Manager-specific Litigation Risk and Corporate Disclosure: Evidence from Shareholder Derivative Suits

Thomas Bourveau
Hong Kong University of Science and Technology
actb@ust.hk

Yun Lou
HEC Paris
lou@hec.fr

Rencheng Wang
University of Queensland
r.wang@business.uq.edu.au

This draft: October 2015

Preliminary draft. Please do not circulate.

Abstract

Using the staggered adoption of Universal Demand (UD) laws related to shareholder derivative suits as an exogenous shock to manager-specific litigation risk, we show that litigation risk pertaining to managers have a unique effect on corporate disclosure. Specifically, we find that managers issue more management forecasts after UD laws raise the hurdle of filing derivative suits against them. Furthermore, the effect of UD laws on the frequency of forecasts issued is more pronounced when managers have flexibility in disclosure policies and weak career concerns, and when firms are financially constrained and have strong demand for stock liquidity. Our findings contribute to the voluntary disclosure literature by showing that managers' *personal* litigation risk matters to corporate disclosure policies.

1. Introduction

Shareholder litigation plays an important role in shaping firms' disclosure policies. The existing literature suggests that expected litigation risk can either deter managers from disclosing forward-looking information or encourage managers to disclose more timely information to pre-empt shareholder litigation (e.g., Skinner 1994; Johnson Kasznik and Nelson 2001). While the prior literature has focused on firm-level or industry-level litigation risk, surprisingly little is known about whether litigation risk pertaining to managers has an effect on corporate disclosure. In this paper, we fill this gap and examine the impact of managers' *personal* litigation risk on corporate disclosure. Specifically, we use the staggered adoption of Universal Demand (UD) laws regarding shareholder derivative suits in the U.S. as an exogenous shock to managers' personal litigation risk, and we investigate whether ex-ante litigation risk pertaining to managers affects their propensity and frequency of issuing management forecasts.

We focus on shareholder derivative suits to analyze the effect of manager-specific litigation risk on corporate disclosure for several reasons. First, in contrast with shareholder class action suits, which are often filed against corporations, shareholder derivative suits are exclusively brought against directors and officers alone. Specifically, in a derivative lawsuit, shareholders file the lawsuit on behalf of corporations to allege potential wrongdoings of the directors and officers. The defendants of a derivative suit often include all members of the top management team. In particular, CEOs are named as defendants in 97% of the derivative suits (Erickson 2010). Therefore, shareholder derivative suits provide an ideal setting to assess the impact of managers' personal litigation risk on corporate disclosure. Second, the majority of the allegations of

derivative suits are related to directors' and officers' mishandling of corporate information. For example, Erickson (2010) finds that 90% of the derivative suits in her sample include claims that directors and officers in public firms have made false or misleading statements to the capital markets. Hence, derivative suits are very relevant to corporate disclosure policies. Finally, while the Private Securities Litigation Reform Act (PSLRA) of 1995 limited shareholders' ability of filing class action suits, it did not affect the conditions of filing derivative suits (Erickson 2010). Consequently, many shareholders divert their efforts from class action suit to derivative suits in the post-PSLRA period, which is the sample period of our study.

Corporate disclosure policies are ultimately decided by the top management members especially CEOs (e.g., Bamber, Jiang, and Wang 2010), hence it is natural to tie managers' personal litigation risk to corporate disclosure policies. In this study, we consider managers' personal litigation risk/cost associated with derivative suits in a broad way. While derivative suits may lead to unfavorable outcomes for managers, a significant portion of these lawsuits are settled and the losses are often covered by directors and officers (D&O) liability insurance as long as managers do not engage in intentional misconduct (Ferris, Jandik and Lawless 2007). However, the derivative suits can impose significant reputational cost on managers: being publicly identified with corporate wrongdoings. The social shame of being named in the litigation for not fulfilling their duties can seriously jeopardize managers' future career prospects. Taking into account these potential repercussions, managers will make decisions to minimize the probability of being sued in derivative suits.

Since information disclosure is one of the most frequent allegations used against managers in derivative suits, managers have strong incentive to design disclosure policies in a way that can help them avoid being sued in these lawsuits. To the extent that voluntarily disclosing forward-looking or other value-relevant information increases the number of shareholder lawsuits (Johnson, Kasznik and Nelson 2001; Rogers and Van Buskirk 2009), managers will minimize the amount of voluntary disclosure. Hence, we predict that ex-ante litigation risk pertaining to derivative suits is negatively related to the amount of voluntary disclosure.

To make a causal inference for the effect of managers' personal litigation risk on their disclosure decisions, we use the staggered adoption of UD laws across different states in the U.S. as an exogenous shock to manager-specific litigation risk. UD laws require derivative plaintiffs (i.e., shareholders) to make a demand on firms' board of directors to file any derivative suit (regardless of whether the majority of board members are independent or not). The board of directors usually refuses this request since most of them are named as defendants in the derivative lawsuit. Hence, the adoption of UD laws imposes a significant hurdle for shareholders to file derivative suits. Consequently, fewer derivative suits are filed against managers in the post-UD law period (Appel 2015).

Using a difference-in-difference framework, we find evidence of a significant increase in both the tendency of firms issuing management forecasts and the average number of forecasts issued among UD law firms (i.e., firms incorporated in the states that adopted UD laws) in the years after adopting UD laws. The economic magnitude is strong: UD law firms are 5% more likely to issue management forecasts relative to Non-UD law firms, which represents approximately a 20% increase in the likelihood of

issuing management forecasts compared to the sample mean. These results are obtained after controlling for firm, industry-year, state-year fixed effects,[1] and a group of time-varying firm characteristics that may affect the issuance of management forecasts.

To provide more evidence that the increase in management forecasts is attributable to managers' reduced personal legal exposure to derivative suits, we examine several sets of cross-sectional variations between changes in the frequencies of management forecasts and the adoption of UD laws. The first set of cross-sectional tests shows that the effect of UD laws on the frequency of management forecasts is more pronounced for firms with low institutional ownership and low analyst coverage. This is consistent with the idea that the effect of reduced personal litigation risk on voluntary disclosure should be stronger for firms with more flexibility in disclosure decisions (Li and Zhang 2015). In the second set of cross-sectional analyses, we find that UD law firms issue more forecasts when they are financially constrained, consistent with the prior literature arguing that firms make voluntary disclosure to facilitate their accessing of capital markets (Frankel, McNichols and Wilson 1995). In line with the recent literature arguing that firms voluntary disclose information to improve their stock liquidity (Balakrishnan, Billings, Kelly, and Ljungqvist 2014), we also find evidence that the effect of UD laws on the frequency of management forecasts is concentrated in firms that have strong demand for stock liquidity. The final set of cross-sectional tests shows that the effect of UD laws on management forecasts is stronger when managers' career concern is weaker (proxied by the low enforceability of managers' non-competing agreements), which is consistent with

[1] The state-year fixed effect is the interaction between the state location of headquarters and year. It is not the interaction between the state of incorporation and year, which is partially identified by the treatment variable.

the role of career concern in incentivizing managers to withhold news (Kothari, Shu and Wysocki 2009; Ali, Li, and Zhang 2015; Shaikh 2015).

To provide further confidence for the causal link between UD laws and managers' forecast decisions, we examine whether UD laws have an effect on the issuance and frequency of management forecasts in the two years prior to the adoption. We do not find any evidence that UD laws have a trended effect on management forecasts in the years leading up to the adoption. Furthermore, our main finding that UD law firms issue more management forecasts is also robust to restricting the sample to firms that have the same incorporation and headquarter states, which alleviate the concern that firms may endogenously choose the state of incorporation. In addition, Houston et al. (2015) argues that the 1999 ruling of the Ninth Circuit Court of Appeals raised the hurdle of filing class action suits against firms located in the states of the Ninth Circuit Court. To ensure that our main result is not driven by the changes in the legal environment of class action suits, we drop firms incorporated or headquartered in the states of the Ninth Circuit Court, and the effect of UD laws on the frequency of forecasts issued remains still significant and positive.

Finally, we conduct two sets of additional tests. In the first set of additional tests, we examine the effect of UD laws on the type of management forecasts issued. We find evidence that UD law firms are more likely to issue quantitative, point estimate and optimistic forecasts, and they are less likely to issue forecasts with open ranges. This is consistent with the fact that a significant portion of allegations against managers in derivative suits are related to misleading information (Erickson 2010), which discourages managers from issuing very specific and optimistic forecasts prior to the adoption of UD

laws. Second, we show that the adoption of UD laws has a positive effect on the precision of forecasts issued. Specifically, the widths of management forecasts issued by UD law firms are smaller than the control firms. A further decomposition of forecasts into good and bad news shows that the positive effect of UD laws on forecast precision is mainly driven by good news forecasts, implying that managers have asymmetric loss in derivative suits when their positive projection is not accurately realized. This result is consistent with prior literature documenting that litigation risk is the major reason why firms avoid issuing optimistic guidance (e.g., Ge and Lennox 2011) and firms increase good news forecasts after the PSLRA reduces the threat of class action suits (Johnson, Kasznik and Nelson 2001).

