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Nam H. Nguyen
The University of Texas Rio Grande Valley

Hieu V. Phan

Eunju Lee

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Nam H. Nguyen, Hieu V. Phan, and Eunju Lee [†]

[†] Nam H. Nguyen, namhoang.nguyen@utrgv.edu, Robert C. Vackar College of Business & Entrepreneurship, University of Texas Rio Grande Valley, 1201 W University Dr, Edinburg, TX 78539, phone: (956) 278-9881; Hieu V. Phan (corresponding author), hieu_phan@uml.edu, Manning School of Business, University of Massachusetts Lowell, 72 University Avenue, Lowell, MA 01854, phone: (978) 934-2633; Eunju Lee, eunju_lee@uml.edu, Manning School of Business, University of Massachusetts Lowell, 72 University Avenue, Lowell, MA 01854, phone: (978) 934-2520.

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Abstract

We exploit the staggered adoption of the universal demand (UD) laws across U.S. states, which impedes shareholder rights to initiate derivative lawsuits, as a quasi-natural experiment to examine the relation between shareholder litigation rights and firm capital structures. We find that weaker shareholder litigation rights due to the UD laws adoption lead to higher financial leverage, which enhances firm value. Furthermore, the positive relation between the UD laws adoption and financial leverage is more pronounced for firms exposed to higher shareholder litigation risk ex ante or financially constrained firms. Our evidence is consistent with lower shareholder litigation threats motivating firms to increase financial leverage.

1. Introduction

Legal protection of shareholders can alleviate managerial agency problems that arise from the separation of ownership and control (La Porta et al., 1998). Theoretically, shareholder litigation can be a governance channel through which shareholders deter managers' self-serving and moral hazard problems (Kraakman, Park, and Shavell, 1993; Kinney, 1994; Ferris et al., 2007; Donelson and Yust, 2014). However, shareholder litigation has its own caveats. In particular, shareholder litigation could be costly to the defendant firms given its substantial legal fees and cash settlements. Faced with litigation risk that potentially erodes job security and personal reputation (Liu et al., 2016), managers may pursue risk-averse strategies that negatively affect shareholder value. Deng et al. (2014) find that shareholder litigation harms defendant firms' reputation and increases external financing costs. Arena (2018) reports that corporate litigation risk decreases firms' credit ratings and increases their cost of debt. On average, the defendant firms' market values of equity decrease upon the filings of shareholder lawsuits (Bhagat et al., 1998; Ferris et al., 2007). Autore et al. (2014) find that securities litigation leads to lower external financing. Since shareholder litigation risk has negative implications for both debt and equity financing, whether and how it affects firm capital structure decisions is unclear ex ante. This research attempts to answer these questions.

Shareholders typically bring litigation against firms through either securities class action lawsuits or derivative lawsuits. A securities class action lawsuit is usually initiated by a group of shareholders who trade a firm's shares within a specific period and suffer from a sudden stock price decline, aiming at recovering their financial losses due to an alleged securities fraud. A derivative lawsuit, on the other hand, is filed by shareholders on behalf of the firm and usually alleges that officers and directors breached their fiduciary duties. The main objective of derivative

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lawsuits is presumably to push the defendant firms to improve corporate governance. Any cash settlements resulted from the derivative lawsuits will go to the firms rather than directly to the shareholders after paying the plaintiff's attorney fees. Although derivative lawsuits can lead to an improvement in corporate governance (Ferris et al., 2007), their direct and indirect costs may outweigh their benefits. The following piece of anecdotal evidence illustrates the substantial costs of derivative lawsuits to the defendant firms and managers:

> "Lawrence J. Ellison, chief executive of Oracle, has reached a tentative agreement under which he would pay $100 million to charity to resolve a lawsuit charging that he engaged in insider trading in 2001, a lawyer involved in the case said.

> The unusual settlement, which requires the approval of Oracle's board and could still break down, would be one of the largest payments made to resolve a shareholder suit of this kind, known as a derivative lawsuit… Under the terms of the agreement, the lawyers who brought the case for shareholders would receive about $22.5 million, separate from the $100 million payment."[1]

UD laws, which were adopted by 23 states in the United States over the period 1989-2005, require shareholders to obtain board approval before initiating a derivative lawsuit. Since the alleged wrongdoers in derivative lawsuits usually include board members, boards of directors rarely grant such approval, making it more difficult for shareholders to file derivative lawsuits against corporate directors and managers. Nguyen et al. (2018) and Appel (2019) report that the number of derivative lawsuits decreased significantly following the state adoption of UD laws,

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[1] https://www.nytimes.com/2005/09/12/technology/oracles-chief-in-agreement-to-settle-insider-trading-lawsuit.html. Last accessed on May 12, 2019.

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indicating that UD laws effectively weaken shareholder litigation rights to initiate derivative lawsuits. In this research, we exploit the staggered adoption of UD laws by different states, which weaken shareholder litigation rights, as a quasi-natural experiment to identify the relation between shareholder litigation rights and firm capital structures.

UD laws may have opposing effects on firm capital structures. Spier and Sykes (1998) and Sandy (2014) argue that civil litigants have junior claims on firms' assets should they go bankrupt, thus, firms can use debt financing as a deterrent against civil litigation that potentially pushes firms into insolvency. Ni and Yin (2018) report that the adoption of UD laws leads to a higher cost of debt since it weakens corporate governance, increases information asymmetry, and motivates managerial risk-taking. To the extent that the passage of UD laws impedes shareholders' derivative lawsuits, thereby reducing litigation risk while increasing the cost of debt, firms might be motivated to decrease financial leverage.

It is noteworthy that managers' wealth, reputation, and job security are tied to the firm, thus, they have an inherent interest in pursuing conservative corporate policies, such as cash policy (Arena and Julio, 2015), to lower their exposure to litigation risk. If the adoption of UD laws decreases shareholder litigation risk, thereby easing managers' concerns, firms may be more willing to pursue risk-increasing corporate policies. Consistent with this argument, Lin et al. (2019) demonstrate that weaker shareholder litigation rights lead to more corporate innovative activities and Nguyen et al. (2018) report that firms decrease cash reserves and boost investment in risk-increasing but value-enhancing projects, leading to improved operating performance following the state adoption of UD laws. An improvement in firm performance is likely to induce firms to increase debt financing to exploit the benefits of interest tax shields.

Jensen and Meckling (1976) argue that firms that are prone to the free cash flow agency problems should increase dividend and/or debt financing to mitigate the adverse effects of these problems. In particular, the disciplinary power of debt that subjects firms to a fixed payment schedule and exposes them to insolvency risk if they fail to honor their debt payment obligation can substitute for corporate governance. To the extent that shareholder litigation is an effective governance mechanism, firms may increase debt financing to offset weaker shareholder litigation rights following the passage of UD laws. The opposing arguments about the relation between shareholder litigation rights and financial leverage indicate that the net effect of shareholder litigation rights on financial leverage should be determined empirically.

We begin our analysis by examining the effects of the passage of UD laws on firms' financial leverage measured by either book or market leverage using the difference-in-differences (DID) approach. This approach allows us to compare financial leverage of a treatment firm from before to after the passage of UD laws by its state of incorporation and between a treatment firm affected by the UD law and a control firm not affected by the UD law throughout the sample period. Our regression models control for variables that have power to explain financial leverage as documented in the literature, which include firm size, market-to-book ratio, tangibility, profitability, and dividend payment dummy (e.g., Rajan and Zingales, 1995; Frank and Goyal, 2009; Serfling, 2016, among others). Using a sample of U.S. public firms over the period 1985-2009, we find that the adoption of UD laws is positively related to financial leverage. Our finding is robust to both book leverage and market leverage and is insensitive to controlling for state-level political and economic conditions, corporate lobbying, and year- and firm- or industry-fixed effects, or industry-by-year and state-by-year fixed effects. The economic effect of UD laws on firm financial leverage is non-trivial. Our estimation indicates that, holding other variables

unchanged at their sample means, the adoption of UD laws leads to an increase in book (market) leverage by 0.011 (0.018), which is equivalent to 5.37% (8.65%) of its sample mean.

The DID approach is grounded on the premise that absent the passage of UD laws, the financial leverage of the treatment and control firms should evolve in a similar way (i.e., the parallel assumption). If the treatment and control firms are systematically different and their financial leverage evolves in different ways even in the absence of the passage of UD laws, our documented results will be invalid. To ensure that our results capture the effect of the adoption of UD laws rather than the systematic differences between the treatment and control firms, we use the propensity score matching (PSM) approach to identify control firms that are similar to the treatment firms along several observable dimensions. We then rerun the DID analysis with the propensity score-matched sample but our finding persists.

One may be concerned that both firm financial leverage and state adoption of UD laws follow time trends, implying a spurious rather than a causal relation between the two. Intuitively, if time trends drive the relation between UD laws adoption and firm capital structures, we should also observe an increase in financial leverage before the adoption of UD laws. Employing a dynamic model to examine the timing of the effect of UD laws adoption on financial leverage, we find that financial leverage increases following the passage of UD laws but not before that. In another analysis, we find that our results are more pronounced for firms that face greater shareholder litigation threats ex ante. Taken together, the evidence rules out the possibility that our finding is due to time trends.

Financially constrained firms typically have insufficient internally generated cash flows and limited access to external debt markets. Since shareholder litigation may result in a cash

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settlement that reduces the cash available to meet debt payment obligation, it is likely to exacerbate financial constraints and exert downward pressure on firm financial leverage. To the extent that the passage of UD laws reduces the shareholder litigation risk and motivates firms to increase debt financing, we expect the positive relation between UD laws adoption and financial leverage to be more pronounced for financially constrained firms. We examine the relation between UD laws adoption and financial leverage for firms sorted on their degrees of financial constraints and, consistent with our expectation, we find a positive relation between the adoption of UD laws and leverage of financially constrained firms; however, such relation is either negative or statistically insignificant for financially unconstrained firms.

If UD laws undermine the governance power of shareholder litigation, poorly governed firms, which are more likely to rely on shareholder litigation as a governance mechanism, may substitute it with debt as an alternative governance mechanism (Shleifer and Vishny, 1997). Nevertheless, firms with good corporate governance should be less concerned about shareholder litigation threats, implying little effect of the adoption of UD laws on these firms' financial leverage. We examine the relation between UD laws adoption and financial leverage conditional on corporate governance but find little evidence that firms substitute debt for shareholder litigation rights.

