

Firm-Level Uncertainty, Earnings Call Disclosure, and Debt Structure

Jing-Chi Chen

Department of Accounting and Finance, University of West Georgia, USA

Yi-Mien Lin

Department of Accounting, National Chung Hsing University, Taiwan

Abstract

This study examines how firm-level uncertainty affects corporate debt financing and debt composition, how voluntary disclosure in earnings conference calls shapes these effects, and whether institutional investor horizons further moderate these relationships. We distinguish between bank loans and public bonds as two fundamentally different forms of debt. Our results show that firms facing higher idiosyncratic and implied volatility are significantly less likely to rely on debt financing, particularly bank debt, whereas higher political risk increases firms' reliance on debt and shifts borrowing toward bank loans rather than public bonds. Voluntary disclosures in earnings conference calls play a crucial role in shaping how uncertainty influences financing choices. Specifically, a more positive managerial tone amplifies the negative effect of uncertainty on debt issuance, while forward-looking earnings-related disclosures mitigate this adverse effect. Additional analyses reveal that transient and dedicated institutional investors differentially moderate the joint effects of uncertainty and disclosure on debt financing decisions. In particular, firms with greater ownership by transient investors exhibit stronger sensitivity of both debt usage and debt composition to uncertainty and disclosure, consistent with these investors' short-term orientation and greater trading responsiveness to information.

Keywords: Firm-level uncertainty, Financing choice, Bank debt, Public debt, Earnings call disclosure, Institutional investors

JEL code: G32, G34, M41

1. Introduction

This study examines how firm-level uncertainty affects debt financing and debt type choices, and how voluntary disclosure shapes these effects. Firms may raise capital through seasoned equity offerings, bank loans, or corporate bond issuance. We investigate how uncertainty around quarterly earnings announcement dates, including idiosyncratic volatility, implied volatility, and firm-specific political risk, influences short-term financing decisions in the quarter after the announcement. We focus on the debt and equity financing choice following quarterly earnings announcements and examine the moderating effect of voluntary disclosure in earnings conference calls. In addition, the study analyzes how different types of debt, such as bank loans from private lenders and public bonds, respond to uncertainty. These analyses deepen the understanding of financing decisions and debt composition in the context of information disclosure.

According to the pecking order theory (Myers and Majluf, 1984), firms prefer internal funds over external capital due to information asymmetry. When external financing is necessary, debt is preferred over equity to avoid dilution and adverse selection. The cost of external financing, however, depends on the quality of corporate disclosures. Timely and credible disclosures reduce information risk and alleviate lenders' concerns, thereby lowering the cost of debt (Sengupta, 1998). In this study, firm-level uncertainty is measured using idiosyncratic volatility, implied volatility derived from stock options, and firm-level political risk; financing channels are classified into equity issuance, bank borrowing, and public bond financing to identify how uncertainty affects access to external capital and the composition of debt.

Earnings conference calls provide timely and forward-looking information beyond financial statements. They allow investors to evaluate management's tone, credibility, and responses to questions, thereby reducing information asymmetry and influencing market reactions and

financing decisions (Hollander, Pronk, and Roelofsen, 2010). We examine how voluntary disclosure moderates the relationship between uncertainty and debt financing, focusing on positive tone and earnings-related disclosure. Beyond disclosure, institutional investors also play a pivotal role in corporate capital structure. Their expertise, information advantage, and concentrated ownership enable them to influence managerial decisions and monitor risk more effectively than retail investors. Institutional investors not only lower the cost of debt but also improve access to external financing (Brown et al., 2019). Dedicated investors, with longer investment horizons, tend to act as stronger monitors and improve governance (Borochin and Yang, 2017). Transient investors, in contrast, may impose short-term pressure and amplify risk-taking. Therefore, this study further investigates how these two types of institutional investors influence financing decisions following earnings announcements and voluntary disclosures.

Firm-level political risk, defined as sensitivity to policy changes (Hassan et al., 2019), adds another layer of uncertainty because lenders must assess creditworthiness under regulatory ambiguity (Huang, Shen, and Wu, 2023).¹ Without adequate safeguards, lenders may restrict financing to politically exposed firms, increasing financial distress risk. Prior research shows that such firms rely more on bank loans than on public bonds (Huang et al., 2023). Banks offer closer monitoring, renegotiation flexibility, and stronger enforcement (Cantillo and Wright, 2000; Li et al., 2019), making them a crucial financing channel under political uncertainty. We therefore include firm-level political risk as a key uncertainty measure.

Our results show that higher idiosyncratic volatility and implied volatility are associated with a lower likelihood of using debt, especially bank debt, suggesting that banks are more sensitive to firm-specific uncertainty than public bond investors. In contrast, political uncertainty increases

¹ Government policy uncertainty is known to shape corporate decisions. During such periods, firms often delay investment and adopt a conservative stance (Gulen and Ion, 2016).

firms' reliance on debt and shifts preference toward bank loans. Voluntary disclosures in earnings calls also shape these relationships. A more positive tone strengthens the negative effect of uncertainty on debt financing, whereas earnings-related disclosure weakens this effect and can even produce a positive association. This implies that lenders discount narrative optimism under uncertainty but place greater weight on forward-looking, earnings-based information when assessing credit risk. Political risk increases firms' reliance on bank loans, while earnings-related disclosure reduces information asymmetry for bond investors and weakens the association between political risk and public bond financing. This suggests that political uncertainty shifts credit evaluations toward lenders who depend less on public information, whereas forward-looking disclosure helps maintain access to public debt markets despite heightened political risk. Overall, tone and forward-looking disclosure play distinct roles in shaping financing decisions under uncertainty.

Additional analyses show that institutional investor type plays a central role in how firms adjust financing decisions under uncertainty. Under high idiosyncratic or implied volatility, transient investors intensify the negative effect of tone and reverse the positive effect of earnings-related disclosure on debt financing, indicating heightened sensitivity to uncertainty. Dedicated investors show a consistent negative moderating effect on earnings-related disclosure, reflecting their long-term risk orientation. For debt composition, both types of investors influence how disclosure and uncertainty interact, particularly in bank lending. Under high political risk, transient and dedicated investors strengthen the positive link between earnings-related disclosure and bank borrowing, indicating stronger reliance on forward-looking information when uncertainty is elevated. Overall, institutional investor heterogeneity meaningfully shapes the interaction between disclosure and uncertainty in financing behavior.

This study contributes to three major areas of literature. First, we extend the disclosure

literature by showing that qualitative information in earnings conference calls, including managerial tone and forward-looking specificity, influences firms' short-term financing decisions after quarterly earnings announcements. Prior research highlights the informational value of conference call language. Bushee and Huang (2024) document that managerial linguistic complexity provides meaningful signals, with informative Fog indicating higher future earnings and obfuscatory Fog indicating lower earnings. Perico Ortiz, Schnaubelt, and Seifert (2025) show that incorporating topics and tone from analyst questions and managerial responses improves the explanation of changes in implied volatility. Building on this evidence, our study extracts textual content from earnings calls to examine how voluntary disclosure moderates the relationship between uncertainty and firms' debt–equity choices and debt composition.

Second, it advances research on firm-level uncertainty and capital structure by showing that different forms of uncertainty, including idiosyncratic volatility, implied volatility, and political risk, influence financing choices in distinct ways. Firm-level uncertainty generally reduces debt usage, particularly bank borrowing, while political risk increases firms' reliance on bank loans because banks can monitor borrowers more closely and adjust lending relationships under regulatory or policy uncertainty. This shows that the source of uncertainty plays a critical role in shaping how firms access external financing.

Third, the study contributes to the institutional investor literature by showing that investor heterogeneity matters for financing outcomes under uncertainty. Prior evidence indicates that institutional investors influence conference call tone, with short-term institutions associated with more positive and opportunistic trading and long-term institutions linked to more cautious tone (Amoozegar et al., 2020). Consistent with this distinction, we find that dedicated investors interpret forward-looking disclosures as indicators of long-term risk and prefer more conservative debt decisions, whereas transient investors respond differently and exert a stronger influence when

uncertainty is high, shaping how disclosure and financing behavior interact. Overall, the findings provide an integrated perspective on how disclosure practices, different types of uncertainty, and institutional ownership jointly influence corporate financing strategies, offering practical insights for managers, investors, and policymakers.

The remainder of this paper is structured as follows. Section 2 reviews the literature and develops the hypotheses. Section 3 outlines the research methodology, including the empirical model, variable definitions, and data sources. Section 4 presents and interprets the empirical results. Section 5 concludes the study.

2. Literature Review and Hypothesis Development

Firm-level uncertainty is increasingly recognized as a critical determinant of corporate financing decisions. Uncertainty related to firm value, earnings quality, or business prospects creates information asymmetry between the firm and external capital providers, thereby influencing the cost, structure, and accessibility of financing. According to the pecking order theory (Myers and Majluf, 1984), firms facing high information asymmetry are more reluctant to issue equity due to potential undervaluation and dilution. In such cases, debt financing becomes the preferred alternative. However, when uncertainty reaches a sufficiently high level, even debt may become difficult to access or entail prohibitively high costs. Lenders may respond to elevated borrower risk by rationing credit, shortening maturities, or demanding higher interest rates and more restrictive contractual terms (Diamond, 1984; Stulz, 2000; Gamba and Triantis, 2008).

Recent studies suggest that firm-specific uncertainty, commonly measured using proxies such as idiosyncratic volatility or implied volatility, significantly increases creditors' perception of borrower risk (Lee, Wang, and Zhang, 2021; Nguyen and Phan, 2017). In response to this

heightened risk, creditors—particularly banks—engage in more rigorous screening processes and demand greater compensation for lending to firms deemed opaque or volatile (Bharath, Sunder, and Sunder, 2008; Francis, LaFond, Olsson, and Schipper, 2004). These firms often encounter tighter lending conditions, such as higher collateral requirements, stricter covenants, and reduced credit availability (Gao, Liao, Wang, and Yu, 2020; Hasan, Hoi, Wu, and Zhang, 2017). As a result, elevated firm-level uncertainty may not only increase the cost of borrowing but may also discourage firms from accessing debt financing altogether.

