

Wen, Wen; Feng, Xiaoqing

**Article**

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# Multiple large shareholders and abnormal stock trading halts

Wen Wen <sup>a</sup> and Xiaoqing Feng <sup>b</sup>

<sup>a</sup>International Business School, Beijing Foreign Studies University, Beijing, China; <sup>b</sup>School of Economics and Management, China University of Petroleum, Beijing, China

## ABSTRACT

Using a sample of Chinese A-share listed firms on Shanghai and Shenzhen stock exchanges from year 2003–2019, this paper examines the impact of multiple large shareholders (MLS) on abnormal stock trading halts. The results reveal that listed companies with MLS have a lower probability of abnormal stock trading halts. When the number and share percentage of non-controlling shareholders increase, their inhibitory effect on arbitrary stock trading halts is more significant. Channel tests suggest that MLS can restrain abnormal stock trading halts by reducing the tunnelling activities by controlling shareholders, increasing the proportion of dissenting votes on corporate board, and improving corporate information disclosure quality. The impact of MLS on abnormal stock trading halts is more pronounced in firms with lower quality of internal control and information transparency.

## KEYWORDS

Multiple large shareholders; stock trading halts; internal control; information transparency; corporate governance

## 1. Introduction

A stock trading halt refers to the mandatory interruption of stock trading on the market requested by the exchange or listed companies when a company has a major event, releases significant news, or has dramatic stock price fluctuations. Stock trading halt includes passive halt initiated by the China Securities Regulatory Commission (CSRC) or the stock exchanges for warning purposes and active halt applied by listed companies for planning major events. The original design of the trading halt system is to reduce information asymmetry and give investors sufficient time to re-evaluate asset prices and adjust trading strategies when there are abnormal fluctuations in a company's stock price or the release of significant news, thus protecting the interests of investors (Liao et al., 2009). However, the trading halt system has caused great controversies, especially in the Chinese capital market. Due to the lack of detailed and clear regulatory requirements for the types, duration and information disclosure of stock trading halt, abnormal trading halts and delayed

**CONTACT** Xiaoqing Feng  [fxq1110@cup.edu.cn](mailto:fxq1110@cup.edu.cn)  China University of Petroleum, No.18 Fuxue Road, Changping District, Beijing, China

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resumption of trading by listed companies are common.<sup>1</sup> Stock trading halt has even become a tool for listed companies to avoid the risk of drastic stock fluctuations and help controlling shareholders maintain control rights (Luo et al., 2020). This not only aggravates insider encroachment and disrupts the normal order of the capital market but also damages the international reputation and image of the A-share market (Shi et al., 2019).<sup>2</sup> The CSRC has explicitly stated that it would strictly regulate improper trading halts of listed companies, strengthen front-line supervision of trading halts and resumptions of listed companies. In November 2018, CSRC issued the 'Guidance on Improving the System of Trading Halts and Resumptions of Listed Companies' Stocks', which provided detailed instructions on improving the trading halts and resumption application system and strengthening the information disclosure requirements.<sup>3</sup>

Based on the guidelines for halt and resumption of trading issued by the Shanghai and Shenzhen stock exchanges,<sup>4</sup> and relevant literature (Shi et al., 2019), we define 'abnormal stock trading halt' as trading halts initiated by listed companies, the duration of which exceeds the maximum halt period for specified matters, as well as the insufficient information disclosure during the halt period, which may jeopardise investors' right to trade and right to know. Compared to the frequent occurrence of abnormal stock trading halts in the Chinese capital market, academic research on the trading halts issue is still scarce. A few studies investigate the determinants of abnormal stock trading halts and their impact on investors' interests. Scholars believe that the stock market trading halt is a market value management tool adopted by listed companies. Compared to normal trading halts, abnormal trading halts increase insider self-interest, cause abnormal losses for investors and harm investor interests (Shi et al., 2019). Private firms and firms with high public attention and social pressure are more likely to resort to trading halts and their trading halts last for longer periods (Li et al., 2018; Yin & Xiong, 2017). Since controlling shareholders have absolute advantages in terms of control rights, they are more likely to avoid private wealth losses through manipulating trading halts when they have equity pledges (Luo et al., 2020). However, no prior research has explored the governance effect of abnormal stock trading halts from the perspective of equity structure.

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<sup>1</sup>For example, on September 14<sup>th</sup>, 2016, Shenzhen Special Economic Zone Real Estate and Properties (Group) Co., Ltd (stock code: 000029) applied a trading halt in excuse of major restructuring. The trading halt lasts for four years. Until November 2020, the company applied for resumption of trading. On December 7<sup>th</sup>, 2015, Xinjiang Yilu Wanyuan Industrial Holding Co., Ltd (stock code: 600145) applied for trading halt in excuse of restructuring matters, which lasted four and a half years. It took four and a half years to apply for resumption of trading until June 30<sup>th</sup>, 2020, and shareholders dubbed as 'the nail in the coffin of trading halts'. Some listed companies only disclose perfunctory information to the public for general reasons such as 'planning major matters', 'not announcing important matters' and 'publishing important announcements' during the long trading halt. Moreover, some companies did not disclose detailed information on their counterparties, trading methods, and other details until the resumption of trading.

<sup>2</sup>Abnormal trading halts of A-share listed companies have triggered negative responses from international capital markets. For example, when consulting on whether to include A-shares in its global index, MSCI questioned the damage to capital market liquidity caused by the abnormal trading halts of Chinese listed companies. In addition, one month after MSCI included the Chinese A-share market in the MSCI emerging market index, it warned that if a stock trading halt of a Chinese company reached 50 working days, it would be removed from the index list regardless of the reason for the trading halt request.

<sup>3</sup>Source: [http://www.csrc.gov.cn/newsite/flb/ffg/bmgf/ssgs/ssyts/201906/t20190627\\_358100.html](http://www.csrc.gov.cn/newsite/flb/ffg/bmgf/ssgs/ssyts/201906/t20190627_358100.html).

<sup>4</sup>Specifically, refer to the Guidelines for Halt and Resumption of Listed Companies in Planning Major Matters issued by Shanghai Stock Exchange on May 27<sup>th</sup>, 2016. The Memorandum of Information Disclosure Business No. 9 of Main Board – Halt and Resumption of Listed Companies. The Memorandum of Information Disclosure Business No. 14 of SME Board – Halt and Resumption of Listed Companies. The Memorandum No. 22 of the Chi Next Information Disclosure Business Memorandum – Halt and Resumption of Listed Companies issued by Shenzhen Stock Exchange.

Multiple large shareholders (MLS) refer to the existence of other major shareholders with a shareholding of more than 10% of the company besides the controlling shareholder. MLS can play a monitoring effect on controlling shareholders' and management's self-interest grabbing behaviours, reducing managerial agency costs and information asymmetry (Chen et al., 2019; Jiang et al., 2018). In addition, MLS can significantly inhibit opportunistic behaviours, such as insider trading (Luo & Huang, 2020) and controlling shareholders' tunnelling (Boateng & Huang, 2017). Therefore, whether the existence of MLS plays a monitoring and governance effect on the abnormal trading halt or not? What are the underlying mechanisms? The answers to the above questions can help design the constraint mechanism of abnormal trading halts in China from the perspective of shareholding structure. This paper can also promote the improvement of the corporate governance system and the healthy development of the Chinese capital market.

This paper adopts a sample of Chinese A-share listed companies' data in Shanghai and Shenzhen stock exchanges from year 2003 to 2019, and examines the governance effect of multiple major shareholders on abnormal stock halts by manually collecting and merging data of persons acting in concert. Our findings show that (1) compared with the shareholding structure of a single large shareholder, the existence of MLS can significantly inhibit the probability of occurrence of abnormal stock trading halts and exert a good monitoring effect. (2) The mechanism test shows that MLS play a governance role on abnormal stock trading halts by reducing the tunnelling activities of controlling shareholders' interests, increasing the proportion of dissenting votes on the board of directors, and improving the quality of corporate information disclosure. (3) The governance effect of MLS on abnormal stock trading halts is more significant when their monitoring ability is stronger, i.e. the relative shareholding ratio of non-controlling large shareholders is higher relative to controlling shareholders. (4) The monitoring effect of MLS on abnormal stock trading halts is more pronounced in companies with lower quality of internal control and information transparency.

This paper contributes to the prior studies in two aspects: First, based on the characteristics of the Chinese capital market, this paper provides a brand-new research perspective and empirical evidence for the regulation and governance of stock trading halts. The abuse of trading halts system in the Chinese stock market not only damages the trading order of the capital market but also affects the international market reputation and image of A-shares. Therefore, it is an important practical issue for regulatory authorities in China to regulate the halts and resumption of trading operations of listed companies, protect the legitimate rights and interests of investors, and guide the stable and healthy developments of the capital market. Prior research focuses on exploring the driving factors behind the frequent occurrence of abnormal stock trading halts in the Chinese capital market (Li et al., 2018; Luo et al., 2020; Yin & Xiong, 2017), as well as the negative economic consequences caused by abnormal stock trading halts (Shi et al., 2019). In comparison, starting from the characteristics of corporate equity structure, we find that the equity structure with MLS can significantly inhibit abnormal stock trading halts initiated by controlling shareholders and actual controllers. The mechanisms include non-controlling major shareholders dispatching directors to the board of directors, casting more non-affirmative votes in board meetings, supervising listed companies to improve information disclosure quality and suppressing the tunnelling behaviour of controlling shareholders. Overall, this paper has strong implications for evaluating and

improving stock trading halt policies, safeguarding the legitimate rights and interests of investors and enhancing the internationalisation level of the Chinese capital market. In addition, this paper enriches the literature on the governance mechanism of abnormal stock trading halts.