Our study contributes to the voluntary disclosure literature in several ways. First, we add to the stream of literature that examines the relation between litigation risk and voluntary disclosure by providing evidence that managers' *personal* litigation risk matters. Prior literature often uses ex-ante firm characteristics, industry membership, and ex-post filings of class action suits to proxy for litigation risk (Francis, Philbrick and Schipper 1994; Field, Lowry and Shu 2005; Kim and Skinner 2012). While these measures of litigation risk have their own merits, they cannot distinguish firm/industry-level litigation risk from manager-specific litigation risk. Since managers are the decision-makers of corporate disclosure policies, it is important to understand the role of litigation risk pertaining to managers in corporate disclosure.

Second, our study is also related to the line of literature that studies the role of career concern in voluntary disclosure (e.g., Kothari, Shu and Wysocki 2009; Ali, Li, and Zhang 2015; Shaikh 2015). While being sued in derivative suits may force managers to pay out

of their pockets, reputation losses can cause severe damage to managers' public images and put their future career prospects in danger. By incorporating reputation losses into the cost of litigation risk, we provide additional evidence on the role of career concern in voluntary disclosure via the channel of shareholder litigation.

Third, we also contribute to the recent stream of literature that examines the impact of manager-specific attributes on earnings forecasts. For example, Yang (2012) separates firms' overall forecasting records of earnings guidance into a manager-specific and firm-specific component. She finds that investors respond more strongly to the manager-specific forecasting accuracy when information uncertainty is high. We extend this line of literature by showing that manager-specific litigation risk also affects their decisions regarding earnings forecasts.

Finally, our study is closely related to the growing finance literature that examines the role of shareholder litigation in corporate decisions. Using the adoption of UD laws as an exogenous shock to shareholder litigation, Appel (2015) studies the effect of shareholder litigation on firms' governance, compensation and financing policies. He documents an increase in governance provisions that entrench managers, an increase in CEO cash compensation, and a decrease in share purchases and book leverage after the hurdle of filing shareholder derivative suits has been raised. Chu and Zhao (2015), on the other hand, find that a reduction in shareholder litigation threat improves corporate takeover efficiency and leads to better post-merger stock market performance. We add to this literature by showing that shareholder litigation also affects firms' disclosure policies.

The rest of the paper is organized as follows. Section 2 discusses the institutional background and develops the hypothesis. Section 3 describes the data and research

design. In Section 4, we present the main empirical results. Section 5 provides some additional analyses. We conclude in Section 6.

2. Institutional Background and Hypothesis Development

2.1. Institutional Background

Private litigation plays an important role in enforcing managers' fiduciary duties and disclosure obligations under the securities laws in the US. While shareholder class action suits have received much attention in the legal and accounting literature, surprisingly little empirical evidence exists on the role of derivative suits as an integral part of private litigation. Using a hand-collected dataset, Erickson (2010) provides the first comprehensive empirical examination of shareholder derivative suits filed in federal courts. She finds that shareholders file more derivative suits than class action suits in her sample period.

A derivative suit allows shareholders to bring lawsuits against directors and officers' wrongdoings on behalf of a corporation. Examples of wrongdoings include directors and officers' illegal activities, mishandling of information, or self-dealing.[2] Since the corporation is the actual plaintiff, the derivative suit is a mechanism for the shareholders to force alleged directors and officers to compensate the damage they cause to the corporation.

Nevertheless, the adoption of UD laws in 23 states between 1989 and 2005 imposes a significant obstacle for shareholders to file derivative suits against directors and officers. Specifically, prior to the filing of any derivative suit, the shareholders will need to first demand that the board of directors bring legal action against the wrongdoers. Since the

[2] One of the high-profile derivative suits is the stock option backdating scandal that happened around 2005.

majority of the board of directors (e.g., CEOs) are often named as defendants of the derivate suits, the directors rarely approve the demand. If the board of directors disapproves the demand, the court judges typically follow the board's decision and dismiss the suits. As a consequence, fewer derivative suits are filed in the states that adopted the UD laws in the post-UD law years. For example, Appel (2015) finds that the passage of UD laws leads to a one third decrease in derivative suits compared to its sample mean.

2.2. Hypothesis Development

The basic premise of our paper is that UD laws reduce managers' personal legal exposure to derivative suits and decrease the marginal cost of disclosing forward-looking information, which results in more voluntary disclosure in the post-UD law period.

Derivatives suits can impose substantial financial as well as reputational losses on managers. Although directors and officers (D&O) liability insurance can cover the monetary losses of derivative suits, the scope of D&O insurance does not apply to wrongdoings that involve directors and officers' dishonesty, intentional misconduct, and breaches in which the directors and officers have reaped a personal gain (Cox 1999). Furthermore, the insurers frequently deny the insurance coverage on the ground that the insured directors and officers conceal important information when they apply for insurance (Cox 1999). Hence, D&O insurance does not completely shield managers from financial liabilities resulting from derivative suits.

Moreover, a significant indirect cost of derivative suits for directors and officers is the reputation damage. Being publicly identified for corporate wrongdoings can seriously harm their reputation and jeopardize their future employment opportunities. Srinivasan

(2005) and Brochet and Srinivasan (2014) provide evidence that financial fraud and disclosure-related lawsuits impose significant labor market penalties on directors. Specifically, directors may not only lose their jobs from the corporation involved in the lawsuits, but they are also likely to be removed from board positions in other companies and receive negative recommendations from proxy advisors. Even if a derivative suit is eventually dismissed or settled, the social shame of being named in such lawsuit can still damage managers' public image and negatively affect their future career prospects.

Taking into account the potential financial losses and reputational damages arising from derivative suits, managers will have strong incentives to make decisions to minimize the likelihood of being sued in such suits. For example, managers could disclose bad news more timely to pre-empt shareholder litigation (Skinner 1994). While the argument that timely disclosure can help managers to reduce shareholder suits is very appealing, empirical evidence in general suggests that more voluntary disclosure does not necessarily deter managers or firms from being sued.[3] For instance, Kasznik and Lev (1995) shows that although some firms disclose earnings warnings with the intention of pre-empting large negative earnings news that may lead to potential shareholder suits, the shareholders still react very negatively when the actual negative news is revealed by these firms. In fact, more than half of firms in their sample decide to keep silent and do not disclose any earnings warnings.

On the contrary, there are a lot of empirical evidence showing that more voluntary disclosure can lead to a higher incidence of shareholder suits (e.g., Francis, Philbrick and Schipper 1994; Skinner 1997). Only when ex-ante litigation risk reduces, managers are

[3] An exception is Field, Lowry and Shu (2005), which shows that early disclosure of earnings-related bad news can potentially deter class action suits. However, this finding only holds for the subsample of non-dismissed suits.

more willing to disclose forward-looking information (Johnson, Kasznik and Nelson 2001). Moreover, for managers that have been sued for disclosures made in good faith, they seem to revise their belief ex-post that pre-emptive disclosure can deter lawsuits. Consequently, the managers alter their disclosure behavior and reduce the level of voluntary disclosure (Rogers and Van Buskirk 2009). Taken together, we expect that managers are likely to disclose less forward-looking information to avoid being sued in derivative suits brought against them. Hence, when the adoption of UD laws reduces the likelihood of derivative suits, the marginal cost of forward-looking disclosures decreases. As such, managers are more willing to provide these disclosures. Therefore, we form the following hypothesis:

H1: UD law firms issue more forward-looking forecasts than non-UD law firms.

3. Research Design and Data

3.1 Research Design

We use the staggered adoption of UD laws as a source of plausibly exogenous variation to managers' personal litigation risk. Specifically, we estimate various OLS specifications of the following generalized difference-in-differences model:

$$\text{Dependent Variable}_{ist} = \beta_0 + \beta_1 \text{UD Law}_{st} + \text{Controls}_{ist} + \alpha_i + \gamma_t + \varepsilon_{ist} \quad (1)$$

where i, s, and t denote firm, state of incorporation and year, respectively. Our main tests are based on two different dependent variables. First, we consider an indicator variable *IssuanceMF*, which equals to one if a firm issues any earnings forecast during a given year, and zero otherwise.[4] Next, we use a continuous variable *FreqMF*, defined as the natural logarithm of the number of earnings forecasts issued during a given year, to

[4] We do not estimate a Probit or Logit model with firm fixed effects because it is subject to the incidental parameters problem (Wooldridge 2002).

capture the frequency of earnings forecasts. Our independent variable of interest, *UD Law*, is an indicator variable that takes the value of one if a state has a Universal Demand law in place in year *t*, and zero otherwise. We follow Appel (2015) and define whether a firm is subject to UD laws based on its state of incorporation.

In our baseline specification of model (1), we include firm fixed effects (α_i) and year fixed effects (γ_t). Firm fixed effects control for any firm-level time-invariant characteristics, and year fixed effects account for unobserved heterogeneity that varies across time (e.g., macroeconomic shocks). This research design essentially represents a difference-in-differences approach in which firms incorporated in states that do not have a UD law in place in a given year serve as the control group for firms incorporated in states that have the law in place in that year. Such a research design is powerful for drawing causal inferences (Bertrand, Duflo and Mullainathan 2004), and has been adopted by an increasing number of accounting and finance papers (e.g.. Bertrand and Mullainathan 2003; Armstrong, Balakrishnan and Cohen 2012; Christensen, Hail and Leuz 2013; Hail, Tahoun and Wang 2014; Hayes, Tian and Wang 2015).

