Forward-Looking Disclosure Effects on Stock Liquidity in China: Evidence from MD&A Text Analysis

Abstract

We investigate the impact of forward-looking disclosures in annual reports on stock liquidity in China. Analysis of the MD&A sections within annual reports demonstrates a strong positive correlation between forward-looking disclosures and a company's stock liquidity. This promotional effect appears more pronounced within high-tech companies and those with lower levels of information transparency. Mechanistic tests indicate that the increase in equity liquidity attributable to forward-looking disclosures can be traced to heightened interest from analysts and media coverage. Further examination of the impact of MD&A textual characteristics reveals that improvements in the readability and tone of the text strengthen the effect of forward-looking information on enhancing stock liquidity. Economic consequence tests show that forward-looking disclosures not only enhance stock liquidity but also contribute to expanding investment scale, reducing financing costs, and improving both future firm performance and market valuation. These findings suggest that augmenting the efficiency of capital market information dissemination could significantly bolster financial support for the real economy.

Keywords: Forward-Looking Disclosure; Stock Liquidity; Capital Market Allocation Efficiency; MD&A Text

1. Introduction

For funds to flow into the real economy productively, capital markets must allocate financial resources efficiently and effectively. Information is a pivotal factor influencing the efficiency of capital market allocation (Chung and Chuwonganant, 2023; Xu et al., 2022). While in theory in perfect capital markets prices can promptly reflect all information (Fama, 1970), real-world markets are not perfectly efficient. As Grossman and Stiglitz (1980) note, investors' information processing costs are a critical factor affecting market efficiency. As a bridge for communication between companies and the equity market, enhancing the quality of the disclosure of information can decrease investors' information costs, alleviate information asymmetry both within and outside of companies, and bolster the efficiency of resource assignment in the equity market (Lang and Lundholm, 1993). While disclosure may affect efficiency in all markets, these effects are even more pronounced in developing countries where disclosure is limited, and markets are less developed.

One indicator of stock market efficiency is liquidity (Amihud, 2002). Optimal liquidity not only reduces investors' transaction risks and financial risks, but also helps market prices promptly and accurately reflect a company's intrinsic value through price discovery (Zhang et al., 2018). Understanding the factors influencing stock liquidity (ILLIQ) may provide investors with better decision-making references while offering policymakers a basis for promoting the healthy development of the stock market (Bouteska et al., 2024).

Annual reports serve as a vital source of information for capital markets, playing a decisive role in investors' decision-making process (Barker, 1998; Roberts et al., 2006). However, historical information such as accounting data in annual reports only reflects existing facts that have already occurred or are currently unfolding (Karpoff et al., 2008). While meeting regulatory agencies' requirements for information reliability, they do not reflect management's analysis and evaluation of the company's operational situation, let alone exhibit the firm's future development strategies and purposes. Therefore, in an increasingly complex investment environment, there is a growing demand from investors for forward-looking information when developing estimates of value based on future cash flows and risks.

As a result, the Management Discussion and Analysis (MD&A) is a valuable part in the annual reports of listed firms as it reveals to investors the forward-looking judgments and expectations of management regarding the firm's development prospects (Bryan, 1997; Muslu et al., 2015). This section provides information that cannot be gained from financial statements and their accompanying notes, meeting investors' higher demands for information relevance and foresight.

Specifically, forward-looking information in the MD&A part encompasses not only financial forecasts, but also non-financial information such as strategic considerations and uncertainties. These future-oriented details are characterized by their significance, long-term relevance, and value correlation with the firm's future, which may compensate for the perceived shortcomings of traditional accounting information, such as lag and short-term perspectives (Tse and Yaansah, 1999). Information in the MD&A part also assists investors in more accurately assessing the firm's future performance and development prospects (Cazier et al., 2020; Cho and Muslu, 2021).

There is controversy over whether forward-looking information disclosure (FINFOR) contains informational value, with different studies in different countries finding different results. Applying a range of publicly listed firms in the US, Muslu et al. (2015) found that while FINFOR may somewhat enhance the information environment, it cannot completely eliminate information asymmetry. Bozzolan et al. (2009) examined non-financial firms cross-listed on the NY stock market and Italy, France, and Switzerland. They found that FINFOR can enhance the accuracy of analysts' forecasts and reduce forecasting errors. Hassanein and Hussainey (2015) examined a range of publicly listed firms in the UK and found that changes in FINFOR have no great influence on the value of well-performing firms but have a negative influence on the value of underperforming companies. Research suggests that narrative forward-looking information in UK publicly listed companies does not contain informational value. Hassanein et al. (2019) studied a range of non-financial publicly listed firms in the FTSE index and found that FINFOR only positively impacts the value of UK companies when audited by one of the Big Fours in the UK.

Chinese capital markets provide a unique location to examine these questions. Since the commencement of reform and opening, the Chinese economy embarked on a phase of swift advancement, ultimately attaining the status of the world's largest emerging economy (Liao and Waters, 2023; Zeng et al., 2022). The process of Chinese economic development also enticed a substantial influx of foreign investments. Simultaneously, Chinese capital market underwent a gradual process of liberalization, presenting a vast and diverse array of investment prospects for global investors (Shi, 2023). As the number of investors venturing into the equity market escalated, Chinese A-share market ascended to become the globe's second largest. The performance and trajectory of the Chinese A-share market not only mirrored the state and outlook of the Chinese economy but also wielded influence over the confidence and sentiments of international investors (Campbell et al., 2022). However, during the economic transition period in China, issues pertaining to the investor protection system, as well as low levels of information and resource allocation efficiency, were notably conspicuous (Cai et al., 2024). The fluctuations within Chinese stock market had the potential to initiate interconnection and adjustments in global markets, particularly in emerging markets closely linked with China (Zeng et al., 2023; Zeng et al., 2024; Yadav et al., 2023). Delving into the resource allocation efficiency of the Chinese stock market holds substantial importance for both domestic and foreign investors, enabling the optimization of their investment portfolios and the reduction of asset risks (Hao et al., 2023). Chinese A-share market therefore provides a unique chance to estimate the influence of increased information and transparency on equity liquidity and company investment compared with more developed markets that have substantial depth of information and transparency.

In examining the actual circumstances of Chinese capital market, regulatory authorities have shown a considerable emphasis on the critical role of forward-looking information. For example, the "Notification from the China Securities Regulatory Commission (CSRC) on Issuing the Standards for the Contents and Formats of Information Disclosure in Public Securities Offerings, No.2 - Specifications for Annual Reports (Revised in 2007)"[1] highlighted the requirement for listed companies to analyse the development trends of the industry and the

[1] https://www.lawinfochina.com/display.aspx?lib=law&id=6606&CGid=

competitive market structure faced by the company in their board reports. The guidelines also called for companies to alert investors to future developmental opportunities and challenges as perceived by management, to disclose the financial needs and utilisation plans necessary for future strategic initiatives, and to outline all risk factors that could adversely affect the realisation of future strategies and operational goals. The 2012 revision of the same guidelines further accentuated the necessity for companies to provide a forward-looking perspective in the directors' reports, requiring an analysis of factors such as industry competition, developmental trends, future strategies, operational plans for the ensuing year, and anticipated risks. This document elaborated on the format and content of FINFORs, thereby enhancing their readability. By the 2015 revision, the MD&A section had been established as a distinct chapter, with detailed stipulations for textual information disclosure, such as enhancing the reliability, relevance, and connectedness of MD&A content. The guidelines stressed the importance of using plain, clear, and easily understandable language, and avoiding vagueness and templatisation. For FINFORs, it was further stipulated that listed companies should address issues of significant investor interest and reflect the specific circumstances, industry environment, and business characteristics the company was facing at the time.

From these requirements and revisions, it is evident that regulatory bodies increasingly acknowledge the influence of FINFORs on investment decisions. Additionally, the guidelines now include a provision in the annual operational plans that "companies should clarify that these plans do not constitute performance commitments to investors, urging investors to maintain sufficient risk awareness and to understand the differences between operational plans and performance commitments." In summary, as regulatory frameworks for FINFOR continue to improve, these disclosures have become a significant factor influencing investor decisions. This development offers an excellent perspective for the research in this paper on how FINFOR affects ILLIQ.

Based on the institutional context of China, this paper firstly employs text analysis techniques to measure the influence of FINFOR on ILLIQ of companies. We find a positive connection between FINFOR statements in annual reports and stock market

liquidity and this promoting effect is more significant in high-tech companies and companies with lower information transparency. Secondly, since information intermediaries influence the efficiency of capital market information by analyzing and disseminating complex company financial data (Barker et al., 2012), we also measure the role of analysts and the media on the transmission of information in the MD&A sections to the capital markets. We find that the increased liquidity for firms with FINFOR is related to greater attention from analysts and the media.

Thirdly, we further examine the influence of MD&A textual characteristics and find that as the readability and tone of textual information improve, the impact of FINFOR on enhancing ILLIQ becomes stronger. Finally, we explored the economic consequences of FINFOR promoting ILLIQ. We find that this promotional effect can expand the scale of investment, reduce financing costs, improve the firm's future performance and increase the firm's market value.

Our paper provides a variety of contributions. First, previous work estimated the influence of information disclosure on ILLIQ from insights such as managerial tone of disclosure (Dang et al., 2022), risk disclosure (Elshandidy and Neri, 2015; Kohlbeck and Luo, 2022), annual report readability (Boubaker et al., 2019), media (Gorman et al., 2017), accounting information quality (Sadka, 2011), and voluntary disclosure (Cho and Kim, 2021; Schoenfeld, 2017). This paper not only enriches the literature on textual analysis in information disclosure, but also further expands the study of factors influencing ILLIQ.