Second, this paper provides new empirical evidence on the governance effect of multiple large shareholders. Existing literature on the economic consequences of the MLS are very rich, but the conclusions are not consistent. Most of the literature finds that MLS can exert a good monitoring effect, alleviate agency conflicts and balance the power of controlling shareholders (Maury & Pajuste, 2005; Mishra, 2011; Wang & Jiang, 2017). In contrast, a few studies suggest that MLS have a collusive motivation and may play an excessive monitoring effect, which adversely affect the long-term development of the company (Lyu & Li, 2015; Niu et al., 2021; Zhu et al., 2018). This paper finds that the existence of MLS can reduce the probability of abnormal stock trading halts in the Chinese capital market and provides new empirical evidence to support the governance effects of multiple large shareholders' ownership structures.

The remainder of the paper is as follows: Section 2 conducts the literature review and theoretical analysis and presents the research hypotheses. Section 3 reports the research design. Section 4 reports the empirical findings. Section 5 presents the robustness tests. Section 6 reports the further studies and mechanism tests. The final section reports the conclusion and implications.

## 2. Literature review, theoretical analysis and hypothesis development

### 2.1. Literature on multiple large shareholder

The coexistence of multiple large shareholders is a widespread phenomenon worldwide, whether in Europe (Faccio & Lang, 2002), Asia (Claessens et al., 2002), or the United States (Edmans & Manso, 2011), where the ownership structure is usually considered to be more decentralised. According to our statistics, 39.5% of Chinese listed companies have at least two large shareholders with more than 10% shareholding, and some listed companies even have four or more large shareholders. Therefore, the economic consequences of the MLS in the ownership structure have aroused extensive attention from scholars.

There is no consensus on whether MLS can play an effective governance effect. Some studies argue that MLS can play a monitoring and balancing role on controlling shareholders and can effectively restrain controlling shareholders' self-interest grabbing behaviour. In detail, MLS can reduce the amount and probability of related-party transactions (Chen & Wang, 2005), enhance firms' risk-taking willingness (Mishra, 2011), improve corporate investment efficiency (Jiang et al., 2018) and increase firm value (Maury & Pajuste, 2005). Meanwhile, the ownership structure arrangement with MLS helps alleviate the agency problems between shareholders and management, reduces managerial perks, improves managerial pay-for-performance sensitivity (Chen et al., 2019), inhibits opportunistic insider trading by executives (Luo & Huang, 2020), further alleviates agency conflicts between shareholders and creditors, and reduces the cost of debt (Wang & Jiang, 2017).

Some literature also suggests that other large shareholders and controlling shareholders may form alliances with each other and encroach the interests of minority shareholders through the 'collusion effect' and thus worsen the agency's problem. Lyu and Li (2015)

argue that major shareholders of family-listed companies are likely to form communities of interest through family shareholdings. The likelihood of inefficient investment in the firm increases with the degree of collusions among major shareholders. Similarly, Niu et al. (2021) find that MLS in family firms may collude with each other through earnings management, share transfers and strategic stock renaming, which increase audit risks and audit fees. Some other studies argue that the presence of MLS leads to the phenomenon of excessive monitoring, which reduces the operational efficiency (Pagano & Röell, 1998). In addition, MLS also weakens firms' tolerance for innovation failure and risk-taking ability, which in turn negatively affects firm innovation (Zhu et al., 2018).

## 2.2. Literature on stock trading halts

Regulators initially design the trading halt system to improve the transparency of information in the capital market and to allow time for investors to reassess the asset prices. Studies based on developed capital markets have not reached a consensus on whether the implementation of the stock trading halt system can protect investors' interests. Some studies find that stock trading halts provide time for investors to digest information, help stop the spread of panic, prompt investors to make rational judgements and adjust their trading strategies, and thus have the effect of cooling the market and reducing insider trading (Abad & Pascual, 2013; Greenwald & Stein, 1991; Kodres & O'Brien, 1994). However, another part of literature reveals the negative impact of the stock market trading halt system. Since stock trading halt impedes shareholders' trading activities, shareholders are unable to engage in normal buying and selling transactions, which may reduce the efficiency of price discovery and promote speculative trading incentives of arbitrageurs (Liao et al., 2009; Sifat & Mohamad, 2019). The trading volume and volatility of suspended stocks increase instead after resumption of trading, suggesting that stock trading halts do not eliminate information uncertainty (Christie et al., 2002).

Compared with overseas capital markets, the A-share market has a large number of trading halts, long suspension periods, and no clear timetable for resumption of trading, as well as inconsistent suspension standards and inadequate information disclosure during suspensions, making investors suffer.<sup>5</sup> Studies based on the Chinese capital market have generally found that the trading halt system has not achieved the regulator's goal of improving market efficiency but rather has been detrimental to investors' interests. Whether due to routine or abnormal trading halts, the price volatility of suspended stocks increases significantly upon resumption of trading, thus reducing the efficiency of price discovery in the market (Liao et al., 2009). Both voluntary and mandatory trading halts significantly reduce the return on investment received by small and medium-sized shareholders, and stocks trading volume and volatility during the post-suspension period significantly increase (He et al., 2019). Arbitrary stock trading halts not only reduce analysts' forecast accuracy (Yu & Fang, 2021) but also contribute to executives' excess benefits (Yu & Fang, 2021). Compared with normal trading halts, arbitrary trading halts of listed companies cause an average of 4% excess loss to investors, and insiders' self-interest grabbing during arbitrary suspensions rises significantly, suggesting that stock trading halts do not achieve their original purpose of safeguarding investors' interests (Shi et al., 2019).

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<sup>5</sup>Data source: Sohu.com, [https://www.sohu.com/a/164444064\\_115124](https://www.sohu.com/a/164444064_115124).

Based on the above economic consequences, the motivation of stock trading to halt manipulation and its governance mechanism have attracted the attention of academics in recent years. From the perspective of motivation, the literature finds that the market value management motivation of large shareholders and information asymmetry are important reasons for the abnormal trading halts of listed companies. From the perspective of market value management, Luo et al. (2020) find that the large shareholders' stock pledge is positively associated with stock trading halt manipulation. In order to prevent the loss of control rights caused by stock price crash risk, the probability and length of a company's application for trading halt are significantly higher when the controlling shareholder pledges stock and when its pledge ratio is also higher relative to other major shareholders. From the perspective of information asymmetry, Guo et al. (2020) show that geographical distance increases the cost of information collection and creates barriers to information transmission. Therefore, the number and length of trading halts significantly increase when the geographic location of listed companies is far from metropolitan areas and transportation hubs. In addition, private companies, small-scale companies, and companies with high attention from institutional investors are more inclined to use trading halts for risk aversion (Li et al., 2018). From the perspective of governance of trading halts, the pressure of online public opinion formed by the 'voice' of small and medium shareholders in stock bars and other platforms can, to a certain extent, monitor the trading halts of listed companies, but this role relies on a good external legal environment (Yin & Xiong, 2017).

In summary, there is a relatively abundant literature exploring the economic consequences of trading halts of listed companies, but there is a relative lack of literature examining the determinants of abnormal trading halt and its governance mechanism. A few papers have explored the determinants of major shareholders' behaviour, geographic distance, and public opinion attention on the decision to suspend arbitrary trading halt of listed companies, but no literature has yet focused on whether the coexistence of MLS can play an effective governance effect. Therefore, this paper explores the influence of MLS on abnormal trading halt of listed companies, which helps to expand the research on the governance mechanism of MLS and enrich the literature on the determinants of trading halt and resumption behaviour of listed companies.

### **2.3. Theoretical analysis and hypothesis development**

Abnormal stock trading halt is an action initiated by insiders of a listed company. Controlling shareholders and actual controllers often abuse suspension and delay resumption of trading.<sup>6</sup> This not only deprives investors of the right to engage in normal stock trading but also erodes the interests of external investors in situations of severe information asymmetry (Shi et al., 2019), damaging the liquidity and resource allocation efficiency of the capital market. In emerging countries such as China, the type II agency problem arising from the conflict of interests between large and small shareholders are

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<sup>6</sup>Shenzhen Stock Exchange issued the 'Guidelines for Information Disclosure of Listed Companies No. 2- Halt and Resumption of Trading Business' in 2018. If a listed company applies for trading halts without prudence, or if the company and its controlling shareholders, actual controllers and other related parties abuse the halts or delay the resumption time, we can take measures such as conducting on-site inspections, and take regulatory measures or disciplinary actions against the company and related parties depending on the situation. This indicates that regulator also believe that controlling shareholders and actual controllers have significant influence on the abnormal stock trading halt.

more serious (La Porta et al., 1999), especially when there is a high degree of separation between ownership and control rights of the controlling shareholder, who has a greater incentive to appropriate the firm's resources and exploit the interests of small and medium shareholders (Claessens et al., 2002). Specifically, in terms of trading halt decisions, on the one hand, stock trading halt even becomes a tool for controlling shareholders to avoid stock price fluctuations and maintain control (Li, 2016). Luo et al. (2020) documents that compared to other major shareholder's stock pledges, companies with controlling shareholder's stock pledges tend to adopt halts strategies, utilising the loopholes of the halt system to avoid market panic, avoid sharp fluctuations in stock prices, and maintain stability of their own control. Therefore, listed companies with controlling shareholder's stock pledges are more likely to adopt trading halt strategies to avoid market panic and safeguard their own interests, thus significantly increasing the probability of arbitrary stock trading halt and significantly extending the duration of trading halt. On the other hand, in addition to the risk-averse motive of avoiding violent capital market fluctuations, the profit maximisation motive is also an important reason for controlling shareholders to implement trading halt decisions. Listed companies may apply for a trading halt on the grounds of 'major asset reorganisation' to raise capital market expectations and raise share prices, creating opportunities for major shareholders to reduce their shareholdings at high levels to cash out. After the major shareholders have finished cashing out, the company will announce the suspension or termination of the reorganisation plan and the share price returns to its low point. Listed companies may also apply for trading halts on very vague grounds such as 'material matters' or 'important matters' to cover up opportunistic behaviours such as tunnelling by controlling shareholders and avoid stock price fluctuations, and then apply for resumption of trading after achieving the true purpose. During this period, only a small portion of major events have truly made progress, while most major events have terminated or have not made significant progress, making it impossible for investors to know the true situation (Luo et al., 2020). These phenomena of imprudent trading halts have also attracted the attention of regulators.<sup>7</sup>

