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Article

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Could regulatory information disclosure impact the behaviour of corporate over-financialization? Evidence from Chinese comment letters

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ABSTRACT

Taking Chinese A-share listed firms from 2014 to 2018 as our samples, this paper investigates the impact of regulatory information disclosure on corporate over-financialisation behaviour from comment letters. The empirical results show that financialisation-related comment letters can effectively reduce the behaviour of corporate over-financialisation, and this positive governance effect is more pronounced in companies with strong market arbitrage motivation. Further tests show that the more intensity of the financialisation-related comment letters, the higher the governance effect of comment letters on over-financialisation. Specifically, the governance effect of inquiries mechanism is more significant when the financialisation-related comment letters have the questions of ‘over-financialisation’. From the specific influence mechanism, the governance effect of financialisation-related comment letters is achieved by potential violation cost and the pressure of market attention. Finally, the governance effect of financialisation-related comment letters on over-financialisation can spill over to non-comment-letter-receivers in the same industry or in the same corporation groups.

KEYWORDS

Stock exchanges front-line supervision; financialisation-related comment letters; over-financialisation; market arbitrage motivation; spillover effect

1. Introduction

With the implementation of information disclosure through train of listed companies in 2013, the front-line supervision of company information disclosure adopted by the Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) has transformed from ‘prior review’ to ‘post review’. Under the concept of ‘deregulating and strengthening supervision’, comment letters system has become a market-oriented supervision method of ‘post review’. Since 2019, the China Securities Regulatory Commission (CSRC) has launched a pilot project of registration system of IPO in SSE STAR market, which further highlights the important role of the front-line supervision in the high-quality development of capital market.

Information disclosure plays an important role in the front-line supervision from the

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stock exchanges. As an innovative regulatory method of company information disclosure, the influence of comment letters has attracted great attention from regulators and academic. Prior literature find that comment letters have information content (Chen et al., 2018a), improve company information environment (Brown et al., 2018; Li et al., 2019a), and enhance audit quality (Chen et al., 2018b). However, comment letters can also play a role in double-edged sword. For example, comment letters could motivate managers to be engaged in strategic insider trading (Dechow et al., 2016) and real-activities-based earnings management (L. M. Cunningham et al., 2020). It is worth paying attention to the difference institutional background of comment letters. Under Section 408 of the Sarbanes-Oxley Act (SOX), the SEC is required to review the financial statements (10-K filing) of publicly listed firms at least once every 3 years, the receipt of comment letters and firms' response letters are not required to be disclosed timely (Dechow et al., 2016). The comment letters mechanism of the SHSE and SZSE are different from that of SEC. First, the Chinese comment letters are a kind of the inquiries of 'getting to the root', and pays more attention to the substance and risk of firms trading activities. Second, both the disclosure of comment letters and firms' response are more timely (usually within 7 trading days response).

This paper explores the impact of comment letters on the behaviour of firms over-financialisation in China. We focus on over-financialisation to investigate the effectiveness of the stock exchanges' comment letters for two reasons. On the one hand, the behaviour of firms financialisation is related to the healthy development of the real economy, and the phenomenon of 'shifting from real to fictitious' presented by over-financialisation is a new challenge in Chinese economic development (Xie & Kuang, 2020; Zhang, 2019). In view of the problem of 'shifting from real to fictitious', the report of 19th National Congress of the CPC points out that it needs to deepen the reform of the financial system and enhance the ability of finance to serve the real economy. From the microeconomic level, over-financialisation is the most important way for the entity enterprises to 'shifting from real to fictitious'. Driven by the motivation of market arbitrage, the companies do engage in excessive financial investment, rely on financial investment income and ignore the development of main business, which crowd out the company's daily capital investment (H. F. Hu et al., 2020; Wan et al., 2020). In recent years, a large number of non-financial companies are divorced from the real economy and get involved in financial investment activities, which has become an important method for non-financial companies to pursue short-term profits and exacerbate the trend of over-financialisation. For example, from 2010 to 2017, the proportion of financial assets on fixed assets held by Chinese non-financial listed companies reach 22% on average, and more than 20% of the profits of non-financial listed companies come from financial channels (Gu et al., 2020). Based on the principal-agent theory, the decision-making of company investment is deeply affected by information asymmetry and agency problems (Biddle et al., 2009; Jensen & Meckling, 1976), and it induces the inefficient over-financialisation under the profit-seeking motivation of management (Hao, 2020; S. Y. Hu et al., 2019). The over-financialisation has the characteristics of hiding bad news, and the resource mismatch or financial market risk (H. F. Hu et al., 2020; Peng et al., 2018a). Therefore, it is necessary to set up a regulatory mechanism for over-financialisation behaviour, but there is little literature to investigate the regulatory effect on over-financialisation, especially for lacking the governance evidence of information disclosure supervision in over-financialisation

behaviour. On the other hand, to better improve the ability of financial services with the real economy and timely relieve market risks, the information disclosure of financial investment is the most concerned issues in comment letters from the stock exchanges. In our samples from 2014 to 2018, the proportion of financialisation-related comment letters is 39.7%. This provides a good research opportunity to explore the governance path of company over-financialisation from the information disclosure mechanism of comment letters.

Under the supervision of comment letters system, when the firms' financialisation information disclosure is inadequate or irregular, the stock exchanges could issue comment letters and require the firms to make responses timely, which could effectively promote the company to fulfill the obligation of information disclosure, reduce the information asymmetry and agency problems in the process of financial investment decision-making. The regulatory pressure and market attention of comment letters could increase the costs and decrease the benefits of over-financialisation. Therefore, could the stock exchanges' comment letters alleviate company over-financialisation? Meanwhile, the investment substitution theory holds that capital arbitrage is regarded as the essence of financialisation (Demir, 2009; Zhang, 2019), which induce the high motivation of market arbitrage and over-financialisation. The front-line supervision acts as a market-oriented mechanism and gives full play to the effective market supervision. Could comment letters play a more governance role in over-financialisation under the high motivation of market arbitrage?

Using Chinese A-share listed firms from 2014 to 2018 as our samples, this paper examines the front-line supervision effect of comment letters on over-financialisation. The empirical results show that financialisation-related comment letters can effectively reduce company over-financialisation behaviour, and this positive governance effect is more pronounced in companies with strong motivation of market arbitrage. Further tests show that the more intensity of financialisation-related comment letters, the higher the governance effect of comment letters on over-financialisation. Specifically, when the financialisation-related comment letters have the questions of 'over-financialisation', the disciplinary effect of inquiries mechanism is more significant. From the potential influence mechanism, the governance effect of financialisation-related comment letters on over-financialisation is achieved by punishment cost and market attention pressure. Finally, from the spillover effect of comment letters disclosure, the governance effect of financialisation-related comment letters on over-financialisation can spill over to non-comment-letter-receivers in the same industry or in the same corporation groups.