Second, a limited amount of works has explored the influence of FINFOR on the stock market in different national contexts (Muslu et al., 2015; Bozzolan et al., 2009; Hassanein and Hussainey, 2015; Hassanein et al., 2019; Bouteska et al., 2023; Gao et al., 2024), resulting in controversy as to whether FINFOR has informational content. Chinese A-share market holds the second position globally, trailing only the United States in market value. However, during the economic transition period in China, issues pertaining to the investor protection system, as well as low levels of information and resource allocation efficiency, were notably conspicuous. The volatility exhibited by Chinese A-share market had the potential to instigate

interconnection and adjustments within global markets, particularly in emerging market nations closely linked with China. This paper conducts research based on Chinese equity market, which is in a transitional economy, and confirms that FINFOR has a certain information content, further enriching the study on the economic consequences of FINFOR.

Third, our results indicate that the impact of FINFOR promoting ILLIQ can enhance a firm's future performance, increase its market value, expand investment scale, and reduce financing costs. These findings hold important practical significance. In addition, since boosting the quality of forward-information disclosure may bridge the connection between the capital market and the real economy, our results suggest that regulatory authorities may wish to improve the information environment in the equity market as part of a path towards increasing the efficiency of financial support for the real economy. Our results also suggest that companies can provide more reliable forward-looking information to the market to reduce information asymmetry, thereby improving ILLIQ but also possibly having the tangible effects of boosting future performance, increasing market value, and improving investment and financing behaviors.

2. Theoretical analysis and research hypothesis

Information economics posits that information asymmetry leads to adverse selection behavior between buyers and sellers in securities transactions, thereby increasing additional transaction costs (Leuz and Verrecchia, 2000). In situations of information asymmetry, uninformed traders are in a position of informational disadvantage, and so out of self-protection reduce their willingness to trade, ultimately leading to a decrease in ILLIQ (Glosten and Milgrom, 1985). Improving the quality of information disclosure is a critical means to alleviate information asymmetry and reduce adverse selection behavior (Verrecchia, 2001). It not only enhances the informational content in the open market, reducing the likelihood of obtaining excess returns through information advantage, but also reduces uncertainty in company value. Information disclosure therefore reduces the information gap arising from being in an information disadvantaged position and thus increases the willingness of potential

investors to trade, thereby aiding in the improvement of ILLIQ.

To an investor, the most valuable information is that which pertains to the future development of the firm. While the annual report, as a vital component of a listed company's external information disclosure, serves as a crucial source of information for investors to conduct value assessments and investment decisions (Holland, 1998), not all information in the annual report is equally helpful. The types of information disclosed in a listed company's annual report can be categorized chronologically into *past tense*, *present tense*, and *future tense* information. *Past tense* information reflects the historical operating conditions of the company, which is likely already incorporated into stock prices. *Present tense* information, as it is contemporary, is also likely largely integrated into stock prices. As the operating environment of companies becomes increasingly complex, past tense and present tense information can no longer meet the information needs of investors (Kılıç and Kuzey, 2018). Consequently, the value of *future tense* information contained in FINFOR has gradually attracted attention from investors.

Within the annual report, the MD&A is a valuable section in external information disclosure to investors. It reveals the management's forward-looking judgments and expectations regarding the company's development prospects, providing information that cannot be obtained from financial statements and their footnotes, providing investors with desired relevant forward-looking information (Aljifri and Hussainey, 2007). Such proactive information disclosure by management to the capital market conveys incremental information, which may reduce the probability of capital mispricing and corporate risk occurrence.

FINFOR includes not only financial forecasts but also non-financial information such as strategies and uncertainties. These future-related pieces of information have significant, long-term, and value-related characteristics beyond that contained in traditional historical based accounting information which is reported with a lag and is can have a short-term focus. Such forward-looking information aids investors in more accurately assessing the company's future financial performance and development prospects (Cazier et al., 2020). Thus, FINFOR provides valuable informational

content and broadens the breadth and depth of information.

Based on the above analysis, FINFOR plays a critical role in enhancing the information efficiency of the stock market, thereby enhancing ILLIQ. According to the principal-agent theory, agency problems arise from the divergence of interests between managers (insiders) and owners (outsiders). Managers can pursue their own maximum interests based on information advantages, but this may harm the interests of outsiders. Therefore, managers can use information disclosure as a means to alleviate agency conflicts (Jensen and Meckling, 1976). The informative content of forward-looking information can offer investors more details about the company's future business plans and development strategies, not only mitigating agency conflicts but also reducing information asymmetry, thereby improving ILLIQ. Additionally, signaling theory suggests that managers in information-advantaged positions can actively disclose forward-looking information to enhance the information volume available to investors, correct external misestimations and expectations of the firm, and reduce information asymmetry between the company and investors (Merkley, 2014). To the extent this additional information reduces information asymmetry and adverse selection, ILLIQ will be also enhanced.

Increasing FINFOR also has positive effects. According to stakeholder theory, improving the quality of information disclosure can be an effective strategy to gain the support of corporate stakeholders, such as regulators, investors, governments, and employees (Freeman and Reed, 1983), who may be crucial for the economically viable operations of a company. Existing literature suggests that high-quality information disclosure can decrease the cost of capital (Botosan, 1997), lower debt financing costs (Franco et al., 2016), and enhance firm value (Plumlee et al., 2015).

In summary, FINFOR alleviates the degree of information asymmetry both internally and externally to companies. As a result, it is possible that proactive disclosure of forward-looking information by firms contributes to ILLIQ by reducing adverse selection. These effects could be especially strong in systems with imperfect investor protections and a high degree of information asymmetry, such as in China.

On the other hand, FINFOR may not significantly enhance ILLIQ, especially if such disclosures are biased or uninformative. According to the theory of information disclosure costs, prospective information disclosure actually comes with costs. The direct cost of information disclosure is the preparation cost. If a company has sufficient resources to cover the cost of information preparation, it may update its information disclosure content year by year. However, to save on preparation costs, companies may simply cut and paste from previous years' disclosures (Hassanein and Hussainey, 2015), thus rendering the prospective information uninformative. In addition, in a fiercely competitive industry environment, disclosing too much prospective information makes it easier for competitors in the industry to perceive, which in turn helps them make strategic adjustments. To restrict the flow of valid information to potential competitors and maintain the competitive position of listed companies (Haushalter et al., 2007; Campello, 2003), managers tend to reduce prospective information disclosure. Based on the above analysis, if managers have motives to manipulate the textual information in annual reports, such disclosures will further exacerbate the degree of information asymmetry and affect external perceptions of the company's operations.

Notably, although existing securities regulations have required listed firms to FINFOR, they have not specifically stipulated the format, scope, and quantity of disclosure (Chen and Zheng, 2014). Therefore, FINFOR exhibits a high degree of “voluntariness”. The voluntary nature of the scope and quantity of FINFOR may induce managers to strategically state forward-looking information for the maximization of their own interests, resulting in voluntary information disclosure not necessarily possessing informational content.

Chinese capital market provides a unique opportunity to examine these effects. Chinese capital market is in a stage of growth and development, with the degree of marketization yet to be improved. Legal systems related to investments are incomplete, and the information disclosure environment still has the deficiency of "reporting good news but not bad news." (Lan et al., 2013; Wang and Ye, 2015; Zhang et al., 2019) Given this situation, managers may strategically articulate forward-looking information for short-term gains, not conveying the company's true

characteristic information to information users, further exacerbating information asymmetry, leading to a decrease in ILLIQ. This analysis led the present paper to propose the subsequent competitive hypotheses.:

H1: Under unchanged conditions, there exists a significant positive correlation between FINFORs and ILLIQ.

H2: Under unchanged conditions, there is no significant correlation between FINFORs and ILLIQ.

3. Research Design

3.1. Sample Selection and Data

This article employs non-financial listed firms in Chinese A-share market for the years 2008 to 2021 as the sample[2]. The MD&A textual data originates from the WINGO database[3], while rest data is from the CSMAR database. The sample underwent the following treatments: (1) Exclusion of ST and *ST listed firms; (2) Removal of any missing values in the sample; (3) Winsorization of continuous variables at the 1st and 99th percentiles.

3.2. Definition of Main Variables

3.2.1 Stock Liquidity (*ILLIQ*)

Drawing from Amihud's (2002) research, a non-flow measure was constructed to assess ILLIQ, as follows:

$$ILLIQ_{i,t} = \frac{1}{D_{i,t}} \sum_{d=1}^{D_{i,t}} \frac{|R_{i,d,t}|}{VOLD_{i,d,t}} \quad (1)$$

Where $R_{i,d,t}$ represents the return of market i on the d-th day of year t, $VOLD_{i,d,t}$ stands for the trading volume of stock i in Chinese Yuan (in hundred million units) on the d-th day of year t, and $D_{i,t}$ denotes the amount of trading days for market i in year t. $ILLIQ_{i,t}$ intuitively reflects the dimension of liquidity in terms of price effect. The larger $ILLIQ_{i,t}$, the greater the influence of unit transaction amount on the stock's

[2] Since equity division is a special phenomenon of Chinese capital market reform, there are significant differences in the governance structure of listed companies before and after the equity division reform. Considering that the equity division reform began in 2005 and was basically completed in 2007, the sample interval selected in this paper starts from 2008.

[3] http://www.wingodata.cn/#/dash/index

return, indicating poorer ILLIQ. To present the regression results more intuitively, this study takes the opposite of $ILLIQ_{i,t}$, denoted as $NILLIQ_{i,t}$. The larger $NILLIQ_{i,t}$, the higher the stock liquidity.

