Research on inquiry letter supervision and stock price crash risk based on fixed effects model

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Abstract. This paper examined whether different types of inquiry letters had effects on stock price crash risk. To measure the stock price crash risk, a model was built. Additionally, to study the effects, this paper used a fixed effects model based on the panel data from Shenzhen Stock Exchange and CSMAR database from 2014 to 2019. The results showed that during 2014 and 2016, inquiry letters about asset restructuring significantly reduced stock price crash risk; the risk of stock price crash may be lower when the company received more letters about asset restructuring. However, inquiry letters about regular report and others had no significant effects. During 2017 and 2019, inquiry letters about regular report significantly reduced the stock price crash risk. Similarly, the company’s stock price crash risk may be lower when the company received more letters about regular report. However, inquiry letters about asset restructuring and others had no significant impact. The research aimed to explain the role of different types of inquiry letters in the Chinese stock market through data analysis, which may provide suggestions to prevent stock price crash risk, eventually promoting the capital market's stable development.

1. Introduction
The questionnaire system for listed companies is not pioneered in China. Since the establishment of the Securities and Exchange Commission (SEC), the US has had a questionnaire system. There exists research on the impact of inquiry letter supervision in terms of information disclosure quality (Bens et al., 2016; Kubick et al., 2016; Bozanic et al., 2017; Johnston and Petacchi, 2017)[1-4], spillover effects (Brown et al. 2018)[5] etc. However, scholars have disagreements on the impact of regulatory policy based on inquiry letters.

Theoretically, on the one hand, inquiry letters are authoritative and effective, whose positive spillover effects of supervision can urge the media, intermediaries and the public to supervise the questioned company. For example, some studies indicated that inquiry letter supervision could reduce corporate information asymmetries and the behaviour of accrual earnings management and tax avoidance (Kubick et al., 2016; Wang et al., 2016; Cunningham et al., 2018) [2][6][7]. On the other hand, however, inquiry letter supervision has been considered a "double-edged sword". Dechow et al. (2016)[8] suggested that SEC comment letters facilitated insider trading during the disclosure period of inquiry letters and even caused company managers to choose more insidious earnings management. (Cunningham et al., 2018)[7]. Moreover, in China, where the subject of inquiry letter supervision is the Stock Exchange under the China Securities Regulatory Commission(CSRC) leadership, inquiry
letters may have no effects because of law enforcement inefficiency. In addition, scholars disagree on the impact of different types of inquiry letters (Cheng Liu, 2019) [9].

In summary, the impact of inquiry letter supervision should be laid more emphasis on. Firstly, whether inquiry letter supervision has an impact on stock price crash risk? Secondly, whether different types of inquiry letters have different effects on stock price crash risk? Thirdly, As the Chinese financial market is gradually regulated and the reform of registration-based initial public offering (IPO) system emerge, CSRC only reviews registration documents instead of conducting judgments. Have the effects of inquiry letter supervision changed in this situation?

This paper collects the data of inquiry letters delivered by the Shenzhen Stock Exchange from 2014 to 2019 and uses the stock price crash risk to measure the governance improvement after companies receiving inquiry letters, thereby testing the effects of inquiry letter supervision. The reasons for research in stock price crash risk are as follows: Large fluctuations of stock price may cause great damage to the capital market and investors. Especially in the situation of China's rapid economic growth and gradual accumulation of financial risks, it is of great significance to research this issue.

The main contributions of this paper are as follows. Firstly, this research enriches the study on the economic consequences of the questionnaire supervision system. Secondly, it provides a new addition to the literature on the factors influencing stock price crash risk. Thirdly, it expands the research on the heterogeneity of inquiry letters. Fourthly, according to Chinese situations, including the impact of China's reform of registration-based IPO system and the stock crash from 2015 to 2016, this paper divides the sample into two periods: 2014 to 2016 and 2017 to 2019.

The rest of this article is structured as follows. Section 2 is the literature review. Section 3 is the theoretical analysis and research hypothesis. Section 4 is the research design. Section 5 is the empirical results. Section 6 is the robustness tests. Section 7 is the conclusion and suggestions.

2. Literature review

Research on the effects of inquiry letters and comment letters has been popular in recent years, while research regarding it is in its early stages in China. Most research is from the perspectives of the corporate information environment, audit pricing, internal control, CFO replacement, and tax avoidance (Gietzmann and Pettinicchio, 2014; Anantharaman and He, 2016; Gietzmann et al., 2016; Kubic, 2017) [10-13]. However, there has not yet reached a consensus on the effects of inquiry letter supervision.