Although the state adoption of UD laws is likely to be exogenous to firms, firms can select the states of incorporation that serve their interests. Indeed, many firms choose to incorporate in Delaware to benefit from its corporation-friendly laws and tax structure (Daines, 2001), which raises a concern that our finding is confounded by the Delaware effect. To alleviate this self-selection bias concern, we exclude firms incorporated in Delaware from our sample and rerun the financial leverage regressions, but our results continue to hold.

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During our sample period, some states adopted other laws and regulations, such as the Business Combinations laws (BC laws) and Poison Pill legislation, which might also affect firm financial leverage. The Private Securities Litigation Reform Act of 1995 (PSLRA), which hinders shareholders from initiating lawsuits, was also adopted during the sample period. To alleviate a concern that the adoption of these laws and regulations confounds our results, we control for their adoption in our analysis, but the results are essentially unchanged. We further consider a possibility that as UD laws weaken shareholder litigation rights, shareholders may choose to file securities class action lawsuits instead. We control for the annual number of securities class action lawsuits in the firms' states of incorporation in the analysis, but our findings persist.

Our research adds to the literature in two important ways. First, our research contributes to the capital structure literature. Recent research finds that the adoption of UD laws leads to an increase in both the cost of debt (Ni and Yin, 2018) and the cost of equity (Houston, Lin, and Xie, 2018). Thus, the net effect of the UD laws adoption on corporate financing choices, hence capital structures, is unclear ex ante. To the best of our knowledge, our study is the first that demonstrates a causal relation between shareholder litigation rights and financial leverage. Our study also adds to a growing stream of literature that examines the relations between shareholder litigation and corporate policies, such as innovation (Lin, Liu, and Manso, 2019), cash holdings (Nguyen et al., 2018), governance and executive and compensation (Laux, 2010), corporate disclosure (Bourveau et al., 2018), or ownership structure (Crane and Koch, 2018). Although shareholder litigation is considered as a governance mechanism, its governance effectiveness remains a subject of debate in the literature. Our research provides new evidence of the negative effects of shareholder litigation on corporate policies to the debate.

Second, policy makers have recently adopted a series of legal reforms, such as the Fairness in Class Action Litigation Act of 2017 and the Lawsuit Abuse Reduction Act of 2017, that impose mandatory sanctions for frivolous legal claims that harm business operation (Nguyen et al., 2018). Our research provides new empirical evidence that may help policy makers to make informed decisions on shareholder litigation reforms. Our findings also have important implications for managers in making financial decisions and investors in considering the effects of shareholder litigation.

The rest of the paper proceeds as follows. Section 2 discusses the institutional background of UD laws, and Section 3 develops testable hypotheses. We describe the sample and variable construction in Section 4. Section 5 presents the empirical models, estimation results, and discussions. Section 6 provides additional analyses, and Section 7 concludes the paper.

2. Institutional Background of UD Laws

Whether shareholders file direct lawsuits or derivative lawsuits depends on a cause of harm and who was harmed directly. If a firm's wrongdoings, such as fraudulent disclosures or violations of federal or state securities laws, caused direct harm to its shareholders, the shareholders would file a direct lawsuit. Direct lawsuits can be initiated by a single shareholder, while the involvement of multiple shareholders leads to securities class action lawsuits. If the acts of directors or officers harmed the company and affected shareholders' wealth indirectly, shareholders would file derivative lawsuits against directors or officers on behalf of corporations. Derivative litigation is typically brought for the breach of fiduciary duties against directors or officers in cases of mergers and acquisitions, insider trading, appraisal rights, accounting issues, executive compensation, etc.

To file a derivative lawsuit, shareholders must demand that the board initiate the lawsuit against directors or officers. Prior to UD laws, the court provided a futility exception to the demand requirement. That is, shareholders could meet the demand requirement by either asking the board to take corrective actions or alleging particularized facts showing the futility of demand. In case shareholders plead demand futility, they could commence the derivative lawsuit directly without making a demand. If shareholders ask the board to take corrective actions and the board accepts the demand, the firm has two options (Scarlett, 2012; Chen, 2017). First, the board prosecutes the action. It would enter into an investigation after providing shareholders with plans to work on the demand.[2] The firm may proceed with the lawsuit or make a settlement after that. Second, the board may attempt to solve the issue internally without relying on the court. If shareholders are not satisfied with the settlement, shareholders can go ahead with the derivative lawsuit.

If the board rejects or does not act upon the demand, shareholder plaintiffs must prove that directors or officers who refuse the demand are not independent and that the rejection is made in bad faith. If such challenge is successful, shareholders can proceed with the derivative lawsuit. Otherwise, the derivative lawsuit is most likely to be dismissed under the business judgment rule (Pinto and Branson, 2013). With respect to financial reliefs, derivative lawsuit settlements go to corporations after paying the plaintiff's attorney fees, and shareholders do not receive any financial recovery.

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[2] A special litigation committee (SLC), which consists of independent directors appointed by the board, would hire an independent law firm to investigate shareholders' claims. If the SLC concludes through their investigation that continuing the lawsuit is not in the best interests of the corporation, the board will reject the demand based on the SLC report (Fischel and Bradley, 1986; Scarlett, 2012).

Prior to the adoption of UD laws, demand futility could be alleged by shareholder plaintiffs at the stage of demand requirement. By removing this demand futility option, UD laws require shareholders to demand the board to initiate a derivative lawsuit. Derivative lawsuits typically include some directors as defendants, thus, the board is highly likely to refuse the demand. Since the board has an option to refuse derivative litigation, UD laws serve as a hurdle to derivative lawsuits.

3. Testable Hypotheses

Shareholder litigation is costly to firms. Choi et al. (2017) document that the mean settlement amount for a derivative lawsuit is $21 million, while the average settlement amount for a securities class action lawsuit is $29 million over the period 2005-2008. Karpoff, Lee, and Martin (2008) and Gande and Lewis (2009) document that a shareholder lawsuit decreases the defendant firm's value by 9%-14% around its filing date. Besides its direct costs, shareholder litigation is harmful to firm reputation (Deng et al., 2014). Jones (1980) and Romano (1991) point out that cash-rich firms are more likely to be the targets of shareholder litigation due to their payment ability, thus, firms may reduce cash holdings to discourage shareholders from initiating litigation. Moreover, firms can use debt financing to mitigate the risk of civil litigation that potentially pushes firms into bankruptcy (Spier and Sykes, 1998). Since civil litigants have junior claims in bankruptcy, debt financing can reduce both the settlement amounts and the probability of civil litigation against the firms. Ni and Yin (2018) argue that UD laws adoption weakens corporate governance, increases information asymmetry, and motivates managers to take risk, leading to a higher cost of debt. Moreover, if the passage of UD laws undermines the governance power of shareholder litigation, which potentially exacerbates managerial agency problems, self-interested

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managers may become more entrenched and reduce debt financing. The foregoing arguments lead to our first testable hypothesis as follows:

H1a: The adoption of UD laws leads to a decrease in firm financial leverage.

Deng et al. (2014) argue that shareholder litigation harms defendant firms' reputation and increases external financing costs. Since managers' wealth, reputation, and job security are tied to the firms, they have an inherent interest in following conservative corporate policies to lower their litigation risk exposure.[3] Indeed, Arena and Julio (2015) report that firms that are exposed to the risk of securities class action lawsuits are inclined to follow a conservative cash policy. If the adoption of UD laws eases managers' litigation concerns, it may motivate them to pursue risk-increasing corporate policies. Consistent with this argument, Lin et al. (2019) report a positive relation between the state adoption of UD laws and corporate innovative activities. Nguyen et al. (2018) find that firms decrease cash reserves while increasing investment in risk-increasing but value-enhancing projects following the state adoption of UD laws. These authors further report that firms' investment efficiency and the value of cash to shareholders increase following the adoption of UD laws. Improved firm performance could motivate firms to increase debt financing to exploit the benefits of interest tax shields.

Firms that are prone to the free cash flow agency problem are advised to increase dividend and/or debt financing to mitigate its adverse effects (Jensen and Meckling, 1976). In particular,

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[3] Although firms can purchase directors and officers (D&O) liability insurance to protect the defendant officers and directors from the consequences of shareholder litigation, litigation insurance may not provide full or even partial coverage in certain cases, which exposes firms to costly attorney fees (Nguyen et al., 2018). Moreover, depending on the settlements, insurance premiums may increase significantly following the lawsuits (Romano, 1988; Baker and Griffith, 2007; Boyer and Stern, 2014).

debt subjects the borrowing firms to a fixed payment schedule and exposes them to insolvency risk if they fail to honor their debt payment obligations. The disciplinary power of debt can reduce managerial discretion while pushing firms to enhance operating efficiency, which implies that debt can substitute for other corporate governance devices in disciplining managers. To the extent that shareholder litigation is an effective corporate governance mechanism, firms may choose to increase debt financing to offset weaker shareholder litigation rights following the passage of UD laws. These arguments suggest a positive relation between the adoption of UD laws and financial leverage due to a possible substitution between debt monitoring and shareholder litigation rights. Following the preceding discussions, we state our alternative testable hypothesis as follows:

H1b: The adoption of UD laws leads to an increase in firm financial leverage.

The opposing arguments about the relation between shareholder litigation rights and financial leverage indicate that the net effect of the adoption of UD laws on financial leverage is best determined empirically.

4. Sample and Variables Description

Our sample includes all U.S. public firms from the Compustat database for the period 1985-2009. The sample period begins four years before the first state adopted the UD law and ends four years after the last state adopted the UD law. We exclude firms from the utility and financial industries (Standard Industrial Classification (SIC) codes from 4900–4999 and 6000-6999, respectively) since these industries are highly regulated and their capital structures may have a different meaning. We further exclude firm-year observations with negative book value of equity since these firms are in extreme distress or nearly bankrupt (Graham and Rogers, 2002; Campello, 2006).[4] Finally, we winsorize the continuous variables at their 1st and 99th percentiles to avoid the

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[4] We note that Appel (2019) does not exclude these firms from his sample.

effect of outliers on the analysis results. Our final sample includes 103,477 firm-year observations of 12,165 unique firms.