Different types of debt financing are not equally affected by firm-level uncertainty. Among available options, bank loans are particularly sensitive to borrower-specific risk. Relationship-based lending requires substantial private information gathering and continuous monitoring, which makes banks especially cautious in lending to firms with high uncertainty (Boot, 2000; Petersen and Rajan, 1994). When firm fundamentals are volatile or earnings are unpredictable, banks are more likely to reduce credit exposure or impose unfavorable lending terms. In contrast, public debt markets, although still responsive to risk, are supported by broader investor bases, greater portfolio diversification, and pricing mechanisms that rely on publicly available information. Bond investors can adjust exposure across issuers and across time, enabling them to absorb a certain degree of firm-level uncertainty more effectively than banks (Diamond, 1991; Faulkender and Petersen, 2006). Therefore, the impact of firm-level uncertainty on financing outcomes is likely to be more severe for bank debt than for public debt. Based on these theoretical considerations, we propose the following hypotheses:

H1a: Firm-level uncertainty, proxied by equity market-based measures, is negatively associated with the choice of debt financing.

H1b: The negative effect of firm-level uncertainty is more pronounced for bank debt financing

than for public debt financing.

In contrast to firm-specific uncertainty, political or policy-related uncertainty influences corporate financial decisions through broader and more systemic channels. While firm-level uncertainty arises from a company's internal operations or performance variability, political uncertainty originates externally, reflecting macro-institutional conditions such as regulatory instability, legislative changes, and shifts in governance structures (Gulen and Ion, 2016; Hassan, Hollander, van Lent, and Tahoun, 2019; Marciukaityte, 2018). This form of uncertainty is commonly associated with delayed investment, precautionary cash holdings, and more conservative corporate behavior.

Although early research suggests that political uncertainty raises cash flow volatility and default risk, thereby discouraging debt financing (Pastor and Veronesi, 2012; Kim and Zhang, 2016), more recent findings offer a nuanced perspective. Under political uncertainty, firms may avoid equity issuance due to increased investor risk aversion, valuation discounts, and potential control dilution (Dang, Lin, Liu, and Nguyen, 2021; Ghosh, Liu, and Mitra, 2022). In such contexts, debt financing can serve as a more flexible and less dilutive alternative for raising external capital.

One possible explanation is that politically connected firms often benefit from preferential access to credit markets, such as more favorable loan terms or implicit support from government-linked financial institutions (Faccio, 2006). In markets characterized by concentrated ownership or weak investor protections, firms may avoid equity financing due to concerns over undervaluation or loss of control. Debt allows firms to maintain existing governance structures while obtaining the necessary capital to support operations and investment.

Moreover, drawing on signaling theory (Myers and Majluf, 1984), issuing debt during

periods of elevated political risk may serve as a credible signal of managerial confidence in the firm's future cash flows and operational resilience. This signaling effect becomes particularly salient in environments where information asymmetry is pronounced and external stakeholders have limited visibility into firm fundamentals. Because political risk tends to affect entire sectors or economies, firms may find bank loans more attractive than public debt, given the ability to negotiate privately, build long-term relationships, and secure customized terms from lenders. Taken together, these arguments suggest that political uncertainty may tilt firms' financing choices toward debt, and especially toward bank debt. We therefore propose the following hypotheses:

H2a: Higher firm-level political uncertainty increases firms' reliance on debt financing rather than equity financing.

H2b: The positive effect of firm-level political uncertainty on debt financing is stronger for bank loans than for public bonds.

Furthermore, the above arguments highlight the importance of distinguishing among different sources of uncertainty when evaluating financing behavior. While firm-level uncertainty, such as idiosyncratic volatility or implied volatility, tends to discourage firms from relying on debt due to increased perceived default risk and heightened investor skepticism, political uncertainty may, under certain institutional conditions, encourage the use of debt as both a strategic financing decision and a communicative device. In both cases, however, the firm's information environment is likely to shape how uncertainty is interpreted by capital market participants.

High-quality disclosures improve transparency, reduce informational frictions, and enhance investor confidence, thereby mitigating the adverse effects of uncertainty on financing conditions. For instance, McBrayer (2019) finds that firms with credit ratings incur lower investment banking

fees and experience less dilution in equity offerings, demonstrating that credible disclosure reduces financing costs. Gulen and Ion (2016) show that firms become more cautious with investment and financing decisions during periods of heightened policy uncertainty. Pastor and Veronesi (2013) suggest that the effects of such uncertainty may subside as investors gradually learn about new policies. However, as Benamar, Foucault, and Vega (2021) emphasize, even proactive information acquisition cannot fully eliminate the impact of exogenous or structural uncertainty.

Additional research indicates that firm-specific disclosures actively influence how uncertainty affects financing behavior. For example, Ongsakul et al. (2025) employ text-based machine learning to measure COVID-related uncertainty in earnings call transcripts and find that firms with greater exposure tend to increase their reliance on debt financing. However, this tendency is shaped by the credibility and specificity of the firm's communication. When disclosures are timely, clear, and informative, they help reduce perceived risk and maintain investor trust even in uncertain conditions.

Various dimensions of disclosure, such as tone, specificity, and forward-looking content, also shape investor interpretations of firm-level uncertainty. Huang, Teoh, and Zhang (2014) show that the use of optimistic tone in earnings announcements can influence investor sentiment, although such tone becomes less persuasive under high uncertainty. Hope, Hu, and Lu (2016) find that the disclosure of specific risk factors improves market responses and reduces information asymmetry. Li (2010) highlights the predictive value of forward-looking statements in financial filings, particularly when these statements are linguistically clear and substantively meaningful. These findings suggest that it is not only the existence of disclosure that matters, but also its clarity, precision, and informational quality.

In uncertain environments, firms that provide vague, generic, or boilerplate disclosures may

fail to reduce investor concerns, resulting in higher financing costs and limited access to external capital. Conversely, firms that offer transparent and credible information about specific risks and future strategies are more likely to maintain favorable borrowing terms and financing flexibility. Therefore, effective disclosure practices can serve as a strategic mechanism to cushion the impact of uncertainty on capital structure decisions. Building on this reasoning, and focusing on the role of earnings calls as a key disclosure channel, we propose the following hypothesis:

H3: Voluntary disclosure in earnings conference calls moderates the effect of firm-level uncertainty on firms' financing choices, influencing both the likelihood of debt issuance relative to equity and the choice between bank loans and public bonds.

3. Research Methodology

3.1 Empirical model

This study examines how firm-level uncertainty and the information content of earnings conference calls influence firms' subsequent equity–debt financing choices and their selection among alternative debt types. To test Hypotheses H1a and H2a, we estimate the following logit regression to assess whether higher uncertainty increases or decreases the likelihood of using debt financing to raise external capital. Hypotheses H1a and H1b use idiosyncratic volatility and implied volatility as measures of uncertainty, while Hypotheses H2a and H2b use firm-level political risk to capture the effects of a distinct, policy-driven source of uncertainty.

In the logit regression, the dependent variable *DebtEquity* is a binary indicator of the firm's financing choice. It equals 1 if the firm raises external capital through debt issuance in the quarter following quarterly earnings announcement and 0 if the firm issues seasoned equity or undertakes no external financing during that period.

$$DebtEquity_{t+1} = a_0 + a_1 Uncertainty_t + \sum a_j OtherControl + Industry + Year + e_{t+1} \quad (1)$$

where *Uncertainty* represents firm-level uncertainty and is measured using three indicators: (1) mean idiosyncratic stock volatility, (2) implied volatility from stock options, and (3) firm-level political risk. All measures capture uncertainty around quarterly earnings announcements. *OtherControl* includes additional control variables such as the investment-grade indicator (*InvestGrade*), quarterly stock return (*Ret*), excess leverage (*ExcessLeverage*), financial distress (*ZScore*), stock volatility (*StockVol*), cash holdings (*CashEqu*), tangible assets (*PPE*), financial leverage (*Leverage*), operating cash flows (*OCF*), capital expenditures (*CAPXAT*), market-to-book ratio (*MB*), and return on assets (*ROA*). Variable definitions are provided in the Appendix.

To test Hypotheses H1b and H2b, we employ a Tobit regression to assess how firm-level uncertainty influences firms' debt type decisions. The dependent variable is defined as either the ratio of bank loans to total debt or the ratio of public debt to total debt, thereby capturing the firm's reliance on different debt types.

$$DebtType_{t+1} = a_0 + a_1 Uncertainty_t + \sum a_j OtherControl + Industry + Year + e_{t+1} \quad (2)$$

We further test H3 to examine whether corporate information disclosure during earnings conference calls weakens the relationship between firm-level uncertainty and firms' reliance on debt financing, including both the choice of debt over equity and type of debt obtained. The specifications are as follows:

$$DebtEquity_{t+1} = a_0 + a_1 Uncertainty_t + a_2 ConferCall_t + a_3 (Uncertainty_t ConferCall_t) + \sum a_j OtherControl + Industry + Year + e_{t+1} \quad (3)$$

$$DebtType_{t+1} = a_0 + a_1 Uncertainty_t + a_2 ConferCall_t + a_3 (Uncertainty_t ConferCall_t) + \sum a_j OtherControl + Industry + Year + e_{t+1} \quad (4)$$

The debt type variables (*DebtType*) are obtained from the S&P Capital IQ database. Following Huang, Shen, and Wu (2023), we classify debt into two categories: (1) Bank loans,

which include term loans and revolving credit; and (2) Public debt, which consists of senior bonds and notes, subordinated bonds and notes, and commercial paper. To capture firms' reliance on different types of debt financing, we construct two measures of debt structure: (1) *BankTD*, calculated as the ratio of bank loans to total debt (Bank loans / Total debt); and (2) *PublicTD*, calculated as the ratio of public corporate bonds to total debt (Public debt / Total debt). The set of control variables (*OtherControl*) remains the same as those included in Equations (1) and (2).