Most scholars believe that inquiry letters can be effective in supervision. The first support is the ‘information effect’ theory, which suggests that inquiry letters have a positive impact on information disclosure, thus reducing information asymmetry. The existing literature have demonstrated that SEC’s comment letters improve information transparency (Bozanied et al., 2017)[3]. The second support is the 'supervision effect' theory. It suggests that when supervisors require listed companies to improve information disclosure quality in terms of criterion and integrity, they also require financial intermediaries such as accounting firms to deal with related matters, which transmits the pressure from supervisors to intermediaries due to concerns about their reputation or being punished. (Chang and Chou, 2008) [14]. Therefore, financial intermediaries will make efforts to identify and solve problems with their clients in time upon receiving letters.

However, some scholars who believe that inquiry letter supervision may be inefficient. The reasons are as follows. Firstly, the effects of regulatory measures depend on law enforcement efficiency since law enforcement efficiency is more critical to capital market development than legal provisions (Pistor et al., 2000)[19]. However, law enforcement efficiency is below the world average in China(Allen et al., 2005)[20]; hence inquiry letter supervision may be inefficient. In addition, Ding (2013)[21] indicated that China’s supervision was not strict, resulting in a spread of financial fraud. Therefore, the overall law enforcement inefficiency may prevent the inquiry letters from being effective. Secondly, the inquiry letters may not necessarily convey new or effective information to the market. On the one hand, questioned companies may not reply in a serious way(Xiaoxi Li,2019)[22]. On the other hand, the effects of different inquiry letters to promote information disclosure are also inconsistent. Jianan
Gao (2017) [23] concluded that compared to the inquiry letters that only require explanation and supplementary disclosure, investors would pay more attention to the inquiry letters which point out the company’s serious problems or require the company to correct the incorrect information since investors may fear being misled by wrong information. When more attention is paid to, the information provided by inquiry letters may increase.

In addition, the stock crash is the latest concerned issue in finance under the background of a global financial crisis. Jin & Myers (2006) [24] suggested that an important reason for stock price crash is low information transparency. In recent years, there has been a consensus among scholars on the causes of this problem. That is, the company’s management often has an incentive to hide negative or ‘bad’ news about the company according to the principal-agent problem. The distribution of stock returns is symmetrical if both good and bad news appear randomly and managers disclose both types of news immediately (Kothari et al., 2009) [25]. However, numerous studies have shown that the distribution of bad news and good news disclosed by managers is not symmetrical since there is a tendency for managers to conceal bad news. (Pastena & Ronen, 1979; Kothari et al.) [26,25] As there is an upper limit to the amount of bad news a company can accommodate, once the accumulated negative news exceeds this limit, the bad news will be released at the same time, causing a negative impact on the company’s stock price or even causing a stock crash (Jin & Myers, 2006; Hutton et al., 2009) [24,27].

According to the ‘information effect’ theory, companies will increase information disclosure when they receive an inquiry letter in order to avoid further inquiries, which will mitigate adverse selection and reduce information asymmetry (Bushman & Smith, 2001; Muslu et al., 2014) [15,16]. According to the ‘supervision effect’, the concerns about reputation and being punished encourages financial intermediaries to improve supervision quality of questioned companies. Therefore, bad news hidden by the company can be detected. Meanwhile, information asymmetry and the accumulation of bad news are important factors in stock price crash risk, so that inquiry letter supervision can be effective.

3. Theoretical analysis and research hypothesis

3.1. Inquiry letters about asset restructuring and stock price crash risk

The problems of information asymmetry in asset restructuring are more serious since the target companies in asset restructuring are mostly unlisted companies with little public information (De Franco et al., 2011) [26]. Additionally, all participants are required to sign a confidentiality agreement before the announcement of the transaction proposal. As a result, there is no public information available in the market at this stage. Furthermore, unlike financial reports, M&A information focuses on future prospects (Kimbrough & Louis, 2011) [27], leading to greater information uncertainty.

The inquiry letters about asset restructuring are aimed at corporate asset restructuring events. Therefore, the letters often inquire about the transaction plan, transaction target and asset evaluation in asset restructuring. After receiving letters, the company and relevant intermediaries should answer the questions from CSRC. Consequently, inquiry letters about asset restructuring can encourage companies to disclose information about asset restructuring, which may eventually reduce stock price crash risk by making corporate information more transparent and revealing companies’ bad news.