Table 1 presents the timeline of the UD laws adoption by states. Georgia and Michigan are the first states that adopted the UD laws in 1989, while Rhode Island and South Dakota are the last ones that adopted the UD laws in 2005. A majority of firms affected by UD laws were incorporated in Florida, Georgia, Texas, Massachusetts, Pennsylvania, Virginia, Michigan, and Wisconsin.

[Insert Table 1 about here]

We report the summary statistics of the sample in Table 2. *UD law* is an indicator variable that takes a value of 1 for the years in which UD law is effective in a firm's state of incorporation, and 0 otherwise. *Book leverage* is the ratio of the sum of long-term debt and debt in current liabilities to the book value of assets. *Market leverage* is the ratio of the sum of long-term debt and debt in current liabilities to the market value of assets. *Size* is measured as the natural logarithm of the book value of assets. *Market-to-book* is defined as the market value of assets divided by the book value of assets. *Profitability* is the ratio of income before extraordinary items including depreciation and amortization to the book value of assets. *Tangibility* is the ratio of property, plant, and equipment to the book value of assets. *Dividend dummy* is an indicator variable that takes a value of 1 if a firm pays a common dividend in a given year, and 0 otherwise. *Modified z-score* is calculated as $1.2 \times (WCAP/AT) + 1.4 \times (RE/AT) + 3.3 \times (EBIT/AT) + (SALE/AT)$. Appendix A provides the definitions of the variables. The descriptive statistics reported in Table 2 indicate that the mean of *UD law* is 0.092, and the means (medians) of *book leverage* and *market leverage* are 0.205 and 0.208 (0.169 and 0.127), respectively.

[Insert Table 2 about here]

5. Empirical Models, Results, and Discussions

5.1. UD Laws and Financial Leverage – Baseline Regressions

We employ the DID approach to examine the effect of the UD laws adoption on firm capital structure decisions. The treatment (control) group includes firms incorporated in states that have (have not) adopted the UD laws. Our financial leverage model specification is motivated by a long line of capital structure literature (e.g., Harris and Raviv, 1991; Rajan and Zingales, 1995; Frank and Goyal, 2009; Lemmon, Roberts, and Zender, 2008; Serfling, 2016, among others) and has the following form:

$$\text{Leverage}_{ist} = \alpha + \lambda_1 * \text{UD law}_{st} + \lambda_2 \text{Size}_{ist} + \lambda_3 \text{Market-to-book}_{ist} + \lambda_4 \text{Profitability}_{ist} +$$
$$\lambda_5 \text{Tangibility}_{ist} + \lambda_6 \text{Dividend}_{ist} + \text{Firm fixed effects} + \text{Year fixed effects} + \varepsilon_{ist}, \quad (1)$$

where *Leverage*$_{ist}$ is either the book leverage or market leverage of firm *i* incorporated in state *s* in year *t*. We also control for a firm's bankruptcy likelihood by including the modified Altman's z-score in some regression models (Matsa, 2010; Agrawal and Matsa, 2013). Since capital structures can be correlated with unobserved firm characteristics and time-varying macroeconomic conditions, we additionally control for firm and year fixed effects in the regressions. Firms incorporated in the same state are subject to the same UD law at a given point in time, thus, we cluster the standard errors in this and other following regressions by states of incorporation.[5]

We report the results of the book leverage regressions in Columns 1-3 of Table 3. In Column 1, we control for firm size, market-to-book ratio, profitability, tangibility, and firm and year fixed effects. Column 2 further includes modified Altman's z-score and dividend payment.

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[5] However, clustering the standard errors by firms yields qualitatively similar results.

The coefficients of *UD law* are positive (0.011 and 0.013) and statistically significant at the 5% level in both columns. These results indicate that firms increase their book leverage following the adoption of UD laws by their states of incorporation.

[Insert Table 3 about here]

Both UD laws adoption and firm capital structures could be correlated with unobserved factors such as the economic conditions of the firms' states of incorporation, raising endogeneity concern about their relation. To alleviate this concern, we re-estimate the book leverage model augmented with the GDP growth rate and the natural logarithm of the state GDP per capita, and report the results in Column 3 of Table 3. We find that the coefficient of *UD law* remains positive (0.013) and statistically significant at the 5% level. The economic effect of UD laws adoption on financial leverage is also important. The estimated coefficients of *UD law* indicate that, holding other variables unchanged at their sample means, the adoption of UD laws increases firm book leverage by 0.011-0.013, which is equivalent to 5.37-6.34 percent of its sample mean. [6]

Columns 4-6 of Table 3 report the results of the market leverage regressions. We find a positive and statistically significant relation between UD laws adoption and market leverage, which is consistent with the results of the book leverage regressions. In terms of economic significance, the coefficient estimates of *UD law* indicate that market leverage increases by 0.018-

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[6] Firm financial leverage could be driven by industry-wide common factors. Therefore, we replace firm fixed effects with industry fixed effects or industry-by-year fixed effects, but the regression results are qualitatively unchanged (the results are not reported for brevity but are available from the authors).

0.021, which is equivalent to 8.65-10.1 percent of its sample mean, following the passage of UD laws.

5.2. Dynamic Financial Leverage Models

Firm financial leverage and the adoption of UD laws by states may follow time trends, which implies that the positive relation between the two could be spurious. If the concern about the pre-treatment trends is valid, we should also observe a positive relation between UD laws and financial leverage in the year preceding the adoption of this law. To explore this possibility, we estimate the following dynamic financial leverage model:

$$\text{Leverage}_{ist} = \alpha + \delta_1 \text{UD law}_s^{-2} + \delta_2 \text{UD law}_s^{-1} + \delta_3 \text{UD law}_s^0 + \delta_4 \text{UD law}_s^{+1} + \delta_5 \text{UD law}_s^{\geq+2} +$$

$$\mathbf{X'}_{ist}\boldsymbol{\lambda} + \text{Firm fixed effects} + \text{Year fixed effects} + \varepsilon_{ist} \qquad (2)$$

The dependent variable in Equation 2 is either *Book leverage* or *Market leverage*. The five indicator variables *UD laws^{-2}*, *UD laws^{-1}*, *UD laws^0*, *UD laws^{+1}*, and *UD laws$^{\geq+2}$* are set to one if the firm is incorporated in a state that will pass the UD law next two years, will pass the law next year, passes the law this year, passed the law one year ago, and passed the law two or more years ago, respectively. *X* is a vector of control variables including firm size, market-to-book ratio, profitability, tangibility, dividend payout dummy, modified Altman z-score, state GDP growth rate, and state GDP per capita. Columns 1-3 (Columns 4-6) of Table 4 report the results of the dynamic book (market) leverage models. We find that the coefficients of *UD laws^{-2} and UD laws^{-1}* are either negative and statistically significant or statistically insignificant while the coefficients of *UD laws^0, UD laws^{+1}, UD laws$^{\geq+2}$* are all positive and highly significant for both the book

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leverage and market leverage regressions.[7] These results suggest that the increase in firm financial leverage is related to the adoption of UD laws rather than due to time trends.

[Insert Table 4 about here]

In an additional analysis, we follow previous research (e.g., Acharya, Baghai, and Subramanian, 2014; Serfling, 2016) and regress book leverage on year fixed effects and dummy variables indicating the year relative to the UD law adoption for 21-year period centered on the adoption year. Figure 1 in the Internet Appendix provides a graphical presentation of the coefficients of the year dummies for 21 years around the UD laws adoption. The figure indicates the positive and significant effects of the UD laws on financial leverage of the treated firms only after these laws adoption.

5.3. Propensity Score Matching (PSM) Analysis

The DID approach is grounded on the parallel assumption that without the treatment, which is the UD laws adoption, the capital structures of the treatment and control firms will evolve in a similar way. This assumption will be violated if the treatment and control firms are systematically different, and their capital structures evolve in different ways even without the UD laws adoption. To alleviate this concern, in the next analysis we use the PSM approach to identify control firms that are similar to the treatment firms in the year preceding the UD laws adoption. Specifically, we

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[7] The positive coefficient of *UD laws^0* indicates an immediate effect of UD laws on firm capital structures, which could be a surprise since firms may need time to adjust their financial policy. We perform a subsample analysis and find that the coefficient of *UD laws$_s^0$* is positive and statistically significant for only the subgroup of firms with fiscal years ending after the calendar years but insignificant for the remaining subgroup, which implies a time gap between the passage of UD laws and the change in financial leverage as expected.

classify firms incorporated in the states that have adopted UD laws in a given year as treatment firms and firms incorporated in the states that have not adopted UD laws throughout the sample period as control firms. We use a probit model to estimate the likelihood of a firm being a treatment one based on firm characteristics including firm size, profitability, tangibility, and market-to-book ratio (Serfling, 2016). We identify a control firm in the same 3-digit SIC industry and has the closest propensity score in year t-1 for each treatment firm. The PSM procedure produces 689 matched pairs of treatment and control firms. Panel A of Table 5 compares the characteristics of the treatment and control firms pre- and post-matching. The statistics indicate that the differences between the treatment and control firms are statistically significant before the matching but insignificant post matching, suggesting that the PSM procedure is successful in identifying control firms.

[Insert Table 5 about here]

We rerun financial leverage regressions using the DID model and the propensity score-matched sample over the 7-year period centered on the UD laws adoption years and report the results in Panel B of Table 5. *Treatment* is an indicator variable that takes a value of 1 for a firm incorporated in a state that adopted the UD law, and 0 otherwise. *Post* is an indicator variable that takes a value of 1 for the years in which the UD law has been adopted by a given state, and 0 otherwise. We do not control for the stand-alone *treatment* variable since the regressions control for firm fixed effects. The results indicate that the coefficients of the interaction between *treatment* and *post* are positive and statistically significant in both columns, which corroborates our finding of an increase in financial leverage following the UD laws adoption. For robustness check, we rerun the analysis using the 11-year period centered on the UD laws adoption years and find virtually similar results.

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5.4. UD Laws and Optimal Leverage

Facing shareholder litigation risk, firms may maintain financial leverage below the optimal levels, thus, lower litigation risk following the adoption of UD laws could motivate firms to increase financial leverage to the optimal levels. We examine the relation between the adoption of UD laws and firms' underleverage and report the results in Table A1 in the Internet Appendix. Panel A reports the results of the underleverage linear probability regressions. The dependent variable is an underleverage indicator that takes a value of 1 if a firm's actual financial leverage is below its optimal one in a given year, and 0 otherwise. Optimal financial leverage is estimated as either the fitted value from the financial leverage regression (Columns 1 and 2) or the industry contemporaneous median financial leverage (Columns 3 and 4). The results indicate a negative relation between UD laws adoption and the likelihood of underleverage, suggesting that firms are less likely to be underleveraged following the adoption of UD laws.