Since UD laws are adopted at the state level, we cluster standard errors by the state of incorporation.[5] This clustering method accounts for potential time-varying correlations in omitted variables that may affect different firms within the same state (Bertrand, Duflo and Mullainathan 2004). We further follow Bertrand and Mullainathan (2003) and augment our model with state-year and industry-year fixed effects instead of year fixed effects. The state-year fixed effect is defined using the state of location of headquarters and controls for time-varying differences across headquarter locations due to changes in

[5] We find similar results if we cluster the standard errors at the firm level, firm-year level or state-year level (Petersen 2009; Gow, Ormazabal, and Taylor 2010; Thompson 2011).

local economic environment (Appel 2015). The industry-year fixed effect is constructed based on Fama-French 48 industries and allows us to phase out the effect of industry trends that are contemporaneous with the passage of UD laws itself. That is, with industry-year fixed effects, we compare firms within the same industry at a given point in time, which rules out the influence of any other factors that do not vary within industry-year, such as investment opportunities. Such a procedure is important since industries are not evenly distributed across states.

In addition to the above-mentioned fixed effects, we control for a group of variables that are known to be primary determinants of firms' disclosure decisions. Specifically, we follow prior literature and include a set of firm characteristics such as institutional ownership (Ajinkya, Bhojraj, and Sengupta 2005; Karamanou and Vafeas 2005), firm size (Lang and Lundholm 1993; Kasznik and Lev 1995; Frankel et al. 1995), and book-to market ratio (Waymire 1985; Graham et al. 2005) to capture firms' incentive of communicating private information to the public. Further, we control for return on assets (*ROA*), stock return, earnings volatility, and a loss indicator to take into account the influence of firm performance over disclosure decisions (e.g., Miller 2002; Lennox and Park 2006; Chen, Matsumoto, and Rajgopal 2011). To differentiate the effect of manager-specific litigation risk on management forecasts from that of industry-specific litigation risk, we include an indicator variable *High Litigation risk* based on the industry litigation risk classification in Francis, Philbrick and Schipper (1994). Note that we already control for firm-level litigation risk using firm fixed effects. Finally, we add a Regulation Fair Disclosure (*Regulation FD*) indicator to capture the changes in the

disclosure environment around Regulation FD (Cotter, Tuna, and Wysocki 2006).[6] The appendix provides detailed definitions for all variables used in our empirical analyses.

3.2 Data

We obtain all managerial annual earnings per share (EPS) estimates from the Company Issued Guidance (CIG) in the First Call Historical Database over the time period 1998 – 2010. This sample period allows us to identify management forecasts directly and mitigates the potential coverage issues of missing data in the First Call in the early period (Chuk, Matsumoto, and Miller 2013). We include both qualitative and quantitative annual earnings guidance. Further, we get financial information from Compustat, institutional ownership data from Thomson Reuters, analyst forecasts information from the Institutional Brokers' Estimate System (I/B/E/S), and stock price information from the Center for Research in Security Prices (CRSP). Our final sample consists of 45,674 firm-year observations.

We follow Appel (2015) to designate the state of incorporation and event year pertaining to the passage of UD laws. Table 1 lists the years and corresponding states that adopted UD laws. As shown in Table 1, the adoption of UD laws spans over a period from 1989 to 2005 across 23 states. The most recent states that adopted UD laws are Rhode Island and South Dakota, which passed the laws in 2005.

Table 2 reports the summary statistics of the main variables used in our regression analyses. The variable *IssuanceMF* has a mean of 0.26, indicating that approximately 26% of firms issue an annual earnings forecast in a given year. On average, firms in our

[6] Our results are robust if we further control for analyst following (Skinner, 1997; Graham et al., 2005), analyst forecast bias (Lennox and Park 2006), analyst forecast dispersion (Cotter, Tuna, and Wysocki 2006), financial distress (Frost 1997), external financing (Frankel, McNichols, and Wilson 1995), industry competition (Newman and Sansing 1993), insider trading (Cheng and Lo 2006), stock return volatility (Ali, Klasa, and Yeug 2014), and the value-relevance of earnings (Matsumoto 2002; Hutton 2005).

sample issue 1.43 annual earnings forecasts.[7] The mean value of *UD Law* is 0.16, suggesting that 16% of our sample firm-years are treated. Further, 27% of the observations belong to highly litigious industries such as biotechnology, computer Hardware, electronics, and retailing industries.

4. UD Laws and Management Forecast Issuance

4.1. Main Results

In this section, we formally test our main hypothesis that a decrease in manager-specific litigation risk due to the passage of UD laws encourages managers to issue more forward-looking information.

Table 3 presents the main results regarding the effect of UD laws on the propensity and frequency of issuing earnings forecasts. In the first three columns of Table 3, the dependent variable is an indicator variable *IssuanceMF*, which equals to one if firms issue at least one earnings forecasts during a given year, and zero otherwise. In column (1), the coefficient on *UD Law* is positive and statistically significant at the 5% level. This result indicates that firms are more likely to issue earnings forecasts after the adoption of a Universal Demand law relative to control group of firms that do not experience such an exogenous change in managers' personal litigation risk. In column (2), we augment our model with control variables and replace the year fixed effects with state-year fixed effects. Our coefficient on *UD Law* remains positive and becomes statistically significant at the 1% level. This result suggests that the positive effect of UD laws on the issuance of earnings forecasts cannot be explained by changes in local economic conditions or firms' operating environment. Finally, in column (3) we

[7] Conditional on issuing earnings forecasts, the average number of forecasts issued is 3.62.

supplement our model with industry-year fixed effects. Again, the coefficient on *UD Law* stays positive and statistically significant at the 1% level, indicating that our results are not driven by unobservable time-varying industry trends. In terms of economic magnitude, the effect of UD laws on the propensity of issuing earnings forecasts is quite large. Specifically, the coefficient estimates in the main specifications (columns (2) and (3)) correspond to approximately a 20% increase in the likelihood of issuing earnings forecasts relative to the sample mean.

Note that the coefficients on the control variables also generally carry the expected signs. For example, the coefficients on *Institutional ownership*, *Firm size*, *ROA*, and *Stock return* are positive and statistically significant, but the coefficient on *Loss* is negative and statistically significant. These results suggest that firms with effective governance mechanisms in place, great visibility or good performance are more likely to issue earnings forecasts, consistent with Kasznik and Lev (1995), Miller (2002), Ajinkya, Bhojraj, and Sengupta (2005), and Chen, Matsumoto, and Rajgopal (2011).

In the next three columns of Table 3, we examine the effect of the adoption of UD laws on the frequency of earnings forecasts issued. In columns (4), (5) and (6), the dependent variable is equal to the logarithm of the number of earnings forecasts issued in a given year (*FreqMF*). The coefficient on *UD Law* is positive and statistically significant at the 5% level in column (4) and at 1% level in columns (5) and (6). The economic magnitude of the coefficient on *UD Law* is similar across the different specifications, representing a 23-27% increase in the forecast frequency relative to its sample mean. These results imply that managers increase the frequency of earnings forecasts as a response to the exogenous decrease in their personal litigation risk.

Overall, the results in Table 3 support our main hypothesis and provide plausibly causal evidence that a decrease in managers' personal litigation risk leads to an increase in their willingness to voluntarily disclose forward-looking information.

4.2. Cross-sectional Analysis

Next, we perform several cross-sectional tests to ensure the validity of our results. Angrist and Krueger (2001) argue that most exogenous shock settings will have a heterogeneous effect across affected subjects. That is, the decrease in managers' personal litigation risk should affect firms differently in predictable ways. Table 4 reports the estimation of our cross-sectional tests. [8]

First, we examine whether the flexibility in disclosure decisions affects the relation between manager-specific litigation risk and the frequency of earnings forecasts. Previous studies find that institutional investors and financial analysts influence managers' policies regarding earnings forecasts (Ajinkya, Bhojraj, and Sengupta 2005), and these external parties can limit managers' flexibility in making disclosure-related decisions (Li and Zhang, 2015). As such, we expect the effect of UD laws on the frequency of earnings forecasts to be stronger for firms with more disclosure flexibility (i.e., low institutional ownership and low analyst coverage).

Columns (1) to (4) of Table 4 Panel A present the results regarding the cross-sectional implication of disclosure flexibility. In columns (1) and (2), we estimate our baseline model by splitting the sample at the median of institutional ownership. The coefficient on *UD Law* is positive and statistically significant at conventional levels only for the subsample of firms with relatively low level of institutional ownership. Furthermore, a

[8] To conserve space, we focus on the forecast frequency (*FreqMF*) instead of the propensity to issue forecasts (*IssuanceMF*) in the cross-sectional tests. However, our cross-sectional results are robust if we use I*ssuanceMF* as the dependent variable.