H1: Receiving inquiry letters about asset restructuring is negatively correlated with stock price crash risk.

3.2. Inquiry letters about financial report and the stock price crash risk

According to the ‘information effect’ theory, the inquiry letters about financial report require listed companies to disclose incremental information of financial reports, thereby reducing information asymmetry. According to the ‘supervision effect’ theory, letters encourage the financial intermediaries to supervise the company upon receiving letters, thereby improving supervision quality. Consequently, inquiry letters about financial report can reduce stock price crash risk by uncovering bad news through information disclosure and intermediaries’ supervision.
In particular, inquiry letters about financial report can identify doubtful accounting policy choices and implementation, including critical matters related to financial accounting calculation and manipulation of earnings management (Cunningham et al., 2020)[28]. When there are internal control problems, the companies will be delivered inquiry letters by CSRC to improve internal control and increase information disclosure, thereby preventing the bad news concealment of company management. (Ping Nie et al., 2020) [29].

H2: Receiving inquiry letters about financial report is negatively correlated with stock price crash risk.

3.3. Inquiry letters about others and the stock price crash risk

Inquiry letters about others are those delivered by the Stock Exchange in addition to inquiry letters about asset restructuring and financial report. This type of letters inquiry a wide range of events, such as controller change, dividends, foreign investment, etc.

Similarly, the ‘information effect’ theory and the ‘supervision effect’ theory apply to inquiry letters about others. That is, letters may reduce the bad news hidden by managers through information disclosure and intermediaries’ supervision. However, compared to letters about asset restructuring and financial report, inquiry letters about others lack specificity in terms of what they inquiry about, which may cause a certain impact on the supervision effects.

H3: The relationship between receiving inquiry letters about others and the stock price crash risk is unknown.

4. Research design

4.1. The sample and data

This study uses a sample of Chinese listed companies on Shenzhen Stock Exchange from 2014 to 2019. The research begins in 2014 based on two reasons. (1) Since 2014, inquiry letters delivered by SZSE and the companies’ reply letters make public in ‘Regulatory Information Disclosure’ column. (2) Since 2014, the disclosure of inquiry letters on SZSE tended to be intensive and regular. In addition, the research is segmented in 2016 based on three reasons. (1) There was a stock crash in China from mid to late 2015 to 2016, so there may be a structure break. (2) The reform of registration-based IPO system began to implement within two years after March 1, 2016; (3) The market of asset restructuring becomes gradually regulated due to several new rules on asset restructuring promulgated by CRSC in September 2016.

From all the data available in the sample period, this paper excludes (1) samples with annual stock returns less than 30 weeks; (2) samples in the financial sector; (3) samples with missing financial and corporate data. Finally, 10,554 observations were obtained. To mitigate the effects of outliers, this paper also winsorizes continuous variables at the 1% level in both tails.

4.2. Variable measurement

4.2.1. Measuring stock price crash risk (DUVOL). Following the literature (Hutton et al, 2009, Kim et al., 2011a, b)[23,30,31], this paper uses down-to-up volatility of stock price (up-to-up volatility, DUVOL) to measure the stock price crash risk. Firstly, the market-adjusted return of stock i is calculated according to equation (1) using the weekly return of stock i.

\[ r_{it} = \alpha + \beta_1 r_{m,t-2} + \beta_2 r_{m,t-1} + \beta_3 r_{m,t} + \beta_4 r_{m,t+1} + \beta_5 r_{m,t+2} + \epsilon_{it} \]  

Where \( r_{it} \) is the return of stock i in each year at week t and \( r_m, t \) is the average return of all A-share stocks weighted by market capitalization at week t. Additionally, the lagged and lead terms of market returns are included in equation (1) to adjust for the effect of nonsynchronous stock trading. The market-adjusted return for stock i (\( W_{it} \)) in week t is:

\[ W_{it} = \ln(1+\epsilon_{it}) \]
The stock return is divided into two subsamples of up weeks and down weeks based on whether the market-adjusted weekly return $W_{i,t}$ is greater than the annual average return. Then we can calculate the standard deviation ($R_u, R_d$) of the stock returns in each of the two subsamples. Finally, $DUVOL_{i,t}$ is calculated through equation (3):

$$DUVOL_{i,t} = \ln\left[\frac{\left(\sum_{down} R_{i,t}^2\right)}{\left(\sum_{up} R_{i,t}^2\right)}\right]$$  

Where $nu(nd)$ is the number of weeks which the stock i's week-specific return $W_{i,t}$ is greater (less) than the average annual return $Wi$.

