend payer indicator, ROA, stock return, and industry indicator.). The dependent variable is Readability Index, created using principal component analysis (PCA) from the eight readability measures, including Automated Readability Index, Flesch-Kincaid Readability Index, Gunning Fog Readability Index, Smog Readability Index, Lasbarhets Readability Index, RIX Readability Index, Coleman-Liau Readability Index, and Bog Index. These variables are defined in Section 3, Data and Descriptive Statistics, of the paper. Panel A presents estimates including control variables, year fixed effect, and firm fixed effect. Panel B presents the simple difference-in-difference estimates excluding control variables and fixed effects. The main variable of interest is the interaction term of two indicator variables: Ninth Circuit x Post-1999. Ninth circuit takes a value of 1 if the firm is headquartered in the Ninth Circuit. Post-1999 takes a value of 1 if the observation is after 1999. *Size* is measured as the dollar market equity value (in thousands) of the firm. *ROA* is return on assets, calculated as EBITDA/total assets. *Earnings Growth* is the change in net income divided by the total assets. *Sales Growth* is the change in sales dividend by the total assets. *Loss* indicator equals to 1 if the net income is negative, and zero otherwise. *Market to Book* is calculated as (book value of debt + market value of equity) / (book value of debt + book value of equity). *Stock Volatility* is the standard deviation of daily stock returns, measured over a 365-day period. *Stock Return* is natural log of annualized stock return adjusted by inflation. *Big-8 Auditor* indicator equals to one if the auditor codes are between 1 and 8, and zero otherwise. *Institutional ownership* is the total institutional ownership as a percentage of shares outstanding. Standard errors are clustered at the firm level and reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10% levels.

DV: Readability (PCA)	(1) Full Sample	(2) Matched Sample
	Panel A: Results with Controls and Year/Firm Fixed Effects	
Ninth Circuit x Post 1999	-0.494***	-0.279**
	(0.075)	(0.130)
LN (Market Value)	0.032**	0.072**
	(0.015)	(0.034)
ROA	0.000	-0.006***
	(0.000)	(0.001)
Earnings Growth	0.000	-0.010
	(0.005)	(0.021)
Sales Growth	-0.000	0.001
	(0.004)	(0.005)
Loss Indicator	0.193***	0.223***
	(0.023)	(0.055)
Market to Book	-0.006	0.000
	(0.007)	(0.004)
Volatility	-0.027	0.074
	(0.025)	(0.063)
Stock Return	-0.036***	-0.035**
	(0.008)	(0.017)
Big-8 Auditor Indicator	0.089*	0.075
	(0.048)	(0.093)
Institutional Ownership	-0.035	-0.413**
	(0.061)	(0.165)
Constant	-1.738***	-2.002***
	(0.129)	(0.244)
Year Fixed Effect	Y	Y
Firm Fixed Effect	Y	Y
Observations	80,131	16,401
adj. R-sq	0.535	0.485
	Panel B: Results without Controls and Year/Firm Fixed Effects	
Ninth Circuit x Post 1999	-0.683***	-0.338***
	(0.064)	(0.126)
Post 1999	0.570***	0.896***
	(0.064)	(0.088)
Ninth Circuit	1.016***	0.373***
	(0.041)	(0.131)
Constant	-0.811***	-0.719***
	(0.041)	(0.090)
Observations	85,020	16,674
adj. R-sq	0.020	0.019

Table 8 Difference-in-Differences Regression on 1996-2002 Subsample: The Effect of Litigation Threat on Readability in Financial Disclosure