Multiple large shareholders have the ability and motivation to monitor and constrain the opportunistic behaviour of controlling shareholders, and inhibit abnormal suspension behaviour. On the one hand, MLS have the ability to restrain abnormal stock trading halts. Specifically, compared with small and medium shareholders, MLS have relatively high percentage of shares and a stronger voice in companies, and can protect the rights and interests of non-controlling shareholders by assigning directors and making them vote against board decisions. Especially when the proposals of the board are closely associated with the interests of non-controlling shareholders, the representatives of directors of non-controlling shareholders will perform their monitoring roles by voting against the board decisions (Zhu et al., 2021). In the Chinese capital market, controlling shareholders have an incentive to use stock trading halt strategies to maintain stock price stability and maintain control, which in turn can be detrimental to the interests of other large shareholders. Therefore, when MLS hold a large and high number of shares, they are more

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<sup>7</sup>For example, the Shenzhen Stock Exchange issued an inquiry letter to Shangying Global Co., Ltd (stock code: 600146) in May 2020, asking it to explain its stock trading halts for repeatedly releasing good news through major asset restructuring and asset acquisition matters and to cooperate with major shareholders to reduce their shareholdings for cash.

capable of using their influence and voice to fulfill their monitoring responsibilities and exert effective governance effects. On the other hand, MLS are more motivated to monitor abnormal stock trading halts for safeguarding their own rights and interests. If the company abnormally suspends trading of its stocks for a long time, it will deprive small and medium-sized shareholders' right to participate in fair-trading, and significantly reduce the information efficiency of the capital market. Since non-controlling shareholders do not enjoy control right in listed companies, their benefit mainly comes from the operating income of listed companies. Therefore, when controlling shareholders have private profit-grabbing behaviours, MLS have stronger motivation to monitor and are more willing to curb the arbitrary trading halt of the company's stock. In particular, when the number of MLS is larger and their shareholding percentage is higher, their voice in the company is stronger, and they are more capable of performing their monitoring duties and exerting effective governance effects compared to small and medium shareholders. Other large shareholders require controlling shareholders and managers to improve information disclosure, explain the rationality of the suspension behaviour, fully disclose the progress of planning matters, and thereby compress the hidden space occupied by controlling shareholders' interests. Based on the above analysis, this paper proposes the following hypothesis:

**H1a:** Based on the monitoring view, the existence of MLS can inhibit abnormal stock trading halts.

On the contrary, other large shareholders also weigh the benefits and costs of stock trading halts. When the benefits of trading halts outweigh the costs, other large shareholders tend to collude with controlling shareholders to form an alliance of interests and jointly exploit and encroach on the rights and interests of small and medium shareholders, thereby promoting abnormal stock trading halts. Prior literature shows that other large shareholders do not always play a monitoring role in corporate governance. When multiple large shareholders' shareholdings are relatively close, they may tend to adopt collusive strategies for tunnelling the company (Cheng et al., 2013), engage in inefficient investment activities (Lyu & Li, 2015), misuse corporate resources, and thus reduce firm value (Cai et al., 2016). Especially in emerging markets where the institutional environment is not as developed, the intertwined cross-shareholdings and nepotism among large shareholders can exacerbate their collusive motives. In addition, the existence of information asymmetry makes it difficult for regulators to effectively monitor and govern this phenomenon. Specifically, listed companies in China often apply for trading halts on the grounds of 'major asset reorganization' and 'planning for major matters', and lack the necessary information disclosure and investor communications during the trading halt period. They then apply for a resumption of trading when the market is ripe, which facilitates the collusion between MLS and controlling shareholders. When large shareholders reach mutually beneficial agreements and action goals, they will apply for resumption of trading. When the large shareholders have pledged shares and related-party transactions, MLS may join hands to stabilise the stock price through stock trading halts and engage in diversified market value management practices. Such strategic halts behaviour may

also have greater benefits for other large shareholders. Unlike mature foreign capital markets that impose strict restrictions and regulations on stock halts, China has adopted a 'Processing upon application' approach for listed companies to voluntarily apply for halt for a long period of time and lacks clear regulations on the duration, procedures, and information disclosure during the halt period (Shi et al., 2019). This results in very low costs for listed companies to apply for stock trading halts. Non-controlling large shareholders may weigh the benefits and costs of abnormal halts and choose to collude with controlling shareholders. Therefore, the suspension system may become a tool for large shareholders to exploit the interests of small and medium shareholders, which is not conducive to the healthy and stable developments of the capital market. Based on the above analysis, this paper proposes the competing hypothesis as follows:

**H1b:** Based on the collusion view, the existence of MLS may encourage abnormal stock trading halts.

### 3. Research design

#### 3.1. Sample selection and data source

Our initial sample comprises A-share listed companies in Shanghai and Shenzhen stock exchanges from year 2003–2019. We choose year 2003 as the starting point of our sample because companies disclosed the data of the top 10 shareholders and concert parties of listed companies in detail since 2003. Our actual sample ends in 2020 due to the use of  $t + 1$  period abnormal trading halt variables for regression. Based on the initial sample, we screen the sample according to the following criteria: (1) Considering the drastic abnormal stock returns during the share-split reform in 2006 and the drastic stock price crash in 2015, we exclude year 2006 and year 2015 to reduce the impact of institutional changes in the capital market. (2) We exclude observations in the financial industry according to the industry classification of CSRC in 2012. (3) We exclude companies without controlling shareholders whose shareholding percentage is greater than 10%. (4) We exclude observations with a leverage ratio greater than 1. (5) We exclude observations with missing data. The final sample contains 28,820 firm-year observations representing 3,479 listed companies. To avoid the effect of extreme outliers, all continuous variables are winsorised at the 1% and 99% levels. We obtain data on listed companies' concert parties from the Choice database, supplemented by manually collected annual reports. We obtain stock trading halt and resumption data, corporate finance and corporate governance data from the CSMAR database and the China Research Data Service Platform (CNRDS).

#### 3.2. Variable definition

##### 3.2.1. Multiple large shareholders

Following prior literature (Attig et al., 2008; Jiang et al., 2017; Luo & Huang, 2020), this paper adopts 10% of the shareholdings as the criterion for large

shareholders.<sup>8</sup> Considering that some shareholders of listed companies in China may enter into concerted party agreements and act in concert due to kinship and synergy of interests, we follow existing literature and combine the cases of concerted party agreements to define shareholders with 10% or more voting rights as large shareholders. Specifically, this paper uses three variables to measure MLS: (1) MLS dummy variable (*MULTI\_D*), which equals to 1 if the company has a large shareholder with more than 10% shareholding in addition to the controlling shareholder and 0 otherwise. (2) The number of MLS (*MULTI\_N*), which equals to the number of non-controlling large shareholders in addition to the controlling shareholder. (3) The total shareholding percentage of MLS (*MULTI\_P*), which equals to the sum of the shareholding ratios of non-controlling large shareholders other than the controlling shareholder.

### 3.2.2. Abnormal stock trading halt

Following Shi et al. (2019), this paper determines whether the trading halt is an abnormal trading halt from the perspective of the type of event, duration, and adequacy of information disclosure. There are four criteria for defining an abnormal stock trading halt: (1) The reason for application for trading halt is a non-public offering that does not involve a major asset reorganisation and the trading halt lasts more than 10 trading days or involves an asset reorganisation but the trading halt lasts more than 1 month or terminates planning for non-public issuance of stocks but does not disclose important information such as the reason for termination. (2) The reason for application for trading halt is a major asset reorganisation and the trading halt lasts more than 3 months or does not disclose important information such as the underlying assets and purchase methods within 1 month. (3) The reason for application for trading halt is other major events and the trading halt lasts more than 10 trading days or terminates the planning of major events, but does not disclose important information. (4) The reason for application for trading halt is other matters or the specific reason not disclosed, and the trading halt lasts more than 10 trading days. *HALT* represents the dummy variable of abnormal stock trading halt, which takes the value of 1 if the company engages in abnormal stock trading halt in the current year, and 0 otherwise.