4.2.2. Measuring inquiry letters (INQUIRY). The core independent variables are whether the company has received an inquiry letter about asset restructuring (AR_INQUIRY), financial report (FR_INQUIRY) or others (Other_INQUIRY) from SZSE. AR_INQUIRY takes the value of 1 if the company receives an inquiry letter about asset restructuring and 0 otherwise; FR_INQUIRY takes the value of 1 if the company receives an inquiry letter about financial report and 0 otherwise; Other_INQUIRY takes the value of 1 if the company receives inquiry letter about others and 0 otherwise.

4.2.3. Control variables. Following the literature (Chen et al.2001, Hutton et al.2009, Kim et al., 2011a,b)[32,23,30,31], the paper selects the following control variables.

| Variable type        | Variable name                      | Variable symbols | Variable measurement                                                                 |
|----------------------|-----------------------------------|------------------|-------------------------------------------------------------------------------------|
| Dependent Variable   | stock price crash risk             | DUVOL (i ,t+1)   | Weekly stock return volatility ratio of one year backward                            |
|                      | Whether receiving an inquiry letter about asset restructuring | AR_INQUIRY(i ,t) | Dummy variable, assigned the value of 1 if an inquiry letter of asset restructuring is received, otherwise assigned the value of 0 |
|                      | Whether receiving an inquiry letter about financial report     | FR_INQUIRY(i ,t) | Dummy variable, assigned the value of 1 if an inquiry letter of financial report is received, otherwise assigned the value of 0 |
|                      | Whether receiving an inquiry letter about others                 | Other_INQUIRY (i ,t) | Dummy variable, assigned the value of 1 if an inquiry letter about others is received, otherwise assigned the value of 0 |
|                      | Number of inquiry letters received about asset restructuring     | NUM_AR_INQUIRY(i ,t) | Number of inquiry letters received for asset restructuring                           |
|                      | Number of inquiry letters received about financial report       | NUM_FR_INQUIRY(i ,t) | Number of inquiry letters received for financial report                              |
|                      | Number of inquiry letters received about others                  | NUM_Other_INQUIRY (i ,t) | Number of inquiry letters received for others                                        |
| Control Variable     | Weekly earnings volatility ratio | DUVOL (i ,t)     | Company's weekly earnings up/down volatility ratio in year t                          |
|                      | Change in stock turnover rate    | DTURN(i ,t)      | The difference between the turnover rate of the company in year t minus the turnover rate of the previous year (t-1) over the turnover rate of the current year |
|                      | Market fluctuations              | SIGMA (i ,t)     | Standard deviation of the company's weekly                                          |
earnings in year \( t \), indicating stock price volatility

| Market gains | \( \text{RET} (i, t) \) | Average of company's weekly earnings in year \( t \) |
| Financial leverage | \( \text{LEV} (i, t) \) | Measured by liability/asset ratio |
| Company size | \( \text{INSIZE} (i, t) \) | Measured by the natural logarithm of total assets |
| Market-to-book ratio | \( \text{MB}(i, t) \) | Ratio of current price per share to book value per share |
| Return on total assets | \( \text{ROA}(i, t) \) | Ratio of net profit to total assets |
| Industries | \( \text{IND} \) | Controlling industry fixed effects |
| Year | \( \text{YEAR} \) | Controlling for year fixed effects |

4.3. Regression model setting. Following the literature (Hutton et al., 2009) [23], the basic regression model is set.

\[
\text{DUVOL}_{i,t} = \alpha_0 + \alpha_1 \text{INQUIRY}_{i,t} + \alpha_2 \text{DUVOL}_{i,t} + \alpha_3 \text{DTURN}_{i,t} + \alpha_4 \text{SIGMA}_{i,t} \\
+ \alpha_5 \text{RET}_{i,t} + \alpha_6 \text{LEV}_{i,t} + \alpha_7 \text{INSIZE}_{i,t} + \alpha_8 \text{MB}_{i,t} + \alpha_9 \text{ROA}_{i,t} \\
+ \alpha_{10} \text{IND} + \alpha_{11} \text{YEAR} + \epsilon_{i,t}
\]  

(4)