In a complementary analysis, we replace the underleverage indicator with the absolute value of underleverage measured as the difference between a firm's actual leverage and either the predicted leverage estimated by the leverage regression or its respective industry's contemporaneous median leverage. Note that the subsample used in this test includes only underleveraged firm-year observations. The results reported in Panel B of Table A1 indicate that the coefficients of UD laws are negative and statistically significant, suggesting that underleveraged firms increase their leverage to the optimal levels following the passage of UD laws.

5.5. Value Effect of Increased Financial Leverage

Debt financing could increase firm value due to its interest tax shield benefits and disciplines imposed on the borrowing firms. However, the adoption of UD laws may lead to an increase in managerial agency problems and a decrease in information disclosure, thereby increasing the cost of debt (Ni and Yin, 2018). Thus, the net value effect of increased debt financing following the adoption of UD laws is unclear *ex ante*. In the next analysis, we examine the relation between financial leverage and firm value conditional on the passage of UD laws using the market-to-book value model (Fama and French, 1998; Pinkowitz et al., 2006; Dittmar and Mahrt-Smith, 2007; Bates et al., 2009) that has the following form:

$$\frac{MV_{i,t}}{BA_{i,t}} = \gamma_0 + \gamma_1 UD_{i,t} + \gamma_2 UD_{i,t} \times Financial\ leverage_{i,t} + \gamma_3 Financial\ leverage_{i,t} +$$

$$\gamma_4 \frac{E_{i,t}}{BA_{i,t}} + +\gamma_5 \frac{\Delta E_{i,t}}{BA_{i,t}} + \gamma_6 \frac{R\&D_{i,t}}{BA_{i,t}} + \gamma_7 \frac{\Delta R\&D_{i,t}}{BA_{i,t}} + \gamma_8 \frac{D_{i,t}}{BA_{i,t}} + \gamma_9 \frac{\Delta D_{i,t}}{BA_{i,t}} + \gamma_{10} \frac{I_{i,t}}{BA_{i,t}} + \gamma_{11} \frac{\Delta I_{i,t}}{BA_{i,t}} +$$

$$\gamma_{12} \frac{\Delta NA_{i,t}}{BA_{i,t}} + \gamma_{13} \frac{\Delta E_{i,t+2}}{BA_{i,t}} + \gamma_{14} \frac{\Delta R\&D_{i,t+2}}{BA_{i,t}} + \gamma_{15} \frac{\Delta D_{i,t+2}}{BA_{i,t}} + \gamma_{16} \frac{\Delta I_{i,t+2}}{BA_{i,t}} + \gamma_{17} \frac{\Delta NA_{i,t+2}}{BA_{i,t}} +$$

$$\gamma_{18} \frac{\Delta MV_{i,t+2}}{BA_{i,t}} + firm\ fixed\ effects + \varepsilon_{i,t}. \tag{3}$$

In Equation 3, the dependent variable is *market-to-book ratio*, where *MV* is the market value of assets and *BA* is the book value of assets. $X_{i,t}$ indicates a change in the level of *X* from time *t*–1 to *t*. ΔX_t indicates a change in the level of *X* from time *t*–2 to *t*. ΔX_{t+2} indicates a change in the level of *X* from time *t* to *t*+2. *Financial leverage* is either book or market leverage. *C* is cash, *E* is earnings before extraordinary items, *NA* is assets minus cash, *R&D* is research and development expenses, *I* is interest expenses, and *D* is common dividends. Other variables are defined in Appendix A. The results reported in Table A2 in the Internet Appendix indicate that the coefficients of the interactions between UD laws and financial leverage are positive and statistically significant in all

models, indicating that the change in financial leverage following the adoption of UD laws has a positive effect on firm value.[8]

6. Additional Analyses

6.1. Alternative Measures of Financial Leverage

To ensure that our results are not sensitive to the way we construct the financial leverage variables, we re-estimate the baseline and dynamic financial leverage regressions with alternative measures of financial leverage, which include *Long-term book leverage* and *Long-term market leverage*. *Long-term book leverage* is the ratio of the book value of long-term debt to the book value of assets. *Long-term market leverage* is the ratio of the book value of long-term debt to the sum of long-term debt and market value of equity. We report the results of the long-term leverage regressions and dynamic model estimation in Panels A and B, respectively, of Table A3 in the Internet Appendix. The results indicate that our findings are qualitatively similar.

Several firms in our sample maintain zero leverage during the sample period. To alleviate a concern that including zero-leverage firms biases our estimation results, we exclude firms with zero leverage from our sample and rerun the financial leverage regressions. The results reported in Table A4 of the Internet Appendix indicate that our findings are essentially unchanged.

6.2. Shareholder Litigation Threats Ex-Ante

Consistent with the argument that the passage of UD laws reduces shareholder litigation risk, which motivates firms to take more risk by increasing financial leverage, we expect the

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[8] We thank two anonymous reviewers for the suggestion to consider the value effect of the change in leverage following UD laws adoption.

positive effect of the UD laws adoption on financial leverage to be more pronounced for firms facing a higher threat of shareholder litigation ex ante. We employ the DID model to examine the effect of UD laws on financial leverage conditional on firms' shareholder litigation threats. We use a probit model and derivative lawsuit data obtained from Audit Analytics to estimate the propensity that a firm faces a derivative lawsuit in a given year (Kim and Skinner, 2012; Arena, 2018). The dependent variable in the probit model is a derivative lawsuit indicator that takes a value of 1 if a firm faces a derivative lawsuit in a given year, and 0 otherwise. We then run financial leverage regressions augmented with an interaction between *UD law* and the estimated propensity of a derivative lawsuit. The results reported in Table 6 indicate that the coefficients of the interaction between *UD law* and *litigation propensity* are positive and significant at the 1% level while the coefficients of the stand-alone *litigation propensity* are negative and highly significant. These results are consistent with our expectation.

[Insert Table 6 about here]

We note that lawsuits are observed *ex post* and the litigation propensity could be biased by the specification of the probit model used to predict a firm's litigation likelihood. To alleviate this concern, in an unreported analysis, we classify firms in the manufacturing and service industries (with 2-digit SIC codes from 20-39 and 70-89, respectively) into the high-shareholder litigation threat subgroup and firms in the remaining industries into the low-shareholder litigation threat subgroup (Francis, Philbrick, and Schipper, 1994). This industry-based classification is model-free, thus, it is not biased by the specification of the litigation probit model. We estimate the book and market leverage regression models for each subgroup and find that the coefficients of *UD law* are positive and statistically significant at the 1% level for the high-shareholder litigation threat

subgroup while the estimated coefficients of *UD law* for the low-shareholder litigation threat subgroup are statistically insignificant. This evidence further corroborates our findings.

6.3. Financial Constraints

Financially constrained firms typically have limited access to external debt markets. Although the low payment ability of these firms reduces the litigation likelihood, the consequences of litigation, if any, could be more damaging for them. Shareholder litigation may divert cash away from firms' business operations and reduce the cash available to service debt payment, thereby exacerbating their financial constraints and exerting downward pressure on firm financial leverage. Since the UD laws adoption can reduce shareholder litigation risk and motivate firms to increase debt financing, we expect the effect of UD laws adoption on financial leverage to be more pronounced for financially constrained firms. Our next analysis examines the relation between the UD laws adoption and financial leverage for subgroups of firms sorted on their degrees of financial constraints.

To ensure the robustness of our results, we employ different measures of financial constraints including S&P long-term credit ratings (Faulkender and Petersen, 2006), dividend payment (Fazzari et al., 1988), and size-age (SA) index (Hadlock and Pierce, 2010). The size-age (SA) index is defined as -0.737 × AT + 0.043 × AT^2 – 0.040 × Age, where *AT* is the natural logarithm of inflation-adjusted book assets, and *Age* is the number of years the firm has been included in Compustat. Firms without (with) long-term credit ratings are considered financially constrained (unconstrained). We define firms in the top (bottom) tercile of the SA index as financially constrained (unconstrained). We classify non-dividend payers (dividend payers) or non-rated (rated) firms into the financially constrained (unconstrained) subgroup.

Panel A of Table 7 reports the results of the book leverage regressions for the subgroups of firms sorted on the measures of financial constraints. The coefficients of *UD law* are positive (ranging from 0.01 to 0.016) and statistically significant for financially constrained firms across all three financial constraint measures. In contrast, the coefficients of *UD law* for financially unconstrained firms are either negative or statistically insignificant. Panel B of Table 7 reports the results of the market leverage regressions for subgroups of firms sorted on the degrees of financial constraints. Consistent with the book leverage regression results, we find that the positive relation between the adoption of UD laws and market leverage is generally more pronounced for financially constrained firms.[9]

It is worth noting that following the adoption of UD laws, firms increase risk-taking (Nguyen et al., 2018; Lin, Liu, and Manso, 2019) that would increase both the cost of debt and the value of the firm. Since debt financing increases financial distress risk and costs, our findings that i) financially constrained firms increase debt financing more than financially unconstrained firms do, ii) firms increase leverage to their optimal levels, and iii) leverage is positively related to firm value conditional on the adoption of UD laws collectively suggest that the marginal benefits of

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[9] In an unreported analysis, we use the Whited-Wu (2006) index as another financial constraint measure and find qualitatively similar results. However, since the construction of the Whited-Wu index includes long-term debt measure and our dependent variable is financial leverage, the results could be driven by a mechanical relationship between the two (the results are available from the authors upon request).

debt dominate its marginal costs. Overall, our evidence is consistent with the trade-off theory of capital structure.[10]

6.4. Corporate Governance

To the extent that shareholder litigation acts as a corporate governance device, the passage of UD laws weakens the governance power of shareholder litigation, which may motivate firms to use debt as a substitute governance mechanism (Shleifer and Vishny, 1997). The substitution effect, if any, should be more pronounced for firms with poor corporate governance since shareholder litigation is arguably more important for these firms. In contrast, since derivative lawsuits presumably aim at improving corporate governance, the substitution effect between debt and shareholder litigation rights should be less important for well-governed firms.