Wald test of the difference in coefficients across the two subsamples confirms that the estimated coefficient is statistically larger for firms with low levels of institutional ownership. We then repeat the same procedure by splitting our sample at the median of analyst coverage in columns (3) and (4) and find that the increase in forward-looking disclosures is concentrated in firms with relatively low analyst coverage. Taken together, these results support our conjecture that managers' ability to change disclosure policies as a response to the exogenous shock to their personal litigation risk is higher when managers have more flexibility in making disclosure decisions.

Second, we examine whether the effect of UD laws on the earnings forecast frequency varies with firms' accessing of external financing. Frankel, McNichols, and Wilson (1995) show that firms that access the capital markets more frequently tend to issue more earnings forecasts. They argue that improved information environment helps reduce the cost of capital. Recent studies also find causal evidence that the relaxation of financial constraints reduces quantity and quality of corporate disclosure (e.g., Irani and Oesch 2014). Hence, we predict that the effect of UD laws on the forecast frequency should be stronger for firms that are more financially constrained.

To test the above conjecture, we use two measures of financial constraints to proxy for firms' ability of accessing external financing: the WW index developed by Whited and Wu (2006) and the KZ index by Kaplan and Zingales (1997). These two measures have been widely used in the finance literature to capture firms' financial constraints (Farre-Mensa and Ljungqvist 2015). Therefore, we partition our sample into subsamples based on the median of WW index and KZ index. Columns (5) – (8) of Table 4 Panel A present the results of the effect of UD laws on the forecast frequency for firms with

different levels of financial constraints. The coefficient on *UD law* is economically and statistically stronger for firms with high WW/KZ index, suggesting that the effect of UD laws on the forecast frequency is concentrated in firms that are more financially constrained.

Third, we investigate whether stock market liquidity affects the relation between the managers' personal litigation risk and the forecast frequency. Firms seeking to gain investor attention are often hampered by the lack of liquidity of their stocks. Balakrishnan, Billings, Kelly, and Ljungqvist (2014) show that firms improve liquidity by voluntarily disclosing more information to the market. As such, we predict that the effect of UD laws on the frequency of earnings forecasts should be more pronounced for firms with strong demand for liquidity.

To proxy for firms' incentive of improving stock liquidity, we use two measures: the bid-ask spread and Amihud's illiquidity measure (AIM) (Amihud 2002; Goyenko, Holden, and Trzcinka 2009; Anantharaman and Zhang 2011; Balakrishnan et al. 2014). We divide our sample into subsamples based on the median of the bid-ask spread and AIM illiquidity measure. Columns (1) – (4) of Table 4 Panel B present the corresponding results. The results show that the effect of UD laws on the forecast frequency is stronger for firms with high demand for stock market liquidity.

Finally, we examine whether the effect of UD laws on the forecast frequency varies with managers' career concern. Previous studies show that non-compete clauses constrain executive mobility by restricting managers' options subsequent to the termination of employment and such effect increases with the enforceability of non-compete contracts (Gilson 1999; Garmaise 2011). These studies suggest that managers working in states

with high enforceability of non-compete contracts have greater career concern. We expect the effect of UD laws on the forecast frequency to be stronger when managers are less concerned about their employment opportunities.

To test the above conjecture, we partition the sample into high and low enforcement groups based on the median of Garmaise's (2011) enforceability index for managers' non-compete agreements across different states in the U.S.. Columns (5) and (6) of Table 4 Panel B present the results of the effect of UD laws on the forecast frequency for these subsamples. The coefficient on *UD Law* is economically and statistically stronger for firms that belong to the low enforcement group. The Wald test of the difference in coefficients across the two subsamples confirms that the estimated coefficient is statistically larger for firms with low enforceability index pertaining to non-compete agreements. These results indicate that the increase in forward-looking voluntary disclosure following the adoption of UD laws is concentrated in firms located in states with lower enforcement of non-compete agreements, supporting our conjecture that managers' willingness to disclose information is stronger when they face weaker career concerns.

4.3. Trend Analysis

Having shown the main effect of UD laws on management forecast issuance and its cross-sectional variations, we next discuss the assumptions behind our identification strategy and perform a trend analysis to ensure the validity of our findings. Specifically, we evaluate the extent to which the adoption of UD laws is exogenous. The validity of our research design relies on the assumption that the change in firms' policies regarding management earnings forecasts is not anticipated. To rule out a potential concern of

reverse causality, we follow Bertrand and Mullainathan (2003) and decompose the adoption of UD laws into separate time periods for each state. More specifically, we re-estimate our models from Equation (1) and replace the *UD Law* dummy by several indicator variables. For example, *UD Law (=-2)* is an indicator variable that takes the value of one for the two years before the adoption of UD laws in a given state, and zero otherwise. The other dummy variables are defined similarly.

Table 5 reports the results of the trend analysis. In the first two columns of Table 5, we decompose the effect of UD laws on firms' binary choices to issue an earnings forecast or not in a given year (*IssuanceMF*). The coefficients on *UD Law (=-2) and UD Law (=-1)* are not statistically different from zero at any conventional level. This result indicates that firms incorporated in states that will adopt UD laws do not issue more or less earnings forecasts in the two years before the adoption of UD laws relative to a control group of firms incorporated in states that will not experience such a change in legislation in the near future. In other words, our treatment and control groups are similar in the years before the change in the regulation that affects managers' personal litigation risk. The coefficient on *UD Law (=0)* is positive and statistically significant at the 5% level, suggesting that the increase in the probability of issuing earnings forecasts starts right in the year after the adoption of UD laws. Furthermore, the positive effect of UD laws on the propensity of issuing earnings forecasts is permanent since the coefficient on *UD Law (>=+2)* is also positive and statistically significant at the 1% level. In columns (3) and (4) of Table 5, we use the frequency of earnings forecasts as the dependent variable (*FreqMF*) and repeat the trend analysis. The results are similar to columns (1) and (2).

Overall, the results in Table 5 suggest that the treatment and control groups were not different before the change in laws and that the increase in forward-looking voluntary disclosure did not precede the change in laws. Hence, the parallel trend assumption behind the difference-in-differences research design holds in our setting.

4.4. Robustness Checks

To further ensure the robustness of the positive effect that UD laws have on the management forecast issuance, we perform several robustness tests in this section.[9]

Table 6 reports the result of these robustness tests. In column (1), we exclude the firms that are incorporated in states that adopted a Universal Demand law before 1998, which corresponds to the first year of our sample period of earnings forecasts. This test intends to mitigate the concern that stale firm-year observations over the sample period may drive the results. As shown in column (1) of Table 6, removing these observations do not affect our main result. Specifically, the coefficient on *UD Law* remains positive and statistically significant at the 1% level.

Second, to alleviate the concern that firms may endogenously choose their state of incorporation based on expected changes in managers' personal litigation risk, we restrict our sample to firms that are incorporated and headquartered in the same state. We use the historical location of headquarter reported in 10-k (Heider and Ljungqvist 2015) to identify the state where a firm's headquarter is located. Column (2) of Table 6 presents the corresponding results. The sample size drops from 45,674 to 13, 997 firm-years. The coefficient on *UD Law* is still positive and statistically significant, albeit at the 10% level.

[9] To conserve space, we focus on the forecast frequency (*FreqMF*) instead of the propensity to issue forecasts (*IssuanceMF*) in the robustness checks. However, the results are very similar if we use I*ssuanceMF* as the dependent variable.

The decrease in the significance level may be partly driven by the significant drop in the sample size.

Furthermore, Houston et al. (2015) argues that the 1999 ruling of the Ninth Circuit Court of Appeals raised the hurdle of filing class action suits against firms located in the states of the Ninth Circuit Court. To ensure that our main result is not driven by the changes in the legal environment of class action suits, we exclude from our sample firms incorporated or headquartered in the states of the Ninth Circuit Court. As shown in columns (3) and (4) of Table 6, the effect of UD laws on the frequency of earnings forecasts remains significant and positive at the 1% and 5% level.

5. Additional Tests

So far, we have shown that UD laws have a positive effect on the propensity and frequency of issuing management forecasts and we interpret it as managers' marginal cost of disclosing forward-looking information reduces in response to the decrease in managers' personal litigation risk.

We next conduct two sets of additional tests to explore whether the changes in managers' personal litigation risk affect the types and precision of earnings forecasts. In the first set of additional tests, we examine the effect of UD laws on the type of earnings forecasts issued. As shown in Table 7, we find evidence that UD law firms are more likely to issue quantitative forecasts (*FreqQuant*), point estimates (*FreqPoint*) and optimistic forecasts (*FreqOptim*), but they are less likely to issue forecasts with open ranges (*FreqOpenRange*). This is in line with the evidence that misleading information is one of the important reasons why managers are sued in derivative suits (Erickson 2010).

As such, managers are unwilling to issue very specific and optimistic forecasts absence of UD laws. In untabulated results, we also find that UD laws do not have a statistically significant impact on the frequency of pessimistic or close range forecasts. In addition, managers also issue more qualitative forecasts, but the economic magnitude is smaller than that of quantitative forecasts.