5. Empirical results

5.1. Descriptive statistics

| VARIABLES | N   | mean  | sd   | min  | max |
|-----------|-----|-------|------|------|-----|
| AR_INQUIRY | 10,554 | 0.0734 | 0.261 | 0    | 1   |
| FR_INQUIRY | 10,554 | 0.106  | 0.308 | 0    | 1   |
| Other_INQUIRY | 10,554 | 0.137  | 0.343 | 0    | 1   |
| NUM_AR_INQUIRY | 10,554 | 0.0821 | 0.306 | 0    | 3   |
| NUM_FR_INQUIRY | 10,554 | 0.118  | 0.361 | 0    | 3   |
| NUM_Other_INQUIRY | 10,554 | 0.224  | 0.751 | 0    | 13  |
| DUVOL | 10,554 | -0.155 | 0.489 | -1.348 | 1.159 |
| DTURN | 10,279 | -0.287 | 0.889 | -3.686 | 0.858 |
| SIGMA | 10,554 | 0.0704 | 0.0305 | 0.0275 | 0.175 |
| RET | 10,554 | 0.00379 | 0.0117 | -0.0179 | 0.0433 |
| LEV | 10,554 | 0.403 | 0.203 | 0.0566 | 0.922 |
| LNSIZE | 10,554 | 22.00 | 1.121 | 19.82 | 25.47 |
| MB | 10,554 | 0.568  | 0.240 | 0.110 | 1.126 |
| ROA | 10,554 | 0.0294 | 0.0846 | -0.458 | 0.190 |

Table 2 displays the summary statistics of the variables in this study. The results show that the mean value of DUVOL_{i,t} is -0.192, which is similar to previous studies on the stock price crash risk [Xu et al., 2014; Ye et al., 2015][33,34]. The mean values of AR_INQUIRY, FR_INQUIRY, Other_INQUIRY are 0.0734, 0.106 and 0.137 respectively, indicating that the SZSE delivered inquiry letters about others most, followed by inquiry letters about financial report. The inquiry letters about asset restructuring were the least.

The mean values of NUM_AR_INQUIRY, NUM_FR_INQUIRY and NUM_Other_INQUIRY are 0.224, 0.118 and 0.0821 respectively, indicating that the company received the most inquiry letters about others, followed by inquiry letters about financial report and the least were inquiry letters about asset restructuring. The mean value of DUVOL is -0.155, DTURN is -0.287, SIGMA is -0.0704, RET
is -0.00379, LEV is -0.403, LNSIZE is -22, MB is -0.568, and ROA is -0.0294, which are similar to the results of previous studies.

5.2. Regression results

Table 3. Regression results Model 1.

| VARIABLES            | (1) F_DUVO L | (2) F_DUVO L | (3) F_DUVO L | (4) F_DUVO L |
|----------------------|--------------|--------------|--------------|--------------|
| AR_INQUIRY           | -0.1084***   | -0.0026      | -0.0933***   | -0.0104      |
|                      | (-2.6906)    | (-0.0824)    | (-2.3617)    | (-0.3932)    |
| FR_INQUIRY           | -0.0141*     | -0.0562*     | -0.0282      | -0.0597**    |
|                      | (-0.2581)    | (-1.8579)    | (0.6090)     | (-2.2343)    |
| Other_INQUIRY        | -0.0486      | -0.0204      | -0.0427      | -0.0035      |
|                      | (-1.1137)    | (-0.9088)    | (-1.5755)    | (-0.3310)    |
| NUM_AR_INQUIRY       |              |              | 0.0282       | -0.0597**    |
|                      |              |              | (0.6090)     | (-2.2343)    |
| NUM_FR_INQUIRY       |              |              |              | -0.0427      |
|                      |              |              |              | (-1.5755)    |
| NUM_Other_INQUIRY    |              |              |              | -0.0035      |
|                      |              |              |              | (-0.3310)    |
| DUVOL                | -0.3224***   | -0.3276***   | -0.3252***   | -0.3280***   |
|                      | (-18.3391)   | (-21.1532)   | (-18.3381)   | (-21.1246)   |
| ROA                  | -0.2723      | -0.2667**    | -0.2961      | -0.2669***   |
|                      | (-0.8894)    | (-2.2969)    | (-0.9709)    | (-2.2922)    |
| RET                  | 3.0016*      | -3.0721**    | 2.9898*      | -3.0814**    |
|                      | (1.8768)     | (-2.0389)    | (1.8618)     | (-2.0494)    |
| LEV                  | 0.0144       | -0.3001***   | 0.0167       | -0.2968**    |
|                      | (0.1108)     | (-2.2887)    | (0.1281)     | (-2.2549)    |
| MB                   | -0.2765**    | -0.8881***   | -0.2773**    | -0.8872***   |
|                      | (-2.0522)    | (-8.0098)    | (-2.0626)    | (-8.0152)    |
| LNSIZE               | 0.0702       | 0.1809***    | 0.0676       | 0.1780***    |
|                      | (1.5256)     | (4.0550)     | (1.4755)     | (4.0208)     |
| SIGMA                | 2.1157***    | 0.0533       | 2.1008***    | 0.0583       |
|                      | (3.0882)     | (0.0888)     | (3.0832)     | (0.0961)     |
| DTURN                | -0.0308**    | -0.0141      | -0.0302**    | -0.0144*     |
|                      | (-2.1122)    | (-1.6154)    | (-2.0733)    | (-1.6538)    |
| Constant             | -1.7664*     | -3.5751***   | -1.7099*     | -3.513***    |
|                      | (-1.8043)    | (-3.7840)    | (-1.7538)    | (-3.7525)    |
| N                    | 3.684        | 5.537        | 3.684        | 5.537        |
| R-squared            | 0.121        | 0.141        | 0.121        | 0.142        |
| F test               | 4.948***     | 61.46***     | 4.788***     | 61.30***     |

