The Effects of Trading Suspensions in China

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Abstract

We study the effects of both mandatory and voluntary trading suspensions on stock prices, volatility and trading volume in China's stock market. It is found that both voluntary and mandatory suspensions generate negative abnormal returns. Trading volume and volatility rise significantly in the post-suspension period. Our results suggest that suspensions are not effective in calming down investors in China. Ownership structure and duration of suspension explain the ineffectiveness of suspensions.

Key words: Voluntary Suspensions, Mandatory Suspensions, Efficiency

JEL classification: G10, G14, G18

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1. Introduction

The use of individual stock trading suspensions is common across global stock exchanges to ensure that all investors have equal access to market information so as to protect their interests. While this kind of suspension is not rare in China, many investors criticize the listed companies for initiating trading suspensions too extensively and the exchange for halting trading too frequently. In July 2017, MSCI warned of the prolonged trading suspensions of Chinese companies and removed those suspended for more than 50 days from its emerging market index (Reuters, 30 July 2017).

Proponents claim that trading suspensions ensure more equitable information dissemination and order execution; therefore, calling a trading halt can reduce possible excessive price fluctuations and allow orderly, equitable trading in financial markets (Kryzanowski, 1979; Greenwald and Stein, 1991; Lee et al., 1994; Chen et al., 2003; Chakrabarty et al., 2011). On the other hand, opponents suggest that trading suspensions block the chance to trade (Lee et al., 1994; Kim et al., 2008).

Despite the abundance of the existing literature on trading suspensions of developed markets in the US, Canada, and Europe, there are fewer studies investigating the effects of trading suspensions in emerging markets (Abad and Pascual, 2013)[2]. Our paper adds to the literature by analyzing the effects of trading suspension in China, a large emerging market economy that is playing an increasingly significant role in the global economy.

The case of China is well-suited to examine the effects of trading suspension in emerging markets. First, because China exhibits almost all of the notable features that characterize emerging market countries, understanding China could help us to understand the effects of

[2] Abad and Pascual (2013) show that most studies on trading suspensions have referred to developed financial markets in the US, Canada, and Europe. In contrast, empirical studies in emerging markets have typically focused on the effects of price limit.

trading suspension in emerging market countries in general. For example, unlike developed markets where specialists provide a substantial liquidity, the Chinese stock market adopt an electronic automated trading system, which is typical for emerging markets. This allows us to investigate the effects of trading suspension without the interference of specialists. Individual investors dominate in Chinese stock market, a feature common to emerging economies (Liu and Wang, 2018). Studying the stock market dominated by individual investors can complement the other literature in trading suspension. Second, studying trading suspension in an emerging market country such as China offers unique perspectives that are not available in studies of developed countries. Listed firms in China's stock markets are allowed to suspend trading for theirs stocks. There is a large number of issuer-initiated suspensions (voluntary), while the number of regulator-initiated suspensions (mandatory) remains small. In fact, voluntary suspensions consist of more than 97% of all suspensions in China's stock markets. Investigating the effects of frequent voluntary suspensions may offer new insights to the efficiency of trading suspensions.

In this paper, we investigate trading suspensions in China and assess whether or not the suspension is called to avoid future decline of stock prices. Specifically, the effectiveness of trading suspensions is evaluated in three aspects: price discovery process, changes in return volatility and changes in trading volume. In addition, this paper divides the whole sample into mandatory suspensions and voluntary suspensions subsamples, and investigates the factors that explain the differences between them.

The extant literature includes only a few studies that have investigated the effects of trading suspensions in emerging markets. Bacha et al., (2008) investigate efficiency of trading halts in Malaysia and show that trading suspension will lead to positive price reaction, increased

volume and volatility. Tan and Yeo (2003) investigate the effects of trading halts on the Singapore Stock Exchange. They find that the 'good news' group experience significantly positive abnormal returns around the event date, while the 'bad news' group suffers a prolonged decline. Xu et al., (2014) assessed the effects of trading halts on absolute return, trading volume and bid-ask spread using high-frequency data from the Shanghai Stock Exchange. Our analysis extends this literature in several dimensions. First, to the best of our knowledge, this study represents the first attempt to comprehensively investigate the efficiency of mandatory and voluntary trading suspensions in China. Second, we carefully investigate the patterns of stock price, volatility and trading volume before and after trading suspensions and relate them to corporate governance, accounting variables and suspension duration. Finally, we investigate the importance of ownership structure on the effects of trading suspensions.

The remainder of this paper is organized as follows. In section 2, we describe the sample. Detailed methodology and empirical results are reported in section 3. The final section summarizes and concludes.