Our paper makes several contributions. First, this paper provides new evidence for the governance of over-financialisation from the regulatory information disclosure, and expands the research on the governance mechanism of firms' financialisation. Most of the existing literature examine the economic consequences of firms' financialisation from the aspects of financial market stability (Peng et al., 2018a), and company innovation behaviour (Hao, 2020; Wang et al., 2017), and support the market arbitrage view of financialisation. Some literature also explore the impact of firms' financialisation from external macro environments, such as economic policy uncertainty (Peng et al., 2018b) and financial system reform (Peng & Huang, 2018), but pay little attention to the effect of regulatory information disclosure. Moreover, the prior research on company financialisation is mainly based on the overall degree of financial investment, and there is little

governance evidence for 'over-financialisation'. Based on the typical setting of stock exchanges' comment letters, we extend the governance path of over-financialisation to the micro information disclosure mechanism, and enrich the theoretical research of economic financialisation from the perspective of public information disclosure, which is of great value to improve the inefficient allocation of financial assets.

Second, we provide the effectiveness of front-line regulatory from the perspective of company over-financialisation under Chinese registration system reform, and enrich the growing body of research on the economic consequence of comment letters system. Prior literature on the regulatory effect of comment letters mainly focus on corporate information disclosure (Brown et al., 2018; Li et al., 2019a), earnings management (Chen et al., 2019; L. M. Cunningham et al., 2020), analyst behaviour (Bozanic et al., 2017; Wang, 2016) and auditor behaviour (Chen et al., 2018b; Gietzmann & Pettinicchio, 2014), but few studies explore the specific impact mechanism of comment letters. Our study fill this gap and analyse the governance effect of comment letters supervision on over-financialisation, especially for excavating the effectiveness of accurate inquiry of 'over-financialisation'. Meanwhile, we also examine the mechanism of financial inquiries on over-financialisation from the aspects of violation cost and market attention pressure, which have an important enlightenment for strengthening the collaborative governance with the third-party market intermediary supervision in the process of front-line supervision.

Third, this paper examines the spillover effect of comment letters disclosure on company over-financialisation, and provides guidance for regulators in view of allocating limited regulatory resources and improving the efficiency of the front-line regulatory. More importantly, our study contributes to the relevant research on corporation groups risk management from comment letters mechanism. Prior studies find that the corporation group companies have high contagion effects of market risks (Na et al., 2017) and more contagion of financial investment behaviour (X. Z. Li et al., 2019). From the embedding role of financial inquiry information, we examine the spillover governance of comment letters disclosure on over-financialisation in corporation group member companies, which is of great significance to improve the financial investment risk of corporation groups from the stock exchanges' inquiry system.

2. Literature review

2.1. Research progress on comment letters

Comment letters serve as a public information disclosure mechanism. The research on the economic consequence of comment letters mainly focus on the following aspects.

First, comment letters disclosure has a positive impact on the company's information environment. The inquiry of annual reports could bring strong negative market reaction and market supervision effect (Chen et al., 2018a), and thus relieve information asymmetry in M&A transactions (Li et al., 2019a). Bozanic et al. (2017) find that comment letters disclosure can reduce the company's litigation risk; and present the spillover effect of risk factor disclosure in industry peers (Brown et al., 2018).

Second, comment letters have a certain double-sided effect on the behaviour of management. Kubick et al. (2016) find that tax-related SEC comment letters can inhibit corporate tax avoidance behaviour. Li et al. (2019b) provide that the Chinese comment

letters could improve the quality of management earnings forecast. Comment letters mechanism could inhibit accrual-based earnings management (Chen et al., 2019; L. M. Cunningham et al., 2020), but induce management to engage in more real earnings management activities (L. M. Cunningham et al., 2020) and increase insider trading in the disclosure window of comment letters (Dechow et al., 2016).

The comment letters mechanism can affect the decision-making of stakeholders. Auditors would reassess the litigation risk of comment letter recipients and increase audit fees (Gietzmann & Pettinicchio, 2014), and even issue more conservative audit opinions (Chen et al., 2018b). Bozanic et al. (2017) find that the disclosure of comment letters can increase the degree of analyst tracking; and improve the efficiency of analysts' earnings forecasting (Li et al., 2019a; Wang, 2016). Finally, the banks could charge higher interest rates when the borrowers receive a comment letter (L. Cunningham et al., 2017).

2.2. Literature on corporate financialisation

Financialisation has always been a hot topic in the field of economic and financial research. The prior literature on firms' financialisation mainly summarise as follows.

The first is research on motivation of financialisation. The one is 'reservoir motivation'. The purpose for financial asset allocation from non-financial enterprises is preventive savings (Y. M. Hu et al., 2017; Smith & Stulz, 1985). The other is the motivation of 'investment substitution'. Investment substitution theory holds that the purpose of financialisation is to maximise profits, and over-financialisation could have a 'crowding out effect' on real investment (Demir, 2009; Orhangazi, 2008). So, capital arbitrage is considered as the essence of financialisation (Gu et al., 2020).

The second is economic consequences of financialisation. Over-financialisation could bring potential risks and reduce company production efficiency (H. F. Hu et al., 2020; Xie & Kuang, 2020). S. Y. Hu et al. (2019) find that financialisation can reduce the investment efficiency from the perspective of purchasing wealth management products; and the arbitrage motivation of financialisation inhibits company innovation ability (Hao, 2020; Wang et al., 2017). In addition, Peng et al. (2018a) document that financial investment can be used as a convenient tool for company to adjust profits and exacerbate financial market non-stability.

The third topic is the governance of financialisation. S. W. Liu et al. (2019) find that corporate social responsibility can inhibit financialisation. Peng and Huang (2018) point out that the reform of financial system could relieve financialisation. In addition, Peng et al. (2018b) show that the increasing of economic policy uncertainty would restrain the trend of financialisation.

To sum up, the disclosure of comment letters has a certain positive effect on corporate behaviour, but rarely explore the effect of comment letters on financialisation. As for the firm financialisation, prior literature support the view of market arbitrage, and those research are mainly proxy for the overall level of financial investment. But few literature explore how to regulate the behaviour of over-financialisation from the micro information disclosure mechanism. The stock exchanges' comment letters pay much attention to the behaviour of financial investment. Do comment letters disclosure has a governance effect on over-financialisation?

3. Theory analysis and hypothesis development

In the principal-agent framework, the decision-making of financial investment is deeply affected by information asymmetry and agency problems (Hao, 2020; S. Y. Hu et al., 2019). Comment letters act as an important information disclosure mechanism, we expect that comment letters could have a governance effect on over-financialisation.