### 3.3. Research model

To test our main hypothesis, i.e. the effect of MLS on the abnormal stock trading halt, we construct the following Probit regression model following prior literature (Luo et al., 2020; Shi et al., 2019):

$$\begin{aligned} HALT_{i,t} + 1 = & \alpha_0 + \alpha_1 MULTI_{i,t} + \alpha_2 SIZE_{i,t} + \alpha_3 LEV_{i,t} + \alpha_4 ROA_{i,t} + \alpha_5 CUR_{i,t} + \alpha_6 TOP1_{i,t} \\ & + \alpha_7 SOE_{i,t} + \alpha_8 MANO_{i,t} + \alpha_9 BIND_{i,t} + \alpha_{10} BSIZE_{i,t} + \alpha_{11} DUA_{i,t} + \alpha_{12} AGE_{i,t} \\ & + \alpha_{13} PLD_{i,t} + \alpha_{14} NORMAL_{i,t} + \alpha_{15} HISHALT_{i,t} + \alpha_{16} RETURN_{i,t} + \alpha_{17} VOL_{i,t} \\ & + \alpha_{18} MTB_{i,t} + \alpha_{19} Z_5 CORE_{i,t} + \alpha_{20} FCF_{i,t} + \alpha_{21} TURNOVER_{i,t} + \alpha_{22} MARKET_{i,t} \\ & + Industry\ FE + Year\ FE + \varepsilon_{i,t} \end{aligned}$$

(1)

<sup>8</sup>In the robustness test, we also use 5% shareholding ratio as the defining criterion for large shareholders, and the conclusion remains robust.

where  $i$  represents the firm,  $t$  represents the year,  $a_i$  is the estimated coefficient corresponding to each control variable, and  $\varepsilon$  is the error term. The explanatory variable is the abnormal trading halt dummy variable (*HALT*), and the explanatory variables include the MLS dummy variable (*MULTI\_D*), the number of MLS (*MULTI\_N*), and the percentage of shares held by MLS (*MULTI\_P*). The control variables include firm financial characteristic variables: firm size (*SIZE*), firm leverage (*LEV*), profitability (*ROA*), and liquidity (*CUR*). We also include corporate governance characteristic variables: ownership concentration (*TOP1*), state ownership (*SOE*), management ownership (*MANO*), percentage of independent directors (*BIND*), board size (*BSIZE*), chairman and CEO duality (*DUA*), and firm age (*AGE*). Considering that stock pledges of large shareholders' equity may prompt companies to engage in opportunistic behaviours such as abnormal stock trading halt (Luo et al., 2020), this paper controls for large shareholders' stock pledge variables (*PLD*). In addition, we control whether the company has a normal trading halt (*NORMAL*), the average number of stock trading halts in previous years (*HISHALT*), the average stock return (*RETURN*), average stock volatility (*VOL*), firm growth (*MTB*), bankruptcy risk index (*Z\_SCORE*), free cash flow (*FCF*), annual stock turnover rate (*TURNOVER*), and marketisation index (*MARKET*). In addition, industry and year fixed effects are included in the model to control for the effects of industry factors and macroeconomic fluctuations. The standard errors are clustered at the firm level. Table 1 reports detailed variable definitions.

## 4. Empirical result

### 4.1. Descriptive statistics

Table 2 presents the descriptive statistics. Panel A reports the descriptive statistics of the main variables. The mean value of *HALT* is 0.083, suggesting that 8.3% of the sample has experienced abnormal stock trading halts. The statistics also indicate that listed companies in China frequently arbitrarily apply for stock trading halts. The mean value of *MULTI\_D* is 0.395, indicating that 39.5% of the sample firms have MLS, indicating that the ownership structure with MLS is relatively common among listed companies in China, and this result is also consistent with existing studies (Jiang et al., 2018; Luo & Huang, 2020). The maximum value of the number of MLS (*MULTI\_N*) is 5, indicating that there are at most five other large shareholders other than the controlling shareholder. The mean value of MLS ownership (*MULTI\_P*) is 0.079, while within the subsample with MLS, the mean value of this variable is 0.201. Panel B reports the distribution of non-controlling large shareholders in detail. There are 32.68% (9,417 observations) of the sample with one non-controlling large shareholder. The sample with two non-controlling large shareholders reaches 6.01% (1,731 observations), and the sample with three or more non-controlling large shareholders has a total of 0.80% (231 observations in total).

### 4.2. Correlation analysis

Table 3 reports the correlation analysis for the main variables. The MLS variables (*MULTI\_D*, *MULTI\_N*, and *MULTI\_P*) are all negatively and significantly correlated with the probability of abnormal trading halt (*HALT*), indicating that the existence of MLS has a significant inhibitory effect on abnormal stock trading halts, without controlling for other factors.

**Table 1.** Variable definitions.

Variables	Definition
<i>HALT</i>	A dummy variable that takes the value of 1 if firm <i>i</i> has an abnormal trading halt in year <i>t</i> , and 0 otherwise
<i>MULTI_D</i>	A dummy variable that takes the value of 1 if the company has a large shareholder with more than 10% shareholding except the controlling shareholder, and 0 otherwise
<i>MULTI_N</i>	The number of non-controlling large shareholders except the controlling shareholder
<i>MULTI_P</i>	The sum of the percentage of non-controlling large shareholders' shareholdings except the controlling shareholder
<i>SIZE</i>	The natural logarithm of total assets
<i>LEV</i>	Year-end total liabilities divided by total assets
<i>ROA</i>	Net profit divided by year-end total assets
<i>CUR</i>	Year-end current assets divided by total assets
<i>TOP1</i>	The number of shares held by the largest shareholder divided by the total number of shares
<i>SOE</i>	A dummy variable that takes the value of 1 if the listed company is state-controlled, and 0 otherwise
<i>MANO</i>	The number of shares held by managers divided by total number of shares
<i>BIND</i>	The number of independent directors divided by the total number of board of directors
<i>BSIZE</i>	Total number of board of directors
<i>DUA</i>	A dummy variable that takes the value of 1 if the chairman and the CEO is the same person, and 0 otherwise
<i>AGE</i>	The natural logarithm of the difference between year <i>t</i> minus the year that firm <i>i</i> established plus 1
<i>PLD</i>	A dummy variable that takes the value of 1 if firm <i>i</i> has large shareholders' stock pledge in year <i>t</i> , and 0 otherwise
<i>NORMAL</i>	A dummy variable that takes the value of 1 if firm <i>i</i> has a normal trading halt in year <i>t</i> , and 0 otherwise
<i>HISHALT</i>	The average annual number of stock trading halt since the company went public
<i>RETURN</i>	Average weekly return of firm <i>i</i> 's stock in year <i>t</i>
<i>VOL</i>	Standard deviation of the weekly return of firm <i>i</i> 's stock in year <i>t</i>
<i>MTB</i>	Total market value divided by year-end total assets
<i>Z_SCORE</i>	$Z\_SCORE = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.999X5$ proposed by Altman (1968) and Altman (2013). $X1 =$ working capital/total assets; $X2 =$ retained earnings/total assets; $X3 =$ EBITDA/total assets; $X4 =$ total market value/total assets; $X5 =$ operating income/total assets
<i>FCF</i>	Net cash flow from operating activities plus net cash flow from investing activities less interest expenses, divided by operating income
<i>TURNOVER</i>	Total trading volume divided by the number of shares outstanding
<i>MARKET</i>	The marketisation index in the province where the company is registered

### 4.3. Multivariate regression analysis

Table 4 presents the main regression results. The coefficient on MLS dummy variable (*MULTI\_D*) is significantly negative at the 1% level, indicating that the existence of MLS can significantly reduce the probability of abnormal stock trading halt, compared to the ownership structure of a single large shareholder. The coefficient on the number of MLS (*MULTI\_N*) is significantly negative at the 1% level, suggesting that the number of MLS can reduce the occurring probability of abnormal stock trading halt. The coefficient on the sum of shareholdings of non-controlling large shareholders (*MULTI\_P*) is significantly negative at the 1% level, indicating that when the shareholdings of MLS increase, their motivation and ability to monitor the managers increase, and they can curb abnormal trading halt more effectively. The above results support hypothesis H1a, indicating that the ownership structure with MLS is an effective corporate governance mechanism that can have a monitoring effect on abnormal trading halt activities.

This paper further considers the economic significance of the explanatory variables. The average marginal effect of the MLS dummy variable (*MULTI\_D*) is  $-0.008$ , indicating that, on average, the probability of an abnormal trading halt occurs is 0.8% lower for companies with MLS ownership structures than that for companies with a single large

**Table 2.** Descriptive statistics.

Variables	N	Mean	Std	Min	P25	Median	P75	Max
<b>Panel A Descriptive statistics of main variables</b>								
<i>HALT</i>	28,820	0.083	0.277	0.000	0.000	0.000	0.000	1.000
<i>MULTI_D</i>	28,820	0.395	0.489	0.000	0.000	0.000	1.000	1.000
<i>MULTI_N</i>	28,820	0.472	0.651	0.000	0.000	0.000	1.000	5.000
<i>MULTI_P</i>	28,820	0.079	0.112	0.000	0.000	0.000	0.150	0.667
<i>SIZE</i>	28,820	21.986	1.307	19.006	21.064	21.818	22.715	26.662
<i>LEV</i>	28,820	0.452	0.210	0.053	0.289	0.449	0.607	0.930
<i>ROA</i>	28,820	0.033	0.072	-0.389	0.013	0.035	0.064	0.199
<i>CUR</i>	28,820	0.555	0.210	0.000	0.407	0.569	0.715	0.963
<i>TOP1</i>	28,820	0.356	0.152	0.087	0.236	0.334	0.461	0.750
<i>SOE</i>	28,820	0.439	0.496	0.000	0.000	0.000	1.000	1.000
<i>MANO</i>	28,820	0.043	0.111	0.000	0.000	0.000	0.009	0.562
<i>BIND</i>	28,820	0.375	0.095	0.000	0.333	0.375	0.429	0.625
<i>BSIZE</i>	28,820	9.592	2.779	0.000	8.000	9.000	11.000	29.000
<i>DUA</i>	28,820	0.239	0.427	0.000	0.000	0.000	0.000	1.000
<i>AGE</i>	28,820	2.684	0.435	0.000	2.485	2.773	2.996	4.159
<i>PLD</i>	28,820	0.267	0.442	0.000	0.000	0.000	1.000	1.000
<i>NORMAL</i>	28,820	0.577	0.494	0.000	0.000	1.000	1.000	1.000
<i>HISHALT</i>	28,820	0.166	0.138	0.000	0.063	0.125	0.235	1.333
<i>RETURN</i>	28,820	-0.001	0.001	-0.014	-0.002	-0.001	-0.001	0.000
<i>VOL</i>	28,820	0.047	0.018	0.016	0.034	0.044	0.057	0.106
<i>MTB</i>	28,820	0.200	0.188	0.014	0.081	0.143	0.249	1.168
<i>Z_SCORE</i>	28,820	6.062	8.362	-0.821	1.884	3.391	6.495	59.07
<i>FCF</i>	28,820	-0.022	0.444	-2.565	-0.059	0.023	0.102	1.522
<i>TURNOVER</i>	28,820	5.444	4.155	0.241	2.397	4.284	7.287	25.557
<i>MARKET</i>	28,820	7.837	1.700	3.480	6.620	7.930	9.350	11.040
<i>HALT</i>	28,820	0.083	0.277	0.000	0.000	0.000	0.000	1.000
<b>Panel B The sample distribution of non-controlling large shareholders</b>								
Non-controlling large shareholders		0	1	2	3	4	5	
N		17,441	9,417	1,731	203	26	2	
Percent		60.52%	32.68%	6.01%	0.70%	0.09%	0.01%	

Note: \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively.