Note: *, **, and *** are statistically significant at the levels of 10%, 5% and 1% respectively

Table 3 presents the basic regression results about different types of inquiry letters from SZSE and the stock price crash risk. The data in column (1) and column (3) is from 2014 and 2016, while the data in column (2) and column (4) is from 2017 and 2019.
In column (1), the results show that the regression coefficient of AR_INQUIRY is negative, -0.1084, and significant at the 1% level. However, in column (2), the regression coefficient of AR_INQUIRY is not statistically significant. Secondly, the regression coefficient of FR_INQUIRY is not statistically significant in column (1). In column (2), the regression coefficient of FR_INQUIRY is negative, -0.0562, and significant at the 10% level; Thirdly, the regression coefficients of Other_INQUIRY are not statistically significant.

The regression coefficient of NUM_AR_INQUIRY in column (3) is negative, -0.0933, and significant at the 5% level. However, in column (4), the regression coefficient of NUM_AR_INQUIRY is not statistically significant, consistent with the results of column (1) and (2). The regression coefficient of NUM_FR_INQUIRY in column (3) is not statistically significant. However, in column (4), the regression coefficient of NUM_FR_INQUIRY is negative, -0.0597, which is significant at the 5% level, also consistent with the results of column (1) and (2). The regression coefficients of NUM_Other_INQUIRY are not statistically significant.

Compared with the empirical results of J.S. Tang (2018)[35] and Cheng Liu (2019)[9], the adjusted R2 in this paper are greater, indicating that the model in this paper fits better. Comparing the regression coefficients, it suggested that the inquiry letters about asset restructuring have the most significant effect on stock price crash risk, followed by the inquiry letter about financial report. The effects of other types of inquiry letters are the least significant.

5.2.1. Inquiry letters about asset restructuring and stock price crash risk. It can be seen from Table 3 that inquiry letters about asset restructuring can reduce stock price crash risk. Additionally, the stock price crash risk will reduce more if the company receives more inquiry letters about asset restructuring. However, the relationship between them is more significant during 2014 and 2016 than during 2017 and 2019. This paper considers the reasons as follows.

The reply of inquiry letters may not convey new or effective information to the market. Moreover, the information disclosed is different between different types of inquiry letters, which may result in different supervision effects. Considering China's macro background, there existed a market-oriented reform in M&A market since 2014, promoting a quick development in the M&A market. However, there were also problems such as market overheating and disorder trading, which led to untrue and incomplete information. In addition, the Chinese approval-based IPO system made the IPO period longer, eventually increasing the companies’ opportunity costs during IPO. As a result, many companies may choose to acquire small listed companies to achieve their purpose of listing. (Huang Hefei et al.,2019)[36]. In conclusion, during 2014 and 2016, companies may be more likely to be questioned for irregularities in their asset restructuring events. Meanwhile, the questions in inquiry letters may be more serious, thereby better exposing the company's bad news and reducing stock price crash risk.