First, comment letters can give play to the regulatory effect and increase the violation cost of over-financialisation. In theory, government regulation acts as a 'tangible hand', which can make up for the defects of market incompleteness and protect the interests of the public (investors). Government supervision is an important method to regulate the behaviour of microeconomic subjects in emerging markets with weak investor protection (D. H. Chen et al., 2008; Ke & Zhang, 2021). Pistor and Xu (2002) point out that the public law enforcement of government regulators can effectively maintain the healthy development of market under the institutional background of incomplete law. In particular, the front-line regulatory of stock exchanges has a reliable institutional-based. As the regulatory and executive organ of information disclosure of listed companies, the SHSE and SZSE perform regulatory functions under the leadership of CSRC, which make comment letters supervision have authoritative power and benefit the governance effect of the financial inquiries. According to the Assessment and Evaluation Measures for Information Disclosure of Listed Companies from the two stock exchanges, when assessing the rationality of listed companies' information disclosure, the stock exchanges will pay much attention to whether the listed companies truthfully reply the comment letters within the required time period. If the listed companies fail to make a reasonable explanation or fail to reply, it may further trigger the relevant investigation from the CSRC. We expect that this kind of authoritative and effective front-line regulatory inquiries have a strong deterrent effect on corporate financialisation behaviour. For doubtful scientificity and rationality of financial investment behaviour, the inquired firms could be required to give supplements and explanations in the comment letters. For example, on May, 2019, Jihua Group Co. Ltd. received an annual report comment letter from the SHSE,¹ Jihua Group is challenged the rationality of the large amount of cash used for financial products and required to explain its impact on normal investment. This not only makes comment letters strengthen the supply of financial investment information disclosure, but also plays a regulatory role in the financialisation behaviour. What is more, the governance role of comment letters can be realised by arousing the attention of other administrative regulators, which can increase the cost of firm violations and finally achieve the effectiveness of front-line supervision. The financial fraud of Kangmei Pharmaceutical Co. Ltd. is a typical case.² On May, 2019, Kangmei was issued comment letters on its financial investment behaviour by the SHSE,³ which triggered the following inspection of the Ministry of Finance (MOF) and the whole pharmaceutical industry was also involved in the inspection of accounting information quality.⁴ Kangmei

¹Please refer to: <http://www.sse.com.cn/disclosure/credibility/supervision/inquiries/opinion/c/8135979312396770.pdf>

²Please refer to: <https://finance.sina.com.cn/stock/relnews/cn/2019-05-30/doc-ihvhiw5579651.shtml>

³Please refer to: <http://www.sse.com.cn/disclosure/credibility/supervision/inquiries/opinion/c/8135857142826473.pdf>

⁴Please refer to: http://finance.sina.com.cn/zt_d/czbczyq/

pharmaceutical company was subsequently punished by the CSRC in August 2019.⁵ So, comment letters can arouse the joint supervision of other administrative institutions, greatly reduce the information asymmetry of administrative attention, and increase the violation cost of over-financialisation. Thus, comment letters mechanism can effectively alleviate the behaviour of over-financialisation from the deterrence of administrative supervision.

Second, comment letters can bring the pressure of market attention, give full play to the combined effect of market supervision and reduce companies' over-financialisation. Specifically, the disclosure of comment letters have information content and present negative market reaction (Chen et al., 2018a). The comment letters could send to market participants a signal that the inquired company has a low quality of information disclosure. The inquired company has the motivation to reply to the comment letters timely and alleviate the negative market reaction so that it can reduce the receipt of comment letters again. In the process of front-line regulatory, the disclosure of financialisation-related comment letters could enhance the attention of market intermediary supervision. Media, analysts, auditors and other important market participants may pay attention to the content of financialisation-related comment letters, which make comment letter recipients face greater market pressure and increase the manipulation cost of financialisation behaviour. For example, the annual report's auditors are required to give special review opinions on the rationality of financial investment in some comment letters. Meanwhile, the disclosure of inquiry information can also attract the attention of banks, increase the prudence of credit decision-making and the transaction cost of firm financing (L. Cunningham et al., 2017). Under such strong pressure of market attention, comment letters not only lead to the joint supervision of market intermediaries, but also bring the implementation cost of solving the related problems and replying comment letters, which could increase the cost for company insiders to hide the profit-seeking information of financial investment. At this time, the optimal strategy of comment letter recipients is to improve the information disclosure of investment decision and optimise the rationality of financial asset allocation. In particular, when the behaviours of financialisation are explicitly challenged in comment letters, the regulators and other market participants could be more vigilant to the companies' over-financialisation, and financialisation costs will increase and financialisation benefits will decrease, thus reducing over-financialisation behaviour.

Third, financialisation-related comment letters can play a positive information promotion effect, and mitigate agency problems in decision-making of financial investment. Based on the nature of firm, a firm is a series of contractual arrangements; transaction costs exist in all contracts, and agency costs are the concretisation of transaction costs in the principal-agent contractual relationship (Coase, 1937; Williamson, 1979). Therefore, from the perspective of transaction cost of property rights economics, one important way to alleviate the agency problem of companies can improve information transmission and strengthen contract execution (H. Liu et al., 2015). It is specifically applied to the contract relationship of financial investment under the principal-agent framework, the management is expected to conduct investment activities on behalf of shareholders. But there exists market information

⁵Please refer to: http://quotes.money.163.com/f10/ggm_x_600518_5554846.html

asymmetry and agency problems, and makes financial investment become a tool for insiders to adjust profits (Hao, 2020; Peng et al., 2018a). Comment letters can be used as an information promotion mechanism to strengthen the performance of investment contracts, reduce the information transmission deviation between internal and external enterprises, and alleviate the agency problem of management's financialisation behaviour. Therefore, the front-line regulatory inquiry can improve the transparency of financial investment information, promote the effective contract performance of financial asset allocation and curb the behaviour of over-financialisation.

In summary, the disclosure of financialisation-related comment letters can give full play to regulatory deterrence and market supervision pressure, which compel the management to respond the comment letters timely and improve the allocation efficiency of financial investment. The increased cost and decreased benefits relieve firms' motivation of over-financialisation, and make comment letters become an important management tool to alleviate the over-financialisation behaviour. Thus, we propose Hypothesis 1 as follows.

Hypothesis 1: Other things being equal, the decrease of over-financialisation in recipients of financialisation-related comment letters is larger than in recipients of non-financialisation-related comment letters.

The theory of 'investment substitution' holds that financialisation essentially reflects the profit-seeking of capital (Gu et al., 2020; Zhang, 2019). Wang et al. (2017) point out that financialisation has become an arbitrage method for real enterprises to obtain excess profits. This makes those profit-seeking companies own more motivation to allocate financial assets and obtain high returns of financial investment. Therefore, under the guidance of market-oriented supervision, the regulators should pay much attention to the effective supervision of the financial investment from the motivation of market arbitrage. The front-line supervision of comment letters act as an effective market-oriented mechanism, which can improve the transparency of investment transactions and reduce the space for market arbitrage. If financialisation-related comment letters play a governance role in over-financialisation and support the 'market arbitrage view' of financialisation, the financial inquiries mechanism should pay more attention to those companies with the strong motivation of market arbitrage. The regulatory effectiveness and market supervision from comment letters should have greater influence in companies with serious market arbitrage behaviour, and improve inefficient financialisation behaviour through weakening the arbitrage motivation. Thus, we expect that the disciplinary effect of financial inquiries mechanism on over-financialisation is more obvious in companies with more motivation of market arbitrage. We propose Hypothesis 2 as follows.