3.2 Additional Analysis- Moderating role of institutional investors

Different types of institutional investors' shareholdings have distinct impacts on firms' misvaluation and governance. Long-term institutional investors possess informational advantages, which help reduce future firm misvaluation and lead to better corporate governance characteristics. Conversely, transient institutional investors have the opposite effect (Borochin and Yang, 2017). Institutional investors with longer investment horizons are more incentivized to monitor firms effectively, thus improving firms' information quality and reducing financing costs (Attig et al., 2012). Additionally, institutional investors influence firms' capital structure decisions and significantly affect their financing activities (Brown et al., 2019). Therefore, this study further examines how long-term institutional investors (DED) and transient institutional investors (TRA) shape firms' financing choices during the month of and the month following the quarterly earnings conference call, which occurs after voluntary information disclosure. The analysis includes both DED and TRA investor types to capture their differential impact on financing behavior. In addition, the qualitative disclosure variable is incorporated into the model to examine whether the tone and content of voluntary disclosures influence firms' capital-raising decisions in the quarter following the earnings conference call.

3.3 Variable definitions

Uncertainty measure

There are two indicators of firm-level uncertainty: (1) Mean stock-level idiosyncratic volatility (IVOL), as used by Bloom (2014). IVOL identifies whether average firm-level uncertainty is abnormally high or low. Following Birru and Young (2022), idiosyncratic volatility (IVOL) is measured as the standard deviation of the residuals from the Fama and French (1993) three-factor model using daily stock returns over the 90 days prior to the quarterly earnings announcement date. Implied volatility (IV) is derived from firms' stock options and serves as an alternative measure of firm-level uncertainty. Following Neilson (2022), this study calculates IV as the standardized average of implied volatilities from 90-day call and put options prior to the earnings announcement date.

Firm-level political risk

Firm-level political risk (PolRisk) is measured using the firm-level policy uncertainty index developed by Hassan, Hollander, van Lent, and Tahoun (2019). This index captures the frequency of discussions about political risk in quarterly earnings call transcripts, based on natural language processing (NLP) techniques. A higher value indicates greater firm-specific exposure to political risk. Firm-level political risk (*PoRisk*) is obtained from the firm-level policy uncertainty index provided by Hassan, Hollander, van Lent, and Tahoun (<https://www.firmlevelrisk.com/download>). This measure captures the percentage of discussions related to political topics, weighted by the total number of bigrams included in the transcripts. Thus, higher PolRisk values indicate higher levels of firm-level political risk. The firm-level political uncertainty measure (PoRisk) developed by Hassan et al. (2019) is constructed using textual analysis of quarterly earnings conference-call transcripts of U.S. firms from 2001 to 2016. They employ a training library of political texts to

distinguish political from non-political topics, covering areas such as economic policy, budgets, healthcare, and non-political themes.

Conference call Information disclosure

Qualitative information disclosure (*ConferCall*) includes disclosure tone, disclosure uncertainty, and non-earnings-related forward-looking statements.

Disclosure tone

Following the approach used in prior literature, this study expects that greater positive (negative) voluntary disclosures, as captured by *Tone*, are associated with lower (higher) risk forecasts by analysts and investors. *Tone* is measured as the difference between positive and negative word counts divided by total words in earnings conference calls, multiplied by 100. Positive and negative words are identified using Loughran and McDonald's (2011) dictionary.

Forward-looking earnings-related disclosures

Bozanic, Roulstone, and Van Buskirk (2018) find a strong negative association between earnings-related forward-looking disclosures and uncertainty. This study identifies earnings-related forward-looking statements (*FLSEarning*) following the methodologies proposed by Bozanic, Roulstone, and Van Buskirk (2018) and Bochkay and Joos (2021). *FLSEarning* is measured as the number of sentences containing earnings-related forward-looking statements divided by the total number of sentences in earnings conference calls.

Institutional investor types

We measure institutional investors' investment horizons following Gaspar, Massa, and Matos (2005), who classify horizons using the churn rate (CR), which reflects how frequently an investor rotates its stock holdings.

$$CR_{g,t} = \frac{\sum_{i=1}^{N_{g,t}} |S_{g,i,t}P_{i,t} - S_{g,i,t-1}P_{i,t-1} - S_{g,i,t-1}\Delta P_{i,t}|}{\sum_{i=1}^{N_{g,t}} \frac{S_{g,i,t}P_{i,t} + S_{g,i,t-1}P_{i,t-1}}{2}}$$

The subscript g denotes an institutional investor, i denotes a firm invested in by institutional investor g , and t denotes the period. $N_{g,t}$ represents the number of firms included in institutional investor g 's stock portfolio during period t . $S_{g,i,t}$ is the number of shares of firm i held by institutional investor g at the end of period t , and $P_{i,t}$ is the stock price of firm i at the end of period t . In the equation above, the numerator of the churn rate $CR_{g,t}$ represents the absolute change in the total value of institutional investor g 's stock investment portfolio resulting from stock trading during period t . The denominator represents the average total value of investor g 's stock portfolio during the same period. Therefore, the churn rate $CR_{g,t}$ captures the stock turnover rate of institutional investor g 's investment portfolio for period t .

Gaspar, Massa, and Matos (2005) set the analysis period as quarterly and define the annual average churn rate as follows: $AVG_CR_{g,t} = \frac{1}{4} \sum_{r=1}^4 CR_{g,t-r+1}$. Yan and Zhang (2009) divide institutional investors into three groups based on their average churn rate. Institutions in the highest tercile (top one-third) are classified as transient institutional investors due to their higher shareholding turnover, whereas institutions in the lowest tercile (bottom one-third) are classified as dedicated institutional investors because of their lower shareholding turnover. The proportion of shares held by dedicated institutional investors (DED) is calculated as the number of shares held by dedicated investors divided by the total shares held by all institutional investors. Similarly, the proportion of shares held by transient institutional investors (TRA) is defined as the number of shares held by transient investors divided by the total shares held by all institutional investors.

Othe Control variables

Control variables include the following. Financial leverage (*Leverage*) is calculated as total debt (the sum of long-term debt and current liabilities) divided by total assets. Investment grade (*InvestGrade*) is a dummy variable equal to 1 if the firm's existing debt rating is BBB or higher, and 0 otherwise. Quarterly stock return (*Ret*) is measured as the compounded CRSP stock return over the three months ending each quarter. Stock volatility (*StockVolatility*) is calculated as the standard deviation of monthly stock returns over the current quarter and the prior eleven quarters, totaling twelve quarters. Cash equivalent (*CashEqu*) represents the firm's holdings of cash and near-cash assets. Gross property, plant, and equipment (*PPEG*) is the book value of fixed assets before depreciation. Operating cash flow (*OCF*) is defined as operating cash flow divided by total assets. Capital expenditure (*CAPXAT*) is measured as capital expenditure divided by total assets. Market-to-book ratio (*MB*) is the market value of equity divided by its book value. Financial distress (*ZScore*) measures a firm's financial health and predicts the probability of future bankruptcy. A lower ZScore indicates a higher likelihood of financial distress, whereas a higher ZScore suggests a healthier financial condition for the firm. ROA is NI divided by total assets.

Excess leverage (*ExcessLeverage*) follows Shen and Zhang (2020) and is based on the Fama and French 48-industry classification. It is defined as the difference between a firm's actual leverage ratio and its predicted leverage ratio, where the predicted leverage is estimated as follows:

$$MLeverage_{it} = b_0 + b_1 LnAsset_{it} + b_2 Q_{it} + b_3 ROA_{it} + b_4 Tang_{it} + b_5 RDSale_{it} + b_6 SGASale_{it} + IndustryFE + YearFE + e_{it}$$

where MLeverage is the market leverage ratio; LnAsset is the natural logarithm of total book assets (at); Q is Tobin's q; Tang is net property, plant, and equipment (ppent) scaled by total assets; ROA is operating income before interest, taxes, depreciation, and amortization divided by total assets (oibdp/at); RDSale is R&D expenses divided by sales (xrd/sale); and SGASale is SG&A expenses divided by sales (xsga/sale).

3.4 Data sources

The primary research period spans from 2006 to 2022, covering 17 years. However, to compute earnings volatility using a three-year rolling window, the sample period is extended to 2004, resulting in a total coverage of 19 years (2004 to 2022). The sample consists of publicly listed firms in the U.S. capital market, specifically those included in the S&P 1500 index. To maintain comparability in industry characteristics and accounting practices, firms in the financial and insurance industries, as well as utilities due to their distinct regulatory environments, are excluded. Observations with missing or incomplete data are removed, and duplicate firm quarter-year records are eliminated. Firm-level accounting and financial variables are obtained from Compustat, stock prices and returns are collected from CRSP, and analyst-related data are sourced from the I/B/E/S database.

Table 1 reports the industry distribution based on the Fama-French 12 industry classification. The total sample includes 21,124 firm-quarter observations. The largest industry group is Business Equipment (for example, computers, software, and electronic equipment), with 5,158 observations, representing 24.42 percent of the sample. The second-largest industry is Manufacturing (for example, machinery, trucks, and printing), which contains 3,816 observations, representing 18.06 percent. This is followed by Wholesale, Retail, and Selected Services, with 3,530 observations, accounting for 14.20 percent of the sample.