In Table 8, we estimate the impact of UD laws on the precision of earnings forecasts. We find evidence that the adoption of UD laws has a positive effect on the precision of forecasts issued. Specifically, the widths of earnings forecasts (*WidthMF*) issued by UD law firms are smaller than that of the control firms. A further decomposition of the forecasts into good and bad news shows that the positive effect of UD laws on forecast precision is mainly driven by good news forecasts. These results hold whether we define good-news forecasts in the traditional way or adjust it for bundling error (Rogers and Van Buskirk 2013; Li and Zhang 2015). The positive effect of UD laws on the good news forecasts implies that managers have asymmetric loss in derivative suits when their positive projection is not accurately realized. These results are consistent with prior literature documenting that litigation risk is the major reason on why firms avoid issuing optimistic guidance (e.g., Ge and Lennox 2011) and firms increase good news forecasts after the PSLRA reduces the threat of class action suits (Johnson, Kasznik and Nelson 2001).

6. Conclusion

Prior literature generally rely on firm-level characteristics, industry membership, or ex-post filing of class action suits to identify litigation risk and study the relation between

litigation risk and corporate disclosure ((Francis, Philbrick and Schipper 1994; Field, Lowry and Shu 2005; Kim and Skinner 2012). We argue that the evidence based on firm-level or industry-level litigation risk is inconclusive given that managers are the ultimate decision-makers regarding corporate disclosure policies. In this paper, we focus on an exogenous shock to managers' personal litigation risk and examine whether the change in manager-specific litigation risk affects the disclosure of forward-looking information. We find strong evidence that as a response to the reduced personal litigation risk pertaining to derivative suits, managers are more willing to issue earnings forecasts and the average number of forecasts issued also increases. These results are obtained after controlling for firm-level and industry-level litigation risks.

In addition to the propensity and frequency of earnings forecasts, we also find evidence that the changes in managers' personal litigation risk have an effect on the types and precision of earnings forecasts. In particular, after the adoption of UD laws, firms are more likely to issue quantitative forecasts, point estimates, optimistic forecasts, and good news forecasts with high precision.

The finding that managers' personal litigation risk affects the decisions of earnings forecasts adds unique evidence to the literature that examines the role of litigation risk in corporate disclosure. However, it is still an open question as to whether manager-specific litigation risk or firm/industry-level litigation risk matters more to disclosure policies. Furthermore, is there any interaction effect of these different types of litigation risk on corporate disclosure? We leave these interesting questions for future research.

Reference:

Ajinkya, B., Bhojraj, S., Sengupta, P., 2005.The association between outside directors, institutional investors and the properties of management earnings forecasts. Journal of Accounting Research 43, 343–376.

Ali, A., Klasa, S., Yeug, E., 2014. Industry concentration and corporate disclosure policy. Journal of Accounting and Economics 58, 240-264.

Ali, Li, and Zhang 2015. Managers' career concerns and asymmetric disclosure of bad versus good news. Working Paper.

Amihu, Y., 2002. Illiquidity and stock returns: Cross-section and time-series effects, Journal of Financial Markets 5, 31–56.

Anantharaman, D., Zhang, Y. 2011. Cover me: managers' responses to changes in analyst coverage in the post-Regulation FD period. The Accounting Review 86, 1851-1885.

Angrist, J.D., Krueger, A.B., 2001. Instrumental variables and the search for identification: From supply and demand to natural experiments. Journal of Economic Perspectives 15, 69-85.

Appel, I., 2015. Governance by litigation. Working Paper.

Armstrong, C.S., Balakrishnan, K., Cohen, D., 2012. Corporate governance and the information environment: evidence from state antitakeover laws. Journal of Accounting and Economics 53, 185-204.

Balakrishnan, K., Billings, M.B., Kelly, B., Ljungqvist, A., 2014. Shaping liquidity: On the causal effects of voluntary disclosure. The Journal of Finance 69, 2237–2278.

Bamber, L., Jiang, J., Wang, I., 2010. What's our style? The influence of top managers on voluntary corporate financial disclosure. The Accounting Review 85, 1131–1162.

Bertrand, M., Duflo, E., Mullainathan, S., 2004. How much should we trust differences-in-differences estimates? Quarterly Journal of Economics 119, 249-275.

Bertrand, M, Mullainathan, S., 2003. Enjoying the quiet life? Corporate governance and managerial preferences. Journal of Political Economy 111, 1043-1075.

Brochet, F., Srinivasan, S., 2014. Accountability of independent directors: Evidence from firms subject to securities litigation. Journal of Financial Economics 111, 430-449.

Chen, S., Matsumoto, D., Rajgopal, S., 2011. Is silence golden? An empirical analysis of firms that stop giving quarterly earnings guidance. Journal of Accounting and Economics 51, 134-150.

Cheng, Q., Lo, K., 2006. Insider trading and voluntary disclosures. Journal of Accounting Research 44, 815–848.

Christensen, H., Hail, L., Leuz, C., 2013. Mandatory IFRS reporting and changes in enforcement. Journal of Accounting and Economics 56, 147-177.

Chuk, E., Matsumoto, D., Miller, G.S., 2013. Assessing methods of identifying management forecasts: CIG vs. researcher collected. Journal of Accounting and Economics 55, 23–42.

Cotter, J., Tuna, I., Wysocki, P., 2006. Expectations management and beatable targets: how do analysts react to explicit earnings guidance? Contemporary Accounting Research 23, 593–624.

Cox, J. D., 1999. The social meaning of shareholder suits. Brooklyn Law Review 65, 3-45.

Erickson, J., 2010. Corporate governance in the courtroom: An empirical analysis. William and Mary Law Review 51, 1749-1831.

Fama, E., French, K., 1997. Industry costs of equity. Journal of Financial Economics 43, 153–193.

Ferris, S.P., Jandik, T., Lawless, R.M., 2007. Derivative lawsuits as corporate governance mechanism: Empirical evidence on board changes surrounding filings. Journal of Financial and Quantitative Analysis 42, 143-165.

Field, L., Lowry, M., Shu, S., 2005. Does disclosure deter or trigger litigation? Journal of Accounting and Economics 39, 487-507.

Francis, J., Philbrick, D., Schipper, K., 1994. Shareholder litigation and corporate disclosure. Journal of Accounting Research 32, 137-164.

Frankel, R., McNichols, M., Wilson, G.P., 1995. Discretionary disclosure and external financing. The Accounting Review 70, 135–150.

Frost, C., 1997. Disclosure policy choices of UK firms receiving modified audit reports. Journal of Accounting and Economics 23, 163–187.

Garmaise, M.J., 2011. Ties that truly bind: Noncompetition agreements, executive compensation, and firm investment. The Journal of Law, Economics, & Organization 27, 376-425.

Ge, R., Lennox, C., 2011. Do acquirers disclose good news or withhold bad news when they finance their acquisitions using equity? Review of Accounting Studies 16, 183-217.

Gilson, R.J., 1999. The legal infrastructure of high technology industrial distracts: Silicon Valley, Route 128, and covenants not to compete. New York University Law Review 74, 575-629.

Gong, G., Li, L., Wang, J., 2011. Serial correlation in management earnings forecast errors. Journal of Accounting Research 49, 677–720.

Gow, I.D., G. Ormazabal, D.J. Taylor. 2010. Correcting for cross-sectional and time-series dependence in accounting research. The Accounting Review 85: 483–512.

Goyenko, R.Y., Holden, C.W., Trzcinka, C.A., 2009. Do liquidity measures measure liquidity? Journal of Financial Economics 92, 153–181.

Graham, J.R., Harvey, C.R., Rajgopal, S., 2005. The economic implications of corporate financial reporting. Journal of Accounting and Economics 40, 3-73.

Hail, L., Tahoun, A., Wang, C., 2014. Dividend payouts and information shocks. Journal of Accounting Research 52, 403–456.

Hayes, R.M., Tian, X., Wang, X., 2015. Banking industry deregulation and CEO incentives: Evidence from bank CEO turnover. Working Paper.

Heider, F., Ljungqvist, A., 2015. As certain as debt and taxes: Estimating the tax sensitivity of leverage from state tax changes. Journal of Financial Economics, forthcoming.

Houston, J.F, Lin, C. Liu, S., Wei, L.,_2015._Shareholder litigation and management earnings forecasts. Working Paper.

Hutton, A.P., 2005. Determinants of managerial earnings guidance prior to Regulation Fair Disclosure and bias in analysts' earnings forecasts. Contemporary Accounting Research 22, 867–914.

Irani, R.M., Oesch, D., 2014. Financial constraints and corporate disclosure. Working Paper.

Johnson, M., Kasznik, R., Nelson, K., 2001. The impact of securities litigation reform on the disclosure of forward-looking information by high technology firms. Journal of Accounting Research 3, 297–327.

Kaplan, S., Zingales, L., 1997. Do financing constraints explain why investment is correlated with cash flow? Quarterly Journal of Economics 109, 169-215.

Karamanou, I., Vafeas., 2005. The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis. Journal of Accounting Research 43, 453-486.

Kasznik, R., Lev, B., 1995. To warn or not to warn: management disclosures in the face of an earnings surprise. The Accounting Review 70, 113-134.

Kim, I., Skinner, D., 2012. Measuring securities litigation risk. Journal of Accounting and Economics 53, 290-310.

Kothari, S.P., Shu, S., Wysocki, D., 2009. Do managers withhold bad news? Journal of Accounting Research 47, 241–276.