**Table 3.** Correlation analysis of the main variables.

	(1)	(2)	(3)	(4)
<i>HALT</i>	(1)	1	-0.011*	-0.011*
<i>MULTI_D</i>	(2)	-0.011*	1	0.982***
<i>MULTI_N</i>	(3)	-0.011*	0.898***	1
<i>MULTI_P</i>	(4)	-0.016***	0.874***	0.925***

Note: \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The left below triangle presents Pearson correlation analyses while the right triangle above shows Spearman correlation results. The results of correlation analysis of control variables are omitted for brevity.

shareholder.<sup>9</sup> The average marginal effect of the number of MLS (*MULTI\_N*) is -0.006, indicating that, on average, the probability of a firm experiencing an arbitrary trading halt decreases by 0.6% for each additional large shareholder other than the controlling shareholder. The average marginal effect of the sum of the shareholdings of MLS (*MULTI\_P*) is -0.039, suggesting that, on average, the probability of a firm experiencing an abnormal stock trading halt decreases by 3.9% when the ownership percentage of MLS increases by 1%.

<sup>9</sup>Since the estimated coefficients of the Probit model do not imply partial derivatives, in order to examine the degree of influence of multiple large shareholders on the probability of abnormal stock trading halt, this paper further calculates the average marginal effects of the explanatory variables using the margin, dydx(\*) command in Stata.

**Table 4.** Regression result of the impact of MLS on abnormal trading halt.

Variables	HALT		
	(1)	(2)	(3)
<i>MULTI_D</i>	-0.071*** (-2.60)		
<i>MULTI_N</i>		-0.056*** (-2.61)	
<i>MULTI_P</i>			-0.348*** (-2.80)
<i>SIZE</i>	-0.034** (-2.19)	-0.034** (-2.18)	-0.033** (-2.09)
<i>LEV</i>	0.272*** (3.23)	0.272*** (3.22)	0.270*** (3.20)
<i>ROA</i>	-1.332*** (-6.06)	-1.329*** (-6.04)	-1.333*** (-6.06)
<i>CUR</i>	-0.211*** (-3.00)	-0.212*** (-3.01)	-0.210*** (-2.98)
<i>TOP1</i>	-0.106 (-1.10)	-0.112 (-1.16)	-0.109 (-1.14)
<i>SOE</i>	0.056* (1.87)	0.056* (1.85)	0.057* (1.88)
<i>MANO</i>	-0.079 (-0.64)	-0.070 (-0.57)	-0.073 (-0.59)
<i>BIND</i>	-0.117 (-0.66)	-0.117 (-0.67)	-0.117 (-0.67)
<i>BSIZE</i>	0.004 (0.76)	0.004 (0.77)	0.004 (0.76)
<i>DUA</i>	0.007 (0.22)	0.006 (0.19)	0.007 (0.22)
<i>AGE</i>	-0.020 (-0.56)	-0.020 (-0.56)	-0.020 (-0.56)
<i>PLD</i>	0.111*** (3.36)	0.111*** (3.34)	0.110*** (3.33)
<i>NORMAL</i>	0.755*** (20.38)	0.754*** (20.37)	0.754*** (20.36)
<i>HISHALT</i>	3.753*** (36.90)	3.751*** (36.90)	3.753*** (36.87)
<i>RETURN</i>	-0.088 (-0.25)	-0.086 (-0.24)	-0.090 (-0.25)
<i>VOL</i>	3.193 (1.31)	3.196 (1.31)	3.172 (1.30)
<i>MTB</i>	0.023** (2.20)	0.023** (2.21)	0.023** (2.23)
<i>Z_SCORE</i>	0.003 (1.30)	0.003 (1.30)	0.003 (1.32)
<i>FCF</i>	0.013 (0.45)	0.013 (0.45)	0.013 (0.47)
<i>TURNOVER</i>	-0.011** (-2.44)	-0.011** (-2.41)	-0.011** (-2.43)
<i>MARKET</i>	0.000 (0.04)	0.000 (0.03)	0.000 (0.06)
Constant	-4.095*** (-7.96)	-4.102*** (-7.97)	-4.136*** (-8.02)
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	28,820	28,820	28,820
Pseudo R <sup>2</sup>	0.283	0.283	0.283

Note: Z-statistics are reported in the brackets. Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively.

In terms of control variables, the coefficients on firm size (*SIZE*), profitability (*ROA*), liquidity (*CUR*) and annual stock turnover (*TURNOVER*) are significantly negative at least at the 5% level, indicating that firms with larger size, better profitability, better liquidity and higher annual stock turnover rate are less likely to experience discretionary abnormal trading halts. On the contrary, the coefficients on leverage (*LEV*), state ownership (*SOE*), stock pledge by large shareholders (*PLD*), whether there is a normal trading halt (*NORMAL*), the average number of stock trading halts in previous years (*HISHALT*) and firm growth (*MTB*) is significantly positive at least at the 10% statistical level. The above results suggest that higher level of indebtedness, state-controlled enterprises, the presence of stock pledge by large shareholders, firms experiencing normal trading halts, higher average number of stock trading halts in previous years and higher growth rate increase the likelihood of arbitrary trading halts.

## 5. Robustness test

### 5.1. Controlling endogeneity problem

#### 5.1.1. Firm-fixed effects model

Our regression model may suffer from omitted variable bias. Some firm-level characteristics that do not change over time may be omitted from the regression model, and these factors may affect both the ownership structure of MLS and the abnormal trading halts. In order to control for potential omitted variable bias, we adopt the firm-fixed effects model to conduct robustness checks. Panel A of [Table 5](#) reports the result. The results show that the estimated coefficients of *MULTI\_D*, *MULTI\_N*, and *MULTI\_P* are all negative and significant at the 1% level, indicating that our results still hold after controlling for potential omitted variable bias.

#### 5.1.2. Heckman two-stage model

The formation of MLS ownership structure may not be random. Firms with higher agency costs and managerial opportunistic tendencies are more likely to form the ownership structure with MLS. Therefore, this paper adopts the Heckman two-stage approach to control the potential self-selection problem. In the first stage, we construct a Probit model of the factors influencing the ownership structure of MLS. The explanatory variable is the MLS dummy variable (*MULTI\_D*). Following previous literature (Fang et al., 2018), the instrumental variable we selected in the first stage is the natural logarithm of the number of venture capital firms in the province where the firm's IPO year is located (*IV\_VCPE*). Venture capital firms tend to invest in firms close to their region, making it more likely that the firm will form an MLS ownership structure. However, the number of venture capital does not directly affect a firm's decision to apply for stock trading halts. Unreported first-stage result shows that the estimated coefficient on *IV\_VCPE* is significantly positive at the 5% level, indicating that the instrumental variable meets the correlation requirement. Panel B of [Table 5](#) reports the results of Heckman's second-stage regression result. MLS variables remain significantly negative after the inclusion of the inverse Mills ratio (IMR), indicating that the findings of this paper are not confounded by the self-selection problem. The second-stage results also suggest that firms with MLS have a lower probability of engaging in abnormal stock trading halts.

Table 5. Controlling endogeneity problem.

		HALT		
Variables	(1)	(2)	(3)	
<b>Panel A Firm-fixed effect model</b>				
<i>MULTI_D</i>	-0.210*** (-2.60)			
<i>MULTI_N</i>		-0.192*** (-3.09)		
<i>MULTI_P</i>				-1.242*** (-3.16)
Controls	YES	YES	YES	
Firm FE	YES	YES	YES	
Year FE	YES	YES	YES	
Observations	14,917	14,917	14,917	
Pseudo R <sup>2</sup>	0.237	0.237	0.237	
		HALT		
Variables	(1)	(2)	(3)	
<b>Panel B Heckman two-stage sample selection model</b>				
<i>MULTI_D</i>	-0.071** (-2.57)			
<i>MULTI_N</i>		-0.056*** (-2.60)		
<i>MULTI_P</i>				-0.346*** (-2.77)
<i>IMR</i>	0.299 (0.62)	0.340 (0.70)	0.306 (0.63)	
Constant	-4.677*** (-4.38)	-4.764*** (-4.46)	-4.731*** (-4.43)	
Controls	YES	YES	YES	
Industry FE	YES	YES	YES	
Year FE	YES	YES	YES	
Observations	28,820	28,820	28,820	
Pseudo R <sup>2</sup>	0.283	0.283	0.283	
		HALT		
		(1)	(2)	
Variables	A single large shareholder changes to MLS		MLS change to a single large shareholder	
<b>Panel C Difference-in-differences model</b>				
<i>TREAT</i> × <i>POST</i>		-1.051*** (-2.80)		-0.368 (-1.08)
Controls	YES		YES	
Firm FE	YES		YES	
Year FE	YES		YES	
Observations	2,654		1,464	
Pseudo R <sup>2</sup>	0.125		0.185	
		HALT		
Variables	(1)	(2)	(3)	
<b>Panel D PSM regression result</b>				
<i>MULTI_D</i>	-0.070** (-2.46)			
<i>MULTI_N</i>		-0.051** (-2.40)		
<i>MULTI_P</i>				-0.299** (-2.37)
Constant	-2.468*** (4.70)	-2.473*** (-4.71)	-2.492*** (-4.75)	

(Continued)

Table 5. (Continued).