Table 1 around here

4. Empirical Results

4.1 Descriptive statistics

Table 2 presents the descriptive statistics for the selected variables. The dependent variable,

$DebtEquity_{t+1}$, has a mean of 0.689 and a standard deviation of 0.463, with the 25th and 75th percentiles at 0 and 1, indicating a distribution that closely resembles a binary outcome. $PoRisk$, which captures firm-level political risk, has an average value of 110.61 and a high standard deviation of 181.89, suggesting substantial cross-sectional variation in firms' exposure to political uncertainty. $IVOL$, the standardized measure of idiosyncratic volatility, has a mean of 0.096 and a standard deviation of 1.01. This distribution indicates that while most firms exhibit moderate volatility, a subset of firms experience considerably elevated levels. IV , representing implied volatility derived from stock options, has a mean of 0.08 and a standard deviation of 1.00. This distribution reflects moderate variation with a long right tail associated with periods of heightened market uncertainty. $DebtType$ consists of two components, $BankTD$ and $PublicTD$. $BankTD$, defined as bank loans divided by total debt, has a mean of 0.4270, while $PublicTD$, defined as public debt divided by total debt, has a mean of 0.5248. Lastly, $Tone$, which captures the sentiment embedded in qualitative disclosures, has a mean of 0.978, and the FLS earnings-related disclosure measure has a mean of 7.375.

Table 2 around here

4.2 Firm-level uncertainty and debt financing choice

Table 3 examines whether firm-level uncertainty is associated with a higher likelihood of choosing debt financing over equity financing, using a logit regression. The uncertainty measures include idiosyncratic volatility ($IVOL$), implied volatility derived from stock options (IV), and firm-level political risk ($PoRisk$). The dependent variable, $DebtEquity$, is a binary indicator of a firm's financing choice, where a value of 1 indicates that the firm engages in debt financing in the next quarter, and a value of 0 indicates either seasoned equity issuance or no external financing.

In Columns (1) and (2), the evidence shows that $IVOL$ and IV are negatively and

significantly associated with the *DebtEquity* indicator. This suggests that firms with higher levels of idiosyncratic or implied volatility are less likely to use debt financing. A plausible explanation is that greater volatility heightens the probability of financial distress, thereby increasing the cost of debt or restricting the firm's access to credit markets (Minton and Schrand, 1999; Zhang, 2009). Consequently, firms may avoid debt to reduce borrowing costs or to circumvent more stringent lending conditions. Therefore, our results support hypothesis H1a.

In Column (3), *PoRisk* is positively and significantly related to debt financing, indicating that firms exposed to greater firm-level political risk are more likely to favor debt over equity, supporting hypothesis H2a. This pattern may reflect the difficulties such firms face when accessing equity markets, where investor skepticism, reputational concerns, and valuation discounts are more pronounced (Kim, Pantzalis, and Park, 2012). Moreover, political risk is largely external and difficult for firms to control or mitigate, which may further discourage equity investors. In contrast, debt financing, particularly through domestic or relationship-based banks, can provide a more stable and less visible source of capital, especially under uncertain institutional conditions (Faccio, Masulis, and McConnell, 2006).

Table 3 around here

4.3 Firm-level uncertainty and debt financing type

Table 4 presents Tobit regression results that examine the relationship between firm-level uncertainty and the composition of debt financing. Columns (1) and (2) use idiosyncratic volatility (*IVOL*) as the proxy for uncertainty, Columns (3) and (4) use implied volatility (*IV*), and Columns (5) and (6) employ firm-level political risk (*PoRisk*) as the measure of uncertainty. The results indicate that both *IVOL* in Column (1) and *IV* in Column (3) are negatively associated with the ratio of bank loans to total debt (*BankTD*), suggesting that higher levels of firm-specific

uncertainty lead firms to reduce their reliance on bank financing. In contrast, the effect on public debt is weaker. The coefficient on public debt (PublicTD) is significant only when IV is used in Column (4), while the IVOL measure in Column (2) is insignificant. This pattern implies that firms generally scale back debt financing under uncertainty, with the reduction being more pronounced for bank debt than for public debt. Therefore, these findings support hypothesis H1b. In contrast, political risk exhibits a different pattern. The coefficient in Column (5) shows a positive and significant relationship between PoRisk and BankTD, suggesting that firms increase their reliance on bank loans when facing political uncertainty. However, the relationship between PoRisk and PublicTD in Column (6) is insignificant, indicating that political risk has limited influence on public debt issuance. Therefore, the results support hypothesis H2b.

Taken together, the results suggest that firm-level uncertainty, as captured by IVOL and IV, discourages debt financing, particularly through bank lending. By contrast, political uncertainty appears to prompt firms to shift their financing strategies toward greater reliance on bank debt. These findings highlight the importance of distinguishing among different types of uncertainty, as they exert divergent effects on firms' capital structure decisions.

Table 4 around here

4.4 Moderating role of information disclosure – debt financing

Table 5 examines whether voluntary information disclosure in earnings conference call transcripts moderates the relationship between firm-level uncertainty and the choice between debt and equity financing. Columns (1) and (2) show that firms with higher idiosyncratic volatility (IVOL) are less likely to choose debt financing, supporting hypothesis H1a. A more positive tone in earnings conference calls strengthens this negative association between IVOL and debt financing, suggesting that optimistic language does not mitigate but instead amplifies the negative

impact of uncertainty on firms' reliance on debt. One explanation is that the descriptive statistics show a negative mean value of Tone, indicating that firms generally use more negative than positive language. As a result, the overall tone effect reinforces the negative uncertainty–debt relationship, potentially leading firms to rely more on equity financing or alternative funding channels. However, forward-looking earnings-related disclosure significantly weakens this negative relationship and even shifts it from negative to positive. One possible explanation is that forward-looking information increases transparency about future performance, thereby reducing lenders' concerns about uncertainty. With lower perceived risk and a lower cost of debt, firms face less pressure to avoid debt financing and may become more willing to rely on debt. Overall, the results based on IVOL support hypothesis H3.

Columns (3) and (4) adopt implied volatility (IV) to measure uncertainty, and the findings are consistent with those based on IVOL, supporting hypothesis H1a. Higher IV significantly reduces the likelihood of choosing debt over equity financing. A more positive earnings call tone further strengthens this negative relationship between IV and debt financing. In contrast, forward-looking earnings-related disclosure causes the association between uncertainty and debt financing to become less negative and turn positive. In other words, forward-looking disclosure significantly weakens the negative relationship between uncertainty and firms' debt-financing choice. Hence, the results based on IV support hypothesis H3.

In addition, Columns (5) and (6) use firm-level political risk to measure uncertainty. The evidence shows that PoRisk is positively related to the tendency to choose debt financing over equity financing. One possible explanation is that political risk increases the risk premium demanded by equity investors more than that demanded by lenders, making equity issuance more costly and leading firms to rely relatively more on debt financing. Hence, our results support hypothesis H2a. Regarding earnings conference call disclosure, the results show that disclosure

tone and earnings-related disclosure do not significantly affect the relationship between political risk and firms' debt-financing tendency. A plausible explanation is that, although political risk is measured at the firm level, it still reflects exposure to external regulatory, geopolitical, or policy-related uncertainties that managers cannot meaningfully mitigate through voluntary disclosure in earnings calls. As a result, managers' language has limited ability to influence stakeholders' perceptions of firm-level political risk. Hence, the evidence does not support hypothesis H3.

Tables 5 around here

4.5 Moderating role of information disclosure – debt financing type

Table 6 examines how voluntary information disclosure moderates the relationship between firm-level uncertainty and debt financing composition. Panel A shows that higher idiosyncratic volatility (IVOL) is significantly associated with a lower proportion of bank debt (BankTD), suggesting that banks reduce lending when firm-specific risk increases. The interaction between IVOL and positive tone is negative and significant, indicating that a more optimistic tone strengthens the adverse effect of uncertainty on bank lending. In contrast, earnings-related disclosure reverses this negative relationship, meaning that forward-looking information helps clarify firms' future prospects and makes lenders more comfortable extending bank credit. For public debt (PublicTD), IVOL is positively associated with public bond financing, and earnings call disclosure does not significantly modify this positive relationship.

Panel B, which uses implied volatility (IV), presents patterns consistent with those in Panel A. Higher IV significantly reduces bank debt usage, while the effect on public debt is weaker. As in Panel A, greater disclosure in earnings calls is associated with increased bank borrowing. The interaction between IV and tone is negative and significant, showing that optimistic language does not alleviate lender concerns under uncertainty. In contrast, earnings-related disclosure again

offsets the negative effect of IV, meaning that forward-looking statements provide lenders with credible signals about firm fundamentals, thereby supporting credit access. For public corporate bond financing, the moderating role of disclosure is limited.

Panel C shows that higher political risk is associated with greater reliance on bank loans, and earnings call disclosures do not diminish this positive relationship. In contrast, earnings-related disclosure weakens the positive association between political risk and public bond financing. Political risk increases firms' reliance on bank loans, and disclosure tone does not offset this tendency because bank lenders depend more on relationship-based information. However, for public bond debt, earnings-related disclosure reduces information asymmetry and weakens the positive impact of political risk on bond financing.

Tables 6 around here

4.6 Additional Analysis-

4.6.1 Dedicated vs. Transient Institutional Investor Moderating Effect on Debt Financing

Table 7 examines whether different types of institutional investors, specifically dedicated (DED) and transient (TRA) investors, moderate the effects of firm-level uncertainty and voluntary disclosure on debt financing decisions. Using the IVOL-divided sample to distinguish high- and low-uncertainty firms, the results show that high IVOL reduces the likelihood of debt financing. The moderating role of voluntary disclosure varies by disclosure type. Under high IVOL, earnings call tone strengthens the negative association between uncertainty and the tendency to obtain debt financing, whereas earnings-related disclosure reverses this negative relationship, turning it into a positive association.

Transient institutional investors exhibit a significant moderating effect. Under conditions of high IVOL, TRA investors strengthen the negative effect of Tone disclosure on debt financing and reverse the positive influence of earnings-related voluntary disclosure, turning it into a

negative association with debt financing decisions. These results suggest that TRA investors amplify firms' sensitivity to uncertainty by discouraging the use of debt and potentially shifting firms toward alternative financing channels when disclosure signals become more informative. The findings in Columns (3) and (4), which use IV, are consistent with the results in Columns (1) and (2) based on IVOL. The effect of DED investors remains negative for earnings-related disclosure, as shown in Columns (2) and (4). This implies that dedicated investors view earnings-related disclosures as signaling greater long-term risk, prompting them to discourage debt financing. Their monitoring incentives and long-term investment horizon therefore produce a consistently negative effect.