The table presents a difference-in-differences estimation of the effect of the 1999 ruling on the readability of firms' 10K filings with SEC. The regression is estimated on a subset of our baseline sample (from 1996-2002): three years prior to 1999 and three years after 1999. Each model estimates the effect on a different readability measure, including Automated Readability Index, Flesch-Kincaid Readability Index, Gunning Fog Readability Index, Smog Readability Index, Flesch Reading Ease Index, Lasbarhets Readability Index, RIX Readability Index, Coleman-Liau Readability Index, and Bog Index. These variables are defined in Section 3, Data and Descriptive Statistics, of the paper. Panel A presents estimates including control variables, year fixed effect, and firm fixed effect. Panel B presents the simple difference-in-difference estimates excluding control variables and fixed effects. The main variable of interest is the interaction term of two indicator variables: Ninth Circuit x Post-1999. Ninth circuit takes a value of 1 if the firm is headquartered in the Ninth Circuit. Post-1999 takes a value of 1 if the observation is after 1999. *Size* is measured as the dollar market equity value (in thousands) of the firm. *ROA* is return on assets, calculated as EBITDA/total assets. *Earnings Growth* is the change in net income divided by the total assets. *Sales Growth* is the change in sales dividend by the total assets. *Loss* indicator equals to 1 if the net income is negative, and zero otherwise. *Market to Book* is calculated as (book value of debt + market value of equity) / (book value of debt + book value of equity). *Stock Volatility* is the standard deviation of daily stock returns, measured over a 365-day period. *Stock Return* is natural log of annualized stock return adjusted by inflation. *Big-8 Auditor* indicator equals to one if the auditor codes are between 1 and 8, and zero otherwise. *Institutional ownership* is the total institutional ownership as a percentage of shares outstanding. Standard errors are clustered at the firm level and reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10% levels.

	(1) Automated Readability Index	(2) Flesch-Kincaid Readability Index	(3) Gunning Fog Readability Index	(4) Smog Readability Index	(5) Flesch Reading Ease Index	(6) Lasbarhets Readability Index	(7) RIX Readability Index	(8) Coleman-Liau Readability Index	(9) Bog Index
Panel A: Full Sample with Controls and Year/Firm Fixed Effects									
Ninth Circuit x Post 1999	-0.319***	-0.197***	-0.264***	-0.189***	0.722***	-0.648***	-0.198***	-0.178***	-0.654***
	(0.050)	(0.037)	(0.040)	(0.027)	(0.113)	(0.093)	(0.031)	(0.032)	(0.185)
LN (Market Value)	-0.016	-0.004	-0.024	-0.016*	-0.143***	-0.016	-0.014	0.035***	-0.043
	(0.018)	(0.014)	(0.015)	(0.009)	(0.039)	(0.035)	(0.011)	(0.010)	(0.071)
ROA	-0.001	-0.002	-0.004	-0.003	0.017	-0.006	-0.001	-0.001	-0.004
	(0.003)	(0.003)	(0.004)	(0.003)	(0.013)	(0.009)	(0.003)	(0.002)	(0.018)
Earnings Growth	0.003	0.003	0.004	0.002	-0.000	0.006	0.003	-0.003	-0.032*
	(0.005)	(0.004)	(0.004)	(0.003)	(0.012)	(0.013)	(0.004)	(0.002)	(0.018)
Sales Growth	-0.001	-0.006**	-0.002	-0.002	0.010	-0.002	-0.003	0.010***	-0.017
	(0.002)	(0.002)	(0.003)	(0.002)	(0.016)	(0.008)	(0.002)	(0.002)	(0.024)
Loss Indicator	0.048*	0.062***	0.052**	0.038**	-0.120*	0.136**	0.052***	-0.045***	0.609***
	(0.029)	(0.023)	(0.024)	(0.016)	(0.065)	(0.055)	(0.018)	(0.017)	(0.096)
Market to Book	-0.013	-0.006	-0.006	-0.004	0.014	-0.019	-0.006	-0.006	-0.012
	(0.008)	(0.004)	(0.004)	(0.003)	(0.014)	(0.013)	(0.004)	(0.005)	(0.029)
Volatility	-0.056**	-0.035*	-0.058***	-0.038***	0.187***	-0.147***	-0.037**	-0.048***	-0.232**
	(0.025)	(0.018)	(0.019)	(0.013)	(0.056)	(0.045)	(0.015)	(0.016)	(0.101)
Stock Return	-0.017**	-0.011**	-0.012*	-0.009**	0.051***	-0.038***	-0.012**	-0.012***	-0.078***
	(0.007)	(0.005)	(0.006)	(0.004)	(0.017)	(0.014)	(0.005)	(0.004)	(0.030)
Big-8 Auditor Indicator	0.041	0.051	0.047	0.037	-0.291*	0.178	0.050	0.029	0.697***
	(0.062)	(0.050)	(0.053)	(0.036)	(0.157)	(0.121)	(0.040)	(0.040)	(0.268)
Institutional Ownership	-0.163	-0.089	-0.170**	-0.117**	0.184	-0.358*	-0.107*	-0.057	-0.746**
	(0.101)	(0.077)	(0.082)	(0.055)	(0.225)	(0.190)	(0.063)	(0.063)	(0.332)
Constant	22.195***	15.064***	19.635***	17.087***	29.782***	58.936***	8.350***	22.428***	78.550***
	(0.097)	(0.077)	(0.080)	(0.052)	(0.222)	(0.188)	(0.061)	(0.057)	(0.387)
Year Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	31,612	31,612	31,612	31,612	31,612	31,612	31,612	31,612	31,612
adj. R-sq	0.453	0.513	0.527	0.561	0.708	0.561	0.526	0.498	0.784
Panel B: Full Sample without Controls and Year/Firm Fixed Effects									
Ninth Circuit x Post 1999	-0.246***	-0.217***	-0.248***	-0.179***	1.076***	-0.696***	-0.196***	-0.156***	-0.564***
	(0.038)	(0.030)	(0.032)	(0.022)	(0.103)	(0.075)	(0.024)	(0.025)	(0.180)
Post 1999	0.006	0.164***	0.041*	0.036**	-1.297***	0.355***	0.080***	0.050***	0.885***
	(0.026)	(0.020)	(0.021)	(0.015)	(0.069)	(0.050)	(0.016)	(0.017)	(0.120)
Ninth Circuit	0.227***	0.272***	0.244***	0.178***	-1.492***	0.800***	0.221***	0.140***	2.232***
	(0.034)	(0.030)	(0.031)	(0.022)	(0.111)	(0.074)	(0.024)	(0.023)	(0.206)
Constant	22.194***	15.066***	19.542***	17.029***	29.383***	58.878***	8.317***	22.555***	78.515***
	(0.023)	(0.020)	(0.021)	(0.015)	(0.071)	(0.049)	(0.016)	(0.015)	(0.131)
Observations	31,612	31,612	31,612	31,612	31,612	31,612	31,612	31,612	31,612
adj. R-sq	0.004	0.006	0.005	0.005	0.022	0.008	0.006	0.002	0.015