Hypothesis 2: Compared with companies with weak market arbitrage motivation, the governance effect of financial inquiries mechanism on over-financialisation is more significant in companies with strong market arbitrage motivation.

4. Research design

4.1. Sample selection and data sources

The annual reports' comment letters have been publicly disclosed since 2015 in Chinese stock exchanges. We select Chinese A-share listed firms from 2014 to 2018 as our initial samples, and obtain financial data mainly from CSMAR database. The data of comment letters on firm annual reports are manually collected from the websites of the SHSE, the SZSE, Juchao consulting network (www.cninfo.com.cn) and Baidu news (news.baidu.com).

According to conventional research methods, we exclude the following observations: (1) firms in the financial industry; (2) firms with missing variables. After these steps, we obtain 1273 comment letters in the sample of over-financialisation firms, of which 506 comment letters are financialisation-related.

4.2. Variable definition

4.2.1. Measure of over-financialisation

The measurement steps of corporate over-financialisation are as follows:

First, following Peng et al. (2018a) and Hao (2020), we obtain the nine items of financial asset from firms' balance sheet, including: tradeable financial assets, available-for-sale financial assets, investment properties, entrusted financial management, long-term equity investment, buying back the sale of financial assets, granting of loans and advances, held-to-maturity investments and derivative financial assets. Specifically, the ratio of the sum of nine items of financial asset to the total assets is taken as the proxy for corporate financial investment level (*Fin*).

Second, following S. Y. Hu et al. (2019), we use the expected investment model of Richardson (2006) to estimate the expected financial investment level, the model is constructed as follows:

$$\begin{aligned} Finvary_{i,t+1} = & a_0 + a_1 Fin_{i,t} + a_2 LnSize_{i,t} + a_3 Lev_{i,t} + a_4 Growth_{i,t} \\ & + a_5 LnAge_{i,t} + a_6 CFO_{i,t} + a_7 Finret_{i,t} + Industry + Year + \varepsilon_{i,t+1} \end{aligned}$$

In model (1), the dependent variable is the change value of the company's financial investment in year $t + 1$ ($Finvary_{i,t+1}$), the control variables include company's financial investment level ($Fin_{i,t}$), firm size ($LnSize_{i,t}$), financial leverage ($Lev_{i,t}$), growth rate of sales ($Growth_{i,t}$), firm age ($LnAge_{i,t}$), operating cash flows ($CFO_{i,t}$) and financial investment returns ($Finret_{i,t}$) in year t , the industry effect (*Industry*) and year effect (*Year*).

According to the method of company expected investment (Richardson, 2006), we estimate the positive residual ($\varepsilon_{i,t+1} > 0$) to represent the degree of over-financialisation ($OverFin_{i,t+1}$). The greater the value of $OverFin_{i,t+1}$, the more serious the over-financialisation.

4.2.2. Financialisation-related comment letters

According to the measurement of firms financialisation above, we construct financialisation-related comment letters ($FinCL_{i,t}$). Specifically, we download and read annual report comment letters one by one. A comment letter can be defined as financialisation-related when it includes one or more following financial asset items: 'tradeable financial assets',

'available-for-sale financial assets', 'investment properties', 'entrusted financial management', 'long-term equity investment', 'buying back the sale of financial assets', 'granting of loans and advances', 'held-to-maturity investments' and 'derivative financial assets'. If a comment letter contains at least one of these items of financial asset, *FinCL* takes the value of 1, and 0 otherwise.

4.2.3. Market arbitrage motivation

Following Wang et al. (2017) and Yu et al. (2021), we construct two variables of market arbitrage motivation:

(1) Using the sum of 'the ratio of firm interest income to net profit' and 'the ratio of financial investment income to net profit' (*Arbitrage1_{i,t}*). The larger the value of *Arbitrage1*, the stronger the arbitrage motivation of financial asset allocation.

(2) Adopting the difference between 'the average profit margin of the financial industry plus the average profit margin of the real estate industry' and 'the profit margin of the firm's main business' (*Arbitrage2_{i,t}*). The larger the value of *Arbitrage2*, the greater the market arbitrage space.

4.3. Model specification

To test Hypothesis 1, we design model (2) as follows:

$$OverFin_{i,t+1} = \beta_0 + \beta_1 FinCL_{i,t} + \beta_m Controls_{i,t} + Industry + Year + \mu_{i,t} \quad (2)$$

In model (2), *OverFin_{i,t+1}* is the dependent variable of over-financialisation in year $t + 1$; *FinCL_{i,t}* is the independent variable of financialisation-related comment letter in year t .

To test Hypothesis 2, we divide sample into high or low group of market arbitrage motivation based on the median value of market arbitrage motivation (*Arbitrage1/Arbitrage2*).

In model (2), following previous studies (e.g. Gu et al., 2020; S. W. Liu et al., 2019), *Controls_{i,t}* is a set of control variables in year t (Reporting in Table 1). We also control year (*Year*) and industry (*Industry*) fixed effects.

To mitigate the influence of outliers, all continuous variables are winsorised at 1% and 99% levels. The detailed definitions of all variables are shown in Table 1.

5. Empirical results

5.1. Descriptive statistics

Table 2 presents the distributions of annual report's comment letters in the sample of firm over-financialisation. Panel A shows the distribution of comment letters by year, which shows that the receipt of comment letters is gradually increasing from 2014 to 2018. Panel B reports the distribution of comment letters by industry, the comment letters are unevenly distributed, and mainly concentrated in manufacturing (C).

Table 3 reports the descriptive statistics for main variables. The mean of *OverFin_{t+1}* is 0.052. The mean of *FinCL_t* is 0.397, indicating that about 39.7% comment letters from the stock exchanges involve financialisation issues. The distribution of other control variables is basically consistent with previous literature.

Table 1. Definition of variables.