3.2.2 Forward-Looking Information Disclosure (*FINFOR*)

As text analysis technology continues to evolve, a growing number of studies are utilizing machine learning techniques to extract the informational content disclosed in textual data. This paper employs text analysis to construct a FINFOR index using Word2Vec. Word2Vec is extensively used in financial text analysis, particularly in examining the text-based disclosures of listed Chinese companies. The advantages of Word2Vec are as follows: (1) Unlike traditional methods that treat texts as isolated words, Word2Vec maps words into a high-dimensional vector space, precisely capturing semantic nuances, which is ideal for complex financial texts with many professional terms. (2) As an unsupervised learning method, Word2Vec can learn word semantics from unlabeled financial texts, utilizing these data for training to improve the accuracy of text analysis. (3) Word2Vec efficiently handles massive financial data, rapidly generating high-quality word vectors, making it a robust tool for financial big data insights.

The detailed measurement process for FINFOR is as follows: First, the MD&A section from the annual report is extracted as the research subject, and text preprocessing is conducted through word segmentation, punctuation removal, and stop word deletion. Second, referring to existing literature (Muslu et al., 2015) and considering the context of Chinese characters, seed words for FINFOR were selected (Muslu et al., 2015). The specific list is provided in Appendix 1. Third, employing the Word2Vec machine learning method, the aforementioned seed word set was expanded. This expanded word set includes the vocabulary listed in Appendix 2. The total count of seed words and expanded words in the MD&A section was tabulated. *FINFOR* was derived by multiplying the ratio of the total word frequency of FINFOR disclosure to the total word frequency of the MD&A section by 100.

3.3 Design of Baseline Regression Model

$$\text{NILLIQ}_{i,t+1} = \beta_0 + \beta_1 FINFOR_{i,t} + \sum_k \beta_k \text{ Control }_{i,t}^{k} + \sum \text{Ind} + \sum \text{Year} + u_i + \varepsilon_{i,t} \quad (2)$$

Where *i* denotes the company and *t* points the year. *NILLIQ* stands for stock liquidity, *FINFOR* represents forward-looking disclosure, and *Control* encompasses a set of control variables, including firm size (*SIZE*), leverage ratio (*LEV*), return on equity (*ROE*), ownership percentage of the largest shareholder (*TOP1*), board size (*BORD*), institutional ownership *(INSHOLD)*, market-to-book ratio *(MtoB)*, cash holdings ratio *(CASH*), annual return volatility *(RETSD)*, and audit opinion *(AUDIT)*. Additionally, this study further controlled for industry fixed effects (*Ind*), year fixed effects (*Year*), and firm-level fixed effects (*u*). β_0 denotes the constant term, and ε indicates the random disturbance term. The main control variable definitions are presented in Appendix 3, and the Variable Name and Calculation Method are shown in Table 1.

<TABLE 1 IS IN HERE>

4. Empirical Analysis

4.1 Descriptive statistics

Table 2 presents the summary statistics. The mean of *ILLIQ* is 0.0503, with a maximum of 0.725 and a minimum of 0.0020, indicating variations in the illiquidity measure among the listed firms in the sample. *NILLIQ* is the negative of *ILLIQ*. The mean of *FINFOR* is 0.81%, with a maximum of 0 and a minimum of 0.0297%, suggesting varying degrees of FINFOR among the listed firms. The other control variables fall within reasonable ranges.

<TABLE 2 IS IN HERE>

4.2 Benchmark regression results

Table 3 displays the findings of the baseline regression. In the first column, only annual and industry fixed influences are controlled, and the parameter of *FINFOR* is positive and statistically meaningful at the 1% level. In the second column, additional control variables are incorporated into the original model, the parameter of *FINFOR* shows a meaningful positive at the 1% level. These results indicate a positive correlation between forward-looking information and ILLIQ. This effect contributes to forward-looking information encompasses substantial informational content, thereby augmenting the incremental efficiency of market information through broader and deeper dissemination of information, mitigating investor information biases or irrational sentiments. The reduction in adverse selection may increase the willingness of uninformed traders to undertake transactions, and thus increase ILLIQ. Issues such as the insufficient safeguards for small and medium-sized investors, along with the heightened level of information asymmetry, are notably conspicuous within China's capital market. forward-looking information affords investors an additional mechanism for procuring information. Corporate managers may actively release forward-looking information to rectify external misestimations and expectations concerning the company. Such actions would help diminish the information asymmetry across the company and investors, consequently bolstering ILLIQ.

Concerning the control variables, we found that the coefficients for *LEV*, *TOP1*, *CASH*, and *MHOLD* were negative and statistically significant at the 1% level. This suggests that the leverage ratio, the percentage of shares owned by the principal shareholder, cash flow ratio, and management ownership ratio all show a negative association with ILLIQ. The coefficients for *INSHOLD* and *BORD* were negative, though not significant. On the other hand, the parameters for *SIZE, ROE, MtoB, and AUDIT* were positive and significantly strong at the 1% level, while the parameter for *RETSD* was positive and significant at the 5% confidence level, indicating that a firm's size, its profitability, market valuation, and the robustness of financial reporting audits are positively linked with ILLIQ.

<TABLE 3 IS IN HERE>

4.3 Robustness test

4.3.1 Reverse causal test

It is also possible that companies with higher ILLIQ tend to have more transparent information environments, motivating managers to disclose FINFOR to bolster investor confidence. To address this endogeneity concern, this study employs an instrumental variable approach for robustness testing. Drawing from Elgammal et al. (2018), the mean of FINFOR within the industry where the company operates in the same year (*FINFOR_IND*) is selected as the instrumental variable. Companies within the same industry share similar characteristics and face comparable external environments, thus meeting the requirement of correlation between the instrumental variable and the endogenous variable. On the other hand, the *FINFOR* of other firms within the industry is less likely to directly impact on the ILLIQ of the focal company. Instead, it is more likely to indirectly influence the ILLIQ of the focal company through its effect on the endogenous variable. Therefore, this satisfies the assumption of exogeneity of the instrumental variable.

Moreover, referencing the methodology of Fisman and Svensson (2007), this paper uses the mean value of FINFOR (*FINFOR_PRO*) in the same year and province as an instrumental variable. On the one hand, the level of FINFOR at the provincial level belongs to the meso-level data, while the liquidity of listed company stocks pertains to the micro-level data. The latter does not directly have a reverse impact on the former. On the other hand, the characteristics of information disclosure at the provincial level are more likely to affect the FINFOR of micro-enterprises, thereby influencing the liquidity of the company's stocks. Thus, it satisfies the exogenous assumption of instrumental variables.

The first-stage regression results of the instrumental variable are presented in Column (1) and (3) of Table 4, where the regression coefficient of *FINFOR_IND* and *FINFOR_PRO* are positively significant at the 1% level, pointing a meaningful correlation between this instrumental variable and the endogenous variable, thus rejecting the null hypothesis of inadequate instrumental variable identification. Column (2) and (4) of Table 4 display the second-stage regression results of the

instrumental variable. The regression parameter of *FINFOR* is positive and statistically significant at the 1% level. In summary, considering the reverse causality relationship, the conclusion that FINFOR is significantly positively correlated with ILLIQ keeps robust.

4.3.2 Sample selection bias

To address potential sample selection bias, this paper employs the Heckman two-stage regression function for robustness testing. Drawing from Li (2010), we construct a dummy variable for FINFOR (*FINFOR_DUM*) based on the industry-year median. If a company's level of FINFOR surpasses the industry-year median, *FINFOR_DUM* takes a value of 1; otherwise, it is set to 0. Subsequently, in the first stage of the Heckman function, we utilize *FINFOR_DUM* as the dependent variable. We include consistent control variables as in the main regression and conduct a Probit regression. This yields the inverse Mills ratio (*IMR*). Finally, the *IMR* is incorporated into the second stage of the Heckman function for regression. The regression outcomes, as shown in the column (5) of Table 4, point out that the parameter of *FINFOR* is positive and statistically significant at 1% level. It can be observed that, even after considering sample selection bias, the conclusions of this article remain robust.

<TABLE 4 IS IN HERE>

4.3.3 Propensity score matches

To further mitigate potential sample selection bias and endogeneity issues, this paper employs the Propensity Score Matching (PSM) framework for robustness checking. Specifically, a [0,1] dummy variable *FINFOR_DUM* is created. If a firm's FINFOR level is greater than the median of its year-industry peers, such samples are considered as the treatment group and *FINFOR_DUM* is assigned a value of 1; otherwise, it is assigned an amount of 0. Subsequently, *FINFOR_DUM* is used as the dependent variable in a Logit model, with the control variables from the baseline regression serving as covariates. This process yields a propensity score. Finally, the treatment and control group are matched using the nearest neighbor method within a caliper of 0.05, following a 1:1 and 1:2 ratio. This process aims to find the most similar control group for the treatment group. The regression findings are shown in Table 5, where the regression parameters of *FINFOR* are positive and statistically meaningful at 1% level. Therefore, the main findings of this article remain robust.

<TABLE 5 IS IN HERE>

4.3.4 Placebo test

To further mitigate the influence of non-exogenous factors on the baseline regression, this paper employs a placebo test for robustness test. Specifically, in this paper, whether a firm's FINFOR level is greater than the industry-year median is randomly assigned values. This behavior is transformed into a random event through 500 and 1000 computer-generated random repetitions. *PLA_DUM* is a virtual dummy variable with random assignment. If the regression coefficient of *PLA_DUM* on *NILLIQ* approaches zero asymptotically, it provides indirect evidence for the robustness of the conclusions drawn in this work. The findings of the placebo test are shown in Figures 1 and 2. The dashed line represents the actual regression results with *FINFIR_DUM* as the explanatory variable, while the virtual part depicts the virtual regression results with *PLA_DUM* as the explanatory variable, repeated 500 and 1000 times. The mean regression coefficient of *PLA_DUM* tends to be 0. These findings denote that the conclusions of this chapter remain robust even after the placebo test.