We run financial leverage regressions augmented with corporate governance measures proxied by institutional ownership and hostile takeover index and their interactions with *UD law*.[11] The hostile takeover index constructed by Cain et al. (2017) measures firm-level takeover susceptibility. By construction, a larger (smaller) institutional ownership or higher (lower) hostile takeover index score implies better (worse) corporate governance. The results of the book and market leverage regressions reported in Table 8 indicate that the coefficients of *UD law* remain

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[10] We also consider a possible increase in information asymmetry following the adoption of UD laws as an alternative explanation for our results. However, we find that firms increase corporate disclosure following the adoption of UD laws, which is consistent with the finding of Bourveau et al. (2018), implying that information asymmetry is not likely to be the driver of our results.

[11] Our findings are qualitatively unchanged if we use the GIM antitakeover index developed by Gompers, Ishii, and Metrick (2003) or BCF entrenchment index constructed by Bebchuk, Cohen, and Ferrell (2009) instead of the hostile takeover index.

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positive and statistically significant in all models. The coefficients of the stand-alone hostile takeover index and institutional ownership are negative and highly significant. Finally, the coefficients of the interaction between *UD law* and governance measures are statistically insignificant for book leverage models. However, the coefficients of the interaction between *UD law* and hostile takeover index (institutional ownership) are negative (positive) and statistically significant for the market leverage models, indicating mixed results. Moreover, since a change in market leverage could be affected by the change in the market value of equity rather than debt financing, we refrain from drawing a conclusion from this market leverage analysis. Overall, our evidence based on the results of the book leverage regressions does not support the argument that firms increase debt financing as a governance mechanism substitute for shareholder litigation rights.

[Insert Table 8 about here]

6.5. Other Laws, Regulations, and Securities Class Action Lawsuits

Our results could be confounded by the state adoption of other laws and regulations during the sample period, such as the Business Combinations laws (BC laws) and Poison Pill legislation (PP laws), which can affect firms' financing decisions. The Private Securities Litigation Reform Act of 1995 (PSLRA), which was adopted during our sample period, also hinders shareholders' initiation of lawsuits since it requires the plaintiffs to present evidence of managers intentionally deceiving shareholders (Nguyen et al., 2018). To mitigate concern about possible confounding effects of these laws, we rerun the financial leverage regressions while controlling for the state adoption of BC laws, PP laws, and PSLRA. We define *BC laws* (*PP laws*) as an indicator variable that takes a value of 1 for a state-year in which the BC law (PP law) is effective, and 0 otherwise.

PSLRA dummy is an indicator that takes a value of 1 for the years in which PSLRA is effective, and 0 otherwise. The estimation results for book leverage and market leverage reported in Columns 1 and 3, respectively, of Table 9 indicate that the coefficients of *UD law* remain positive and significant at the 1% and 5% levels, suggesting that our findings are robust to controlling for the adoption of the BC laws, PP laws, and PSLRA.

Corporate policies could also be affected by the state adoption of other antitakeover laws during our sample period, such as the Control Share Acquisition laws (CS laws), Fair Price laws (FP laws), and Directors' Duties laws (DD laws) (Karpoff and Wittry, 2018). To alleviate this concern, we further control for the state adoption of these antitakeover laws in the leverage regressions and report the results in Columns 2 and 4 of Table 9. The results indicate that the coefficients of *UD Law* remain positive and highly significant.

[Insert Table 9 about here]

Faced with obstacles to initiating derivative lawsuits following the adoption of UD laws, shareholders may resort to securities class action lawsuits as an alternative mechanism to address managerial misconduct (Nguyen et al., 2018). Cheng et al. (2010) observe that securities class action lawsuits with institutional investors as lead plaintiffs are more likely to succeed and typically have greater settlements than those with individual lead plaintiffs do. Thus, the passage of UD laws may increase the number of securities class action lawsuits, particularly those lead by institutional investors. To explore a possibility that shareholders may substitute securities class action lawsuits for derivative lawsuits, we obtain the data on securities class action lawsuits and their lead plaintiffs for the period 1996-2015 from Cornerstone Research and Stanford Law School and examine their relations with the adoption of UD laws. Similar to Nguyen et al. (2018), we do

not find a significant relation between the adoption of UD laws and the number of securities class action lawsuits or the ones with institutional investors as lead plaintiffs (the results are not reported for brevity but are available from the authors). This result is inconsistent with a direct substitution between derivative lawsuits and securities class action lawsuits. We further run financial leverage regressions that control for the frequency of securities class action lawsuits measured as the natural logarithm of either the number of securities class action lawsuits or the number of securities class action lawsuits initiated by institutional investors in a firm's state of incorporation in a given year. The results reported in Table A5 in the Internet Appendix indicate that our findings continue to hold.

6.6. Exclusion of Firms Incorporated in Delaware

Many firms choose to incorporate in Delaware to benefit from its corporation-friendly laws and tax structure (Daines, 2001), which might raise a concern that our observed positive relation between UD laws adoption and financial leverage is confounded by the Delaware effect. To mitigate this concern, we rerun financial leverage regressions using a subsample that excludes firms incorporated in Delaware and report the results in Table A6 in the Internet Appendix. We find that the coefficients of UD laws are positive and statistically significant at the 1% and 5% levels in all models, suggesting that our finding is not biased by the Delaware effect. We further run the dynamic financial leverage regressions for a subsample that excludes firms incorporated in Delaware. The results reported in Panel C of Table A6 in the Internet Appendix indicate that our results are essentially unchanged.[12]

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[12] In 2003, Delaware courts lowered hurdles to derivative lawsuits by amending Section 220 ("Inspection of Books and Records") of the Delaware General Corporation Law. Since this Delaware's judicial reform encouraged

6.7. Placebo Tests

Our analyses thus far have accounted for state-level economic conditions such as GDP growth and GDP per capita and other laws and regulations, which may correlate with firm capital structures. However, it is possible that our finding of a positive relation between the passage of UD laws and financial leverage is driven by other unobserved shocks that took place around the time of the state adoption of UD laws. To address this concern, in the next robustness check, we run placebo tests based on counterfactual state adoption of UD laws using the framework suggested by Cornaggia et al. (2015). Specifically, we first obtain the empirical distribution of the UD laws adoption years by states during the sample period 1985-2009. We then randomly assign states into the UD laws adoption years (without replacement) following the empirical distribution. This approach maintains the distribution of UD laws adoption years but disrupts the proper assignment of UD laws adoption years to states. Since the randomization process counterfactually assigns non-adopted states to actual adoption years, it should weaken the positive relation between the UD laws adoption and financial leverage. The results reported in Table A7 in the Internet Appendix indicate a negative relation between *UD_placebo_dummy* and financial leverage, which is inconsistent with our findings based on true UD laws adoption.

To strengthen the statistical inference of the placebo test, we repeat the randomization process of assigning states to UD laws adoption years 1,000 times. We then rerun financial

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shareholders to pursue derivative litigation (Qi and Pederson, 2019), we investigate the effect of this Delaware's reform on financial leverage and whether our results are robust to controlling for this reform. In unreported results, we find that the 2003 Delaware litigation law is negatively associated with financial leverage and that our findings remain robust to controlling for the reform.

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leverage regressions using the randomly generated UD laws adoption data and obtain the *t*-statistics of the *UD_placebo_dummy* variable. We find that most of the coefficients of *UD_placebo_dummy* are either negative or statistically insignificant. This evidence indicates that the positive relation between the UD laws adoption and financial leverage is not likely to be driven by the placebo effects.

6.8. Net Debt Issues

The change in financial leverage could be driven by either the change in debt or equity financing or both. To ascertain that our results are driven by an increase in firms' debt financing rather than a decrease in equity value or equity financing, we examine the effect of the UD laws adoption on net debt issues. We regress net debt issues on *UD law*, financing deficit (*FD*), and other control variables but augment the regression with an interaction between *UD law* and *FD* (Shyam-Sunder and Myers, 1999; Frank and Goyal, 2003; Malmendier, Tate, and Yan, 2011). *Net debt issues* is calculated as the difference between long-term debt issuance and long-term debt reduction, scaled by the book value of assets. *FD* is measured as cash dividends plus net investments plus the change in working capital, less cash flow, all scaled by the book value of assets. The interaction *UD law×FD* captures the effect of the UD laws adoption on corporate debt financing conditional on a firm's financing deficit. The estimation results reported in Table 10 indicate that the coefficients of the interaction terms are positive (ranging from 0.077 to 0.087) and statistically significant at the 1% level, suggesting that firms with financing deficit use more debt financing following the UD laws adoption. In an unreported analysis, we run net equity issues regressions augmented with an interaction between *UD law* and financing deficit but do not find significant results.

6.9. Other Robustness Checks

Nguyen et al. (2018) report that firms increase investment in value-enhancing projects following the passage of UD laws. Since financial leverage is closely related to corporate investments, it is possible that the adoption of UD laws affects both financial leverage and investment simultaneously. To explore this possibility, we estimate investment and financial leverage simultaneous equation using the two-stage instrumental variable (IV) regression method. We adopt the classic investment model in which investment, measured as the ratio of capital expenditures to the book value of assets, is a function of lagged Tobin's Q, contemporaneous cash flows, and firm- and year-fixed effects (e.g., Fazzari et al., 1988). Table A8 in the Internet Appendix reports the second-stage estimation results of the financial leverage IV regressions. We find that the positive relation between UD laws adoption and financial leverage remains unchanged. This evidence also implies that the effect of the UD laws adoption on financial leverage extends beyond its effect on corporate investment. Moreover, the negative relation between investment and financial leverage is consistent with the evidence documented in the literature (e.g., Lang, Ofek, and Stulz, 1996).

Shareholders concerned with weaker litigation rights following the adoption of UD laws may push firms to increase payouts, which could mechanically increase financial leverage if firms use stock repurchases as a form of payout. To rule out this alternative explanation, we rerun financial leverage regressions that control for dividends, stock repurchases, or total payouts and report the results in Table A9 in the Internet Appendix. We find that our results are virtually unchanged.

Firms incorporated in the same state are likely to be affected by the same unobserved state-level shocks. Therefore, we re-estimate the financial leverage regressions that control for the state of incorporation and year fixed effects, or state of incorporation-by-year fixed effects. The estimation results reported in Table A10 in the Internet Appendix indicate that our findings persist.