Political risk is positively associated with the tendency to obtain debt financing, consistent with the results in Table 5. Earnings call disclosure also shows a negative association with debt financing, while earnings-related disclosure is positively related to firms' reliance on debt. Under high political risk, transient institutional investors enhance the negative relationship between disclosure and debt financing tendencies. Overall, these findings support the main results and provide additional evidence that transient institutional investors exert a moderating effect.

Tables 7 around here

4.6.2 Dedicated vs. Transient institutional investor moderating effect- debt type

Table 8 examines how dedicated (DED) and transient (TRA) institutional investors influence the relationship between firm-level uncertainty (IVOL), disclosure, and firms' debt composition, using Tobit regressions with bank debt (BankTD) and public debt (PublicTD) as dependent variables. Using the IVOL-divided sample to distinguish high- and low-uncertainty firms, the results show that high IVOL reduces the amount of bank loans obtained in the quarter following the earnings announcement. The moderating role of voluntary disclosure varies by disclosure type.

Under high IVOL, earnings call disclosure is negatively associated with bank loan usage, whereas earnings-related disclosure is positively associated with bank loan usage. Transient institutional investors also exhibit a meaningful moderating effect. Under high IVOL, TRA investors reverse the negative relationship between Tone disclosure and bank loan usage into a positive association, and they further strengthen the positive relationship between earnings-related disclosure and bank loan usage. Moreover, DED investors exhibit a consistent moderating effect. This implies that transient investors amplify firms' responsiveness to uncertainty by encouraging greater reliance on bank financing when disclosure signals become more informative.

The results in Columns (3) and (4), estimated using IV, are consistent with the IVOL-based findings reported in Columns (1) and (2). Political risk is positively associated with bank loan financing, consistent with the results in Table 6. Under high political risk, earnings-related disclosure is positively related to bank loan usage. Moreover, under high political risk, both transient and dedicated institutional investors strengthen the positive relationship between earnings-related disclosure and bank loan financing. This implies that institutional investors, regardless of type, place greater emphasis on earnings-related information when firms face elevated political uncertainty, thereby reinforcing its influence on debt financing decisions.

Tables 8 around here

5. Conclusions

This study examines how firm-level uncertainty influences corporate debt financing choices, including its effect on the composition of debt types, and how this influence varies with firms' voluntary disclosure activities. In additional analyses, we further investigate whether transient and dedicated institutional investors exert monitoring effects on these relationships. We find that firm-

level uncertainty affects the likelihood of choosing debt financing, and the moderating effect of voluntary disclosure depends on disclosure type. Idiosyncratic and implied volatility both have negative effects on debt financing, and a more positive tone in earnings calls further strengthens this negative relationship. In contrast, forward-looking earnings-related disclosure weakens and may even reverse the negative effect of uncertainty by reducing perceived risk for lenders. When uncertainty is measured by political risk, firms are more likely to rely on debt, but voluntary disclosure does not significantly moderate this relationship, likely because political risk reflects external forces that cannot be mitigated through managerial communication.

Moreover, firm-level uncertainty affects the composition of debt financing, and the moderating effects of voluntary disclosure differ across disclosure types. Higher idiosyncratic and implied volatility reduce reliance on bank debt, while effects on public debt are weaker. A more positive earnings call tone amplifies the negative impact of uncertainty on bank borrowing, whereas earnings-related disclosure reverses this effect by providing forward-looking information that increases lenders' confidence. For public debt, disclosure plays a limited role except under political risk. Political risk increases reliance on bank loans, and earnings-related disclosure reduces information asymmetry for bond investors and weakens the positive association between political risk and public bond financing.

In additional analysis, we find that under high idiosyncratic and implied volatility, earnings call tone strengthens the negative relationship between uncertainty and debt financing, while forward-looking earnings-related disclosure weakens this effect. Transient and dedicated institutional investors play a strong moderating role: they amplify the negative impact of tone disclosure and reverse the positive influence of earnings-related disclosure. Under high political risk, firms are more likely to rely on debt, and transient investors again strengthen the negative association between disclosure and debt financing. Regarding debt composition, high

idiosyncratic or implied volatility reduces bank borrowing, with tone reinforcing this reduction, while earnings-related disclosure offsets it and increases bank debt usage. Both transient and dedicated investors reverse the effect of tone and increase the positive impact of earnings-related disclosure. High political risk increases firms' reliance on bank loans, and both investor types strengthen the positive link between earnings-related disclosure and bank debt, suggesting greater reliance on forward-looking information when political uncertainty is high.

This study enriches the capital structure literature by showing how the source of uncertainty, the type of debt, the quality of disclosure, and institutional investor ownership jointly shape corporate financing behavior. The findings provide practical implications for managers navigating capital markets under uncertainty and for investors evaluating firms' risk communication and borrowing strategies.

References

- Adebambo, B. N., & Yan, X. (2018). Investor overconfidence, firm valuation, and corporate decisions. *Management Science*, 64(11), 5349–5369.
- Amoozegar, A., Berger, D., Cao, X., & Pukthuanthong, K. (2020). Earnings conference calls and institutional monitoring: Evidence from textual analysis. *The Journal of Financial Research*, 43(1), 5–36.
- Attig, N., Cleary, S., El Ghouli, S., & Guedhami, O. (2012). Institutional investment horizon and investment–cash flow sensitivity. *Journal of Banking & Finance*, 36(4), 1164–1180.
- Benamar, H., Foucault, T., & Vega, C. (2021). Demand for information, uncertainty, and the response of U.S. Treasury securities to news. *The Review of Financial Studies*, 34(7), 3403–3455.
- Benamar, S., Foucault, T., & Vega, C. (2021). Can information acquisition eliminate uncertainty? *Review of Financial Studies*, 34(3), 1524–1564.
- Bharath, S. T., Sunder, J., & Sunder, S. V. (2008). Accounting quality and debt contracting. *The Accounting Review*, 83(1), 1–28.
- Birru, J., & Young, T. (2022). Sentiment and uncertainty. *Journal of Financial Economics*, 146(3), 1148–1169.
- Bloom, N. (2014). Fluctuations in uncertainty. *Journal of Economic Perspectives*, 28(2), 153–176.
- Bochkay, K., & Joos, P. R. (2021). Macroeconomic uncertainty and quantitative versus qualitative inputs to analyst risk forecasts. *The Accounting Review*, 96(3), 59–90.
- Boot, A. W. A. (2000). Relationship banking: What do we know? *Journal of Financial Intermediation*, 9(1), 7–25.
- Borochin, P., & Yang, J. (2017). The effects of institutional investor objectives on firm valuation and governance. *Journal of Financial Economics*, 126(1), 171–199.
- Bozanic, Z., Roulstone, D. T., & Van Buskirk, A. (2018). Management earnings forecasts and other forward-looking statements. *Journal of Accounting and Economics*, 65(1), 1–20.
- Brown, S., Dutordoir, M., Veld, C., & Veld-Merkoulova, Y. (2019). What is the role of institutional investors in corporate capital structure decisions? A survey analysis. *Journal of Corporate Finance*, 58, 270–286.

- Bushee, B. J., & Huang, Y. (2024). Do analysts and investors efficiently respond to managerial linguistic complexity during conference calls? *The Accounting Review*, 99(4), 143–168.
- Chen, K. C. W., Jiang, G., & Lin, W. C. (2015). Does stakeholder engagement reduce information asymmetry? *Journal of Business Ethics*, 125(1), 147–169.
- Dang, M., Puwanenthiren, P., Thai, H. A., Mazur, M., Jones, E., & Vo, X. V. (2021). Policy uncertainty and seasoned equity offerings methods. *International Review of Financial Analysis*, 77, 101830.
- Dang, T. V., Lin, Y., Liu, Y., & Nguyen, C. (2021). Policy uncertainty and accelerated seasoned equity offerings. *Journal of Corporate Finance*, 66, 101823.
- Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *Review of Economic Studies*, 51(3), 393–414.
- Diamond, D. W. (1991). Monitoring and reputation: The choice between bank loans and directly placed debt. *Journal of Political Economy*, 99(4), 689–721.
- Eberhart, R. N., Eesley, C. E., & Eisenhardt, K. M. (2017). Failure is an option: Institutional change, entrepreneurial risk, and new firm growth. *Organization Science*, 28(1), 93–112.
- Faccio, M. (2006). Politically connected firms. *American Economic Review*, 96(1), 369–386.
- Faulkender, M., & Petersen, M. A. (2006). Does the source of capital affect capital structure? *Review of Financial Studies*, 19(1), 45–79.
- Francis, J., LaFond, R., Olsson, P. M., & Schipper, K. (2004). Costs of equity and earnings attributes. *The Accounting Review*, 79(4), 967–1010.
- Gamba, A., & Triantis, A. (2008). The value of financial flexibility. *The Journal of Finance*, 63(5), 2263–2296.
- Gao, Y., Liao, L., Wang, H., & Yu, H. (2020). Firm-specific uncertainty and bank loan contracting. *Journal of Banking & Finance*, 112, 105267.
- Gaspar, J. M., Massa, M., & Matos, P. (2005). Shareholder investment horizons and the market for corporate control. *Journal of Financial Economics*, 76(1), 135–165.
- Ghosh, A., Liu, Y., & Mitra, S. (2022). The effect of policy uncertainty on firms' capital structure decisions: International evidence. *Journal of International Financial Markets, Institutions and Money*, 76, 101489.
- Gulen, H., & Ion, M. (2016). Policy uncertainty and corporate investment. *Review of Financial Studies*, 29(3), 523–564.

- Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2017). Social capital and debt contracting: Evidence from bank loans and public bonds. *Journal of Financial and Quantitative Analysis*, 52(3), 1017–1047.
- Hassan, T. A., Hollander, S., van Lent, L., & Tahoun, A. (2019). Firm-level political risk: Measurement and effects. *Quarterly Journal of Economics*, 134, 2135–2202.
- Hollander, S., Pronk, M., & Roelofsen, E. (2010). Does silence speak? An empirical analysis of disclosure choices during conference calls. *Journal of Accounting Research*, 48(3), 531–563.
- Hope, O.-K., Hu, D., & Lu, H. (2016). The benefits of specific risk-factor disclosures. *The Accounting Review*, 91(5), 1411–1442.
- Huang, A. H., Teoh, S. H., & Zhang, Y. (2014). Tone management. *The Accounting Review*, 89(3), 1083–1113.
- Huang, G. Y., Shen, C. H. H., & Wu, Z. X. (2023). Firm-level political risk and debt choice. *Journal of Corporate Finance*, 78, 102332.
- Jiang, G., Lee, C., & Zhang, Y. (2005). Information uncertainty and expected returns. *Review of Accounting Studies*, 10(2), 185–221.
- Kang, W., Li, N., & Zhang, H. (2019). Information uncertainty and the pricing of liquidity. *Journal of Empirical Finance*, 54, 77–96.
- Kim, H., & Zhang, L. (2016). Corporate political connections and tax aggressiveness. *Contemporary Accounting Research*, 33(1), 78–114.
- Kimbrough, M. D. (2005). The effect of conference calls on analyst and market underreaction to earnings announcements. *The Accounting Review*, 80(1), 189–219.
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The Journal of Finance*, 54(2), 471–517.
- Lee, J., Wang, Y., & Zhang, Y. (2021). Firm-level uncertainty and the cost of capital. *Journal of Accounting Research*, 59(3), 965–1006.
- Li, F. (2010). The information content of forward-looking statements in corporate filings: A naïve Bayesian machine learning approach. *Journal of Accounting Research*, 48(5), 1049–1102.
- Li, X., Lin, C., & Zhan, X. T. (2019). Does change in the information environment affect financing choices? *Management Science*, 65, 5676–5696.
- Liberti, J. M., & Petersen, M. A. (2019). Information: Hard and soft. *Review of Corporate Finance Studies*, 8(1), 1–41.

- Loughran, T., & McDonald, B. (2011). When is a liability not a liability? *The Journal of Finance*, 66(1), 35–65.
- Marciukaityte, D. (2018). Labor laws and firm performance. *Journal of Financial Research*, 41(1), 5–32.
- Matsumoto, D. A. (2002). Management's incentives to avoid negative earnings surprises. *The Accounting Review*, 77(3), 483–514.
- McBrayer, G. (2019). Credit ratings and the cost of seasoned equity offerings. *Journal of Corporate Finance*, 56, 532–549.
- Minton, B. A., & Schrand, C. (1999). The impact of cash flow volatility on discretionary investment and the costs of debt and equity financing. *Journal of Financial Economics*, 54(3), 423–460.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.
- Neilson, J. J. (2022). Investor information gathering and the resolution of uncertainty. *Journal of Accounting and Economics*, 74(1), 101513.
- Nguyen, Q., & Phan, H. V. (2017). Policy uncertainty and mergers and acquisitions. *Journal of Financial and Quantitative Analysis*, 52(2), 613–644.
- Ongsakul, V., Chatjuthamard, P., Chintrakarn, P., & Jiraporn, P. (2025). Leveraging the pandemic: Exploring how COVID exposure shapes capital structure using a text-based approach. *Review of Behavioral Finance*, Forthcoming.
- Perico Ortiz, D., Schnaubelt, M., & Seifert, O. (2025). A narrative perspective on investor uncertainty: Evidence from earnings conference calls. *Journal of Behavioral Finance*. Forthcoming.
- Pastor, L., & Veronesi, P. (2012). Uncertainty about government policy and stock prices. *The Journal of Finance*, 67(4), 1219–1264.
- Pastor, L., & Veronesi, P. (2013). Political uncertainty and risk premia. *Journal of Financial Economics*, 110(3), 520–545.
- Petersen, M. A., & Rajan, R. G. (1994). The benefits of lending relationships: Evidence from small business data. *The Journal of Finance*, 49(1), 3–37.

- Sengupta, P. (1998). Corporate disclosure quality and the cost of debt. *The Accounting Review*, 73(4), 459–474.
- Shen, C. H. H., & Zhang, H. (2020). What's good for you is good for me: The effect of CEO inside debt on the cost of equity. *Journal of Corporate Finance*, 64, 101699.
- Stulz, R. M. (2000). Financial structure, corporate finance, and economic growth. *International Review of Finance*, 1(1), 11–26.
- Waisman, M., Ye, P. F., & Zhu, Y. (2015). The effect of political uncertainty on the cost of corporate debt. *Journal of Financial Stability*, 16, 106–117.
- Yan, X., & Zhang, Z. (2009). Institutional investors and equity returns: Are short-term institutions better informed? *The Review of Financial Studies*, 22(2), 893–924.
- Yu, J., & Yuan, Y. (2011). Investor sentiment and the mean–variance relation. *Journal of Financial Economics*, 100(2), 367–381.
- Zhang, G. (2009). Accounting information, capital investment decisions, and equity valuation: Theory and empirical implications. *Journal of Accounting Research*, 47(4), 745–778.

Table 1 Sample and industry analysis

FamaIndcl12	Obs.	percentile
1 Consumer NonDurables -- Food, Tobacco, Textiles, Apparel, Leather, Toys	1366	6.47
2 Consumer Durables -- Cars, TV's, Furniture, Household Appliances	950	4.50
3 Manufacturing -- Machinery, Trucks, Planes, Off Furn, Paper, Com Printing	3816	18.06
4 Enrgy Oil, Gas, and Coal Extraction and Products	514	2.43
5 Chemicals and Allied Products	1461	6.92
6 Business Equipment -- Computers, Software, and Electronic Equipment	5158	24.42
7 Telephone and Television Transmission	114	0.54
8 Utilities	0	0
9 Wholesale, Retail, and Some Services (Laundries, Repair Shops)	3530	16.71
10 Healthcare, Medical Equipment, and Drugs	2999	14.20
11 Money Finance	0	0
12 Other -- Mines, Constr, BldMt, Trans, Hotels, Bus Serv, Entertainment	1216	5.76
Number of Observations (Firm-Quarter-Year)	21,124	100.00

Note:

The industry classification in this table follows the Fama-French 12-industry scheme. We exclude industry 8 (Utilities) and industry 11 (Finance) from the analysis due to their distinct regulatory environments and accounting practices, which differ substantially from those of other industries.

Table 2 Descriptive Statistics

	Mean	SD	p25	p50	p75
DebtEquity	0.6888	0.4630	0	1	1
BankTD	0.4270	0.6663	0.1445	0.3443	0.4836
PubicTD	0.5248	0.8111	0.2033	0.4352	0.5727
PoRisk	110.611	181.8897	19.2054	56.9861	132.0546
IVOL	0.0961	1.0082	-0.5700	-0.119	0.5016
IV	0.08	1.0004	-0.628	-0.152	0.5241
Tone	-0.978	0.8524	-1.53	-0.9800	-0.4200
FLSEarnings	7.3747	3.0489	5.3500	6.9800	9.1300
InvestGrade	0.2241	0.4170	0	0	0
Ret	0.0505	0.2097	-0.0600	0.0421	0.1460
ExcessLeverage	-0.3180	11.919	-1.3690	0.6634	2.2849
Zscore	3.9820	5.6792	1.5743	2.5039	4.2343
StockVol	0.0520	0.9831	-0.5800	-0.1940	0.3886
CashEqu	0.0030	0.0659	-0.0170	0.0008	0.0211
PPEG	0.5204	0.7699	0.1936	0.3775	0.7153
Leverage	0.2724	0.2327	0.1198	0.2513	0.3778
OCF	0.0617	0.0761	0.0199	0.0531	0.0986
CAPXAT	0.3379	0.5921	0.0837	0.2046	0.3882
MB	0.3200	0.8689	0.0469	0.1587	0.3440
ROA	0.0390	0.0274	0.0251	0.0361	0.0499

Note:

DebtEquity is a binary indicator of the firm's financing choice. BankTD is the ratio of bank loans to total debt. PublicTD is the ratio of public corporate bonds to total debt. Uncertainty represents firm-level uncertainty, include: IVOL= mean idiosyncratic stock volatility, IV= implied volatility from stock options, and PoRisk= firm-level political risk. InvestGrade is an indicator for whether the firm holds investment-grade credit status. Ret is the quarterly stock return, measured as the compounded CRSP return over the three months ending each quarter. StockVolatility is the standard deviation of monthly stock returns over the current quarter and the prior eleven quarters. CashEqu is the firm's holdings of cash and cash equivalents. PPEG is gross property, plant, and equipment. Leverage is the firm's financial leverage ratio. OCF is operating cash flows. CAPXAT is capital expenditures scaled by total assets. MB is the market-to-book ratio. ZScore is the financial distress measure predicting the probability of future bankruptcy. ROA is return on assets. ExcessLeverage is the difference between the firm's actual leverage and its predicted leverage.