However, in the first half of 2016, the market gradually regulated. Especially in September 2016, the Securities and Futures Commission promulgated several new rules on asset restructuring and listing, making the M&A market cool down. Overall, the asset restructuring of listed companies gradually returned to rationality. In addition, after the reform of registration-based IPO system, the problems of the long IPO period and high listing requirements under the approval-based IPO system have been solved. Therefore, the advantages of listing by acquiring small listed companies were no longer available. As a result, during 2017 and 2019, companies may be less likely to be inquired about irregularities and severe problems in asset restructuring but more likely to be required to supplement information disclosure.

5.2.2. Inquiry letters about financial report and the stock price crash risk. From the empirical results in Table 3, it can be seen that inquiry letters about financial report can reduce stock price crash risk. Additionally, the stock price crash risk will decrease more if the company receives more inquiry letters about financial report. However, the relationship between them is more significant during 2017 and 2019 than during 2014 and 2016. This article considers the reasons as follows.
As shown in the literature review, the inefficiency of law enforcement may decrease the effects of inquiry letters. Before the emphasis on the reform of registration-based IPO system, intermediaries are less critical in supervision due to unclear responsibilities. The SFC, as the representative of the government, supervises the companies. In 2015, the stock crash in China had interrupted the reform of registration-based IPO system. Consequently, the responsibilities of intermediaries were still ambiguous. Thus, according to the 'supervision effect', intermediaries' unclear responsibilities led to the failure to supervise questioned companies during 2014 and 2016. Meanwhile, the supervision of SFC was inefficient, making supervision less efficient overall.

From 1 March 2016, registration reform set sail again. The reform emphasized the clearing of intermediaries’ responsibility. Therefore, based on the ‘supervision effect’, when the responsibilities of intermediaries gradually become clearer after 2017, the risk awareness of intermediaries such as accounting firms may be raised. This promotes the intermediaries to improve their supervision quality of questioned companies’ financial reports after the company receives letters, thus actively identifying bad news concealed by the management. Finally, it may reduce stock price crash risk.

5.2.3. Inquiry letters about others and the stock price crash risk. The empirical results in Table 3 show that there is no significant relationship between inquiry letters about others and the stock price crash risk from 2014 to 2019. That is, the supervision of inquiry letters about others is not effective. This paper suggests the main reason is that inquiry letters about others are not targeted compared to inquiry letters about asset restructuring and financial report.

Additionally, Xiaoxi Li(2019)[18] suggested that questioned companies may not reply seriously. Compared with companies receiving inquiry letters about asset restructuring and financial report, companies that receive inquiry letters about others may be less severe.

Moreover, Jianan Gao(2017)[19] concluded that compared with the inquiry letters that require the company to correct the wrong information, the letters that only require explanation and supplementary disclosure are given less effective information. Inquiry letters about others usually only require explanations about what has occurred in the companies. Therefore, the effective information provided by inquiry letters about others is generally less so that inquiry letters about others may be less likely to reveal bad news. In conclusion, inquiry letters about others have no significant impact on the stock price crash risk caused by bad news.

6. Robustness tests
To test the robustness of empirical results, this paper will replace the rising and falling phases of stock prices (DUVOL) with the negative skewness of stock i’s market-adjusted weekly return (NCSKEW) as the dependent variable. Firstly, NCSKEW is calculated.

\[ NCSKEW_{it} = \frac{\left[ n(n-1)^{3/2} \sum W_{it}^{3} \right]^{\frac{1}{2}}}{\left[ (n-1)(n-2)(\sum W_{it}^{2})^{3/2} \right]} \] (5)

And then Model 2 is constructed as follows.

\[ NCSKEW_{it} = \alpha_0 + \alpha_1 \text{INQUIRY}_{it} + \alpha_2 \text{NCSKEW}_{it} + \alpha_3 \text{DTURN}_{it} + \alpha_4 \text{SIGMA}_{it} + \alpha_5 \text{RET}_{it} + \alpha_6 \text{LEV}_{it} + \alpha_7 \text{LNSIZE}_{it} + \alpha_8 \text{MB}_{it} + \alpha_9 \text{ROE}_{it} + \alpha_{10} \text{IND} + \alpha_{11} \text{YEAR} + \epsilon_{it} \] (6)

As can be seen from Table 4, the regression results of Model 2 are similar to the results with Model 1, also consistent with the previous findings.
Table 4. Regression results of Model 2.