The adoption of UD law could reflect the political condition of a state, and firms may choose states of incorporation that have a political environment favorable for their business operation. This possibility indicates the need to control for state political conditions. We rerun financial leverage regressions that control for state political balance proxied by the state-level fraction of the Democratic Party members in the House of Representatives in a given year and report the results in Table A11 in the Internet Appendix. The results indicate that the coefficients of *UD law* remain positive and statistically significant at the 1% level in all models.

Although the adoption of UD law is beyond the control of a single firm, firms may lobby states for the adoption of UD laws to reduce shareholder litigation risk, which raises concern about the exogeneity of the UD laws adoption. It is noteworthy that among the states that adopted UD laws, Pennsylvania is the only state in which the law was adopted by its Supreme Court, which is less susceptible to corporate lobbying. Thus, to mitigate a concern about corporate lobbying that may affect our findings, we run financial leverage regressions for a subsample of firms incorporated in Pennsylvania and its bordering states including Delaware, Maryland, New Jersey, New York, Ohio, and West Virginia. Since none of the states that border Pennsylvania adopted the UD laws during the sample period, firms incorporated in these states are used as control firms in this analysis. The results reported in Panel A of Table A12 in the Internet Appendix indicate that our findings are qualitatively unchanged.

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We further use the PSM approach to identify control firms that are similar to the firms incorporated in Pennsylvania (i.e., treatment firms) in the year preceding the UD laws adoption. We re-estimate the financial leverage regressions using the DID model and the propensity score-matched sample over the 7-year or 11-year period centered on the UD law adoption year of Pennsylvania and report the results in Panel B of Table A12. The results indicate that the coefficients of the interaction between *treatment* and *post* are positive and statistically significant in all four columns, which corroborate our finding of an increase in financial leverage following the UD laws adoption.

Although increasing financial leverage could increase firm value and benefit shareholders, it does not necessarily serve the interest of managers since higher leverage also heightens financial distress and insolvency risk. However, managers could be motivated to increase debt financing following the adoption of UD laws if their interests are aligned with those of the shareholders. In the next robustness check, we examine the relation between UD laws adoption and financial leverage conditional on the alignment of interest between managers and shareholders proxied by managerial stock ownership. Larger managerial stock ownership implies a closer interest alignment between managers and shareholders. We obtain CEO stock ownership data from the Execucomp database. We run financial leverage regressions augmented with managerial stock ownership and its interaction with *UD Law* and report the results in Table A13 of the Internet Appendix. Since Execucomp reports compensation data for managers of only S&P 1500 firms from 1992 and many firms do not report CEO ownership, the regression sample is small. Nevertheless, we find that the coefficients of the interactions between managerial ownership and *UD law* are positive and statistically significant, indicating that the positive effects of UD laws

adoption of corporate leverage are more pronounced for firms with closer alignment of interest between managers and shareholders.

In the final robustness check, we exploit the U.S. Ninth Circuit Court of Appeals' ruling of July 2, 1999 (re: Silicon Graphics Inc. Securities Litigation) as an exogenous change to the stringency of securities class action litigation standards to identify the relation between shareholder litigation rights and financial leverage. The ruling increases the hurdle for bringing securities class action litigation against corporations headquartered in the Ninth Circuit by mandating plaintiffs to prove clear evidence of intentional managerial misbehavior. This higher requirement decreases securities class action risk for firms headquartered in the Ninth Circuit significantly (Pritchard and Sale, 2005; Huang, Roychowdhury and Sletten, 2019). Crane and Koch (2018) report that the number of class action lawsuits in the Ninth Circuit decreased by 43% following the ruling while the number of class action lawsuits increased by 14% in other circuits. We expect that lower securities class action threat following this ruling leads to higher financial leverage.

We run leverage regressions for a subsample of firms headquartered in states under the jurisdiction of the U.S. Ninth Circuit Court of Appeals and their neighboring states. Since no neighboring state was affected by a similar ruling during the sample period, firms located in these states are used as controls in the regressions. We construct the *Ninth Circuit Court Ruling* indicator variable, which is set to one for the years in which U.S. Ninth Circuit Court of Appeals' ruling is effective in a firm's headquartered states (including Alaska, Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon, and Washington), and zero otherwise. The estimation results and reported in Table A14 in the Internet Appendix indicate that the coefficients of *Ninth Circuit Court Ruling* are positive (ranging from 0.01 to 0.018) and highly significant, suggesting that firms

increase financial leverage following a decrease in shareholder litigation risk. These results are consistent with our finding based on the UD laws adoption.

7. Conclusions

We use the staggered adoption of UD laws by U.S. states over the period 1989-2005 as a quasi-natural experiment to examine the relation between shareholder litigation rights and firm capital structures. We find that firms increase financial leverage following the passage of UD laws that weakens shareholder litigation rights. Our finding is robust to both book and market leverage measures and is not sensitive to controlling for state political and economic conditions, potential corporate lobbying, and industry, firm, and year fixed effects. Our results are unlikely to be confounded by the passage of other laws and regulations during the sample period. Moreover, the positive relation between UD laws and financial leverage is more pronounced for firms that face higher shareholder litigation risk ex ante and financially constrained firms. We investigate the possibility that firms increase debt financing as a governance device to substitute for weaker shareholder litigation rights but find little evidence in support of this argument. Overall, our evidence indicates that the adoption of UD laws reduces shareholder litigation risk, motivating firms to use more debt financing in their capital structures that enhance firm value.

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Appendix A: Variables Definition

Variable name	Construction	Data source
Book leverage	The ratio of book value of short-term and long-term debts to book value of assets.	Compustat
Dividend dummy	An indicator equals 1 if a firm pays a common dividend in a given year, and 0 otherwise.	Compustat
Market leverage	The ratio of the book value of debt to the market value of assets.	Compustat
Market-to-book ratio	The ratio of the market value of assets to the book value of assets.	Compustat
Modified Z-Score	The modified Altman's z-score calculated as $(1.2 \times (wcap/at) + 1.4 \times (re/at) + 3.3 \times (ebit/at) + (sale/at))$.	Compustat
Political balance	The state-level fraction of the Democratic Party members in the House of Representatives in a given year.	U.S. Census Bureau
Profitability	The ratio of income before extraordinary items including depreciation and amortization to the book value of assets.	Compustat
Size	The natural logarithm of the book value of assets.	Compustat
Size-age index	The size-age (SA) index is defined as: SA index = $-0.737 \times AT + 0.043 \times AT^2 - 0.040 \times Age$, where AT is the natural logarithm of inflation-adjusted book assets, and Age is the number of years the firm has been included in Compustat.	Compustat

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State GDP Growth	The state-level GDP growth rate over the fiscal year.	U.S. Bureau of Economic Analysis
State GDP Per Capita	The natural logarithm of a state GDP per capita.	U.S. Bureau of Economic Analysis
Tangibility	The ratio of property, plant, and equipment to the book value of assets.	Compustat
UD law	An indicator variable that takes a value of 1 for the firms incorporated in state has passed the UD law in a given year, and 0 otherwise.	Hand collection

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Table 1: Universal Demand (UD) Laws Adoption

Table 1 lists the states that adopted UD laws over the sample period 1985-2009.

UD Law Adoption Year	State
1989	Georgia
1989	Michigan
1990	Florida
1991	Wisconsin
1992	Montana
1992	Virginia
1992	Utah
1993	New Hampshire
1993	Mississippi
1995	North Carolina
1996	Arizona
1996	Nebraska
1997	Connecticut
1997	Maine
1997	Pennsylvania
1997	Texas
1997	Wyoming
1998	Idaho
2001	Hawaii
2003	Iowa
2004	Massachusetts
2005	Rhode Island
2005	South Dakota

Table 2: Summary Statistics

Table 2 reports the descriptive statistics of the samples of financial leverage models. *UD law* is an indicator variable that takes a value of 1 for the years in which UD law is effective in a firm's state of incorporation, and 0 otherwise. *Book leverage* is the ratio of the book value of debt to the book value of assets. *Market leverage* is the ratio of the book value of debt to the market value of assets. *Size* is measured as the natural logarithm of the book value of assets. *Market-to-book* is defined as the market value of assets divided by the book value of assets. *Profitability* is the ratio of income before extraordinary items including depreciation and amortization to the book value of assets. *Tangibility* is the ratio of property, plant, and equipment to the book value of assets. *Dividend dummy* is an indicator variable that takes a value of 1 if a firm pays dividend in a given year, and 0 otherwise. *Modified Z-Score* is calculated as $1.2 \times (wcap/at) + 1.4 \times (re/at) + 3.3 \times (ebit/at) + (sale/at)$. Appendix A provides the definitions of the variables.

Variable	N	Mean	P25	Median	P75	Std. Dev.
UD Law	103,477	0.092	0.000	0.000	0.000	0.289
Book Leverage	103,477	0.205	0.021	0.169	0.335	0.191
Market Leverage	103,477	0.208	0.010	0.127	0.337	0.230
Size	103,477	4.553	3.012	4.446	5.992	2.158
Market-to-book	103,477	2.207	1.074	1.467	2.341	2.262
Profitability	103,477	0.027	-0.004	0.101	0.166	0.274
Tangibility	103,477	0.270	0.091	0.206	0.387	0.224
Dividend dummy	103,477	0.259	0.000	0.000	1.000	0.438
Modified Z-Score	103,477	0.753	0.390	1.706	2.634	3.797