Table 3 Firm-level uncertainty and debt financing choice

Dependent Variable=	(1)	(2)	(3)
DebtEquity	IVOL	IV	PoRisk
Uncertainty	-0.1680*** (-4.92)	-0.2134*** (-8.61)	0.0004*** (4.19)
InvestGrade	-0.0221 (-0.57)	-0.0373 (-0.94)	0.0005 (0.01)
Ret	-0.2953** (-2.55)	-0.3297*** (-2.81)	-0.3270*** (-2.83)
Excessleverage	0.0022 (1.50)	0.0019 (1.23)	0.0019 (1.31)
ZScore	-0.0098*** (-3.10)	-0.0082** (-2.52)	-0.0110*** (-3.47)
StockVol	-0.0246 (-0.61)	-0.0197 (-0.59)	-0.1717*** (-6.76)
CashEqu	-0.4566* (-1.91)	-0.5191** (-2.12)	-0.5228** (-2.19)
PPEG	0.0321** (2.32)	0.0392*** (2.73)	0.0312** (2.25)
Leverage	-0.3340*** (-3.53)	-0.4262*** (-4.40)	-0.3171*** (-3.33)
OCF	0.4649 (1.43)	0.3161 (0.94)	0.5345 (1.64)
CAPXAT	-0.0834*** (-3.35)	-0.0917*** (-3.63)	-0.1058*** (-4.29)
MB	0.1873*** (5.01)	0.2061*** (5.40)	0.1713*** (4.68)
ROA	1.8558** (2.51)	2.0249*** (2.67)	2.0812*** (2.81)
Constant	1.1214 (0.98)	1.1657 (1.01)	1.1161 (0.96)
Year quarter fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
Observation	21124	20188	21118
Wald chi2	651.25	707.10	648.95
Pseudo R ²	0.0281	0.0314	0.0277

Note: z statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. DebtEquity is a binary indicator of the firm's financing choice. Uncertainty represents firm-level uncertainty, include: IVOL= mean idiosyncratic stock volatility, IV= implied volatility from stock options, and PoRisk= firm-level political risk. InvestGrade is an indicator for whether the firm holds investment-grade credit status. Ret is the quarterly stock return. StockVol is stock volatility. CashEqu is the holdings of cash and cash equivalents. PPEG is gross property, plant, and equipment. Leverage is financial leverage ratio. OCF is operating cash flows. CAPXAT is capital expenditures. MB is market-to-book ratio. ZScore is financial distress measure predicting the probability of future bankruptcy. ROA is return on assets. ExcessLeverage is the difference between the firm's actual leverage and its predicted leverage.

Table 4 Firm-level uncertainty and debt financing type

Tobit regression	(1)BankTD IVOL	(2)PublicTD IVOL	(3)BankTD IV	(4)PublicTD IV	(5)BankTD PoRisk	(6)PublicTD PoRisk
Uncertainty	-0.0143** (-2.53)	-0.0029 (-0.82)	-0.0225*** (-4.89)	-0.0074** (-2.48)	0.0001*** (3.42)	-0.0000 (-0.21)
InvestGrade	0.0294*** (4.54)	-0.0056 (-1.28)	0.0274*** (4.19)	-0.0054 (-1.21)	0.0307*** (4.78)	-0.0051 (-1.16)
Ret	0.0311* (1.90)	0.0053 (0.50)	0.0243 (1.48)	0.0024 (0.22)	0.0302* (1.82)	0.0049 (0.46)
ExcessLeverage	-0.0013*** (-5.41)	-0.0010*** (-5.03)	-0.0014*** (-5.64)	-0.0010*** (-4.93)	-0.0014*** (-5.53)	-0.0010*** (-5.05)
ZScore	-0.0034*** (-5.06)	-0.0078*** (-12.61)	-0.0036*** (-5.09)	-0.0078*** (-12.31)	-0.0035*** (-5.22)	-0.0078*** (-12.65)
StockVol	-0.3072*** (-6.11)	0.0127 (0.38)	-0.3384*** (-6.59)	0.0020 (0.06)	-0.3143*** (-6.26)	0.0117 (0.35)
CashEqu	-0.0159** (-2.50)	-0.0037 (-0.92)	-0.0119** (-2.22)	0.0003 (0.09)	-0.0284*** (-6.78)	-0.0063** (-2.37)
PPEG	0.0177*** (6.71)	0.0077*** (5.18)	0.0163*** (6.79)	0.0072*** (4.94)	0.0176*** (6.69)	0.0077*** (5.16)
leverage	0.1937*** (12.09)	0.2245*** (18.83)	0.1671*** (10.23)	0.2092*** (17.36)	0.1939*** (12.10)	0.2249*** (18.84)
OCF	0.3832*** (5.53)	0.0901* (1.71)	0.3757*** (5.29)	0.0860 (1.59)	0.3907*** (5.66)	0.0913* (1.73)
CAPXAT	0.0077 (1.34)	-0.0272*** (-5.96)	0.0102* (1.68)	-0.0243*** (-5.13)	0.0057 (0.99)	-0.0275*** (-6.13)
MB	0.0089*** (4.05)	0.0044*** (2.92)	0.0103*** (4.52)	0.0053*** (3.25)	0.0083*** (3.89)	0.0043*** (2.87)
ROA	-1.3509*** (-7.67)	-0.3956*** (-3.12)	-1.3759*** (-7.70)	-0.3952*** (-3.06)	-1.3308*** (-7.57)	-0.3934*** (-3.10)
Constant	0.7270*** (10.97)	0.7820*** (12.14)	0.7347*** (10.95)	0.7901*** (12.51)	0.7259*** (11.24)	0.7820*** (12.19)
Year quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation	21,100	21,100	20,173	20,173	21,094	21,094
F value	20.44	17.45	19.74	16.04	20.53	17.46
Pseudo R ²	0.0647	0.1954	0.0670	0.1982	0.0648	0.1951

Note: t statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. BankTD is the ratio of bank loans to total debt.

PublicTD is the ratio of public corporate bonds to total debt. IVOL= mean idiosyncratic stock volatility, IV= implied volatility from stock options, and PoRisk= political risk. InvestGrade is an indicator for whether the firm holds investment-grade credit status. Ret is stock return. StockVol is stock volatility. CashEqu is the holdings of cash and cash equivalents. PPEG is gross property, plant, and equipment. Leverage is financial leverage ratio. OCF is operating cash flows. CAPXAT is capital expenditures. MB is market-to-book ratio. ZScore is financial distress measure predicting the probability of future bankruptcy. ROA is return on assets. ExcessLeverage is excess financial leverage.

Table 5 Information disclosure, firm-level uncertainty, and debt financing choice

Voluntary Disclosure	(1) IVOL Tone	(2) IVOL FLSEarning	(4) IV Tone	(4) IV FLSEarning	(5)PoRisk Tone	(6)PoRisk FLSEarning
Uncertainty	-0.2463*** (-6.12)	-0.2325*** (-4.29)	-0.3008*** (-9.57)	-0.3615*** (-7.94)	0.0004*** (2.91)	0.0005*** (2.77)
Disclosure	-0.0619*** (-3.15)	-0.0072 (-1.36)	-0.0625*** (-3.06)	-0.0062 (-1.14)	-0.0642*** (-2.85)	-0.0051 (-0.89)
Uncertainty*Disclosure	-0.0793*** (-4.05)	0.0089* (1.66)	-0.0816*** (-4.45)	0.0198*** (3.95)	0.0000 (0.32)	-0.0000 (-0.83)
InvestGrade	-0.0337 (-0.86)	-0.0268 (-0.68)	-0.0513 (-1.28)	-0.0403 (-1.01)	0.0032 (0.08)	-0.0040 (-0.10)
Ret	-0.2710** (-2.33)	-0.2898** (-2.50)	-0.2974** (-2.56)	-0.3239*** (-2.75)	-0.3115*** (-2.69)	-0.3279*** (-2.84)
Excessleverage	0.0020 (1.40)	0.0023 (1.52)	0.0017 (1.12)	0.0019 (1.24)	0.0017 (1.20)	0.0020 (1.33)
ZScore	-0.0103*** (-3.23)	-0.0098*** (-3.13)	-0.0086*** (-2.64)	-0.0084*** (-2.60)	-0.0112*** (-3.52)	-0.0109*** (-3.44)
StockVol	-0.4559* (-1.91)	-0.4546* (-1.90)	-0.5166** (-2.11)	-0.5149** (-2.10)	-0.5262** (-2.20)	-0.5229** (-2.19)
CashEqu	-0.0325 (-0.81)	-0.0225 (-0.56)	-0.0206 (-0.62)	-0.0116 (-0.35)	-0.1756*** (-6.91)	-0.1717*** (-6.76)
PPEG	0.0322** (2.30)	0.0310** (2.25)	0.0394*** (2.71)	0.0368*** (2.59)	0.0310** (2.23)	0.0306** (2.22)
Leverage	-0.3314*** (-3.46)	-0.3401*** (-3.58)	-0.4305*** (-4.40)	-0.4300*** (-4.42)	-0.3143*** (-3.30)	-0.3252*** (-3.41)
OCF	0.4690 (1.44)	0.4718 (1.45)	0.3180 (0.94)	0.3051 (0.90)	0.5387* (1.65)	0.5389* (1.66)
CAPXAT	-0.0930*** (-3.72)	-0.0834*** (-3.35)	-0.1020*** (-4.00)	-0.0889*** (-3.51)	-0.1127*** (-4.54)	-0.1060*** (-4.30)
MB	0.1797*** (4.61)	0.1906*** (5.04)	0.2016*** (5.06)	0.2105*** (5.47)	0.1673*** (4.60)	0.1728*** (4.70)
ROA	2.1584*** (2.93)	1.7895** (2.42)	2.3430*** (3.10)	1.8709** (2.45)	2.2223*** (3.00)	2.1001*** (2.84)
Constant	0.9865 (0.85)	1.1375 (1.00)	0.9547 (0.83)	1.1845 (1.04)	0.9082 (0.80)	1.1057 (0.96)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	21124	21124	20188	20188	21118	21118
Wald chi2	678.90	652.70	739.83	716.21	653.77	652.37
Pseudo R2	0.0292	0.0283	0.0327	0.0321	0.0281	0.0278

Note: z statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Dependent variable is DebtEquity. Variable definitions follow those in Tables 3 and 4. Table 5 examines whether a firm's information disclosure moderates the relationship between firm-level uncertainty and debt financing choice. Tone is measured as the difference between positive and negative tone words divided by the total number of tone words and FLSEarnings is the number of forward-looking, earnings-related sentences in the earnings conference call transcripts.