Lamont, O., Polk, C. Saa-Requejo, J., 2001. Financial constraints and stock returns. Review of Financial Studies 14, 529–54.

Lang, M., Lundholm, R., 1993. Cross-sectional determinants of analyst ratings of corporate disclosure. Journal of Accounting Research 31, 246–271.

Lennox, C., Park, C., 2006. The informativeness of earnings and management's issuance of earnings forecasts. Journal of Accounting and Economics 42, 439–458.

Li, Y., Zhang, L., 2015. Short selling pressure, stock price, behavior, and management forecast precision: evidence from a natural experiment. Journal of Accounting Research 53, 79-117.

Matsumoto, D., 2002. Management's incentives to avoid negative earnings surprises. The Accounting Review 77, 483–514.

Miller, G.S., 2002. Earnings performance and discretionary disclosure. Journal of Accounting Research 40, 173–204.

Newman, P., Sansing, R., 1993.Disclosure policies with multiple users. Journal of Accounting Research 31, 92–112.

Petersen, M., 2009. Estimating standard errors in finance panel data sets: comparing approaches. Review of Financial Studies 22, 435-480.

Rogers, J.L., Stocken, P.C., 2005. Credibility of management forecasts. The Accounting Review 80, 1233–1260.

Rogers, J.L., Skinner, D., and Van Buskirk, A., 2009. Earnings guidance and market uncertainty. Journal of Accounting and Economics 48, 90–109.

Rogers, J.L., Van Buskirk, A., 2013. Bundled forecasts in empirical accounting research. Journal of Accounting and Economics 55, 43–65.

Shaikh, S. 2015. Managerial career concerns and earnings forecasts. Working paper.

Skinner, D.J., 1994. Why firms voluntarily disclose bad news. Journal of Accounting Research 32 38-60.

Skinner, D.J., 1997. Earnings disclosures and stockholder lawsuits. Journal of Accounting and Economics 23, 249-282.

Srinivasan, S., 2005. Consequences of financial reporting failure for outside directors: Evidence from accounting restatements and audit committee members. Journal of Accounting Research 43, 291-334.

Thompson, S.B., 2011. Simple formulas for standard errors that cluster by both firm and time. Journal of Financial Economics 99, 1-10.

Waymire, G.,1985. Earnings volatility and voluntary management forecast disclosure. Journal of Accounting Research 23, 268–295.

Whited, T.M., Wu, G., 2006. Financial constraints risk. Review of financial studies 19, 531-559.

Yang, H. 2012.Capital market consequences of managers' voluntary disclosure styles. Journal of Accounting and Economics 53, 167–184.

Appendix: Variable Definition

Variables	Definitions	Sources
AIM	Average value of a firm's daily AIM over the last year. Daily AIM = [10,000,000 × |return|÷ (price × volume)]	CRSP
BiasMF	Management forecast bias, measured as the averaged value of the difference between management forecast and realized earnings over a year, scaled by price	First Call
Bid-ask spread	Average value of a firm's daily bid-ask spread over the last year. Daily bid-ask spread is equal to 100 × (ask − bid)/[(ask + bid)/2]	CRSP
Book-to-market	Book-to-market ratio at the beginning of the current year, measured as the book value of equity divided by the market value of equity.	Compustat
Earnings volatility	Earnings volatility, measured as the standard deviation of the annual return on assets over the last five years.	Compustat
Firm size	Natural logarithm of the market value of equity at the beginning of current year.	Compustat
FreqMF	Logarithm of number of management forecasts issued in a year, zero for the firm-years with no forecasts issued.	First Call
High litigation risk	An indicator variable set to one for litigious industries including Biotechnology (SIC 2833 to 2836), Computer Hardware (SIC 3570 to 3577), Electronics (SIC 3600 to 3674), Retailing (SIC 5200 to 5961), and Computer Software (SIC 7371 to 7379), and zero otherwise;	Compustat
Institutional ownership	Institutional investor ownership, measured as the percentage of institutional ownership in a firm at the beginning of current year.	Thomson Reuters
IssuanceMF	An indicator variable equal to 1 if a firm issues a forecast in a year, zero otherwise	First Call
KZIndex	Financial constraint index following Kaplan and Zingales (1997) and Lamont, Polk, and Saa-Requejo (2001)	Compustat
Loss	Negative earnings, an indicator variable equal to one if income before extraordinary items of last year is negative, and zero otherwise.	Compustat
NewsMF	Management forecast news, measured as the averaged absolute value of difference between management forecast and prior consensus analyst forecast over a year, scaled by price.	First Call
Regulation FD	An indicator variable equal to 1 for the period after Regulation FD	
ROA	Return on firm assets of last year, measured as income before extraordinary items divided by total assets.	Compustat
Stock return	Buy-and-hold size-adjusted return over last year.	CRSP
UD Law	An indicator variable equal to 1 for the period after a state pass UD law for a firm in that state, zero otherwise.	Compustat
WidthMF	Management forecast width, measured as the averaged difference between the upper- and lower-end estimates over a year, scaled by price (point estimates have a range of zero	First Call
WWIndex	Financial constraint index following Whited and Wu (2006)	Compustat

Table 1: Adoption of Universal Demand (UD) Law

This table lists the states that adopted universal demand (UD) laws and the corresponding years as in Appel (2105).

States	Year	Reference
Georgia	1989	Georgia Code Ann. § 14-2-742
Michigan	1989	Michigan Comp. Laws Ann. § 450.1493a
Florida	1990	Florida Stat. Ann. § 607.07401
Wisconsin	1991	Wisconsin Stat. Ann. § 180.742
Montana	1992	Montana Code. Ann. § 35-1-543
Virginia	1992	Virginia Code Ann § 13.1-672.1B
Utah	1992	Utah Code. Ann. § 16-10a-740(3)
New Hampshire	1993	New Hampshire Rev. Stat. Ann. § 293-A:7.42
Mississippi	1993	Mississippi Code Ann. § 79-4-7.42
North Carolina	1995	North Carolina Gen. Stat. § 55-7-42
Arizona	1996	Arizona Rev. Stat. Ann. § 10-742
Nebraska	1996	Nebraska Rev. Stat. § 21-2072
Connecticut	1997	Connecticut Gen. Stat. Ann. § 33-722
Maine	1997	Maine Rev. Stat. Ann. 13-C, § 753
Pennsylvania	1997	Cuker v. Mikalauskas (547 Pennsylvania. 600, 692 A.2d 1042)
Texas	1997	Texas Bus. Org. Code. Ann. 607.07401
Wyoming	1997	Wyoming Stat. § 17-16-742
Idaho	1998	Idaho Code § 30-1-742
Hawaii	2001	Hawaii Rev. Stat. § 414-173
Iowa	2003	Iowa Code Ann. § 490.742
Massachusetts	2004	Massachusetts Gen. Laws. Ann. Ch. 156D, § 7.42
Rhode Island	2005	Rhode Island Gen. Laws. § 7-1.2-710(C)
South Dakota	2005	South Dakota Codified Laws 47-1A-742

Table 2: Summary Statistics

This table presents the summary statistics for the full sample over the period of 1998 to 2010.

Variables	N	Mean	Std. Dev.	P25	Median	P75
IssuanceMF	45,674	0.26	0.44	0.00	0.00	1.00
FreqMF	45,674	0.36	0.66	0.00	0.00	0.69
UD Law	45,674	0.16	0.37	0.00	0.00	0.00
Institutional ownership	45,674	0.45	0.31	0.15	0.44	0.71
Firm size	45,674	5.73	2.10	4.18	5.69	7.16
Book-to-market	45,674	0.69	0.59	0.31	0.53	0.85
ROA	45,674	0.00	0.19	-0.01	0.03	0.08
Stock return	45,674	-0.01	0.60	-0.35	-0.08	0.21
Earnings volatility	45,674	0.17	0.41	0.02	0.06	0.14
Loss	45,674	0.29	0.45	0.00	0.00	1.00
High litigation risk	45,674	0.27	0.44	0.00	0.00	1.00
Regulation FD	45,674	0.76	0.43	1.00	1.00	1.00