| VARIABLES          | (1)          | (2)          | (3)          | (4)          |
|--------------------|--------------|--------------|--------------|--------------|
|                    | F_NCSKEW     | F_NCSKEW     | F_NCSKEW     | F_NCSKEW     |
| AR_INQUIRY         | -0.1109*     | -0.0482      | -0.1047**    | -0.0575      |
|                    | (-1.9374)    | (-0.9288)    | (-2.0149)    | (-1.3214)    |
| FS_INQUIRY         | -0.0572      | -0.0646      | -0.0154      | -0.0786*     |
|                    | (-0.7034)    | (-1.3346)    | (-0.2311)    | (-1.8318)    |
| Other_INQUIRY      | 0.0181       | 0.0470       | 0.0098       | 0.0201       |
|                    | (0.2731)     | (-1.2741)    | (0.2307)     | (-1.2139)    |
| NUM_AR_INQUIRY     | -0.3148***   | -0.3333***   | -0.3148***   | -0.3333***   |
|                    | (-16.5427)   | (-20.1675)   | (-16.5367)   | (-20.1219)   |
| ROA                | -0.3726      | -0.4730**    | -0.3860      | -0.4707**    |
|                    | (-0.7707)    | (-2.4025)    | (-0.7964)    | (-2.3927)    |
| RET                | 4.8850**     | 8.6252***    | 4.8776**     | 8.5075***    |
|                    | (2.1010)     | (3.7631)     | (2.0937)     | (3.7180)     |
| LEV                | 0.0457       | -0.4159*     | 0.0516       | -0.3946*     |
|                    | (0.2375)     | (-1.8947)    | (0.2677)     | (-1.7965)    |
| MB                 | -0.2449      | -1.1823***   | -0.2471      | -1.1813***   |
|                    | (-1.1967)    | (-7.1177)    | (-1.2098)    | (-7.1233)    |
| LNSIZE             | 0.1050       | 0.3318***    | 0.1046       | 0.3248***    |
|                    | (1.5172)     | (4.7948)     | (1.5149)     | (4.7968)     |
| SIGMA              | 3.4582***    | 2.5459***    | 3.4404***    | 2.6514***    |
|                    | (3.4670)     | (2.6022)     | (3.4492)     | (2.6759)     |
| DTURN              | -0.0565***   | -0.0248      | -0.0567***   | -0.0254      |
|                    | (-2.5978)    | (-1.6012)    | (-2.6007)    | (-1.6354)    |
| Constant           | -2.7690*     | -6.8585***   | -2.7595*     | -6.7158***   |
|                    | (-1.8731)    | (-4.6780)    | (-1.8712)    | (-4.6905)    |

N  3,684  5,537  3,684  5,537  
R-squared  0.1406  0.1123  0.1400  0.1124  
F test  4.953***  17.51***  4.933***  17.79***  

Note: *, **, and *** are statistically significant at the levels of 10%, 5% and 1% respectively.

7. Conclusions and Suggestions
This paper examined the effects of different inquiry letters on stock price crash risk by OLS regression, using data from Shenzhen Stock Exchange and CSMAR database during 2014 and 2019. In addition, it explored the impact of the Chinese macro background, such as the registration-based IPO system reform, on the effects of inquiry letter supervision. The results showed that during 2014 and 2016, inquiry letters about asset restructuring can significantly reduce stock price crash risk. Moreover, the company’s stock price crash risk decreased more when the company received more letters. Meanwhile, inquiry letters about financial report and others had no significant effects. During 2017 and 2019, inquiry letters about asset restructuring and others had no significant impact on the stock price crash risk; however, inquiry letters about financial report can significantly reduce the stock price crash risk, and the company’s stock price crash risk decreased more when the company received more letters.

The findings have an important implication. Firstly, this paper expanded the study of inquiry letters’ economic effects in terms of stock price crash risk, which provided direct evidence on whether different types of inquiry letter supervision are effective in stabilizing the stock market. Secondly, intermediaries’ responsibilities may increase due to the registration-based IPO system reform, which eventually can improve the effects of inquiry letters about financial report. Therefore, the government
should attach importance to intermediaries’ responsibilities so that intermediaries can play a role in promoting a stable stock market. Thirdly, when the asset restructuring market is regulated, inquiry letters about asset restructuring may cause companies to disclose less effective information. Therefore, the CSRC and the Stock Exchange should consider how to inquiry to make companies disclose more effective information. Finally, the government should improve the information environment to avoid stock price crash risk, eventually protecting investors' interests.

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