<FIGURE 1 IS IN HERE>

<FIGURE 2 IS IN HERE>

4.3.5 Changing the measurement of variables

It is possible that the quantity of FINFOR may be influenced by the presence of linguistic redundancy in a company's disclosure behavior: some companies may disclose a larger number of FINFOR, but due to the excessive length of the annual report, the proportion of FINFOR is relatively low. To address this possibility, we follow Campbell et al. (2014) and (after adding 1 to the quantity of FINFOR in the MD&A section) take the logarithm, resulting in *LNFINFOR*. The regression outcomes, shown in the first column of Table 6, indicate that the coefficient of *LNFINFOR* is positive and statistically significant at 1% level.

It is also possible that a company's FINFOR may exhibit distinct industry characteristics: industries with greater growth potential may tend to disclose more forward-looking information. To account for this possibility, we adjust *FINFOR* for industry means (*ADJ_FINFOR*). The regression findings in the second column of Table 6 indicate that the coefficient of *ADJ_FINFOR* is positive and statistically significant at 5% level.

Finally, considering that the baseline regression results may be influenced by a company's unique characteristics and external environment, we regress *FINFOR* on all control variables of the baseline regression. By calculating the residuals, we obtain the excess FINFOR (*ABNFINFOR*) that removes company-specific features and external factors. The regression findings, demonstrated in the third column of Table 6, reveal that the coefficient of *ABNFINFOR* is positive and statistically significant at 1% level.

Additionally, drawing on Pástor and Stambaugh (2003), we conduct a robustness test by replacing the dependent variable with the earnings reversal indicator (*PASTOR*). The regression findings, displayed in the fourth column of Table 6, indicate that the coefficient of *FINFOR* is positive and statistically significant at the 1% level. These results collectively demonstrate that even after conducting robustness tests with

alternative variable measurements, the findings of this article keep robust.

<TABLE 6 IS IN HERE>

4.3.6 Other robustness tests

Firstly, considering that shocks in specific industries may lead to correlations among companies within the same industry, and changes in different business cycles may result in correlations among different companies in the same year. To address this, this paper controls for two-way clustered standard errors at the firm-industry and firm-year levels in the benchmark regression. Secondly, taking into account the possibility of omitting time-varying unobservable factors at the provincial and industry levels where the companies are located, this paper incorporates provincial-year and industry-year interactive fixed effects into the benchmark regression. The regression results are presented in Table 7, where the regression coefficients of *FINFOR* are positive and statistically significant at 1% level. In summary, the conclusions of this chapter remain unchanged.

<TABLE 7 IS IN HERE>

4.4 Heterogeneity test

The preceding discussion confirmed a positive correlation between FINFOR and ILLIQ. This effect, however, hinges on the degree of internal and external information asymmetry within a company. For firms with higher information transparency, managers appear to be less inclined to engage in information manipulation, so that the forward-looking information they disclosed was interpreted by investors as having higher credibility and information content. If so, such disclosures may have effectively bridged the information gap between investors, particularly those in an information disadvantageous position. As our analysis shows, increased FINFOR is

correlated with enhanced ILLIQ. Given these results, we now examine the heterogeneity of how FINFOR impacts ILLIQ from two perspectives: industry and information transparency.

4.4.1. Heterogeneity in industry

Compared to traditional industries, high-tech industries possess high growth potential. However, they also face intense industry competition, and the speed of product and technology updates is relatively fast. More importantly, managers of high-tech companies often hold a significant amount of information regarding corporate innovation, exacerbating the information asymmetry among external investors (Aboody and Lev, 2000). Market participants face higher costs in obtaining firm-specific information from high-tech companies, and their motivation to actively seek information for stock trading is relatively weak (Hutton et al., 2009). Therefore, for high-tech companies, investors require more FINFORs about the company's future business plans and development strategies to optimize their decision-making. To examine this possibility, this paper first sets up a dummy variable *HIGH_DUM*. Referring to the "Guidelines on Industry Classification of Listed Firms (2012 Version)" issued by the CSRC, if a company belongs to the manufacturing industry, information transmission, software, and information technology service industry, *HIGH_DUM* is assigned a amount of 1; otherwise, it is assigned a value of 0. The regression findings in columns (1) and (2) of Table 8 reveal that in the high-tech industry, the coefficient of *FINFOR* is positive and statistically significant at 1% level, while in the non-high-tech industry, *FINFOR* is positive but not significant. This points out that the impact of FINFOR on enhancing ILLIQ is more pronounced in high-tech companies.

4.4.2. Heterogeneity in Information Transparency

Information transparency is a critical factor affecting ILLIQ. For those companies with high information transparency, investors can obtain more incremental information and can optimize their investment decisions. Therefore, the effect of FINFOR to enhance the liquidity of stocks may be limited. For those companies with low information transparency, investors face more serious information asymmetry. Once again, if FINFOR has information content, the information increment

introduced by FINFOR effectively mitigates information asymmetry both internally and externally, thereby reducing uninformed traders' adverse selection and increasing investor willingness to trade, thus enhancing ILLIQ.

To examine this possibility, we use analyst prediction error to measure the information transparency of the company. The specific estimation process is as follows:

$$FORC_{i,t} = \frac{|\text{Mean}\left(FOREPS_{i,t}\right) - \text{ACTUALEPS}_{i,t}|}{PRICE_{i,t}} \tag{3}$$

where, $FORC_{i,t}$ is the analyst forecast error, the larger the index indicates the lower the company information transparency. $Mean(FOREPS_{i,t})$ is the average forecast earnings of all analysts of the company. $ACTUALEPS_{i,t}$is the actual surplus of the company. $PRICE_{i,t}$ is the closing price at the end of the year. Then, this paper is grouped according to the sample median. If the company's analyst prediction error is greater than the median, the amount of *FORC_DUM* is, otherwise the value is 0. The regression findings in columns (3) and (4) of Table 8 reveal that in the higher information transparency group, the regression coefficient of *FINFOR* is positive and statistically significant at 1% level, while in the lower information transparency group, *FINFOR* is positive but not significant. This points out that the effect of FINFOR on enhancing ILLIQ is more pronounced in companies with lower information transparency.

<TABLE 8 IS IN HERE>

4.5 Mechanism analysis

The efficiency of the capital market is often contingent on the information processing costs incurred by participants (Stein, 2002; Dang et al., 2017). Information intermediaries play a crucial role in reducing information acquisition costs and enhancing the efficiency of the capital market. Specifically, they aid investors in comprehending intricate financial data, uncovering potentially valuable information, and disseminating it to the entire investor community, guiding investors back towards rational investment.

Analysts and media serve as vital information intermediaries in the capital market. Among them, analysts are a potent force in improving the efficiency of capital market information (Tihanyi et al., 2005). They unearth valuable information through methods such as studying financial reports, conducting interviews, and on-site investigations. Analysts utilize their extensive communication channels to transmit this information, including providing research reports to clients, issuing recommendations and earnings forecasts to ordinary investors, and publicly expressing viewpoints in media outlets such as television or newspapers.

Beyond this, the media is the most widely used channel for disseminating information about listed firms in the capital market, surpassing analysts in terms of audience coverage (Fang and Peress, 2009). As a crucial conduit for information transmission, media can alleviate information asymmetry between investors and financing parties (Bergh et al., 2019), alter investor perceptions of listed companies, influence investor sentiment and decisions, thereby affecting the expected stock price trends of companies, and thus play a vital role in enhancing the pricing efficiency of the stock market (Gurun and Butler, 2012).

What roles do the aforementioned two major information intermediaries play in the influence of FINFOR on ILLIQ? To investigate the mechanistic influence of FINFOR on ILLIQ, this study employs the mediation model. The first stage of the mediation model comprises the baseline regression results of this study, followed by the regression equations for the second and third stages as outlined below:

$$\text{MVAR}_{i,t+1} = \beta_0 + \beta_1 \text{FINFOR}_{i,t} + \sum_k \beta_k \text{Control}_{i,t}^{k} + \sum \text{Ind} + \sum \text{Year} + u_i + \varepsilon_{i,t} \quad (4)$$

$$\text{NILLIQ}_{i,t+1} = \beta_0 + \beta_1 \text{MVAR}_{i,t+1} + \beta_2 \text{FINFOR}_{i,t} + \sum_k \beta_k \text{Control}_{i,t}^{k} + \sum \text{Ind} + \sum \text{Year} + u_i + \varepsilon_{i,t} \quad (5)$$

In the context of the equations, *i* represents the company and *t* denotes the year. *NILLIQ* signifies ILLIQ, *FINFOR* pertains to FINFOR, and *MVAR* encompasses the mediating variables, including media attention (*MEDIAN*) and analyst attention (*ANALYST*). Specifically, drawing from the approach of An et al. (2022), *MEDIAN* was derived by taking the logarithm of the total amount of times a company was reported by the media, incremented by 1. *ANALYST* was estimated by taking the

logarithm of the total number of analysts tracking a firm, incremented by 1. *Control* constitutes the set of control variables consistent with the main regression; *Ind* represents industry fixed effects, *Year* accounts for time fixed effects, u_i signifies individual fixed effects, β_0 represents the constant term, and $\varepsilon_{i,t}$ denotes the random disturbance term.