Table 3: The Impact of UD Law on Management Forecast Issuance

This table reports the result regarding the impact of UD law on the issuance of management forecasts. In columns (1), (2), and (3), the dependent variable is *IssuanceMF*, which is equal to 1 if a firm issues a management forecast in a given year and 0 otherwise. The dependent variable of columns (4), (5) and (6) is *FreqMF*, which is the logarithm of the number of management forecasts issued in a given year. Other variable definitions are in the Appendix. Robust t-statistics are reported in parenthesis. Standard errors are clustered at the state of incorporation level. *, **, and *** represent significant level at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	IssuanceMF			FreqMF		
UD Law	**0.0435****	**0.0572*****	**0.0532*****	**0.0829****	**0.0956*****	**0.0867*****
	(2.07)	**(5.41)**	**(4.59)**	**(2.21)**	**(3.86)**	**(3.59)**
Institutional ownership		0.0484**	0.0549***		0.0794***	0.0736***
		(2.51)	(3.53)		(3.31)	(3.47)
Firm size		0.0671***	0.0697***		0.1108***	0.1165***
		(18.04)	(16.07)		(13.52)	(16.09)
Book-to-market		0.0070	0.0089**		0.0187**	0.0232***
		(1.58)	(2.11)		(2.63)	(4.06)
ROA		0.0748***	0.0642***		0.0786***	0.0635***
		(7.73)	(7.41)		(4.20)	(4.72)
Stock return		0.0288***	0.0307***		0.0472***	0.0490***
		(11.64)	(12.35)		(14.40)	(14.96)
Earnings volatility		-0.0079	-0.0083		-0.0026	-0.0046
		(-1.27)	(-1.23)		(-0.40)	(-0.76)
Loss		-0.0446***	-0.0426***		-0.0750***	-0.0714***
		(-9.42)	(-8.35)		(-11.62)	(-11.45)
High litigation risk		-0.0044	0.0292		-0.0100	0.0102
		(-0.34)	(1.25)		(-0.35)	(0.26)
Regulation FD		-0.0940***	-0.2784*		-0.1552***	-0.3095*
		(-3.58)	(-1.86)		(-3.90)	(-1.85)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No
State-Year FE	No	Yes	Yes	No	Yes	Yes
FF48-Year FE	No	No	Yes	No	No	Yes
N	45,674	45,674	45,674	45,674	45,674	45,674
R-squared	0.5102	0.5243	0.5357	0.5784	0.5943	0.6102

Table 4: Cross-sectional Variations in the Impact of UD Law on Management Forecast Issuance

This table reports the results regarding the cross-sectional variations in the impact of UD law on management forecast issuances. The dependent variable of columns is *FreqMF*, which is the logarithm of the number of management forecasts issued in a given year. Other variable definitions are in the Appendix. Robust t-statistics are reported in parenthesis. Standard errors are clustered at the state of incorporation level. *, **, and *** represent significant level at 10%, 5%, and 1%, respectively.

Panel A

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FreqMF		FreqMF		FreqMF		FreqMF	
	High Inst. Ownership	Low Inst. Ownership	High Coverage	Low Coverage	High WWIndex	Low WWIndex	High KZIndex	Low KZIndex
UD Law	**0.0289**	**0.1386*** **	**-0.0409**	**0.1033*** **	**0.0832*** **	**0.0093**	**0.1740*** **	**0.0626** **
	(1.03)	**(6.22)**	**(-0.99)**	**(4.21)**	**(4.86)**	**(0.18)**	**(3.58)**	**(2.30)**
Institutional ownership	-0.1265***	0.2585***	-0.1316*	0.1558***	0.1829***	-0.0372	0.0990**	0.0494
	(-3.87)	(6.64)	(-1.87)	(5.67)	(5.50)	(-0.70)	(2.39)	(1.34)
Size	0.1699***	0.0624***	0.1526***	0.0533***	0.0731***	0.1350***	0.1105***	0.1064***
	(20.28)	(11.33)	(13.99)	(5.63)	(9.47)	(12.99)	(12.50)	(11.38)
Book-to-market	0.0145	0.0102	-0.0461***	0.0043	0.0166	-0.0049	0.0212*	0.0084
	(0.91)	(1.03)	(-5.05)	(0.62)	(1.62)	(-0.32)	(1.94)	(0.64)
ROA	0.0779	0.0703***	0.1444	0.0285*	0.0656***	0.0230	0.0762**	0.1085***
	(1.62)	(3.48)	(1.45)	(1.82)	(3.80)	(0.69)	(2.32)	(4.98)
Stock Return	0.0746***	0.0329***	0.0894***	0.0283***	0.0320***	0.0656***	0.0490***	0.0523***
	(15.44)	(6.51)	(13.18)	(3.76)	(11.29)	(8.10)	(9.59)	(8.70)
Earnings volatility	-0.0068	-0.0159**	-0.0081	-0.0188***	-0.0312***	0.0310***	0.0449***	-0.0122
	(-0.23)	(-2.61)	(-0.39)	(-3.49)	(-3.57)	(2.97)	(3.78)	(-1.42)
Loss	-0.0986***	-0.0367***	-0.0890***	-0.0359***	-0.0488***	-0.0850***	-0.0743***	-0.0493***
	(-6.53)	(-4.33)	(-5.77)	(-5.69)	(-5.86)	(-5.08)	(-8.41)	(-4.24)
High litigation risk	0.0228	0.0433	0.1942**	-0.0267	0.0414	-0.0198	0.0096	0.0278
	(0.21)	(1.55)	(2.29)	(-0.75)	(1.13)	(-0.22)	(0.19)	(0.41)
Regulation FD	0.6126**	0.1066	-0.5058**	-0.2791*	0.1731	-0.7068**	-0.2955	0.6969*
	(2.40)	(0.36)	(-2.18)	(-1.70)	(0.74)	(-2.01)	(-1.48)	(2.00)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FF48-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wald Test	9.316		8.992		3.916		4.007	
N	22,271	23,403	21,222	24,452	22,258	22,282	21,007	21,029
R-squared	0.6174	0.5947	0.6261	0.5467	0.5459	0.6381	0.6131	0.6633

Panel B

	(1)	(2)	(3)	(4)	(5)	(6)
	FreqMF		FreqMF		FreqMF	
	High bid ask spread	Low bid ask spread	High AIM	Low AIM	High Enforcement	Low Enforcement
UD Law	**0.1324*** **	**-0.031**	**0.0616** **	**-0.0778***	**0.0962***	**0.5088*** **
	(3.61)	**(-0.75)**	**(2.43)**	**(-1.73)**	**(1.71)**	**(6.59)**
Institutional ownership	0.0832**	-0.1557***	0.0710**	-0.0844**	0.2512***	0.3236***
	(2.19)	(-2.86)	(2.25)	(-2.22)	(3.22)	(8.03)
Size	0.0599***	0.1313***	0.0679***	0.1623***	0.1266***	0.0965***
	(8.14)	(11.57)	(8.43)	(11.52)	(9.04)	(5.13)
Book-to-market	0.0128	-0.0628***	0.0084	-0.0191	-0.0024	0.0212
	(1.29)	(-4.06)	(1.10)	(-1.34)	(-0.17)	(1.69)
ROA	0.0482***	0.1081*	0.0559***	0.0910*	0.1075***	0.0856***
	(3.18)	(1.83)	(4.68)	(1.88)	(2.78)	(3.72)
Stock Return	0.0311***	0.0781***	0.0350***	0.0787***	0.0655***	0.0369***
	(4.21)	(11.53)	(5.80)	(7.29)	(5.05)	(9.68)
Earnings volatility	-0.0182**	0.0541**	-0.0227***	0.0206	-0.0663	0.0631***
	(-2.24)	(2.50)	(-3.43)	(1.16)	(-0.79)	(5.07)
Loss	-0.0455***	-0.0937***	-0.0439***	-0.0927***	-0.0779***	-0.0042
	(-6.38)	(-5.91)	(-8.71)	(-6.62)	(-5.16)	(-0.52)
High litigation risk	-0.0233	0.1279	-0.0120	0.0661	0.1362	0.0845
	(-0.82)	(1.44)	(-0.27)	(0.72)	(1.03)	(1.03)
Regulation FD	0.0306	0.0593	-0.0939	2.2411***	-0.0498	2.5158***
	(0.43)	(0.17)	(-0.84)	(3.60)	(-0.21)	(18.09)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
FF48-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Wald Test	8.691		7.323		18.666	
N	22,839	22,835	22,832	22,842	5,447	3,825
R-squared	0.4765	0.6325	0.4890	0.6289	0.5353	0.5673

Table 5: Trend Analysis

This table reports the result of the trend analysis regarding the impact of UD law on management forecast issuance. In columns (1) and (2), the dependent variable is *IssuanceMF*, an indicator variable which is equal to 1 if a firm issues a management forecast in a given year and 0 otherwise. The dependent variable of columns (3) and (4) is *FreqMF*, which is the logarithm of the number of management forecasts issued in a given year. Other variable definitions are in the Appendix. Robust t-statistics are reported in parenthesis. Standard errors are clustered at the state of incorporation level. *, **, and *** represent significant level at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	IssuanceMF		FreqMF	
UD Law (=-2)	**0.009**	**0.012**	**-0.051**	**-0.050**
	(0.41)	**(0.46)**	**(-1.36)**	**(-1.53)**
UD Law (=-1)	**0.039**	**0.040**	**0.021**	**0.029**
	(1.25)	**(1.14)**	**(0.66)**	**(0.90)**
UD Law	**0.050****	**0.057*****	**0.055*****	**0.073*****
	(2.66)	**(3.98)**	**(2.72)**	**(5.36)**
UD Law (=+1)	**0.048*****	**0.055*****	**0.067***	**0.077****
	(2.90)	**(2.78)**	**(1.96)**	**(2.17)**
UD Law (>=+2)	**0.081*****	**0.071*****	**0.111****	**0.090***
	(3.21)	**(2.86)**	**(2.16)**	**(1.84)**
Institutional ownership	0.049**	0.055***	0.079***	0.074***
	(2.53)	(3.56)	(3.31)	(3.47)
Firm size	0.067***	0.070***	0.111***	0.117***
	(17.98)	(16.00)	(13.49)	(16.05)
Book-to-market	0.007	0.009**	0.019**	0.023***
	(1.57)	(2.10)	(2.63)	(4.05)
ROA	0.075***	0.064***	0.079***	0.063***
	(7.68)	(7.45)	(4.17)	(4.71)
Stock return	0.029***	0.031***	0.047***	0.049***
	(11.73)	(12.45)	(14.49)	(15.03)
Earnings volatility	-0.008	-0.008	-0.003	-0.005
	(-1.28)	(-1.23)	(-0.40)	(-0.76)
Loss	-0.045***	-0.043***	-0.075***	-0.071***
	(-9.39)	(-8.34)	(-11.59)	(-11.44)
High litigation risk	-0.005	0.029	-0.011	0.010
	(-0.38)	(1.24)	(-0.37)	(0.26)
Regulation FD	-0.095***	-0.280*	-0.149***	-0.303*
	(-4.00)	(-1.90)	(-3.44)	(-1.80)
Firm FE	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes
FF48-Year FE	No	Yes	No	Yes
N	45,674	45,674	45,674	45,674
R-squared	0.5243	0.5356	0.5943	0.6101