Variables	Definition
$OverFin_{i,t+1}$	Firms over-financialisation in year $t + 1$, measured from the model (1).
$FinCL_{i,t}$	Financialisation-related comment letter, a dummy variable that equals 1 if the firm received a financialisation-related comment letter in year t , and 0 otherwise.
$Arbitrage1_{i,t}$	Market arbitrage motivation, the sum of 'the ratio of firm interest income to net profit' and 'the ratio of financial investment income to net profit' in year t .
$Arbitrage2_{i,t}$	Market arbitrage space, the difference between 'the average profit margin of the financial industry plus the average profit margin of the real estate industry' and 'the profit margin of the firm's main business' in year t .
$LnSize_{i,t}$	Firm size, measured as the natural logarithm of total assets in year t .
$Lev_{i,t}$	Financial leverage, measured as the ratio of total liabilities to total assets in year t .
$Growth_{i,t}$	Growth rate of sales, difference between sales in year t and in year $t-1$, and then divided by sales in year $t-1$.
$DirSize_{i,t}$	The natural logarithm of the number of directors on the board in year t .
$Mshare_{i,t}$	The proportion of shares owned by management team in year t .
$IndepRatio_{i,t}$	The proportion of independent directors on the board in year t .
$Fshare_{i,t}$	The proportion of shares owned by the largest shareholder in year t .
$Dual_{i,t}$	Firm CEO duality, a dummy variable that equals 1 if the CEO is also the chairman of the board of directors in year t , and 0 otherwise.
$CFO_{i,t}$	The amount of net cash flow from operation scaled by total assets in year t .
$LnAge_{i,t}$	The natural logarithm of one plus firm's listed years in year t .
$StdROA_{i,t}$	The firm operation risk, measured as the standard deviation of the return on total assets (ROA) in the past three years.
$StdFin_{i,t}$	The financial investment risk, measured as the standard deviation of financial investment returns in the past three years.
SOE_t	Ownership propriety, a dummy variable that equals 1 if a firm is state owned enterprise in year t , and 0 otherwise.
$Big4_{i,t}$	Auditor types, a dummy variable that equals 1 if a firm is audited by international Big 4 auditors in year t , and 0 otherwise.
$Punishment_{i,t}$	Regulatory punishment, a dummy variable that equals 1 if a firm is punished by the stock exchanges or the CSRC in year t , and 0 otherwise.
$EPU_{i,t}$	Economic policy uncertainty, the economic policy uncertainty index proposed by Baker et al. (2016), measured as the arithmetic mean of the monthly economic policy uncertainty index in each year/100

5.2. Multivariate regression analysis

5.2.1. The regulatory effect of comment letters on over-financialisation (H1)

Table 4 reports the baseline regression result of the impact of financialisation-related comment letters on firm over-financialisation. In column (1), there is only year and industry fixed effect, the regression coefficients on $FinCL_t$ are significantly negative at 1% level. In column (2), when adding the other control variables, the regression coefficient on $FinCL_t$ is also significantly negative at 1% level. Column (3) shows the result of controlling for firm-fixed effects, the regression coefficients on $FinCL_t$ are significantly negative at 1% level. The regression results suggest that the disclosure of financialisation-related comment letters has a disciplining effect on future over-financialisation behaviour. These results are consistent with expectation in Hypothesis 1.

5.2.2. Comment letters and over-financialisation: the motivation of market arbitrage (H2)

Table 5 reports the results of market arbitrage motivation on the governance effect of comment letters. Columns (1) and (2) are results for market arbitrage motivation ($Arbitrage1$), the coefficients of $FinCL_t$ are significantly negative at 1% level in high motivation of market arbitrage of Column (1), but not significant in Column (2). Columns (3) and (4) show the results for market arbitrage space ($Arbitrage2$), the

Table 2. Distribution of comment letters (sample of firm over-financialisation).

Year of annual reports	Comment letters	Financialisation -related comment letters	Non-financialisation -related comment letters
Panel A: Distribution of comment letters by year			
2014	128	29	99
2015	203	48	155
2016	253	87	166
2017	317	148	169
2018	372	194	178
Total	1273	506	767
Panel B: Distribution of comment letters by industry			
A. Agriculture, forestry, livestock farming and fishery	40	15	25
B. Mining	29	11	18
C. Manufacturing	834	314	520
D. Electricity, heat, gas and water production and supply	20	13	7
E. Constructions	40	14	26
F. Wholesale and retail businesses	65	30	35
G. Transportation, warehousing and postal services	18	5	13
H. Hotels and catering services	5	3	2
I. Information transmission, software and information technology service	94	43	51
K. Real estate	54	27	27
L. Leasing and business services	24	12	12
M. Scientific research and technology service	12	4	8
N. Water conservancy, environment and public facilities management	13	4	9
O. Residential services, repair and other services	0	0	0
P. Education	0	0	0
Q. Health and social work	2	0	2
R. Culture, sports and entertainment	16	9	7
S. Comprehensive	7	2	5
Total	1273	506	767

coefficients of $FinCL_t$ are more significantly negative in Column (3). That is, the governance effect of financialisation-related comment letters on over-financialisation is greater for companies with higher motivation of market arbitrage, which is consistent with the Hypothesis 2.

6. Additional analysis and robustness tests

6.1. Comment letters and over-financialisation: precise inquiries of over-financialisation

This paper mainly focuses on the perspective of over-financialisation, which potentially implies large financial investment behaviour. As for the contents of financialisation-related comment letters, some focus on the accounting for investment direction and risk of financial investment; some directly involve the rationality of large (excess) financial investment, which can be classified as over-financialisation-related comment letters. Therefore, we further explore the accuracy and effectiveness of over-financialisation-related comment letters. If the regulatory effect of financialisation-related comment letters is held, it should be expected that the governance effect of over-

Table 3. Descriptive statistics for main variables.

Variable	N	Mean	Std.Dev	Min	Median	Max
<i>OverFin</i> _{t+1}	1273	0.052	0.056	0.001	0.031	0.225
<i>FinCL</i> _t	1273	0.397	0.490	0	0	1
<i>Arbitrage1</i> _t	1273	0.313	0.533	-0.084	0.032	1.526
<i>Arbitrage2</i> _t	1273	0.226	0.172	-0.147	0.211	0.531
<i>LnSize</i> _t	1273	22.132	1.198	19.703	22.037	26.185
<i>Lev</i> _t	1273	0.483	0.234	0.060	0.476	0.936
<i>Growth</i> _t	1273	0.210	0.738	-0.617	0.058	4.091
<i>DirSize</i> _t	1273	2.087	0.204	1.609	2.197	2.708
<i>Mshare</i> _t	1273	0.063	0.124	0.000	0.002	0.571
<i>IndepRatio</i> _t	1273	0.381	0.055	0.333	0.364	0.571
<i>Fshare</i> _t	1273	0.302	0.138	0.083	0.273	0.732
<i>Dual</i> _t	1273	0.284	0.451	0	0	1
<i>CFO</i> _t	1273	0.024	0.078	-0.184	0.026	0.241
<i>StdROA</i> _t	1273	0.037	0.048	0.001	0.019	0.233
<i>StdFin</i> _t	1273	0.401	1.358	0.000	0.039	9.106
<i>LnAge</i> _t	1273	2.457	0.527	1.099	2.398	3.296
<i>SOE</i> _t	1273	0.217	0.412	0	0	1
<i>Big4</i> _t	1273	0.026	0.159	0	0	1
<i>Punishment</i> _t	1273	0.214	0.411	0	0	1
<i>EPU</i> _t	1273	1.826	0.737	0.921	2.066	2.778

financialisation-related comment letters on over-financialisation is greater than in non-over-financialisation-related comment letters.

Specifically, when the financialisation-related comment letters involve 'large (excess) financial investment', they are defined as over-financialisation-related comment letters, *FinCLP*_t takes the value of 1, and 0 otherwise.