Variables	HALT		
	(1)	(2)	(3)
Controls	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	22,684	22,684	22,684
Pseudo R <sup>2</sup>	0.251	0.251	0.251

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity. The reason why the sample size in Panel A is smaller than the full sample is that some firms have never experienced abnormal trading halts during the sample period. Therefore, this group of firms is automatically excluded from the fixed effects dichotomous choice model estimation because the explanatory variable whether abnormal trading halts (*HALT*) did not change throughout the sample period.

### 5.1.3. Difference-in-differences (DID) model

To better identify the causal effect of MLS on abnormal stock trading halts, we follow Jiang et al. (2017) and Zhu et al. (2018) and use a difference-in-differences (DID) model to examine the changes in the abnormal stock trading halts of companies before and after changes in their ownership structure. Specifically, when the treatment group includes the companies that change from a single large shareholder to MLS during the sample period, the control group includes companies that have been single large shareholders during the sample period. Alternatively, when the treatment group includes companies that change from MLS to a single large shareholder during the sample period, the control group includes companies that have been MLS during the sample period. We construct the DID regression model as follows:

$$\begin{aligned}
 HALT_{i,t} + 1 = & \beta_0 + \beta_1 TREAT_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 ROA_{i,t} + \beta_5 CUR_{i,t} + \beta_6 TOP1_{i,t} \\
 & + \beta_7 SOE_{i,t} + \beta_8 MANO_{i,t} + \beta_9 BIND_{i,t} + \beta_{10} BSIZE_{i,t} + \beta_{11} DUA_{i,t} + \beta_{12} AGE_{i,t} \\
 & + \beta_{13} PLDi_{i,t} + \beta_{14} NORMAL_{i,t} + \beta_{15} HISHALT_{i,t} + \beta_{16} RETURN_{i,t} + \beta_{17} VOL_{i,t} \\
 & + \beta_{18} MTB_{i,t} + \beta_{19} Z_5 CORE_{i,t} + \beta_{20} FCF_{i,t} + \beta_{21} TURNOVER_{i,t} + \beta_{22} MARKET_{i,t} \\
 & + Firm\ FE + Year\ FE + \varepsilon_{i,t}
 \end{aligned}
 \tag{2}$$

where *TREAT* is a dummy variable for the change in ownership structure, which takes the value of 1 for the treatment group (the shareholding structure change from MLS to one large controlling shareholder or one large controlling shareholder to MLS) and 0 for the control group (the ownership structure remains MLS or a single large shareholder). The other variables are defined as in model (1).

Panel C of Table 5 reports the regression results of the DID. Column (1) shows that the change in the firm's abnormal trading halts after the change in the ownership structure from a single large shareholder to MLS. Column (2) shows the change in the firm's abnormal trading halts after the change in the ownership structure from MLS to a single large shareholder. In column (1), the coefficient on *TREAT* × *POST* is significantly negative, which indicates that the probability of trading halts is significantly lower after the change in the shareholding structure of companies with a single large shareholder to MLS, compared with companies with no change in the ownership structure. Our results support hypothesis H1a, indicating that MLS can play a good monitoring effect and inhibit

the trading halt behaviour of listed companies. However, in column (2), the coefficient on  $TREAT \times POST$  is insignificant, probably because the good corporate governance and information disclosure mechanism constructed with the help of MLS has a certain inertia. In the short period when other large shareholders withdraw, the firm's abnormal trading halt does not appear to increase significantly.

#### **5.1.4. Propensity score matching (PSM)**

There may be systematic differences between firms with MLS ownership structure and firms with a single large shareholder ownership structure, which may cause bias in this paper. To alleviate this endogeneity problem, following Jiang et al. (2017), this paper uses the propensity score matching method (PSM) method to perform a robustness check. Specifically, we use a 1:1 nearest neighbour matching method with replacement, and match 11,342 observations with an MLS ownership structure with 11,342 observations with a single large shareholder ownership structure. The covariates in the matching process are all the control variables in model (1). The unreported covariate balance results suggest that none of the covariates are significantly different after matching. Model (1) was regressed again using the matched sample. Panel D of Table 5 reports the results. The coefficients on all three measures of MLS are significantly negative at the 5% level, indicating that the findings still hold after controlling for the above systematic differences.

### **5.2. Other robustness checks**

#### **5.2.1. Alternative MLS measures**

We use 10% shareholding as the criterion of large shareholder in the main regression. There are differences in the definition criteria of large shareholders in practice and in literature. For example, the US Securities and Exchange Act requires that shareholders holding more than 5% of the shares to publicly disclose their position and transaction details, so some of the existing literature (Bharath et al., 2013; Edmans et al., 2013) adopt 5% as the criterion for defining a large shareholder. We generate an alternative MLS dummy variable ( $MULTI\_D\_5$ ), the number of MLS ( $MULTI\_N\_5$ ), and MLS shareholding percentage ( $MULTI\_P\_5$ ) into model (1). Panel A of Table 6 reports the empirical results. The results show that the MLS variables are significantly negative, indicating that our findings are robust.

#### **5.2.2. Alternative sample period**

To exclude other possible reasons for the findings, this paper also changes the sample period to enhance the reliability of the findings. In November 2018, 'The Guidance on Improving the Stock Suspension and Resumption System of Listed Companies' strengthens the regulation of companies' stock trading halt behaviour. To rule out the impact of the tightening of external regulation, we exclude years 2018 and 2019. Panel B of Table 6 report this empirical result. The results show that the coefficients on MLS are still significantly negative at the 1% level and the findings of this paper still hold.

#### **5.2.3. The impact of MLS on the normal trading halts**

Our research finds that MLS ownership structure has good corporate governance effects and thus reduces abnormal stock trading halts that serve controlling

**Table 6.** Other robustness checks.

Variables	HALT		
	(1)	(2)	(3)
<b>Panel A Changing the criterion for defining MLS</b>			
<i>MULTI_D_5</i>	-0.088*** (-3.01)		
<i>MULTI_N_5</i>		-0.031** (-2.20)	
<i>MULTI_P_5</i>			-0.339*** (-2.88)
Constant	-4.039*** (-7.82)	-4.078*** (-7.90)	-4.115*** (-7.97)
Controls	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	28,820	28,820	28,820
Pseudo R <sup>2</sup>	0.283	0.283	0.283
<b>Panel B Excluding sample years with strict regulation period (2018, 2019)</b>			
<i>MULTI_D</i>	-0.090*** (-3.09)		
<i>MULTI_N</i>		-0.067*** (-2.98)	
<i>MULTI_P</i>			-0.433*** (-3.34)
Constant	-1.814*** (-4.44)	-1.824*** (-4.47)	-1.867*** (-4.57)
Controls	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	19,634	19,634	19,634
Pseudo R <sup>2</sup>	0.217	0.217	0.217
<b>Panel C The impact of MLS on normal trading halt</b>			
<i>MULTI_D</i>	0.001 (0.06)		
<i>MULTI_N</i>		-0.018 (-1.09)	
<i>MULTI_P</i>			-0.147 (-1.49)
Constant	-2.049*** (-5.69)	-2.053*** (-5.70)	-2.066*** (-5.73)
Controls	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	27,977	27,977	27,977
Pseudo R <sup>2</sup>	0.513	0.513	0.513

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity.

shareholders' self-interest. To enhance the reliability of this finding, as a comparison of the results, this paper further examines the effect of MLS on firms' normal trading halts. Table 6 Panel C reports the test results. The coefficients on the three measures of MLS are insignificant when the explanatory variable is whether the company has engaged in normal trading halts (*HALT\_NORMAL*), indicating that the MLS ownership structure does not have an impact on firms' normal trading halts. The above findings from another perspective suggest that the controlling shareholders take advantage of the abnormal trading halts to commit benefit encroachment, and the MLS can play a better inhibiting effect on abnormal trading halts.

## 6. Mechanism test and further analysis

### 6.1. Reduce the tunneling incentive of controlling shareholders

This paper expects that MLS can exert a monitoring effect to suppress controlling shareholders' motive of self-interest grabbing, and thus suppress abnormal stock trading halts. In order to test the influence mechanism of 'multiple large shareholders → inhibit controlling shareholders' motive of tunnelling → reduce abnormal stock trading halts', following prior literature (Jiang et al., 2020), we construct the following interaction term model:

$$\begin{aligned} TUNNELLING_{i,t+1} = & \theta_0 + \theta_1 HALT_{i,t+1} + \theta_2 HALT_{i,t+1} \times MULTI_{i,t} \\ & + \theta_3 MULTI_{i,t} + \theta_i Controls + Industry FE + Year FE + \varepsilon_{i,t} \end{aligned} \quad (3)$$

where *TUNNELLING* represents the controlling shareholder tunnelling. Following Ye et al. (2007) and Wang et al. (2009), we use other receivables divided by total assets to measure the tunnelling behaviour of controlling shareholders. The larger the value of *TUNNELLING* represents more serious tunnelling behaviour of controlling shareholders. In model (3), we focus on the interaction between abnormal stock trading halts and multiple large shareholders (*HALT* × *MLS*). When the coefficient on the interaction term is significantly negative, it indicates that MLS can significantly suppress the controlling shareholder's tunnelling behaviour after abnormal stock trading halts. The measurement of other variables is consistent with model (1).

Table 7 reports the results of the mechanism by which MLS suppress the tunnelling behaviour of controlling shareholders after abnormal stock trading halts. The coefficient on abnormal stock trading halts (*HALT*) is significantly positive at least at the level of 10%, indicating that after the abnormal stock trading halt, the controlling shareholder indeed engages in interest encroachment behaviour. The coefficient on abnormal stock trading halts and interaction with multiple major shareholders (*HALT* × *MLS*) is significantly negative at least at the level of 5%, indicating that other large shareholders can effectively inhibit the tunnelling behaviour of controlling shareholders, which supports the mechanism in the research hypothesis.