<TABLE 9 IS IN HERE>

Table 9 displays the findings of the mechanism test. The first column shows the second-stage regression findings with analyst attention as the mediating variable. The regression coefficient of *FINFOR* is positive and statistically significant at 1% level, pointing out that FINFOR can attract more analyst attention. The second column showcases the findings of the third stage regression. The regression coefficient of *FINFOR* is positive and statistically significant at 1% level, while the coefficient of *ANALYST* is also positive and statistically significant at 1% level, affirming that analyst attention serves as a mediating variable in the impact of FINFOR on ILLIQ. The third column illustrates the second-stage regression results with media attention as the mediating variable. The regression coefficient of *FINFOR* is positive and statistically significant at 1% level, demonstrating that FINFOR significantly enhances media attention. The fourth column provides the findings of the third stage regression. The regression coefficient of *FINFOR* is positive and statistically meaningful at 5% level, while the parameter of *MEDIAN* is positive and statistically meaningful at 1% level, signifying that media attention constitutes a mediating variable in the influence of FINFOR on ILLIQ. These results collectively indicate that FINFOR enhances ILLIQ by increasing both media and analyst attention.

4.6 Test of interactive effect of textual information features

4.6.1 Tone of textual information

The tone of textual information is a critical factor in conveying emotions and intentions in language. It not only embodies the literal meaning of the information but

also reflects the management's attitude towards the company's performance, prospects, and strategies at a deeper level. A positive tone can guide investors' emotions and behavioral decisions. If FINFOR is presented in a relatively optimistic tone, it can further boost investors' confidence, which may positively impact the stock price. Additionally, the effect of forward-looking information on enhancing ILLIQ may also be strengthened.

To validate the above hypothesis, this paper draws on the approach of Davis et al. (2015) and Huang (2014) to measure the net tone using the proportion of the difference between the amount of positive and negative words in the MD&A section to the total number of words in the annual report (*TONE*). A higher TONE value indicates a more positive tone in the MD&A textual information. Subsequently, an interaction term *FINFOR×TONE* is constructed using *TONE* and *FINFOR*. The column (1) of Table 10 presents regression results, the parameter of *FINFOR×TONE* is positive and statistically meaningful at the 1% level, which demonstrates that a positive textual information tone can further enhance the effect of FINFOR on improving ILLIQ.

4.6.2 Readability of textual information

Readability is an essential characteristic of information presentation and serves as the foundation for reasonably evaluating the "reliability" and "relevance" of information quality. Improving the readability of textual information can assist investors in obtaining incremental information. If FINFOR can be presented with high readability, it can further reduce information asymmetry, potentially enhancing the effect of forward-looking information on improving ILLIQ. To test the aforementioned hypothesis, the readability of MD&A is calculated using the following method[4], specifically as described below:

$$READ_{i,t} = \frac{1}{N}\sum_{s=1}^{N} \log P_s \quad (6)$$

Where, *READ* represents the readability of MD&A textual information. A higher *READ* value indicates a higher frequency of word pair combinations appearing in context, making the text easier to comprehend and resulting in higher readability of

[4] Both the readability index and tone index of MD&A are sourced from the Wingo database.

the textual information. P_s denotes the probability of generating sentence *s*, and *N* indicates the number of sentences that constitute the textual information. Subsequently, an interaction term *FINFOR×READ* is constructed using *READ* and *FINFOR*. The column (2) of Table 10 presents regression results, the parameter of *FINFOR×READ* is positive and statistically meaningful at the 5% level, which demonstrates that enhancing the readability can further enhance the effect of FINFOR on improving ILLIQ.

<TABLE 10 IS IN HERE>

4.7 Economic Consequences Test

The preceding text has already established that FINFOR can augment the increment of effective market information, rectify investor information bias and irrational emotions, diminish information asymmetry both within and outside of the firm, consequently improving the ILLIQ of the company. We will further conduct economic consequence tests from the perspectives of investment behavior, financing behavior, performance, and market value to further verify the effectiveness of forward-looking information. To explore the combined economic effects of financial disclosure and ILLIQ, we construct the following economic model:

$$FCOM_{i,t+1} = \beta_0 + \beta_1 FINFOR_{i,t} \times \text{NILLIQ\_DUM}\, M_{i,t+1} + \beta_2 FINFOR_{i,t} + \beta_3 \text{NILLIQ\_DUM}\, M_{i,t+1} + \sum_k \beta_k \text{Control}_{i,t}^{k} + \sum \text{Ind} + \sum \text{Year} + u_i + \varepsilon_{i,t} \quad (7)$$

Here, *i* points the company and *t* points the year. *FCOM* represents the economic consequence variable of the previous period. Specifically, the ratio of company's long-term investment expenditure (*FINVT*) and the ratio of research and development (*FRD*) were employed to measure investment behavior. The ratio of financial expenses to total assets (*FCOST*) was used to estimate the company's cost of financing. *FMtoB* was employed to evaluate the company's market value. The return

on equity (*FROE*) was employed to measure performance[5]. *NILLIQ_DUM* is a dummy variable, taking a value of 1 if the company's ILLIQ exceeds the median, and 0 otherwise. The remaining control variables are consistent with the benchmark results.

Table11 points out the regression findings for the economic consequences. Columns (1) and (2) present the economic consequences of investment behavior. The coefficient of *FINFOR*×*NILLIQ_DUM* is positive and statistically meaningful at 1% level. Columns (3) present the economic consequences of financing behavior behavior. The coefficient of *FINFOR*×*NILLIQ_DUM* is negatively and statistically meaningful at 5% level. Columns (4) present the economic consequences of market value. The coefficient of *FINFOR*×*NILLIQ_DUM* is positive and statistically meaningful at 1% level. Columns (5) present the economic consequences of performance. The coefficient of *FINFOR*×*NILLIQ_DUM* is positive and statistically significant at 5% confidence level. The above findings denote that the impact of improving ILLIQ through FINFOR can expand the scale of investment, reduce financing costs, improve future performance and increase market value.

<TABLE 11 IS IN HERE>

5. Conclusions and Implications

Currently, the Chinese economy is in a critical period of transition. Enhancing the capacity of financial services to support the real economy requires further improvement in the efficiency of financial resource allocation and the facilitation of channels for funds to flow into the real economy, acting as a "booster" for high-quality economic development. Liquidity, as a vital indicator for measuring the efficiency of stock market operation, directly impacts the stable functioning of financial markets and the efficiency of capital market resource allocation. Therefore, improving ILLIQ has become a focal point of attention from various sectors.

[5] *INVT* = (Purchase and construction of fixed assets + Intangible assets + Other long-term assets) / Total assets. RD= R&D expenditure / Operating income. The calculation methods of *MtoB* and *ROE* are detailed in Table 1

Using textual analysis, we examined the influence of FINFOR on ILLIQ. Our results suggest a meaningful positive correlation between FINFOR and ILLIQ. Heterogeneity tests found that this promoting effect is more significant in high-tech companies and companies with lower information transparency. Mechanism tests suggest the disclosure of forward-looking increases equity liquidity by attracting greater attention from analysts and the media. This paper further examines the influence of MD&A textual characteristics and finds that as the readability and tone of textual information improve, the effect of FINFOR on enhancing ILLIQ becomes stronger. Economic consequence tests indicate that the disclosure of forward-looking information influences the improvement of ILLIQ contributes to expanding the scale of investment, reducing financing costs, improving the firm's future performance, and increasing the company's market value, suggesting that enhancing the efficiency of capital market information could bolster financial support for the real economy.

The implications of this article are as follows.

For investors, the disclosure of forward-looking information can mitigate asymmetries between internal and external corporate data, providing crucial insights into the future prospects of the company. Investors are thus enabled to assess the company’s strategic operations, long-term potential, and investment value more accurately, leading to more informed investment decisions. Furthermore, the disclosure of forward-looking information also supports investors in risk management and asset allocation. By understanding the anticipated future performance and strategic direction of a company, investors can more precisely evaluate the risks associated with their investment portfolios and optimise asset distribution, which not only reduces investment risks but also enhances the stability of investment returns.

For listed companies, initially, by presenting forward-looking information such as future development strategies and market expectations to investors, companies can enhance transparency and bolster investor confidence, thereby increasing ILLIQ. Moreover, the focus on long-term prospects fostered by FINFORs helps attract

investors who prioritise long-term returns, enhancing ILLIQ and reducing price volatility. Additionally, asymmetry of information is a significant factor affecting financing; increasing FINFORs allows investors a clearer understanding of the company’s future strategies, reducing the risk premium to some extent and thus creating more favourable financing conditions for listed companies. Lastly, to ensure the quality of FINFORs, listed companies should implement robust internal control and governance mechanisms to prevent opportunistic distortion of information by management.

For policymakers, initially, regulatory bodies should establish standardised and quantifiable assessment systems for FINFORs, guiding and regulating the format, standards, and content guidelines. More detailed regulations should be set regarding the scope, content, method, and format of disclosures, utilising tables, graphics, and annotations to present abstract and complex forward-looking information more intuitively, thereby reducing the information acquisition costs for stakeholders. Secondly, the role of chartered accountants as verifiers and supervisors should be fully leveraged. In audit practices, while the primary focus of chartered accountants has traditionally been on financial statements, narrative disclosures such as MD&A are only reviewed incidentally without a duty to express an opinion. The current regulatory framework in China lacks comprehensive laws and regulations to standardise the verification of narrative information, leading to an "audit blind spot" in FINFORs. Therefore, regulatory bodies should establish and refine guidelines for the verification of FINFORs and detail the scope, responsibilities, procedures, and reporting of verification to enhance the credibility of forward-looking information.

Although this paper employs multiple methods for robustness checks, there are potential limitations. Firstly, although forward-looking information provides a channel for investors to gain additional information, current regulatory rules still struggle to effectively supervise the textual information in MD&A, often lacking quantitative data and specific targets. Therefore, current technology cannot directly quantify the effectiveness of text analysis, which can only be indirectly assessed from perspectives such as corporate governance, internal environment, and external factors. Secondly, given the unique strategic goals and visions of each company, forward-looking

information designed around different strategies may interact, complicating the simple extraction of these interactions through text analysis techniques, thus classifying the impacts of various types of FINFORs on the stock market remains a profoundly complex area worthy of further exploration.