Table 3: UD Laws and Financial Leverage: Baseline Regressions

Table 3 reports the results of the financial leverage regressions. The dependent variable is either *Book leverage* or *Market leverage*. *UD law* is an indicator variable that takes a value of 1 for the years in which UD law is effective in a firm's state of incorporation, and 0 otherwise. *Book leverage* is the ratio of the book value of debt to the book value of assets. *Market leverage* is the ratio of the book value of debt to the market value of assets. *Size* is measured as the natural logarithm of the book value of assets. *Market-to-book* is defined as the market value of assets divided by the book value of assets. *Profitability* is the ratio of income before extraordinary items including depreciation and amortization to the book value of assets. *Tangibility* is the ratio of property, plant, and equipment to the book value of assets. *Dividend dummy* is an indicator variable that takes a value of 1 if a firm pays dividend in a given year, and 0 otherwise. *Modified Z-Score* is calculated as $1.2 \times (wcap/at) + 1.4 \times (re/at) + 3.3 \times (ebit/at) + (sale/at)$. Other variables are defined in Appendix A. *t*-statistics based on heteroscedasticity-robust standard errors clustered by states of incorporation are reported in parentheses. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Book Leverage			Market Leverage		
	(1)	(2)	(3)	(4)	(5)	(6)
UD Law	0.011**	0.013**	0.013**	0.018***	0.020***	0.021***
	(1.99)	(2.10)	(2.05)	(2.77)	(3.09)	(2.98)
Size	0.036***	0.047***	0.047***	0.039***	0.050***	0.050***
	(28.04)	(37.62)	(37.86)	(27.58)	(36.97)	(36.93)
Market-to-book	-0.006***	-0.006***	-0.006***	-0.019***	-0.018***	-0.018***
	(17.88)	(14.59)	(14.77)	(15.98)	(14.86)	(15.00)
Profitability	-0.080***	0.002	0.002	-0.122***	-0.051***	-0.051***
	(10.74)	(0.37)	(0.41)	(14.01)	(9.58)	(9.48)
Tangibility	0.215***	0.202***	0.202***	0.219***	0.208***	0.208***
	(26.95)	(25.33)	(25.37)	(22.72)	(20.71)	(20.85)
Dividend dummy		-0.042***	-0.042***		-0.068***	-0.068***
		(17.49)	(17.34)		(16.68)	(16.46)
Modified Z-Score		-0.011***	-0.011***		-0.009***	-0.009***
		(19.86)	(20.05)		(15.62)	(15.80)
State GDP growth			-0.075***			-0.266***
			(3.86)			(8.40)
State GDP per capita			-0.013			-0.038
			(0.57)			(1.64)
Intercept	-0.046***	-0.097***	0.047	-0.012	-0.053***	0.355
	(6.71)	(14.35)	(0.18)	(1.06)	(4.37)	(1.43)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	103,477	103,477	103,477	103,477	103,477	103,477
Adjusted R^2	0.64	0.65	0.65	0.65	0.66	0.66

Table 4: UD Laws and Financial Leverage – Dynamic Models

Table 4 reports the results of the dynamic financial leverage regressions. The dependent variable is either *Book leverage* or *Market leverage*. *Book leverage* is the ratio of the book value of debt to the book value of assets. *Market leverage* is the ratio of the book value of debt to the market value of assets. The five indicator variables *UD laws$_s^{-2}$*, *UD laws$_s^{-1}$*, *UD laws$_s^0$*, *UD laws$_s^{+1}$*, and *UD laws$_s^{\geq+2}$* are set to one if the firm is incorporated in a state that will pass the UD law next two years, will pass the UD law next year, passes the law this year, passed the law one year ago, and passed the law two or more years ago, respectively. Other variables are defined in Appendix A. *t*-statistics based on heteroscedasticity-robust standard errors clustered by states of incorporation are reported in parentheses. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Variable	Book Leverage			Market Leverage		
	(1)	(2)	(3)	(4)	(5)	(6)
UD Law $^{-2}$	-0.003	-0.001	-0.001	-0.015*	-0.013*	-0.012*
	(0.65)	(0.11)	(0.09)	(1.82)	(1.67)	(1.68)
UD Law $^{-1}$	0.001	0.003	0.003	-0.009	-0.006	-0.006
	(0.11)	(0.74)	(0.76)	(1.25)	(0.76)	(0.83)
UD Law ^{0}	0.012**	0.015***	0.016***	0.007	0.010	0.011
	(2.33)	(2.94)	(2.87)	(0.86)	(1.43)	(1.57)
UD Law $^{+1}$	0.011*	0.014**	0.013**	0.007	0.010	0.008
	(1.74)	(2.26)	(2.14)	(0.95)	(1.52)	(1.29)
UD Law $^{\geq+2}$	0.010	0.014*	0.014*	0.017**	0.020**	0.021**
	(1.32)	(1.74)	(1.71)	(1.99)	(2.33)	(2.29)
Size	0.036***	0.047***	0.047***	0.039***	0.050***	0.050***
	(27.99)	(37.53)	(37.78)	(9.78)	(36.82)	(36.77)
Market-to-book	-0.006***	-0.006***	-0.006***	-0.019***	-0.018***	-0.018***
	(17.87)	(14.59)	(14.77)	(9.42)	(14.85)	(15.00)
Profitability	-0.080***	0.002	0.002	-0.122***	-0.051***	-0.051***
	(10.73)	(0.36)	(0.40)	(6.25)	(9.61)	(9.52)
Tangibility	0.215***	0.202***	0.202***	0.219***	0.208***	0.208***
	(26.98)	(25.36)	(25.40)	(16.41)	(20.77)	(20.92)
Dividend dummy		-0.042***	-0.042***		-0.068***	-0.068***
		(17.43)	(17.28)		(16.77)	(16.54)
Modified Z-Score		-0.011***	-0.011***		-0.009***	-0.009***
		(19.84)	(20.04)		(15.68)	(15.87)
State GDP growth			-0.075***			-0.268***
			(3.75)			(8.16)
State GDP per capita			-0.014			-0.036
			(0.58)			(1.53)
Intercept	-0.046***	-0.097***	0.049	-0.011	-0.053***	0.334
	(6.66)	(14.20)	(0.19)	(0.63)	(4.32)	(1.32)

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Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	103,477	103,477	103,477	103,477	103,477	103,477
Adjusted R^2	0.64	0.65	0.65	0.65	0.66	0.66

Table 5: UD Laws and Financial Leverage – Propensity Score Matching

Table 5 reports the results of the financial leverage regressions using propensity score-matched sample over a 7-year period centered on the UD laws adoption years. The dependent variable in Panel B is either *Book leverage* or *Market leverage*. *Book leverage* is the ratio of the book value of debt to the book value of assets. *Market leverage* is the ratio of the book value of debt to the market value of assets. *Treatment* is an indicator variable that takes a value of 1 for the firms incorporated in the state that has adopted the UD law, and 0 otherwise. *Post* is an indicator variable that takes a value of 1 for the years in which the UD law has been adopted by a given state, and 0 otherwise. Other variables are defined in Appendix A. *t*-statistics based on heteroscedasticity-robust standard errors clustered by states of incorporation are reported in parentheses in Panel B. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Differences in Characteristics of Treatment and Control Firms

	Pre-Match			Post-Match		
Variable	Treatment	Control	Difference	Treatment	Control	Difference
Firm size	4.125	4.467	-0.342***	4.772	4.850	-0.078
			(4.81)			(1.13)
Market-to-book ratio	2.257	2.784	-0.527**	1.917	1.900	0.017
			(1.99)			(0.44)
Profitability	0.062	0.028	0.034**	0.036	0.039	-0.003
			(2.18)			(1.17)
Tangible assets	0.326	0.274	0.052***	0.313	0.296	0.017
			(6.55)			(1.57)

Panel B: UD Laws and Financial Leverage - Propensity Score-Matched Samples

	Book Leverage	Market Leverage
Variable	(1)	(2)
Treatment × Post	0.007*	0.013**
	(1.72)	(2.01)
Post	-0.005	0.001
	(1.46)	(0.07)
Size	0.084***	0.089***
	(17.94)	(11.16)
Market-to-book	-0.007***	-0.036***
	(3.86)	(11.07)
Profitability	0.047*	-0.023
	(1.94)	(1.27)
Tangibility	0.205***	0.228***
	(9.28)	(7.89)
Dividend dummy	-0.023***	-0.053***
	(4.05)	(4.47)
Modified Z-Score	-0.039***	-0.042***
	(13.43)	(8.55)

State GDP growth	-0.049	-0.199***
	(0.74)	(2.78)
State GDP per capita	-0.118**	-0.092
	(2.20)	(1.32)
Intercept	1.101*	0.911
	(1.92)	(1.23)
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Number of observations	8,420	8,420
Adjusted R^2	0.78	0.79

Table 6: UD Laws and Financial Leverage – Shareholder Litigation Threats

Table 6 reports the results of the financial leverage regressions augmented with firms' shareholder litigation threats. The dependent variable is either *Book leverage* or *Market leverage*. *UD law* is an indicator variable that takes a value of 1 for the years in which UD law is effective in a firm's state of incorporation, and 0 otherwise. *Litigation propensity* is the propensity of a firm facing a derivative lawsuit in a given year estimated by a probit model. Other variables are defined in Appendix A. *t*-statistics based on heteroscedasticity-robust standard errors clustered by states of incorporation are reported in parentheses. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Variable	Book Leverage			Market Leverage		
	(1)	(2)	(3)	(4)	(5)	(6)
UD Law	0.004	0.005	0.005	0.012*	0.013*	0.013*
	(0.61)	(0.74)	(0.71)	(1.88)	(1.94)	(1.86)
UD Law × Litigation propensity	1.226***	1.554***	1.549***	1.150***	1.476***	1.448***
	(2.69)	(2.85)	(2.84)	(2.99)	(3.14)	(3.07)
Litigation propensity	-1.945***	-2.371***	-2.366***	-1.770***	-2.215***	-2.188***
	(16.17)	(19.38)	(19.79)	(18.22)	(16.03)	(16.18)
Size	0.042***	0.054***	0.054***	0.046***	0.058***	0.058***
	(32.89)	(45.56)	(45.31)	(28.61)	(40.83)	(40.38)
Market-to-book	-0.007***	-0.007***	-0.007***	-0.023***	-0.022***	-0.022***
	(11.63)	(9.78)	(9.81)	(11.51)	(10.95)	(10.99)
Profitability	-0.117***	0.009***	0.009***	-0.178***	-0.071***	-0.070***
	(11.15)	(3.13)	(3.23)	(14.28)	(13.50)	(13.47)
Tangibility	0.187***	0.163***	0.164***	0.200***	0.181***	0.181***
	(23.77)	(19.69)	(19.72)	(20.65)	(17.00)	(17.23)
Dividend dummy		-0.047***	-0.047***		-0.068***	-0.067***
		(21.40)	(21.39)		(15.98)	(15.72)
Modified Z-Score		-0.018***	-0.018***		-0.015***	-0.015***
		(9.21)	(9.26)		(8.49)	(8.56)
State GDP growth			-0.065***			-0.276***
			(3.65)			(9.82)
State GDP per capita			0.004			-0.006
			(0.16)			(0.23)
Intercept	-0.068***	-0.109***	-0.154	-0.043***	-0.079***	-0.017
	(8.73)	(13.49)	(0.56)	(3.54)	(5.57)	(0.06)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	84,949	84,949	84,949	84,949	84,949	84,949
Adjusted R^2	0.67	0.68	0.68	0.68	0.69	0.69