Table 9 Difference-in-Differences Regression on Border States (with multi-dimensional fixed effects): The Effect of Litigation Threat on Readability in Financial Disclosure

The table presents a difference-in-differences estimation of the effect of the 1999 ruling on the readability of firms' 10K filings with SEC. The regression is estimated using only firms in states on the border of the Ninth Circuit. These include treated firms in Arizona (AZ), Idaho (ID), Montana (MT), and Nevada (NV) within the Ninth Circuit, and control firms in New Mexico (NM), Wyoming (WY), North Dakota ND) and South Dakota (SD), and Utah (UT) outside the Ninth Circuit. For brevity, we report results on one readability measure, the Bog Index. The variable is defined in Section 3, Data and Descriptive Statistics, of the paper. We add Industry-by-Year fixed effect in Model 1, and both Industry-by-Year and State-by-Year fixed effect in Model 2. The main variable of interest is the interaction term of two indicator variables: Ninth Circuit x Post-1999. Ninth circuit takes a value of 1 if the firm is headquartered in the Ninth Circuit. Post-1999 takes a value of 1 if the observation is after 1999. *Size* is measured as the dollar market equity value (in thousands) of the firm. *ROA* is return on assets, calculated as EBITDA/total assets. *Earnings Growth* is the change in net income divided by the total assets. *Sales Growth* is the change in sales dividend by the total assets. *Loss* indicator equals to 1 if the net income is negative, and zero otherwise. *Market to Book* is calculated as (book value of debt + market value of equity) / (book value of debt + book value of equity). *Stock Volatility* is the standard deviation of daily stock returns, measured over a 365-day period. *Stock Return* is natural log of annualized stock return adjusted by inflation. *Big-8 Auditor* indicator equals to one if the auditor codes are between 1 and 8, and zero otherwise. *Institutional ownership* is the total institutional ownership as a percentage of shares outstanding. Standard errors are clustered at the firm level and reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10% levels.

	(1) Bog Index	(2) Bog Index
	Subsample (Border States Only)	
Ninth Circuit x Post 1999	-3.114***	-2.194*
	(1.090)	(1.130)
LN (Market Value)	-0.269	-0.309
	(0.241)	(0.247)
ROA	0.062**	0.063*
	(0.026)	(0.035)
Earnings Growth	-0.240	-0.232
	(0.173)	(0.194)
Sales Growth	0.142***	0.139***
	(0.035)	(0.037)
Loss Indicator	0.729**	0.589
	(0.365)	(0.373)
Market to Book	-1.302***	-1.469**
	(0.462)	(0.587)
Volatility	0.464	0.370
	(0.446)	(0.455)
Stock Return	-0.089	-0.093
	(0.123)	(0.119)
Big-8 Auditor Indicator	0.286	0.060
	(0.567)	(0.619)
Institutional Ownership	-0.185	0.052
	(1.096)	(1.117)
Constant	84.535***	84.600***
	(1.297)	(1.412)
Year Fixed Effect	Y	Y
Firm Fixed Effect	Y	Y
Industry x Year Fixed Effect	Y	Y
State x Year Fixed Effect	N	Y
Observations	2,529	2,510
adj. R-sq	0.735	0.741