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Table 1. Definition of Main Control Variables.

Variable Symbol	Variable Name	Calculation Method
NILLIQ	Stock Liquidity	Calculated according to Formula (1).
FINFOR	Forward-Looking Disclosure	The total word frequency of FINFOR compared to the total word frequency in MD&A, multiplied by 100.
SIZE	Company Size	ln(total assets)
LEV	Debt-to-Equity Ratio	Total liabilities / total assets.
ROE	Return on Net Assets	Net profit / net assets.
TOP1	Percentage of Shares Held by the Largest Shareholder	Amount of shares held by the largest shareholder / total shares.
BORD	Board Size	ln(number of board members)
INSHOLD	Institutional Investor Ownership Percentage	Amount of shares held by institutional investors divided by total shares.
MtoB	Market-to-Book Ratio	(Total market capitalization + non-current market value + Liability book value) / total asset book value.
CASH	Cash Holdings Percentage	Cash holdings amount / total assets.
RETSD	Annual Return Volatility	Annual standard deviation of turnover rate.
AUDIT	Audit Opinion	If the annual audit opinion is unqualified, assign a value of 1; otherwise, assign 0.
MHOLD	Percentage of Management Ownership	Number of shares held by management / total shares.

Table 2. Summary statistics.

Variable	N	Mean	SD	Min	Max
ILLIQ	33811	0.0503	0.0597	0.0020	0.7250
NILLIQ	33811	-0.0503	0.0597	-0.7250	-0.0020
FINFOR(%)	33811	0.0081	0.0029	0.0000	0.0297
SIZE	33811	22.0933	1.3205	15.7152	28.6365
LEV	33811	0.4263	0.2088	0.0523	0.9037
ROE	33811	0.0534	0.1599	-1.0449	0.3354
TOP1	33811	0.3463	0.1486	0.0899	0.7482
BORD	33811	2.1319	0.1995	1.6094	2.7081
INSHOLD	33811	0.3704	0.2374	0.0002	0.8698
MtoB	33811	2.7613	2.0176	0.8534	12.8251
CASH	33811	0.2025	0.1464	0.0122	0.7028
RETSD	33811	0.0307	0.0238	0.0000	2.3526
AUDIT	33811	0.9677	0.1769	0.0000	1.0000
MHOLD	33811	0.0979	0.1708	0.0000	0.6612

Table 3. Benchmark regression results.

Variable	(1)	(2)
	NILLIQ	*NILLIQ*
FINFOR	0.5700***	0.4504***
	(0.1571)	(0.1431)
SIZE		0.0259***
		(0.0012)
LEV		-0.0232***
		(0.0044)
ROE		0.0249***
		(0.0033)
TOP1		-0.0564***
		(0.0064)
BORD		-0.0003
		(0.0033)
INSHOLD		-0.0018
		(0.0022)
MtoB		0.0046***
		(0.0003)
CASH		-0.0261***
		(0.0040)
RETSD		0.0814**
		(0.0388)
AUDIT		0.0278***
		(0.0038)
MHOLD		-0.0335***
		(0.0050)
Constant	-0.0519***	-0.6118***
	(0.0108)	(0.0284)
N	33,811	33,811
Ind	YES	YES
Year	YES	YES
Firm	YES	YES
R^2	0.1869	0.2587

Note: Clustering standard errors at the firm level are indicated in parentheses. *, **, and * point out significance at the 1%, 5%, and 10% levels, respectively. The same notation applies throughout.**

Table 4. Endogeneity check

Variable	(1)	(2)	(3)	(4)	(5)
	FINFOR	*NILLIQ*	*FINFOR*	*NILLIQ*	*NILLIQ*
FINFOR_IND	6.7037***				
	(0.9536)				
FINFOR		8.0097***		2.5552**	0.4360***
		(1.2696)		(1.0422)	(0.1427)
FINFOR_PRO			0.8919***		
			(0.0606)		
IMR					-3.2774***
					(0.8378)
SIZE	0.0261***	0.0257***	0.0000	0.0259***	0.0093**
	(0.0012)	(0.0013)	(0.0001)	(0.0012)	(0.0043)
LEV	-0.0237***	-0.0252***	0.0002	-0.0238***	0.1179***
	(0.0044)	(0.0047)	(0.0002)	(0.0044)	(0.0364)
ROE	0.0246***	0.0240***	0.0001	0.0246***	0.0590***
	(0.0033)	(0.0034)	(0.0001)	(0.0033)	(0.0093)
TOP1	-0.0556***	-0.0425***	-0.0018***	-0.0525***	0.0442*
	(0.0064)	(0.0076)	(0.0004)	(0.0067)	(0.0267)
BORD	-0.0003	0.0012	-0.0002	0.0001	0.1407***
	(0.0033)	(0.0036)	(0.0002)	(0.0033)	(0.0363)
INSHOLD	-0.0017	-0.0009	-0.0001	-0.0016	0.2870***
	(0.0022)	(0.0024)	(0.0001)	(0.0022)	(0.0737)
MtoB	0.0046***	0.0046***	-0.0000	0.0046***	-0.0253***
	(0.0003)	(0.0004)	(0.0000)	(0.0004)	(0.0076)
CASH	-0.0257***	-0.0214***	-0.0005***	-0.0248***	0.2204***
	(0.0039)	(0.0044)	(0.0002)	(0.0040)	(0.0628)
RETSD	0.0808**	0.0759**	0.0008*	0.0799**	-0.9325***
	(0.0384)	(0.0377)	(0.0004)	(0.0385)	(0.2771)
AUDIT	0.0278***	0.0274***	0.0000	0.0277***	0.1120***
	(0.0038)	(0.0039)	(0.0001)	(0.0038)	(0.0220)
MHOLD	-0.0322***	-0.0355***	0.0003	-0.0341***	-0.3366***
	(0.0050)	(0.0052)	(0.0002)	(0.0050)	(0.0774)
Constant	-0.6703***	-0.6893***	0.0019	-0.6334***	1.9259***
	(0.0295)	(0.0334)	(0.0016)	(0.0300)	(0.6479)
N	33811	33811	33811	33811	33811
Ind	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES
Firm	YES	YES	YES	YES	YES
R^2	0.2599	0.1482	0.0729	0.2502	0.2634

Table 5. PSM test.

Variable	(1) 1:1	(2) 1:2
	NILLIQ	*NILLIQ*
FINFOR	0.5361***	0.3985***
	(0.1663)	(0.1502)
SIZE	0.0247***	0.0261***
	(0.0014)	(0.0013)
LEV	-0.0194***	-0.0225***
	(0.0053)	(0.0046)
ROE	0.0192***	0.0250***
	(0.0038)	(0.0036)
TOP1	-0.0626***	-0.0616***
	(0.0079)	(0.0068)
BORD	-0.0074*	-0.0037
	(0.0040)	(0.0035)
INSHOLD	-0.0029	-0.0010
	(0.0028)	(0.0023)
MtoB	0.0045***	0.0044***
	(0.0004)	(0.0004)
CASH	-0.0242***	-0.0259***
	(0.0048)	(0.0043)
RET_SD	0.2560**	0.2494***
	(0.1238)	(0.0946)
AUDIT	0.0313***	0.0285***
	(0.0050)	(0.0041)
MHOLD	-0.0255***	-0.0309***
	(0.0061)	(0.0053)
Constant	-0.5874***	-0.6202***
	(0.0315)	(0.0296)
N	18,742	27,052
Ind	YES	YES
Year	YES	YES
Firm	YES	YES
R^2	0.2705	0.2700

Table 6. Changing the measurement of variables.

Variable	(1)	(2)	(3)	(4)
	NILLIQ	*NILLIQ*	*NILLIQ*	*PASTOR*
LNFINFOR	0.0042***			
	(0.0004)			
ADJ_FINFOR		0.3370**		
		(0.1445)		
ABNFINFOR			0.4504***	
			(0.1431)	
FINFOR				0.0224***
				(0.0049)
SIZE	0.0262***	0.0259***	0.0259***	0.0002***
	(0.0012)	(0.0012)	(0.0012)	(0.0000)
LEV	-0.0232***	-0.0232***	-0.0231***	-0.0003***
	(0.0044)	(0.0044)	(0.0044)	(0.0001)
ROE	0.0251***	0.0249***	0.0250***	-0.0000
	(0.0033)	(0.0033)	(0.0033)	(0.0001)
TOP1	-0.0583***	-0.0567***	-0.0572***	-0.0002*
	(0.0064)	(0.0064)	(0.0064)	(0.0001)
BORD	-0.0007	-0.0004	-0.0004	-0.0000
	(0.0033)	(0.0033)	(0.0033)	(0.0001)
INSHOLD	-0.0025	-0.0018	-0.0019	0.0000
	(0.0022)	(0.0022)	(0.0022)	(0.0000)
MtoB	0.0047***	0.0045***	0.0046***	0.0000***
	(0.0003)	(0.0003)	(0.0003)	(0.0000)
CASH	-0.0263***	-0.0262***	-0.0264***	0.0000
	(0.0039)	(0.0039)	(0.0040)	(0.0001)
RETSD	0.0827**	0.0816**	0.0818**	0.0006*
	(0.0392)	(0.0389)	(0.0388)	(0.0003)
AUDIT	0.0280***	0.0278***	0.0278***	0.0001*
	(0.0038)	(0.0038)	(0.0038)	(0.0001)
MHOLD	-0.0324***	-0.0336***	-0.0334***	-0.0000
	(0.0050)	(0.0050)	(0.0050)	(0.0001)
Constant	-0.6295***	-0.6075***	-0.6072***	-0.0056***
	(0.0288)	(0.0285)	(0.0285)	(0.0006)
N	33,811	33,811	33,811	33,703
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES
Firm	YES	YES	YES	YES
R^2	0.2599	0.2586	0.2587	0.0541

Table 7. Other robustness checks.