Table 6: Robustness Checks

This table reports the result of robustness checks regarding the impact of UD law on the frequency of management forecasts. The dependent variable is *FreqMF*, which is the logarithm of the number of management forecasts issued in a given year. Column (1) presents the result of dropping states for which UD laws were adopted before 1998. Columns (2) reports the result of restricting the sample to firms that have the same incorporation and headquarter states. Column (3) presents the result of removing firms that are incorporated in the ninth circuit states, while column (4) shows the result of dropping firms that are headquartered in the ninth circuit states. Other variable definitions are in the Appendix. Robust t-statistics are reported in parenthesis. Standard errors are clustered at the state of incorporation level. *, **, and *** represent significant level at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	FreqMF	FreqMF	FreqMF	FreqMF
UD Law	**0.0869*** **	**1.0993***	**0.0919*** **	**0.0624** **
	(3.47)	**(1.90)**	**(4.23)**	**(2.46)**
Institutional ownership	0.0914***	0.1636**	0.0644***	0.0374
	(4.13)	(2.23)	(2.93)	(1.47)
Firm size	0.1134***	0.0909***	0.1198***	0.1223***
	(13.88)	(5.30)	(21.14)	(11.90)
Book-to-market	0.0192***	0.0127	0.0264***	0.0286***
	(2.97)	(0.65)	(4.88)	(4.51)
ROA	0.0695***	0.0437	0.0686***	0.0659***
	(4.99)	(0.78)	(4.54)	(3.12)
Stock return	0.0490***	0.0445***	0.0486***	0.0499***
	(15.17)	(4.28)	(14.24)	(12.47)
Earnings volatility	-0.0054	-0.0155	-0.0013	-0.0034
	(-0.91)	(-0.38)	(-0.22)	(-0.33)
Loss	-0.0692***	-0.0732***	-0.0706***	-0.0761***
	(-10.32)	(-4.35)	(-13.46)	(-11.85)
High litigation risk	0.0067	0.1043	0.0225	0.0125
	(0.14)	(1.29)	(0.54)	(0.25)
Regulation FD	0.1277	-0.7795**	-0.3373*	-0.2875
	(0.78)	(-2.19)	(-1.93)	(-1.51)
Firm FE	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes
FF48-Year FE	Yes	Yes	Yes	Yes
N	38,868	13,997	42,255	36,040
R-squared	0.6087	0.6220	0.6110	0.6155

Table 7: The Impact of UD Law on the Types of Management Forecast Issuance

This table reports the result regarding the impact of UD law on the types of management forecasts issued. The dependent variable of column (1) is *FreqQuant*, which is the logarithm of the number of quantitative management forecasts. In column (2), the dependent variable is *FreqOpenRange*, which is the logarithm of the number of open range forecasts. The dependent variable of column (3) is *FreqPoint*, which is the logarithm of the number of point estimate forecasts. The dependent variable of column (4) is *FreqOptim*, which is the logarithm of the number of optimistic management forecasts. Other variable definitions are in the Appendix. Robust t-statistics are reported in parenthesis. Standard errors are clustered at the state of incorporation level. *, **, and *** represent significant level at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	FreqQuant	FreqOpenRange	FreqPoint	FreqOptim
UD Law	**0.0675****	**-0.0083****	**0.0485*****	**0.0364*****
	(2.55)	**(-2.22)**	**(3.53)**	**(3.53)**
Institutional ownership	0.0754***	-0.0051	0.0072	0.1003***
	(3.34)	(-1.52)	(0.60)	(6.04)
Firm size	0.1130***	0.0029***	0.0233***	0.0491***
	(15.96)	(3.98)	(8.96)	(13.95)
Book-to-market	0.0256***	-0.0018*	-0.0068***	0.0158***
	(4.34)	(-1.84)	(-2.95)	(4.49)
ROA	0.0546***	0.0074**	0.0284***	0.0342***
	(4.23)	(2.32)	(4.15)	(3.09)
Stock return	0.0458***	0.0018**	0.0175***	-0.0218***
	(13.22)	(2.08)	(10.28)	(-8.76)
Earnings volatility	-0.0032	0.0013	-0.0018	-0.0095*
	(-0.66)	(0.88)	(-0.34)	(-1.84)
Loss	-0.0782***	0.0024	-0.0036	-0.0435***
	(-12.71)	(1.57)	(-1.11)	(-8.30)
High litigation risk	0.0123	-0.0012	0.0115	0.0054
	(0.31)	(-0.17)	(0.69)	(0.14)
Regulation FD	-0.2355	0.0291	-0.2065***	-0.4800***
	(-1.37)	(0.88)	(-3.46)	(-3.50)
Firm FE	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes
FF48-Year FE	Yes	Yes	Yes	Yes
N	45,674	45,674	45,674	45,674
R-squared	0.5356	0.0845	0.2311	0.3539

Table 8: The Impact of UD Law on Management Forecast Precision

This table reports the result regarding the impact of UD law on management forecast precision. The dependent variable is the width of management forecasts, which is measured as the average difference between the upper- and lower-end estimates over a year, scaled by price (point estimates have a range of zero). Column (1) presents the result of the full sample. Columns (2) and (3) report the results of the management forecast width for traditional good and bad news, respectively. Columns (4) and (5) presents the results of the management forecast width for adjusted good and bad news as Rogers and Stocken (2013) respectively. Other variable definitions are in the Appendix. Robust t-statistics are reported in parenthesis. Standard errors are clustered at the state of incorporation level. *, **, and *** represent significant level at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
	WidthMF				
	All	Traditional Good News	Traditional Bad News	Adjusted Good News	Adjusted Bad News
UD Law	**-0.001*** **	**-0.001*** **	**-0.000**	**-0.002*** **	**0.001**
	(-4.79)	**(-4.41)**	**(-0.11)**	**(-5.74)**	**(1.64)**
Institutional ownership	-0.000	-0.000	0.001	0.000	0.001
	(-0.14)	(-0.24)	(1.28)	(0.73)	(1.10)
Firm size	-0.002***	-0.002***	-0.002***	-0.002***	-0.003***
	(-16.58)	(-15.20)	(-9.24)	(-17.31)	(-9.27)
Book-to-market	0.002***	0.002***	0.002***	0.002***	0.002***
	(7.63)	(7.01)	(6.05)	(7.79)	(5.09)
ROA	-0.001	-0.001	-0.002	-0.001	-0.002
	(-1.57)	(-1.66)	(-1.41)	(-1.12)	(-1.31)
Stock return	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-6.78)	(-3.58)	(-4.57)	(-6.11)	(-5.11)
Earnings volatility	-0.001***	-0.001***	-0.001**	-0.001***	-0.001*
	(-3.26)	(-3.83)	(-2.11)	(-6.04)	(-1.85)
Loss	0.000**	0.000***	0.000	0.001***	-0.000
	(2.53)	(3.08)	(1.10)	(4.32)	(-0.26)
High litigation risk	0.000	0.000	-0.001	0.001	-0.001
	(0.13)	(0.02)	(-1.13)	(1.17)	(-0.96)
Regulation FD	0.011**	-0.001	0.015***	-0.001	-0.018***
	(2.41)	(-0.28)	(4.30)	(-0.45)	(-3.69)
HorizonMF	0.001***	0.001***	0.001***	0.001***	0.002***
	(8.16)	(7.06)	(8.76)	(8.44)	(9.51)
BiasMF	0.000	-0.005	-0.002	-0.006**	-0.001
	(0.01)	(-1.58)	(-0.33)	(-2.37)	(-0.31)
NewsMF	0.049***	0.002	0.010**	0.003	0.007**
	(10.37)	(0.73)	(2.65)	(1.16)	(2.05)
Wald Test		4.768		16.623	
Firm FE	Yes	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes
FF48-Year FE	Yes	Yes	Yes	Yes	Yes
N	9,531	7,037	6,650	7,837	6,249
R-squared	0.6417	0.6000	0.6158	0.6083	0.6036