Table 10 Difference-in-Differences Regression (Evidence from Another Legal Event): The Effect of Litigation Threat on Readability in Financial Disclosure

The table presents a difference-in-differences estimation of the effect of the 2001 Nevada corporate law change on the readability of firms' 10K filings with SEC. The regression is estimated on the full sample (model 1), and a propensity score matched sample (model 2: matching is conducted based on pre-treatment firm-level characteristics in 2000 such as market value, market-to-book, dividend payer indicator, ROA, stock return, and industry indicator). The dependent variable is Readability Index, created using principal component analysis (PCA) from the eight readability measures, including Automated Readability Index, Flesch-Kincaid Readability Index, Gunning Fog Readability Index, Smog Readability Index, Lasbarhets Readability Index, RIX Readability Index, Coleman-Liau Readability Index, and Bog Index. These variables are defined in Section 3, Data and Descriptive Statistics, of the paper. Panel A presents estimates including control variables, year fixed effect, and firm fixed effect. Panel B presents the simple difference-in-difference estimates, excluding control variables and fixed effects. The main variable of interest is the interaction term of two indicator variables: Nevada x Post-2001. Nevada takes a value of 1 if the firm is incorporated in Nevada. Post-2001 takes a value of 1 if the observation is after 2001. *Size* is measured as the dollar market equity value (in thousands) of the firm. *ROA* is the return on assets, calculated as EBITDA/total assets. *Earnings Growth* is the change in net income divided by the total assets. *Sales Growth* is the change in sales divided by the total assets. *Loss* indicator equals to 1 if the net income is negative, and zero otherwise. *Market to Book* is calculated as (book value of debt + market value of equity) / (book value of debt + book value of equity). *Stock Volatility* is the standard deviation of daily stock returns, measured over a 365-day period. *Stock Return* is the natural log of annualized stock return adjusted by inflation. *Big-8 Auditor* indicator equals to one if the auditor codes are between 1 and 8, and zero otherwise. *Institutional ownership* is the total institutional ownership as a percentage of shares outstanding. Standard errors are clustered at the firm level and reported in parentheses. ***, **, and * indicate significance at 1%, 5%, and 10% levels.

DV: Readability (PCA)	(1) Full Sample	(2) Matched Sample
Panel A: Results with Controls and Year/Firm Fixed Effects		
Nevada x Post 2001	-0.454**	-0.409**
	(0.193)	(0.206)
LN (Market Value)	0.041**	0.024
	(0.016)	(0.041)
ROA	0.000	0.002
	(0.000)	(0.035)
Earnings Growth	-0.001	0.003
	(0.006)	(0.013)
Sales Growth	-0.003	-0.011***
	(0.006)	(0.004)
Loss Indicator	0.194***	0.246***
	(0.024)	(0.068)
Market to Book	-0.006	-0.025
	(0.009)	(0.084)
Volatility	0.014	0.118
	(0.025)	(0.074)
Stock Return	-0.053***	-0.039*
	(0.008)	(0.023)
Big-8 Auditor Indicator	0.110**	0.141
	(0.050)	(0.137)
Institutional Ownership	-0.070	-0.257
	(0.061)	(0.193)
Constant	-1.698***	-1.955***
	(0.130)	(0.337)
Year Fixed Effect	Y	Y
Firm Fixed Effect	Y	Y
Observations	80,541	9,979
adj. R-sq	0.534	0.515
Panel B: Results without Controls and Year/Firm Fixed Effects		
Nevada x Post 2001	-0.487***	-0.359*
	(0.169)	(0.194)
Post 2001	0.885***	0.910***
	(0.030)	(0.089)
Nevada	0.174	0.267
	(0.176)	(0.219)
Constant	-0.554***	-0.591***
	(0.029)	(0.091)
Observations	80,541	10,176
adj. R-sq	0.030	0.028