Table 7: UD Laws and Financial Leverage – Financial Constraints

Table 7 reports the results of the financial leverage regressions for financially constrained (FC) and unconstrained (Non-FC) subgroups. The dependent variables in Panels A and B are *Book leverage* and *Market leverage*, respectively. *UD law* is an indicator variable that takes a value of 1 for the years in which UD law is effective in a firm's state of incorporation, and 0 otherwise. Financially constrained (unconstrained) firms include those in the top (bottom) tercile of the SA index, do not pay dividend (pay dividend), or do not have credit ratings (have credit ratings). The models are estimated with other control variables and firm- and year-fixed effects but their estimates are suppressed for brevity. *t*-statistics based on heteroscedasticity-robust standard errors clustered by states of incorporation are reported in parentheses. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: UD Laws and Book Leverage – Financial Constraints

	S&P Credit Ratings		Dividend Payout		SA Index	
	FC	Non-FC	FC	Non-FC	FC	Non-FC
Variable	(1)	(2)	(3)	(4)	(5)	(6)
UD Law	0.016**	-0.026***	0.014*	0.003	0.010*	-0.003
	(2.26)	(3.24)	(1.86)	(0.44)	(1.70)	(0.44)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	85,231	18,246	76,704	26,773	34,492	34,493
Adjusted R^2	0.63	0.73	0.64	0.76	0.61	0.74

Panel B: UD Laws and Market Leverage – Financial Constraints

	S&P Credit Ratings		Dividend Payout		SA Index	
	FC	Non-FC	FC	Non-FC	FC	Non-FC
Variable	(1)	(2)	(3)	(4)	(5)	(6)
UD Law	0.017**	-0.002	0.021**	0.012	0.008*	0.012
	(2.00)	(0.16)	(2.03)	(1.62)	(1.76)	(1.20)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	85,231	18,246	76,704	26,773	34,492	34,493
Adjusted R^2	0.64	0.76	0.66	0.76	0.64	0.74

Table 8: UD Laws, Financial Leverage, and Corporate Governance

Table 8 reports the results of the financial leverage regression models augmented with corporate governance measures. The dependent variable is either *Book leverage* or *Market leverage*. *UD law* is an indicator variable that takes a value of 1 for the years in which UD law is effective in a firm's state of incorporation, and 0 otherwise. *Hostile takeover index* is the firm-level index of takeover susceptibility. *Institutional ownership* is the aggregate equity ownership of institutional investors of a firm in a given year. The models are estimated with other control variables and firm- and year-fixed effects but their estimates are suppressed for brevity. *t*-statistics based on heteroscedasticity-robust standard errors clustered by states of incorporation are reported in parentheses. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Variable	Book Leverage			Market Leverage		
	(1)	(2)	(3)	(4)	(5)	(6)
UD Law	0.012*	0.010*	0.012*	0.031***	0.027***	0.030***
	(1.86)	(1.67)	(1.91)	(3.78)	(3.47)	(3.79)
UD Law × Hostile takeover index	-0.051*	-0.043	-0.036	-0.148***	-0.144***	-0.149***
	(1.82)	(1.40)	(1.19)	(3.81)	(3.86)	(3.98)
UD Law × Institutional ownership	0.006	0.002	0.002	0.023**	0.021**	0.018*
	(0.67)	(0.22)	(0.25)	(2.23)	(2.09)	(1.82)
Hostile index	-0.135***	-0.168***	-0.156***	-0.082***	-0.113***	-0.107***
	(8.72)	(10.94)	(10.18)	(4.37)	(6.04)	(5.68)
Institutional ownership	-0.098***	-0.102***	-0.099***	-0.161***	-0.165***	-0.170***
	(24.01)	(25.47)	(24.56)	(33.16)	(34.29)	(35.07)
Size	0.044***	0.053***	0.055***	0.056***	0.063***	0.063***
	(36.95)	(41.58)	(42.35)	(42.24)	(44.09)	(42.98)
Market-to-book	-0.005***	-0.005***	-0.005***	-0.017***	-0.017***	-0.016***
	(12.96)	(11.69)	(11.90)	(39.20)	(36.90)	(35.72)
Profitability	-0.120***	0.002	0.002	-0.206***	-0.101***	-0.100***
	(25.75)	(0.36)	(0.31)	(39.62)	(15.13)	(15.10)
Tangibility	0.200***	0.188***	0.184***	0.222***	0.215***	0.216***
	(25.38)	(24.46)	(23.99)	(25.32)	(24.95)	(25.03)
Dividend dummy	-0.040***	-0.040***	-0.041***	-0.064***	-0.064***	-0.064***
	(18.97)		(19.28)	(23.31)		(23.37)

	(1)	(2)	(3)	(4)	(5)	(6)
Modified Z-Score		-0.017***	-0.017***		-0.014***	-0.013***
		(25.24)	(25.71)		(21.33)	(20.83)
State GDP growth			0.062***			-0.254***
			(3.74)			(12.55)
State GDP per capita			-0.024***			0.006
			(6.83)			(1.33)
Intercept	-0.009	-0.025***	0.210***	-0.030***	-0.029***	-0.074*
	(1.51)	(3.67)	(6.15)	(4.34)	(3.75)	(1.81)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	63,327	63,327	63,327	63,327	63,327	63,327
Adjusted R^2	0.70	0.71	0.71	0.70	0.71	0.71

Table 9: UD Laws and Financial Leverage – Controlling for Other Laws

Table 9 reports the results of the financial leverage regressions that additionally control for BC, PP, CS, FP and DD laws or the adoption of the Private Securities Litigation Reform Act (PSLRA). The dependent variable is either *Book leverage* or *Market leverage*. *UD law* is an indicator variable that takes a value of 1 for the years in which UD law is effective in a firm's state of incorporation, and 0 otherwise. *BC law* (*PP law*) is an indicator variable that takes a value of 1 for the years in which a firm's state of incorporation has passed the Business Combination law (Poison Pill law), and 0 otherwise. *CS law* (*FP law* or *DD law*) is an indicator variable that takes a value of 1 for the years in which a firm's state of incorporation has passed the Control Share Acquisition law (Fair Price law or Directors' Duties law, respectively) and 0 otherwise. *PSLRA adoption* is an indicator variable that takes a value of 1 for the years in which the Private Securities Litigation Reform Act is effective, and 0 otherwise. The models are estimated with other controls and firm- and year-fixed effects but their estimates are suppressed for brevity. *t*-statistics based on heteroscedasticity-robust standard errors clustered by states of incorporation are reported in parentheses. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Book Leverage		Market Leverage	
Variable	(1)	(2)	(3)	(4)
UD Law	0.012**	0.013**	0.020***	0.021***
	(2.19)	(2.03)	(2.77)	(2.80)
BC Law	0.004	0.003	0.002	0.001
	(0.72)	(0.63)	(0.29)	(0.23)
PP Law	0.004	0.005	0.003	0.004
	(0.89)	(1.04)	(0.29)	(0.52)
PSLRA Adoption	-0.061***	-0.061***	-0.034**	-0.034**
	(2.96)	(4.02)	(2.30)	(2.32)
CS Law		-0.006		-0.002
		(1.12)		(0.33)
FP Law		0.002		0.002
		(0.23)		(0.30)
DD Law		-0.001		-0.003
		(0.08)		(0.29)
Other controls	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Number of observations	103,477	103,477	103,477	103,477
Adjusted R^2	0.65	0.65	0.66	0.66

Table 10: UD Laws and Net Debt Issues

Table 10 reports the results of the net debt issues regressions. The dependent variable is *Net Debt Issues* calculated as the difference between long-term debt issuance and long-term debt reduction, scaled by the book value of assets. *UD law* is an indicator variable that takes a value of 1 for the years in which UD law is effective in a firm's state of incorporation, and 0 otherwise. *FD* is financing deficit measured as cash dividends plus net investments plus the change in working capital, less cash flow, all scaled by the book value of assets. Δ indicates the change in variable value from the preceding year to the current year. *t*-statistics based on heteroscedasticity-robust standard errors clustered by states of incorporation are reported in parentheses. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Net Debt Issues		
Variable	(1)	(2)	(3)
UD Law	0.001	0.001	0.001
	(0.34)	(0.28)	(0.16)
UD Law×FD	0.087***	0.078***	0.077***
	(2.68)	(2.73)	(2.75)
FD	0.009	0.012	0.011
	(0.91)	(1.03)	(1.04)
FD×Lagged book leverage	-0.033	-0.035	-0.046
	(0.72)	(0.60)	(0.61)
Lagged book leverage	-0.181***	-0.174***	-0.171***
	(25.05)	(24.41)	(24.86)
FD×ΔSize	-0.007	-0.006*	0.004
	(1.60)	(1.83)	(0.59)
ΔSize	0.100***	0.113***	0.110***
	(13.13)	(12.62)	(10.98)
FD×ΔMarket-to-book	-0.001	-0.001	0.001
	(0.53)	(0.33)	(0.37)
ΔMarket-to-book	0.001	0.001	0.000
	(1.56)	(0.89)	(0.26)
FD×ΔProfitability	0.047*	0.048	0.038
	(1.87)	(1.49)	(1.28)
ΔProfitability	-0.079***	-0.022	-0.017
	(8.68)	(1.45)	(1.17)
FD×Δtangibility	0.083*	0.089*	0.046
	(1.68)	(1.68)	(0.70)
ΔTangibility	0.011	0.007	0.018
	(0.60)	(0.34)	(0.81)
FD×ΔDividend dummy		-0.047*	-0.045*
		(1.83)	(1.75)
ΔDividend dummy		-0.005**	-0.005**
		(2.07)	(2.26)

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FD×ΔModified Z-Score		0.00	0.002*
		(0.14)	(1.70)
ΔModified Z-Score		-0.009***	-0.010***
		(5.17)	(5.63)
FD×ΔState GDP growth			0.242
			(0.79)
ΔState GDP growth			0.014
			(0.49)
FD×ΔState GDP per capita			0.161*
			(1.82)
ΔState GDP per capita			-0.158***
			(4.07)
Intercept	0.022***	0.020***	0.014***
	(5.35)	(4.66)	(4.06)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of observations	91,313	91,313	91,313
Adjusted R^2	0.19	0.19	0.2