Column (1) of Table 6 reports the regression results of over-financialisation-related comment letters, the coefficients on *FinCLP*_t is significantly negative at 5%. This result shows that when the recipients of comment letters are questioned by over-financialisation directly, the governance effect of financialisation-related comment letters on over-financialisation is more obvious, which is consistent with our theoretical analysis.

6.2. Comment letters and over-financialisation: the intensity of financialisation inquiries

The stock exchange's financial inquiry mechanism is also affected by its enforcement intensity. Higher intensity of financialisation-related comment letters could signify more financialisation problems or serious defects in information disclosure of the recipients and the stock exchanges have paid more attention to them, which can bring stronger supervision pressure and deterrence to the recipients and largely reduce over-financialisation. Therefore, we expect that the higher intensity of financialisation-related comment letters, the stronger the governance effect of financialisation-related comment letters on over-financialisation.

We measure the intensity of financialisation-related comment letters from two dimensions: the number of financialisation questions in a financialisation-related comment letter and the number of consecutive years received financialisation-related comment letters. In specific regressions, we take the natural logarithm of

Table 4. Financialisation-related comment letters and over-financialisation behaviour (H1).

Variable	(1) <i>OverFin</i> _{<i>t</i>+1}	(2) <i>OverFin</i> _{<i>t</i>+1}	(3) <i>OverFin</i> _{<i>t</i>+1}
<i>FinCL</i> _{<i>t</i>}	-0.015*** (-4.88)	-0.012*** (-3.84)	-0.018*** (-3.57)
<i>LnSize</i> _{<i>t</i>}		-0.006*** (-3.00)	-0.008 (-1.17)
<i>Lev</i> _{<i>t</i>}		-0.024** (-2.40)	0.040 (1.05)
<i>Growth</i> _{<i>t</i>}		-0.003 (-1.09)	0.001 (0.20)
<i>DirSize</i> _{<i>t</i>}		-0.007 (-0.69)	0.025 (0.76)
<i>Mshare</i> _{<i>t</i>}		0.009 (0.56)	-0.023 (-0.54)
<i>IndepRatio</i> _{<i>t</i>}		0.014 (0.40)	0.036 (0.41)
<i>Fshare</i> _{<i>t</i>}		0.008 (0.59)	-0.032 (-0.58)
<i>Dual</i> _{<i>t</i>}		-0.002 (-0.49)	-0.002 (-0.30)
<i>CFO</i> _{<i>t</i>}		-0.031 (-1.37)	0.003 (0.08)
<i>StdROA</i> _{<i>t</i>}		0.073* (1.76)	0.041 (0.58)
<i>StdFin</i> _{<i>t</i>}		-0.002 (-1.63)	0.001 (0.45)
<i>LnAge</i> _{<i>t</i>}		0.002 (0.44)	-0.028 (-0.64)
<i>SOE</i> _{<i>t</i>}		-0.005 (-1.12)	-0.038 (-1.00)
<i>Big4</i> _{<i>t</i>}		-0.004 (-0.41)	0.024 (0.86)
<i>Punishment</i> _{<i>t</i>}		-0.007** (-2.21)	-0.011** (-2.00)
<i>EPU</i> _{<i>t</i>}		-1.618** (-2.32)	-1.207* (-1.80)
Constant	0.046*** (4.47)	1.726*** (2.59)	1.377*** (2.15)
Year	Yes	Yes	Yes
Industry	Yes	Yes	No
Firm	No	No	Yes
Adj_R ²	0.051	0.102	0.301
N	1273	1273	1273

z-statistics are presented in brackets; ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Standard errors are clustered by firms.

one plus the above two variables and define them as (*LnFinCLQ_t*) and (*LnCNFinCL_t*), respectively.

We test the sample within the financialisation-related comment letters and over-financialisation-related comment letters, respectively. Columns (2)-(5) of Table 6 report the relevant results. Columns (2)-(3) are the numbers of questions of financialisation inquiries, the coefficients of *LnFinCLQ_t* are all significantly negative; Columns (4)-(5) are the results of consecutive years received financialisation inquiries; the coefficients of *LnCNFinCL_t* are also significantly negative.

Table 5. Comment letters and over-financialisation: Test of market arbitrage motivation.

Variable	Market arbitrage motivation (<i>Arbitrage1</i>)		Market arbitrage space (<i>Arbitrage2</i>)	
	High (1) <i>OverFin</i> _{t+1}	Low (2) <i>OverFin</i> _{t+1}	High (3) <i>OverFin</i> _{t+1}	Low (4) <i>OverFin</i> _{t+1}
<i>FinCL</i> _t	-0.011*** (-2.69)	-0.007 (-1.61)	-0.012*** (-2.67)	-0.008* (-1.82)
Constant	1.488 (1.59)	1.986** (2.01)	1.781* (1.89)	1.698*** (2.66)
Controls	Yes	Yes	Yes	Yes
Year/Industry	Yes	Yes	Yes	Yes
Adj_R ²	0.115	0.084	0.116	0.077
N	637	636	637	636
Chow Test	Chi2 = 80.31*** (p = 0.005)		Chi2 = 76.00** (p = 0.013)	

z-statistics are presented in brackets; ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Standard errors are clustered by firms.

Table 6. Comment letters and over-financialisation: test of other inquiry characteristics.

Variable	The intensity of financialisation inquiries				
	Over-financialisation precise inquiries (1) <i>OverFin</i> _{t+1}	Numbers of questions of financialisation inquiries		Consecutive years received financialisation inquiries	
		(2) <i>OverFin</i> _{t+1}	(3) <i>OverFin</i> _{t+1}	(4) <i>OverFin</i> _{t+1}	(5) <i>OverFin</i> _{t+1}
<i>FinCLP</i> _t	-0.010** (-2.08)				
<i>LnFinCLQ</i> _t		-0.017*** (-3.44)	-0.023** (-2.20)		
<i>LnCNFinCL</i> _t				-0.008** (-2.22)	-0.011* (-1.78)
Constant	0.945 (0.46)	0.876 (0.43)	0.026 (0.26)	0.873 (0.42)	0.047 (0.49)
Controls	Yes	Yes	Yes	Yes	Yes
Year/Industry	Yes	Yes	Yes	Yes	Yes
Adj_R ²	0.056	0.066	0.067	0.054	0.032
N	506	506	112	506	112

z-statistics are presented in brackets; ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Standard errors are clustered by firms. *Controls* is a set of control variables.

Overall, these results demonstrate that the greater the intensity of financialisation-related comment letters, the stronger the disciplinary effect of comment letters on over-financialisation.

6.3. The mechanism of comment letters: violation cost and market attention pressure

In previous theoretical analysis, we hold that the governance channels of financialisation-related comment letters could come from regulatory deterrence and market attention pressure, which compel the managers to respond to the comment letters timely and increase the violation costs and decrease the benefits of over-financialisation. So we expect that the governance effect of financialisation-related comment letters on over-financialisation is more significant in the companies with higher violation cost or stronger market attention pressure.

Table 7. The mechanism of comment letters: violation cost and market attention pressure.