Variable	(1) *NILLIQ*	(2) *NILLIQ*	(3) *NILLIQ*	(4) *NILLIQ*
FINFOR	0.4359**	0.4359***	0.3591**	0.4095***
	(0.1830)	(0.1033)	(0.1443)	(0.1459)
SIZE	0.0268***	0.0268***	0.0272***	0.0265***
	(0.0026)	(0.0013)	(0.0012)	(0.0012)
LEV	-0.0229***	-0.0229***	-0.0242***	-0.0238***
	(0.0058)	(0.0070)	(0.0044)	(0.0044)
ROE	0.0265***	0.0265***	0.0254***	0.0264***
	(0.0049)	(0.0039)	(0.0034)	(0.0034)
TOP1	-0.0565***	-0.0565***	-0.0532***	-0.0554***
	(0.0104)	(0.0056)	(0.0064)	(0.0065)
BORD	-0.0002	-0.0002	-0.0005	-0.0009
	(0.0026)	(0.0024)	(0.0033)	(0.0032)
TAGR	-0.0055**	-0.0055***	-0.0046***	-0.0053***
	(0.0024)	(0.0016)	(0.0012)	(0.0012)
INSHOLD	-0.0023	-0.0023	-0.0013	-0.0023
	(0.0034)	(0.0025)	(0.0022)	(0.0022)
MtoB	0.0047***	0.0047***	0.0050***	0.0047***
	(0.0009)	(0.0003)	(0.0004)	(0.0004)
CASH	-0.0210**	-0.0210***	-0.0193***	-0.0205***
	(0.0084)	(0.0041)	(0.0043)	(0.0041)
RET_SD	0.0843	0.0843**	0.0774**	0.0814**
	(0.0512)	(0.0327)	(0.0373)	(0.0393)
AUDIT	0.0279***	0.0279***	0.0281***	0.0277***
	(0.0039)	(0.0038)	(0.0038)	(0.0038)
MHOLD	-0.0313***	-0.0313***	-0.0264***	-0.0298***
	(0.0091)	(0.0072)	(0.0050)	(0.0050)
Constant	-0.6298***	-0.6298***	-0.6359***	-0.6150***
	(0.0545)	(0.0294)	(0.0287)	(0.0286)
N	33,811	33,811	33,811	33,811
IND	YES	YES	YES	YES
YEAR	YES	YES	YES	YES
Firm	YES	YES	YES	YES
IND-YEAR	NO	NO	YES	NO
POR-YEAR	NO	NO	NO	YES
R^2	0.2598	0.2598	0.2773	0.2732

Note: The brackets in columns (1) and (2) represent the robust standard errors for two-way clustering at the firm-year and firm-industry levels, respectively, while the remaining brackets represent the robust standard errors for clustering at the firm level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 8. Heterogeneity test

Variable	(3)	(4)	(5)	(6)
	HIGH_DUM=1	*HIGH_DUM=0*	*FORC_DUM=1*	*FORC_DUM=0*
FINFOR	0.5222***	-0.1023	0.5997***	0.3319
	(0.1662)	(0.2401)	(0.1717)	(0.2197)
SIZE	0.0261***	0.0216***	0.0237***	0.0168***
	(0.0014)	(0.0018)	(0.0014)	(0.0017)
LEV	-0.0169***	-0.0316***	-0.0132**	-0.0314***
	(0.0052)	(0.0072)	(0.0057)	(0.0088)
ROE	0.0244***	0.0196***	0.0175***	0.1533***
	(0.0041)	(0.0059)	(0.0030)	(0.0318)
TOP1	-0.0596***	-0.0249**	-0.0601***	-0.0571***
	(0.0079)	(0.0106)	(0.0082)	(0.0095)
BORD	0.0005	-0.0032	0.0022	-0.0019
	(0.0041)	(0.0046)	(0.0040)	(0.0057)
INSHOLD	-0.0003	-0.0022	0.0025	0.0021
	(0.0027)	(0.0035)	(0.0030)	(0.0032)
MtoB	0.0047***	0.0049***	0.0070***	0.0029***
	(0.0004)	(0.0009)	(0.0007)	(0.0006)
CASH	-0.0262***	-0.0108	-0.0265***	-0.0315***
	(0.0046)	(0.0071)	(0.0057)	(0.0057)
RETSD	0.1433	0.0326*	0.2462	0.0570
	(0.1150)	(0.0194)	(0.2077)	(0.0460)
AUDIT	0.0264***	0.0261***	0.0191***	0.0522***
	(0.0049)	(0.0060)	(0.0036)	(0.0161)
MHOLD	-0.0300***	-0.0251**	-0.0429***	-0.0482***
	(0.0053)	(0.0119)	(0.0073)	(0.0080)
Constant	-0.6307***	-0.5377***	-0.5758***	-0.4388***
	(0.0317)	(0.0436)	(0.0355)	(0.0399)
N	24,131	9,680	14,330	14,330
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES
Firm	YES	YES	YES	YES
R^2	0.2645	0.2365	0.3409	0.2832

Table 9. Mechanism of action analysis.

Variable	(1)	(2)	(3)	(4)
	ANALYST	*NILLIQ*	*MEDIAN*	*NILLIQ*
ANALYST		0.0029***		
		(0.0005)		
MEDIAN				0.0056***
				(0.0006)
FINFOR	10.3883***	0.4203***	21.2766***	0.3323**
	(2.5123)	(0.1426)	(3.6236)	(0.1450)
SIZE	0.6222***	0.0241***	0.3053***	0.0241***
	(0.0178)	(0.0013)	(0.0146)	(0.0012)
LEV	-0.6487***	-0.0214***	0.1090**	-0.0238***
	(0.0652)	(0.0044)	(0.0547)	(0.0044)
ROE	0.5714***	0.0232***	0.0021	0.0256***
	(0.0374)	(0.0033)	(0.0338)	(0.0034)
TOP1	0.1159	-0.0567***	-0.4988***	-0.0525***
	(0.1134)	(0.0064)	(0.0954)	(0.0065)
BORD	0.0922*	-0.0006	-0.0384	-0.0001
	(0.0522)	(0.0033)	(0.0430)	(0.0033)
INSHOLD	0.5886***	-0.0035	0.0889***	-0.0019
	(0.0375)	(0.0022)	(0.0316)	(0.0022)
MtoB	0.1375***	0.0042***	0.1067***	0.0038***
	(0.0048)	(0.0004)	(0.0044)	(0.0003)
CASH	0.4146***	-0.0273***	-0.1417***	-0.0258***
	(0.0582)	(0.0039)	(0.0475)	(0.0039)
RETSD	-0.1018	0.0817**	2.1246**	0.0660**
	(0.2119)	(0.0388)	(0.8578)	(0.0329)
AUDIT	0.0220	0.0277***	-0.1926***	0.0280***
	(0.0338)	(0.0038)	(0.0332)	(0.0039)
MHOLD	0.2690***	-0.0343***	-0.1334**	-0.0337***
	(0.0801)	(0.0049)	(0.0551)	(0.0050)
Constant	-12.2203***	-0.5764***	-2.4360***	-0.5943***
	(0.4215)	(0.0292)	(0.3703)	(0.0285)
N	33,811	33,811	33,185	33,185
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES
Firm	YES	YES	YES	YES
R^2	0.2804	0.2601	0.3669	0.2626

Table 10. Tone and readability of textual information

VARIABLES	(1) *NILLIQ*	(2) *NILLIQ*
FINFOR×TONE	30.2800***	
	(7.6497)	
FINFOR×READ		0.0752**
		(0.0323)
FINFOR	0.5244***	0.3981***
	(0.1319)	(0.1489)
TONE	0.1482***	
	(0.0246)	
READ		-0.0001
		(0.0001)
SIZE	0.0257***	0.0257***
	(0.0012)	(0.0012)
LEV	-0.0231***	-0.0228***
	(0.0044)	(0.0044)
ROE	0.0219***	0.0242***
	(0.0033)	(0.0033)
TOP1	-0.0555***	-0.0562***
	(0.0064)	(0.0064)
BORD	-0.0009	-0.0007
	(0.0033)	(0.0033)
INSHOLD	-0.0021	-0.0015
	(0.0022)	(0.0022)
MtoB	0.0046***	0.0046***
	(0.0003)	(0.0004)
CASH	-0.0261***	-0.0259***
	(0.0039)	(0.0040)
RET_SD	0.0825**	0.0810**
	(0.0385)	(0.0390)
AUDIT	0.0265***	0.0275***
	(0.0038)	(0.0038)
MHOLD	-0.0336***	-0.0332***
	(0.0050)	(0.0050)
Constant	-0.5982***	-0.6028***
	(0.0282)	(0.0285)
N	33,725	33,725
Ind	YES	YES
Year	YES	YES
Firm	YES	YES
R^2	0.2617	0.2594

Table 11. Economic Consequences Test.