**Table 7.** Mechanism analysis: reducing controlling shareholder's tunnelling incentives.

Variables	TUNNELING		
	(1)	(2)	(3)
<i>MULTI_D</i>	-0.003*** (-5.34)		
<i>MULTI_D</i> × <i>HALT</i>	-0.005*** (-2.77)		
<i>MULTI_N</i>		-0.002*** (-9.01)	
<i>MULTI_N</i> × <i>HALT</i>		-0.001** (-2.04)	
<i>MULTI_P</i>			-0.011*** (-6.18)
<i>MULTI_P</i> × <i>HALT</i>			-0.015** (-2.37)
<i>HALT</i>	0.004** (2.40)	0.002* (1.69)	0.002* (1.90)
Constant	0.057*** (9.15)	0.057*** (9.17)	0.056*** (9.00)
Controls	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	28,820	28,820	28,820
Pseudo R <sup>2</sup>	0.143	0.144	0.143

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity.

## 6.2. Increase the likelihood of board dissent votes

Compared to small and medium-sized shareholders, multiple major shareholders have the ability to exert a monitoring effect on controlling shareholders by appointing directors and increasing their dissent votes, thereby reducing abnormal stock trading halts behaviour. In order to test the monitoring effect of multiple major shareholders' board dissent votes, we use the mediation model proposed by Wen et al. (2004). There are three steps to conduct the mediation test: the first step tests the effect of the independent variables on the dependent variable; the second step tests the effect of the independent variables on the mediating variable; and the third step tests the joint effect of independent and mediating variables on the dependent variables. The mediating effect models are as follows:

$$HALT_{i,t+1} = \beta_0 + \beta_1 MULT_{i,t} + \beta_i Controls + IndustryFE + YearFE + \epsilon_{i,t} \quad (4)$$

$$VOTE_{i,t+1} = \gamma_0 + \gamma_1 MULT_{i,t} + \gamma_i Controls + IndustryFE + YearFE + \epsilon_{i,t} \quad (5)$$

$$HALT_{i,t+1} = \lambda_0 + \lambda_1 MULT_{i,t} + \lambda_2 VOTE_{i,t+1} + \lambda_i Controls + IndustryFE + YearFE + \epsilon_{i,t} \quad (6)$$

where  $\beta_0$ ,  $\gamma_0$  and  $\lambda_0$  represent the intercept terms,  $\beta_i$ ,  $\gamma_i$  and  $\lambda_i$  represent the estimated coefficients on each variable, and  $\epsilon$  is an error term. *VOTE* represents the mediating variable, non-controlling shareholder directors' dissenting voting behaviour. Following prior literature (Zhu et al., 2021), we measure *VOTE* as the natural logarithm of the number of dissenting opinions issued by non-controlling shareholder directors plus one. The other

variables are consistent with model (1). The steps for intermediary testing are as follows: First, we use model (4) to investigate the total effect of multiple large shareholders (*MULTI*) on abnormal stock trading halts. Second, in model (5), we use the non-controlling shareholder directors' dissenting voting behaviour (*VOTE*) as an independent variable to explore the impact of MLS on the board dissent votes. Finally, in model (6), we use multiple large shareholders (*MULTI*) and non-controlling shareholders' directors' dissenting voting behaviour (*VOTE*) together to test whether MLS increase the likelihood of directors' dissenting voting and therefore restrain abnormal trading halts.

Table 8 reports the mechanism testing results of board dissent voting. Table 4 reports the first step results. Columns (1) to (3) of Table 8 report the second step results. The coefficients on multiple large shareholder variables (*MULTI\_D*, *MULTI\_N*, *MULTI\_P*) are significantly positive, indicating that compared to companies with only a single controlling shareholder, companies with MLS have more dissent votes on boards, which suggests that MLS have a stronger monitoring effect on controlling shareholders. Columns (4) to (6) of Table 8 report the results of the third step. The coefficients of *MULTI* and *VOTE* are significantly negative, and the statistical Sobel Z value is significant, indicating that the dissenting voting behaviour of non-controlling shareholder directors plays a partial mediating effect on the inhibition effect of MLS on abnormal stock trading halts.

### 6.3. improve information disclosure quality

The monitoring effect of MLS helps companies to enhance information disclosure and reduce the room for controlling shareholders to conduct self-interest seeking activities, thus reducing opportunistic stock trading halts by firms' insiders. In order to verify the mechanism of 'multiple major shareholders → improve information disclosure quality → reduce abnormal stock trading halts', we adopt the disclosure information quality (*DISQUA*) issued by Shanghai and Shenzhen Stock Exchanges for listed companies to measure the quality of information disclosure. Higher *DISQUA* means better information disclosure quality. Table 9 reports result of the mechanism analysis of information disclosure quality.

**Table 8.** Mechanism analysis: increasing board dissent votes.

Variables	<i>VOTE</i>			<i>HALT</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>MULTI_D</i>	0.010*** (3.51)			-0.114*** (-4.14)		
<i>MULTI_N</i>		0.002* (1.75)			-0.038*** (-2.82)	
<i>MULTI_P</i>			0.027** (2.45)			-0.359*** (-3.22)
<i>VOTE</i>				-0.166* (-1.95)	-0.170** (-2.00)	-0.170** (-1.99)
Constant	0.052* (1.67)	0.052* (1.67)	0.072** (2.27)	-2.395*** (-8.45)	-2.409*** (-8.52)	-2.426*** (-8.57)
Controls	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	28,820	28,820	28,820	28,820	28,820	28,820
Adj R <sup>2</sup> /Pseudo R <sup>2</sup>	0.015	0.015	0.016	0.207	0.207	0.207
Sobel Z				-1.774*	-1.703*	-1.689*

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity.

In columns (1) to (3), the coefficients on the MLS variable are significantly positive, indicating that the coexistence of MLS significantly improves corporate disclosure quality. In columns (4) to (6), the coefficients on *DISQUA* are significantly negative, indicating that corporate disclosure quality is significantly and negatively related to the probability of abnormal stock trading halts. The estimated coefficients on the MLS variables are still all significantly negative at the 5% level, indicating that MLS reduce the probability of abnormal stock trading halts by improving information disclosure quality. In summary, the ownership structure with MLS effectively restrains the opportunistic behaviour of corporate insiders, reduces the agency costs of listed companies, improves the information disclosure quality, and thus inhibits the behaviour of abnormal stock trading halts.

#### 6.4. The monitoring ability of MLS on abnormal stock trading halts

Our findings suggest that non-controlling large shareholders inhibit abnormal stock trading halt by playing a good monitoring role. Furthermore, this paper explores the impact of multiple large shareholders' monitoring ability on stock trading halt. The number of shares held by MLS relative to the controlling shareholder determines whether they have sufficient power to counteract the controlling shareholder and thus restrain insiders' self-interest seeking behaviour. Following existing literature (Ben-Nasr et al., 2015; Jiang et al., 2017), this paper constructs two new variables to measure the monitoring ability of non-controlling large shareholders: (1) *MULTI\_DIFF* denotes the difference between the shareholding percentage of non-controlling large shareholders and the shareholding percentage of controlling shareholders. (2) *MULTI\_PER* denotes the ratio between the shareholding percentage of non-controlling large shareholders and that of controlling shareholders. The above two variables are brought into model (1). Table 10 reports the results. The results show that the greater the power of other large shareholders relative to controlling shareholders, the reduced the likelihood of experiencing abnormal stock trading halts. This result further suggests that MLS exert an effective monitoring effect.

**Table 9.** Mechanism analysis: improving information disclosure quality.

Variables	<i>DISQUA</i>			<i>HALT</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>MULTI_D</i>	0.094** (2.08)			-0.088** (-2.60)		
<i>MULTI_N</i>		0.091*** (2.73)			-0.065** (-2.57)	
<i>MULTI_P</i>			0.495** (2.44)			-0.368** (-2.41)
<i>DISQUA</i>				-0.178*** (-6.16)	-0.177*** (-6.13)	-0.178*** (-6.15)
Constant	9.254*** (13.13)	9.257*** (13.14)	9.224*** (13.09)	-4.691*** (-6.76)	-4.692*** (-6.77)	-4.713*** (-6.78)
Controls	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	21,397	21,397	21,397	21,018	21,018	21,018
Pseudo R <sup>2</sup>	0.142	0.143	0.142	0.347	0.347	0.347
Sobel Z				-2.697**	-3.269***	-3.085***

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity.

### 6.5. MLS, internal control quality and abnormal stock trading halts

This paper further explores whether the impact of MLS on abnormal stock trading halts varies across firms with different internal control quality. Internal control, as an important internal corporate governance mechanism, plays an important role in curbing opportunistic behaviour of corporate insiders (Luo et al., 2018). For companies with high quality of internal control, it is difficult for controlling shareholders to encroach on the resources of listed companies through related-party transactions, illegal guarantees, and uncompensated appropriation of funds, which in turn harm the interests of small and medium shareholders. Therefore, the agency problem caused by the conflict of interests between large and small shareholders is not serious (Zhong et al., 2014). On the contrary, for companies with lower quality of internal control, controlling shareholders are likely to override the company's internal control and encroach on the resources of the listed company through various ways. This may harm the interests of other shareholders, making agency conflicts more severe (Zhang et al., 2016). The existence of MLS ownership structure can monitor and restrain the controlling shareholders' self-interest grabbing behaviour and alleviate the type II agency problem. Therefore, this paper expects that the governance effect of MLS on abnormal trading halts is more pronounced in companies with lower quality of internal control.