Table 6 Information disclosure, Uncertainty and debt financing type**Panel A: IVOL**

	(1)BankTD	(2)BankTD	(3)PublicTD	(4)PublicTD
Tobit regression	Tone	FLSEarning	Tone	FLSEarning
IVOL	-0.0220*** (-4.21)	-0.0231*** (-3.18)	0.0055* (1.66)	0.0097** (2.08)
Disclosure	-0.0113*** (-3.30)	-0.0011 (-1.12)	-0.0154*** (-6.66)	-0.0018*** (-2.78)
IVOL*Disclosure	-0.0123*** (-3.55)	0.0020** (2.17)	0.0008 (0.37)	-0.0007 (-1.23)
Control/Constant	Yes	Yes	Yes	Yes
Year/Industry FE	Yes	Yes	Yes	Yes
N	21100	21100	21100	21100
F	27.93	27.96	20.23	19.74
Pseudo R ²	0.0919	0.0912	0.2074	0.2043

Panel B: IV

	(1)BankTD	(2)BankTD	(3)PublicTD	(4)PublicTD
Tobit regression	Tone	FLSEarning	Tone	FLSEarning
IV	-0.0283*** (-5.37)	-0.0287*** (-3.83)	0.0016 (0.50)	0.0043 (0.88)
Disclosure	-0.0123*** (-3.52)	-0.0016* (-1.70)	-0.0158*** (-6.66)	-0.0023*** (-3.45)
IV*Disclosure	-0.0149*** (-4.48)	0.0023** (2.46)	0.0004 (0.21)	-0.0003 (-0.56)
Control/Constant	Yes	Yes	Yes	Yes
Year/Industry FE	Yes	Yes	Yes	Yes
N	20173	20173	20173	20173
F	26.30	26.42	18.02	17.64
Pseudo R ²	0.0643	0.0631	0.2002	0.1980

Panel C: PoRisk

	(1)BankTD	(2)BankTD	(3)PublicTD	(4)PublicTD
Tobit regression	Tone	FLSEarning	Tone	FLSEarning
PoRisk	0.0000** (2.08)	0.0001* (1.80)	0.0000 (1.19)	0.0001* (1.91)
Disclosure	-0.0125*** (-3.21)	-0.0006 (-0.57)	-0.0180*** (-6.69)	-0.0011 (-1.39)
PoRisk*Disclosure	0.0000 (0.82)	-0.0000 (-0.74)	0.0000** (2.07)	-0.0000* (-1.94)
OtherControl/Constant	Yes	Yes	Yes	Yes
Year quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	21094	21094	21094	21094
F	27.87	27.89	19.45	19.07
Pseudo R ²	0.0912	0.0909	0.2074	0.2044

Note: t-statistics are reported in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Variable definitions follow those in Tables 3 and 4. This table examines whether information disclosure moderates the relationship between firm-level uncertainty and debt composition. BankTD is the ratio of bank loans to total debt, and PublicTD is the ratio of public corporate bonds to total debt. OtherControl variables are the same as in Table 5. Tone is the difference tone of positive and negative words and FLSEarnings is earnings-related sentences in earnings call transcripts.

Table 7 Moderating effect of institutional investors

Logit -DebtEquity Disclosure	(1)IVOL Tone	(2)IVOL FLSEarning	(3)IV Tone	(4)IV FLSEarning	(5)Porisk Tone	(6)Porisk FLSEarning
Uncer	-0.1844*** (-4.34)	-0.1957*** (-4.61)	-0.1329*** (-3.14)	-0.1391*** (-3.31)	0.0892*** (2.81)	0.0934*** (2.96)
Disclosure	0.0172 (0.33)	-0.0926* (-1.83)	0.0142 (0.27)	-0.1133** (-2.16)	0.0033 (0.07)	-0.0789 (-1.63)
Uncer*Disclosure	-0.0714** (-2.18)	0.0551* (1.72)	-0.0647* (-1.93)	0.0695** (2.13)	-0.0613** (-1.97)	0.0484 (1.60)
Uncer*Disclosure*TRA	-0.0393** (-2.45)	-0.0406*** (-2.68)	-0.0282* (-1.69)	-0.0456*** (-2.89)	-0.0314* (-1.75)	-0.0255** (-2.02)
Uncer*Disclosure*DED	-0.0245 (-1.52)	-0.0332** (-2.13)	-0.0147 (-0.89)	-0.0361** (-2.29)	-0.0033 (-0.20)	-0.0001 (-1.35)
TRA	0.0917*** (3.47)	0.1109*** (4.16)	0.1151*** (4.19)	0.1341*** (4.84)	0.0947*** (3.59)	0.1128*** (4.26)
DED	0.0120 (0.43)	0.0258 (0.93)	0.0314 (1.10)	0.0442 (1.54)	0.0302 (1.09)	0.0433 (1.57)
OtherControl/Constant	Yes	Yes	Yes	Yes	Yes	Yes
Year quarter fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
N	21096	21096	20160	20160	21090	21090
Wald chi ²	1082.76	1054.02	1069.36	1048.44	1059.51	1040.42
Pseudo R ²	0.0451	0.0441	0.0467	0.0461	0.0445	0.0435

Note: z-statistics are reported in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. The dependent variable is DebtEquity. TRA denotes transient institutional investors and DED denotes dedicated institutional investors. OtherControl includes the same control variables used in the previous tables. Variable definitions follow those in Tables 3 and 4. This table uses a logit regression to examine the moderating effects of dedicated and transient institutional investors.

Table 8 Moderating effect of institutional investors – Debt financing type

Panel A: BankTD						
Tobit regression	(1)IVOL	(2)IVOL	(3)IV	(4)IV	(5)Porisk	(6)Porisk
Disclosure	Tone	FLSEarning	Tone	FLSEarning	Tone	FLSEarning
Uncer	-0.0565*** (-5.81)	-0.0738*** (-4.76)	-0.0667*** (-6.88)	-0.0690*** (-4.49)	0.0253*** (4.61)	0.0336*** (6.12)
Disclosure	0.0419*** (4.10)	-0.0103*** (-3.69)	0.0431*** (4.15)	-0.1133** (-2.16)	-0.0166* (-1.91)	-0.0245*** (-2.82)
Uncer*Disclosure	-0.0338*** (-4.97)	0.0066*** (3.52)	-0.0358*** (-5.17)	0.0049*** (2.59)	0.0031 (0.56)	0.0146*** (2.70)
Uncer*Disclosure*TRA	0.0075** (2.25)	0.0016** (2.18)	0.0075** (2.21)	0.0017** (2.22)	0.0050 (1.55)	0.0050* (1.68)
Uncer*Disclosure*DED	0.0075** (2.31)	0.0028*** (3.53)	0.0097*** (3.04)	0.0020** (2.52)	0.0077*** (2.73)	0.0056** (1.97)
TRA	0.0014 (0.20)	-0.0264*** (-2.93)	0.0038 (0.53)	-0.0247*** (-2.72)	-0.0042 (-0.86)	-0.0090* (-1.85)
DED	-0.0171*** (-2.65)	-0.0553*** (-6.06)	-0.0109* (-1.66)	-0.0447*** (-4.85)	-0.0249*** (-5.22)	-0.0239*** (-4.94)
OtherControl/Constant	Yes	Yes	Yes	Yes	Yes	Yes
Year quarter fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
N	21072	21072	20145	20145	21066	21066
Wald chi ²	20.24	20.08	19.51	19.35	24.28	20.25
Pseudo R ²	0.0655	0.0646	0.0673	0.0657	0.0811	0.0650
Panel B: PublicTD						
Tobit regression	(1)IVOL	(2)IVOL	(3)IV	(4)IV	(5)Porisk	(6)Porisk
Disclosure	Tone	FLSEarning	Tone	FLSEarning	Tone	FLSEarning
Uncer	-0.0176*** (-2.70)	-0.0168*** (-3.40)	-0.0122* (-1.87)	-0.0215** (-2.08)	0.0186*** (3.55)	0.0083 (0.90)
Disclosure	-0.0149** (-2.24)	-0.0007 (-0.38)	-0.0196*** (-2.84)	-0.0043** (-2.25)	-0.0349*** (-5.10)	-0.0022 (-1.13)
Uncer*Disclosure	0.0008 (0.17)	-0.0029 (-0.75)	0.0035 (0.75)	0.0012 (0.93)	0.0142*** (3.34)	-0.0001 (-0.11)
Uncer*Disclosure*TRA	0.0064*** (2.90)	0.0009 (1.62)	0.0056** (2.45)	0.0012** (2.29)	0.0064*** (2.85)	0.0000 (0.08)
Uncer*Disclosure*DED	0.0079*** (3.53)	0.0016*** (2.73)	0.0082*** (3.53)	0.0017*** (2.97)	0.0077*** (3.48)	0.0007 (1.22)
TRA	0.0083* (1.85)	-0.0098 (-1.59)	0.0060 (1.30)	-0.0150** (-2.45)	0.0079* (1.69)	-0.0006 (-0.09)
DED	-0.0050 (-1.16)	-0.0320*** (-5.17)	-0.0039 (-0.89)	-0.0332*** (-5.35)	-0.0042 (-0.97)	-0.0212*** (-3.26)
OtherControl/Constant	Yes	Yes	Yes	Yes	Yes	Yes
Year quarter fixed effect	Yes	Yes	Yes	Yes	Yes	Yes

Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	21072	21072	20145	20145	21066	21066
Wald chi ²	17.82	17.84	16.33	16.43	17.67	17.66
Pseudo R ²	0.2034	0.2008	0.2055	0.2026	0.2030	0.1989

Note: t-statistics are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Variable definitions follow those in Tables 3 and 4. TRA denotes transient institutional investors and DED denotes dedicated institutional investors. OtherControl variables are the same as in Table 5. This table uses Tobit regression to examine whether information disclosure moderates the relationship between firm-level uncertainty and debt composition and reports the moderating effects of transient and dedicated institutional investors.