Variable	(1)	(2)	(3)	(4)	(5)
	FINVT	*FRD*	*FCOST*	*FMtoB*	*FROE*
FINFOR×NILLIQ_DUM	0.0070***	0.0022***	-0.0004**	0.2901***	0.0184**
	(0.0012)	(0.0004)	(0.0002)	(0.0384)	(0.0073)
NILLIQ_DUM	0.0016**	0.0014***	-0.0006***	0.2764***	0.0390***
	(0.0007)	(0.0003)	(0.0001)	(0.0159)	(0.0096)
FINFOR	-0.1894	-0.0036	0.0048	1.9023	0.2397
	(0.1181)	(0.0531)	(0.0213)	(2.4442)	(1.5186)
SIZE	0.0057***	-0.0028***	0.0010***	-0.5263***	-0.0433***
	(0.0009)	(0.0005)	(0.0002)	(0.0235)	(0.0151)
LEV	-0.0109***	-0.0024*	0.0287***	0.0917	-0.1143
	(0.0034)	(0.0014)	(0.0008)	(0.0852)	(0.0731)
ROE	0.0120***	0.0041***	-0.0062***	0.0987**	0.2589***
	(0.0017)	(0.0007)	(0.0006)	(0.0490)	(0.0833)
TOP1	0.0274***	-0.0007	-0.0037***	-0.7008***	0.0481
	(0.0057)	(0.0024)	(0.0012)	(0.1133)	(0.0710)
BORD	0.0018	0.0016	-0.0003	-0.2656***	-0.0039
	(0.0027)	(0.0012)	(0.0005)	(0.0610)	(0.0378)
INSHOLD	0.0057***	0.0007	-0.0003	1.0621***	0.0447**
	(0.0020)	(0.0008)	(0.0003)	(0.0424)	(0.0188)
MtoB	0.0016***	0.0011***	-0.0002***	0.2154***	0.0205***
	(0.0003)	(0.0001)	(0.0000)	(0.0092)	(0.0036)
CASH	-0.0333***	-0.0038***	-0.0168***	-0.2622***	0.1532***
	(0.0029)	(0.0013)	(0.0006)	(0.0763)	(0.0380)
RETSD	-0.0341**	0.0004	-0.0017	-0.6048	-0.0013
	(0.0134)	(0.0025)	(0.0013)	(0.5352)	(0.0624)
AUDIT	0.0052***	0.0018**	-0.0023***	-0.0396	0.3896***
	(0.0018)	(0.0007)	(0.0005)	(0.0491)	(0.0701)
MHOLD	0.0290***	0.0047***	-0.0006	-1.5260***	0.0382
	(0.0040)	(0.0018)	(0.0007)	(0.0822)	(0.0462)
Constant	-0.0498**	0.0644***	-0.0154***	12.8017***	0.5658*
	(0.0228)	(0.0112)	(0.0050)	(0.5434)	(0.3194)
N	33,811	33,811	33,718	33,718	33,691
Ind	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES
Firm	YES	YES	YES	YES	YES
R^2	0.1199	0.0744	0.3696	0.3406	0.0406

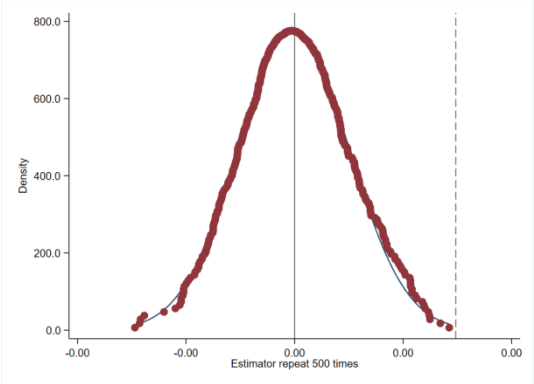

Figure 1. Placebo test repeated 500 times.

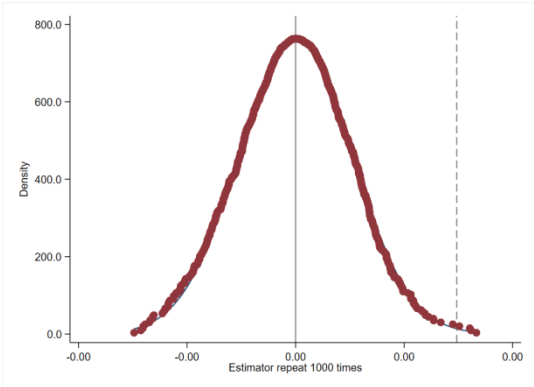

Figure 2. Placebo test repeated 1000 times.

Appendix 1

Plan, anticipate, future, objectives, possible, intend, anticipate, predict, hope, expect, look forward to, forthcoming, subsequent, upcoming year, forthcoming year, purpose, in case of, opportunity, prospect, believe, vision, challenge.

Appendix 2

Later, afterward, in the following months, in the next year, next step, next stage, the following stage, in the future, in the near term, subsequent, still needed, will continue, anticipate, later stage, tend to, planned for, intended for, still pending, estimate, ongoing need, future development, future market, new fiscal year, in the emerging situation, a new round, opportunities for development, favorable opportunities, space for development, opportunities, uncertainty, long-term development, long-term planning, is bound to, promising, in the short term, pursuit, in the next three years, in the next five years, a great opportunity, etc.

Appendix 3

SIZE: The larger the size of a company, the greater the attention it attracts from investors and the more significant its influence on the market, which enhances the trading activity of its stocks. Furthermore, larger companies typically experience less information asymmetry, which may result in lower volatility in stock prices. This reduction in volatility helps to narrow the bid-ask spread, further improving the liquidity of the stocks.

LEV: The impact of a company's leverage level on ILLIQ may manifest in two contrasting effects. On one hand, as a company's debt level increases, it may trigger investor caution due to the heightened operational risks associated with high-debt companies compared to those with low debt. Consequently, this can suppress investor enthusiasm for trading, thereby diminishing the liquidity of the company's stocks (Frieder and Martell, 2006). On the other hand, if a company can effectively manage its debt and maintain robust profitability, a high debt ratio does not necessarily lead to a negative impact on ILLIQ. In certain instances, a high debt ratio might be perceived as a signal of the company's aggressive expansion and investment strategies, which could positively influence ILLIQ (Myers and Rajan, 1998).

ROE: A higher return on equity indicates stronger profitability of a company, which suggests that the company can generate more value for investors. This capability attracts greater investor interest and increases demand for the stock, thereby enhancing its liquidity. Additionally, companies with strong profitability have higher levels of disposable profits, which might be used for distributing dividends, repurchasing shares, or reinvesting in the business. These activities contribute to the attractiveness of the stock and further promote its liquidity.

TOP1: The concentration of equity ownership reflects the controlling power of major shareholders over a company. Higher levels of ownership concentration suggest that the company is more likely to be influenced by the decisions of a single shareholder, which can have dual effects on ILLIQ. On the one hand, when the largest shareholder holds a significant proportion of shares, they generally have a greater incentive to supervise and manage the company effectively to ensure its optimal operation and performance. This oversight can enhance investor confidence in the company, thereby increasing ILLIQ. Furthermore, major shareholders might use their influence to promote improvements in corporate governance and increased transparency of information, which can attract more investors to participate in trading, thus enhancing ILLIQ. On the other hand, an excessively high shareholding percentage by the largest shareholder can lead to over-concentration of ownership. In pursuit of their own interests, the controlling shareholders may engage in activities that effectively 'tunnel' resources from the company, disregarding the interests of other shareholders. Such behaviour can trigger market concerns about corporate governance, leading to a decline in investor confidence and, consequently, a reduction in ILLIQ (Brockman et al., 2009).

BORD: On one hand, a larger board size can produce governance effects, enhancing the transparency of the company, which in turn may contribute to increased ILLIQ (Abbassi et al., 2021). On the other hand, the board might not necessarily generate such governance effects. This is particularly true for Chinese A-share listed companies undergoing transitions where internal governance levels are low. In such cases, the board may fail to exert its expected governance impact, leading to significant information asymmetry faced by investors and consequently reducing

ILLIQ.

INSHOLD: On the one hand, institutional investors, by holding significant shares, often become major shareholders of a company. Major shareholders are typically perceived as more likely to access private information, thereby enhancing the asymmetry of information and reducing ILLIQ (Heflin and Shaw, 2000). On the other hand, due to their substantial shareholdings, institutional investors possess both the capacity and the incentive to monitor the company and encourage enhanced disclosure of information. This action serves to diminish the degree of information asymmetry, consequently increasing the level of liquidity (Mendelson and Tunca, 2004).

MtoB: The market-to-book ratio is an important indicator used by investors to assess the value of a company. Generally, when the market-to-book ratio is high, it usually indicates that the market perceives the true value of the company to exceed its book value. This perception could attract valuable investors, thereby enhancing the liquidity of the stock.

CASH: On one hand, when the cash flow ratio is high, it indicates that the company possesses a strong debt repayment capacity and stable cash flow. This robust financial status often attracts more investors and enhances their confidence, increasing the trading activity of the company's stock, thereby improving its liquidity. On the other hand, due to its easy liquidity, cash can be readily misappropriated by management and major shareholders, objectively exacerbating corporate agency issues. This is particularly concerning in the context of China's A-share listed companies where governance levels are generally low, potentially triggering market concerns about the company, leading to a decline in investor confidence and, consequently, a reduction in ILLIQ.

RETSD: On one hand, higher stock price volatility indicates greater uncertainty about the company's future prospects, which may increase risk perception among investors, causing some to adopt a wait-and-see approach or exit the market, thereby reducing ILLIQ. On the other hand, higher volatility indicates more active buying and selling

in the market, making it easier for investors to execute transactions, which can in turn enhance the liquidity of the stock.

AUDIT: An audit opinion is the auditor's evaluation and judgement of a company's financial statements. Generally, when auditors issue an unqualified audit report, the financial statements of the company are deemed more credible, which can strengthen investors' trust in the company and potentially increase the liquidity of its stock.

MHOLD: On the one hand, when the management's shareholding ratio is high, their interests are more closely aligned with those of the company and other shareholders. This alignment of interests may motivate management to work harder, enhancing investor confidence in the company, which in turn can increase ILLIQ. On the other hand, a high management shareholding ratio could also lead to actions that protect their own interests at the expense of the company and other shareholders. External investors might then become skeptical of the company's governance structure and decision-making process, reducing their willingness to invest and the trading activity of the stock, consequently leading to a decline in ILLIQ.