Following previous literature (Luo et al., 2018), this paper uses the natural logarithm of the DIB internal control index to measure the quality of internal control (*IC*) of listed companies, where a larger value represents higher quality of internal control. We add the internal control quality (*IC*) and its interaction term with the MLS variables ( $MULTI \times IC$ ) into model (1). Table 11 reports the results. The regression results show that the estimated coefficients on the interaction term ( $MULTI \times IC$ ) are significantly positive at least at the 10% level, indicating that the inhibitory effect of MLS on abnormal stock trading halts is more pronounced among firms with lower internal control quality compared to those with higher internal control quality. The above results suggest that there is a substitution between internal control and MLS ownership structure in inhibiting abnormal trading halts triggered by agency conflicts.

**Table 10.** The impact of the monitoring power of MLS on abnormal trading halts.

Variables	HALT	
	(1)	(2)
<i>MULTI_DIFF</i>	-0.408*** (-3.33)	
<i>MULTI_PER</i>		-0.097** (-2.33)
Constant	-4.147*** (-8.05)	-4.092*** (-7.95)
Controls	YES	YES
Industry FE	YES	YES
Year FE	YES	YES
Observations	28,783	28,783
Pseudo R <sup>2</sup>	0.283	0.283

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity.

## 6.6. MLS, information transparency and abnormal stock trading halts

This paper further explores whether the impact of MLS on abnormal stock trading halts varies across firms with different information transparency. Lower information transparency provides a cover for controlling shareholders to seize control for private gain (Liu et al., 2008). In firms with lower information transparency, controlling shareholders have stronger incentives to commit tunnelling behaviours in order to seize control for private gain (Hong et al., 2011). Furthermore, controlling shareholders deliberately create an opaque information environment in order to encroach on the interests of small and medium shareholders (Zhou & Chen, 2006). On the contrary, in companies with high information transparency, investors can monitor the self-interest of corporate insiders in a timely manner, which effectively discourages controlling shareholders from grabbing self-interests (Wang et al., 2009). Therefore, this paper predicts that the existence of MLS has a stronger inhibitory effect on the abnormal stock trading halts in companies with low information transparency.

Following prior literature (Xin et al., 2014), this paper uses the natural logarithm of the number of analysts following plus one to measure the information transparency of listed companies (*ANALYST*). More analysts following represent higher information transparency of the company. We add the information transparency (*ANALYST*) and its interaction term of MLS variables ( $MULTI \times ANALYST$ ) into model (1). Table 12 reports the results. The regression results show that the estimated coefficients on the interaction term between the MLS variables and the information transparency ( $MULTI \times ANALYST$ ) are significantly positive at least at the 10% level, indicating that the inhibitory effect of MLS on arbitrary stock trading halts is more pronounced among firms with less information transparency.

**Table 11.** MLS, internal control quality and abnormal stock trading halts.

Variables	HALT		
	(1)	(2)	(3)
<i>MULTI_D</i>	-2.963** (-2.19)		
<i>MULTI_D</i> × <i>IC</i>	0.442** (2.12)		
<i>MULTI_N</i>		-2.085* (-1.96)	
<i>MULTI_N</i> × <i>IC</i>		0.310* (1.90)	
<i>MULTI_P</i>			-13.149** (-2.18)
<i>MULTI_P</i> × <i>IC</i>			1.961** (2.12)
<i>IC</i>	-0.355** (-2.44)	-0.327** (-2.28)	-0.333** (-2.37)
Constant	-0.110 (-0.11)	-0.291 (-0.31)	-0.268 (-0.29)
Controls	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	27,452	27,452	27,452
Pseudo R <sup>2</sup>	0.225	0.225	0.225

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity.

### 6.6. Test for the type of abnormal stock trading halts

This study finds that MLS ownership structure can significantly inhibit abnormal stock trading halts. This paper further examines what types of abnormal stock trading halts that MLS ownership structure can specifically inhibit. Following Shi et al. (2019), this paper classifies stock trading halts into two major categories: (1) trading halts that occur due to major asset restructuring and private share offerings; (2) trading halts without disclosing the explicit reasons. Specifically, two dummy variables, *HALT\_TYPE1* and *HALT\_TYPE2*, are set to represent the above two types of trading halts. The value of 1 means they belong to certain types of trading halts, and the value of 0 means they do not belong to certain types of trading halts. Table 13 reports the regression results. The coefficient on MLS (*MULTI\_D*) is significantly negative only when the explanatory variable is *HALT\_TYPE2*, which represents the trading halts without disclosing explicit reason. The possible reason for this result is that *HALT\_TYPE1* has a clear reason for trading halts, which is major asset restructuring and non-public stock offering, and is less likely to be manipulated by corporate insiders such as controlling shareholders. On the contrary, *HALT\_TYPE2* does not disclose a clear reason for trading halts and corporate insiders such as controlling shareholders are more likely to use it to conceal benefit appropriation behaviour.

**Table 12.** MLS, information transparency and abnormal stock trading halts.

Variables	HALT		
	(1)	(2)	(3)
<i>MULTI_D</i>	-0.166*** (-4.02)		
<i>MULTI_D</i> × <i>ANALYST</i>	0.048** (2.37)		
<i>MULTI_N</i>		-0.117*** (-3.52)	
<i>MULTI_N</i> × <i>ANALYST</i>		0.032** (2.06)	
<i>MULTI_P</i>			-0.654*** (-3.29)
<i>MULTI_P</i> × <i>ANALYST</i>			0.165* (1.79)
<i>ANALYST</i>	-0.012 (-0.81)	-0.009 (-0.63)	-0.007 (-0.48)
Constant	-2.011*** (-5.33)	-2.025*** (-5.38)	-2.054*** (-5.44)
Controls	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	28,820	28,820	28,820
Pseudo R <sup>2</sup>	0.221	0.221	0.221

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity.

**Table 13.** The impact of MLS on the type of abnormal stock trading halts.

Variables	(1) <i>HALT_TYPE1</i>	(2) <i>HALT_TYPE2</i>
<i>MULTI_D</i>	-0.010 (-0.13)	-0.052** (-2.34)
Constant	-5.697*** (-5.89)	-3.782*** (-8.27)
Controls	YES	YES
Industry FE	YES	YES
Year FE	YES	YES
Observations	28,820	28,820
Pseudo R <sup>2</sup>	0.175	0.322

Note: Standard errors are adjusted for clustering at the firm level. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 level (two-tailed), respectively. The results of control variables are omitted for brevity.

## 7. Conclusions and implications

The abnormal stock trading halts by listed companies are detrimental to investors' interests and threaten the long-term healthy development of the Chinese capital market. In addition to strengthening institutional regulation and penalties for non-compliance by security regulators, it remains unclear whether internal corporate governance mechanisms can effectively restrain stock trading halts. Based on the perspective of ownership structure, this paper finds that the existence of MLS can inhibit abnormal stock trading halts and the greater number and proportion of non-controlling large shareholders reduce the probability of occurrence of abnormal stock trading halts. The mechanism test shows that MLS reduce the tunnelling behaviour of controlling shareholders, increase the likelihood of dissent votes in corporate board and improve the information disclosure quality, thereby inhibiting abnormal stock trading halts. The monitoring effect of MLS on abnormal stock trading halts is more pronounced when non-controlling large shareholders have stronger monitoring ability relative to controlling shareholders. In addition, the governance effect of MLS on abnormal stock trading halts is more prominent in companies with lower quality of internal control and lower information transparency.

This paper has strong policy implications. First, regulatory authorities should further regulate the stock halt and resumption activities of listed companies, effectively protect investors' trading and information rights through various channels, and improve the operational efficiency of the capital market. The frequent occurrence of abnormal stock trading halts not only harms the interests of investors but also threatens the reputation and image of China's capital market internationally. Although the Chinese securities regulatory authorities have increased the supervision of stock trading halts of listed companies in recent years, the phenomenon of companies abusing the stock trading halt system is still common. The regulatory authorities should pay attention to the actions and performance of the controlling shareholders, actual controllers and other insiders during the abnormal suspension period, and curb their opportunistic behaviours such as market value management, reduction and cash out, and related party transaction by taking advantage of the suspension measures. At the same time, the characteristics of MLS ownership

structure at the company level can help constrain the tunnelling behaviour of controlling shareholders. Monitoring other large shareholders on controlling shareholders can improve corporate information disclosure quality and effectively compensate for the shortcomings of existing mandatory regulatory measures. Therefore, the regulatory authorities should encourage non-controlling major shareholders to play an active supervisory effect to effectively curb the private profit-grabbing behaviour of controlling shareholders and promote the healthy and orderly developments of capital market.

Secondly, the regulator should strengthen the supervision of listed companies' arbitrary stock trading halts and guide listed companies to improve the information disclosure quality. The abuse of the suspension policy by listed companies not only deviates from the initial intention of the regulator but also hinders the internationalisation process of the Chinese capital market. Therefore, the regulator should strengthen the restraint on abnormal trading halts, require listed companies to formalise information disclosure on suspension matters and create a transparent information environment. This can place the private interest grabbing behaviour of controlling shareholders and other internal personnel under the 'spotlight', accept the monitoring and scrutiny of various stakeholders, and curb abnormal suspension behaviour caused by the interests of controlling shareholders.

Finally, the regulator should urge listed companies to improve the quality of internal control and reasonably play the role of intermediaries. Internal control is an important internal corporate governance mechanism, and higher quality internal control can effectively inhibit controlling shareholders' tunnelling incentives and form a substitution relationship with the ownership structure of MLS. Therefore, for companies with a single large shareholder, improving the construction of internal control system can help safeguard the legitimate rights and interests of small and medium shareholders and promote the benign development of listed companies. For companies that have been halt for a long time, the regulator can require intermediary agencies such as recommendation agencies and financial advisors to intervene reasonably, verify major issues planned by listed companies, and express professional opinions, fully mobilise the enthusiasm of all parties involved in the capital market, and continuously improve the effectiveness of supervision.

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## ORCID

Wen Wen  <http://orcid.org/0000-0002-2449-8136>  
 Xiaoqing Feng  <http://orcid.org/0000-0003-4909-8320>

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