Variable	Violation cost		Media attention		Auditors' attention	
	High (1) <i>OverFin</i> _{<i>t</i>+1}	Low (2) <i>OverFin</i> _{<i>t</i>+1}	High (3) <i>OverFin</i> _{<i>t</i>+1}	Low (4) <i>OverFin</i> _{<i>t</i>+1}	Auditor- checked (5) <i>OverFin</i> _{<i>t</i>+1}	Non-auditor- checked (6) <i>OverFin</i> _{<i>t</i>+1}
<i>FinCL</i> _{<i>t</i>}	-0.018*** (-3.42)	-0.007** (-2.00)	-0.011*** (-2.83)	-0.008* (-1.73)	-0.013*** (-3.53)	-0.006 (-1.01)
Constant	3.002*** (2.66)	1.240 (1.50)	-0.203 (-0.15)	2.476*** (3.31)	0.005 (0.00)	2.519*** (3.65)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year/Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adj_R ²	0.187	0.076	0.113	0.096	0.105	0.111
N	353	920	636	637	849	424
Chow Test	Chi2 = 50.13* (<i>p</i> = 0.059)		Chi2 = 48.94* (<i>p</i> = 0.090)		Chi2 = 53.52** (<i>p</i> = 0.030)	

z-statistics are given in brackets; ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Standard errors are clustered by firms.

(1) Measuring the violation costs: if a receipt of comment letters' company is punished by the stock exchanges or the CSRC in the following one year, *P*cost equals one, and zero otherwise.

(2) Measuring the pressure of market attention: media attention and auditor-checked inquiries.

Columns (1) – (2) of Table 7 shows the results of the mechanism of violation cost. In the high violation cost (punished companies) of Columns (1), the regression coefficients on *FinCL*_{*t*} is significantly negative at 1% level, while the coefficients of *FinCL*_{*t*} are significantly negative at 5% level in the low violation cost (non-punished companies) of Columns (2). The result shows that the financial inquiry mechanism has a more significant regulatory effect on over-financialisation under the high costs of company violation, which is consistent with the theoretical expectation of regulation effect.

Columns (3) – (4) of Table 7 presents the results of the mechanism of market attention pressure. Column (3) is the samples with high media attention, the regression coefficient on *FinCL*_{*t*} is significantly negative at 1% level, and the coefficient of *FinCL*_{*t*} is significantly negative at 10% level in low media attention of Column (4). These results show that the supervision effect of financial inquiry mechanism on over-financialisation is more obvious under the high setting of media attention.

Columns (5)-(6) of Table 7 demonstrate the impact of auditor-checked inquiries, Column (5) is the sample with auditor-checked inquiries, the regression coefficient on *FinCL*_{*t*} is significantly negative at 1% level, while the coefficient of *FinCL*_{*t*} is not significant in Column (6). These results show that financial inquiry mechanism plays a more significant role in over-financialisation under the pressure of auditor-checked inquiries.

Taken as a whole, financialisation-related comment letter has a stronger governance effect on over-financialisation when violation cost and market attention pressure are higher, which is consistent with the previous theoretical analysis.

6.4. The spillover effects of comment letters on over-financialisation

In this part, we explore the spillover effect of comment letters through three channels: peers in the same industry, the same region and the same corporation groups.

(1) Peers in same industry. Firms located in the same industry are usually considered as peer firms and they are faced with the same economic policies, the same environment of market competitive (Kedia et al., 2015), and the same shocks of administrative supervision. So we expect financialisation-related comment letters may have a spillover effect on the behaviour of over-financialisation in the same industry.

(2) Peers in the same region. Firms located in the same geographic region face similar factor supply and legal supervision environment, which can be considered as peer firms. Firms located in the same region can also face similar regulatory shocks. So we expect financialisation-related comment letters may have a spillover effect on the behaviour of over-financialisation in the same region (province).

(3) Peers in the same corporation groups. Corporation groups usually exist the cross subsidy and rent-seeking behaviour, and make the internal companies of corporation groups have a high contagion of financial investment behaviour (X. Z. Li et al., 2019). When one of the group companies is issued comment letters, the embedded information of financial inquiries may form a greater deterrent effect in the group member companies, and other non-comment-letter-group receivers could be affected by the linkage deterrence of regulatory inquiries, and thus reduce the over-financialisation in group member companies.

Following Kedia et al. (2015) and Xue et al. (2017), We define the exposure of financialisation-related comment letters in the same industry ($OverindFinCL_t$), the exposure of financialisation-related comment letters in the same province ($OverprovFinCL_t$) and the exposure of financialisation-related comment letters in the same corporation groups ($OverGpFinCL_t$):

$OverindFinCL_t$ is calculated as the number of other firms receiving financialisation-related comment letters in the same industry divided by the total number of firms in the same industry; $OverprovFinCL_t$ is calculated as the number of other firms receiving financialisation-related comment letters in the same province divided by the total number of firms in the same province; $OverGpFinCL_t$ is calculated as the number of other firms receiving financialisation-related comment letters in the same corporation groups divided by the total number of firms in the same corporation groups. Then, we test the financialisation-related comment letters' spillover effect in the sample of non-comment letters firms.

Table 8 presents the spillover effects of financialisation-related comment letters on over-financialisation. The test for peers in the same industry reports in Column (1), the regression coefficient on $OverindFinCL_t$ is significantly negative at 5% level, but the regression coefficient on $OverprovFinCL_t$ is not significant in the same province in Column (2), and the regression coefficient on $OverGpFinCL_t$ is significantly negative at 5% level in Column (3).

Overall, the regulatory effect of comment letters on over-financialisation has deterrent spillover effects for peers in the same industry or the same corporation groups, but does not reflect in the same region companies.

Table 8. The spillover effects of comment letters on over-financialisation.

Variable	Same industry	Same province	Same corporation groups
	(1)	(2)	(3)
	$OverFin_{t+1}$	$OverFin_{t+1}$	$OverFin_{t+1}$
$OverindFinCL_t$	-0.046** (-1.98)		
$OverprovFinCL_t$		-0.010 (-0.54)	
$OverGpFinCL_t$			-0.034** (-2.01)
Constant	0.157*** (6.30)	0.155*** (6.25)	0.154*** (5.22)
Controls	Yes	Yes	Yes
Year/Industry	Yes	Yes	Yes
Adj_R ²	0.118	0.117	0.185
N	3634	3634	825

z-statistics are given in brackets; ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Standard errors are clustered by firms. This part tests in the sample of non-comment letters firms.

6.5. Robustness tests

6.5.1. Addressing the endogeneity issue

(1) Difference-in-Differences Analyses

Following (L. M. Cunningham et al., 2020), we adopt a difference-in-differences (DID) analysis to mitigate the possible endogeneity problem, as firms with over-financialisation might have a greater likelihood of receiving financialisation-related comment letters.

We firstly span available firm-years from 2012 to 2019, which can better compare the changes pre- and post-comment letters receipt between the financialisation-related comment letter firms and non-comment letter firms.

Second, we implement the propensity score matching (PSM) method based on the one-to-one nearest neighbour matching principle to construct the treatment group and control group in the same year.

Finally, we save the matching three-year windows (t-1 through t + 1) or five-year period windows (t-2 through t + 2) for both the treatment firms and the control firms, so that we can better compare the changes pre- and post-comment letters receipts in the following one or two years. Then, we design the following difference-in-differences model based on the above matched samples:

$$OverFin_{i,t} = \beta_0 + \beta_1 Treat_{i,t} \times After_{i,t} + \beta_2 Treat_{i,t} + \beta_3 After_{i,t} + \beta_m Control_{i,t} + Year + Firm + \mu_{i,t}$$

In model (3), the control variables ($Control_t$) are the same as those in the baseline model in model (2). The key explanatory variables in DID model: $Treat$ equals one for the treatment firms (i.e. firms that receive financialisation-related comment letters in year t) and zero for the propensity score matched firms. For both the financialisation-related comment letter treatment firms and the matched control firms, $After$ equals one in the one or two years following the firm's receipt of a financialisation-related comment letter and zero otherwise. The focus is the coefficient of the interaction term of $Treat \times After$, which shows the difference in governance effect on over-financialisation ($OverFin$) between the treatment firms and the matched control firms. We expect that β_1 is significantly negative.

Table 9. Comment letters and over-financialisation: control endogeneity.

Variable	DID		Heckman two-step
	Pre- and post-CLs three-year windows	Pre- and post-CLs five-year windows	
	(1) <i>OverFin</i>	(2) <i>OverFin</i>	(3) <i>OverFin_{t+1}</i>
<i>Treat</i> × <i>After</i>	−0.012** (−2.14)	−0.013** (−2.06)	
<i>After</i>	0.005 (1.16)	0.008 (1.44)	
<i>Treat</i>	0.002 (0.59)	0.006 (1.39)	
<i>FinCL_t</i>			−0.018*** (−3.53)
<i>IMR_t</i>			−0.006 (−1.15)
Constant	0.329** (2.00)	0.149 (1.25)	1.509** (2.36)
Controls	Yes	Yes	Yes
Year/Firm	Yes	Yes	Yes
Adj_R ²	0.534	0.478	0.309
N	1588	2232	1273

z-statistics are given in brackets; ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Standard errors are clustered by firms.

Table 9 reports the results for the difference-in-differences design. Columns (1)–(2) show the regressions with pre- and post-comment letters (CLs), three-year windows (t-1 through t + 1) and five-year windows (t-2 through t + 2), respectively. We find the coefficients of the interaction term on *Treat*×*After* are all significantly negative. These results suggest that firms could reduce their over-financialisation behaviour in the one or two years after receiving a financialisation-related comment letter relative to the control firms, which is consistent with hypothesis H1.

(2) Heckman two-step model. We adopt the Heckman two-step model to mitigate the sample selection bias. In the first stage, we use the probit model to regress the variable of *FinCL_{i,t}*, and estimate the Inverse Mill's Ratio (*IMR*). Then, in the second step, we add *IMR* into the main model of (2), and the result is reported in Column (3) of Table 9. The regression coefficient on *FinCL_t* is significantly negative, and the result is also robust.

6.5.2. Alternative measure for over-financialisation

Alternative use for financial investment model. We adopt the another investment model of Biddle et al. (2009) to measure the over-financialisation, and also use its positive residual to represent the degree of over-financialisation (*OverFin_{i,t+1}*). The regression result is reported in Column (1) of Table 10, and the conclusion is also valid.

6.5.3. Using the full sample

Following L. M. Cunningham et al. (2020), we design two mutually exclusive comment letters variables: one is financialisation-related comment letters indicator variable (*FinCL_t*) and the other is non-financialisation-related comment letters indicator variable (*NonFinCL_t*), where *FinCL_t* is a dummy variable that equals 1 if a firm receives a financialisation-related comment letter in year *t*, and 0 otherwise; while the *NonFinCL_t* is a dummy variable that equals 1 if a firm receives a non-financialisation-

Table 10. Comment letters and over-financialisation: other robustness tests.

Variable	(1) <i>OverFin</i> _{<i>t+1</i>}	(2) <i>OverFin</i> _{<i>t+1</i>}
<i>FinCL</i> _{<i>t</i>}	-0.010*** (-3.57)	
<i>FinCL</i> _{<i>t</i>}		-0.006*** (-2.89)
<i>NonFinCL</i> _{<i>t</i>}		0.003 (1.41)
Constant	1.580** (2.20)	1.217* (1.83)
Controls	Yes	Yes
Year/Industry	Yes	Yes
Adj_R ²	0.116	0.110
N	1456	4907

z-statistics are given in brackets; ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Standard errors are clustered by firms.

related comment letter in year *t*, and 0 otherwise. Column (2) of Table 10 reports the result of the full sample from independent variable. The finding strengthens our hypotheses H1.

7. Conclusions

Taking Chinese A-share listed firms from 2014 to 2018 as our samples, this paper investigates the front-line supervision effect of comment letters on over-financialisation from the perspective of financialisation inquiries. The empirical results show that (i) financialisation-related comment letters can effectively decrease the future company over-financialisation behaviour, and this governance effect of financialisation-related comment letters is more pronounced in companies with strong motivation of market arbitrage. (ii) Further tests show that the more intensity of the financialisation-related comment letters, the higher the governance effect of comment letters on over-financialisation. Specifically, when the financialisation-related comment letters have the questions of 'over-financialisation', the disciplinary effect of inquiries mechanism is more significant. (iii) From the paths of comment letters, the governance effect of financialisation-related comment letters on over-financialisation is achieved by potential punishment cost and the pressure of market attention. (iv) From the spillover effect of comment letters, the regulatory effect of financialisation-related comment letters on over-financialisation has deterrent spillover effects for peers in the same industry or the same corporation groups, but is not reflected in the same region companies.

Our study has several important implications. First, the front-line supervision of comment letters is playing a vital role in preventing financial risks and protecting the interests of investors under the reform of the registration system. This paper provides new evidence of the effect of comment letters policy from the perspective of financial inquiries, and expands the research on front-line regulatory inquiries to the microeconomic enterprises behaviour of 'shifting from real to fictitious'. Second, we provide empirical evidence for regulators to resolve the 'shifting from real to fictitious' of financial investment from the public information disclosure. The existing literature

mainly focus on the economic consequences of firms' financialisation, and lack the micro governance mechanism of over-financialisation. This paper extends the governance of firms' over-financialisation to the micro information disclosure from the front-line supervision system, and enriches the relevant research on the theory of economic financialisation. Finally, the spillover effects of comment letters suggest that we should strengthen the market deterrence of the stock exchanges' first-line supervision in the same industry and corporation groups. The regulators also strengthen the intensity and continuous inquiries ability of the first-line supervision and "inquire" a real company for investors.

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