2. Data and Sample Description

There are two stock exchanges, namely the Shanghai Stock Exchange and Shenzhen Stock Exchange, in China. The main provisions regarding trading suspension in China was stipulated in Rules Governing the Listing of Stocks by Exchange and directed in Guidance on Improving the Stock Suspension and Resumption System of Listed Companies by China Securities Regulatory Commission. Rules Governing the Listing of Stocks on Shanghai Stock Exchange and Shenzhen Stock Exchange were implemented in January 1998, and amended in May 2000,

June 2001, February 2002, December 2004, May 2006, September 2008, July 2012, December 2013, October 2014 and April 2018.[3]

The regulations in Shanghai Stock Exchange and Shenzhen Stock Exchange are similar in many aspects. According to the regulations, suspension categories can be generally divided into two main types. The listed companies can request to the corresponding Exchanges for trading suspension with an explanation. We call the issuer-initiated suspension "voluntary suspension". This type of suspension is often related with the release of price-sensitive information, asset restructuring, and general meeting of shareholders. For instance, both stock exchanges permit a suspension in the following circumstances: (1) when a listed company forecasts that it would be difficult to keep any price-sensitive information confidential prior to disclosure; (2) when the company is undergo offer negotiation, major asset restructuring, merges or acquisition; (3) when the company has an abnormal situation during the general meeting of shareholders; (4) when suspension is necessary to maintain an orderly market. The stock exchanges require the company to announce its reason and time of the suspension, and permit to initiate the suspension when the stock exchanges consider the suspension is reasonable. In addition, the securities regulatory authorities may also force the stock to suspend and resume on reasonable grounds. We call the regulator-initiated suspension "mandatory suspension". Both the China Securities Regulatory Commission (CSRC) and stock exchanges have authority to suspend stock trading. According to the regulations, the mandatory suspension is often associated with unfavorable news of listed companies, such as failure of complying with listing regulations, price manipulation, violation of

[3] The Rules Governing the Listing of Stocks are available at the website of Shanghai Stock Exchange (http://www.sse.com.cn/lawandrules/sserules/listing/stock/c/c_20181116_4678354.shtml) and Shenzhen Stock Exchange (http://www.szse.cn/lawrules/rule/company/public/P020180724361500737638.pdf) receptively. Guidance on Improving the Stock Suspension and Resumption System of Listed Companies (CSRC Announcement [2018] No. 34) is available at the website of China Securities Regulatory Commission (http://www.csrc.gov.cn/pub/zjhpublic/zjh/201811/t20181106_346305.htm).

rules, fraud, information leaking out in public media, risk warning, insufficient securities in the hands, etc. For most cases, the suspension begins at the same date that stock exchanges permit or force the stock to suspend, and ends at the date when the related events was settled with a disclosure report or announcement[4].

Our initial sample covers all trading suspensions in China's A-share market of 2964 stocks, identified from the China Stock Market & Accounting Research (CSMAR) database, from May 2005 to September 2016. The initial data were chosen in a way consistent with the end of the non-tradable shares reform (He et al., 2016) [5]. And the last event is satisfied with leaving over 60 trading days to calculate abnormal return. In order to compare mandatory suspensions with voluntary suspensions, we exclude the suspensions due to delisting. We also exclude cases where two consecutive suspensions of the same company occur within a 30-day period. The final sample consists of 36,544 trading suspensions, consists of 2690 A-share stock.

Figure 1 describes suspension events over the sample period. It is noteworthy that the numbers of suspensions decreases substantially since 2012. As part of the reason, China Securities Regulatory Commission (CSRC) continued to amend some rules about improving the stock suspension and resumption system of listed companies and shortening suspension period and frequency from 2012[6]. CSRC clearly expresses that it is ought to reduce the frequency of suspension and enhance market liquidity.

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[4] There is a slight difference of regulating suspensions between Shanghai and Shenzhen stock exchanges. When a listed company fails to disclose quarterly report or correct falsehoods on time, Shenzhen Stock Exchange requests the stock to suspend at the same day, while Shanghai Stock Exchange requests the stock to suspend at the next trading day.

[5] The reform is designed to float nontradable legal person shares through the open market. Such legal person shares could, under the reform program, be converted to tradable A-shares. As a result, the stock liquidity of firms listed before 2005 is different from those after 2005.

[6] The amendments include Interim Provisions on Strengthening Supervision over Abnormal Transaction of Stocks Related to Major Asset Restructuring of Listed Companies (CSRC Announcement [2012] No. 33), Decision on Amending the Interim Provisions on Strengthening Supervision over Abnormal Transaction of Stocks Related to Major Asset Restructuring of Listed Companies (CSRC Announcement [2016] No. 16), Guidance on Improving the Stock Suspension and Resumption System of Listed Companies(CSRC Announcement [2018] No. 34).

[Figure 1 about here]

Our mandatory suspensions subsample covers 917 (2.5%) events, and the voluntary subsample covers 35,627 events (97.5%). The whole sample is divided into four categories based on the suspensions reason of CSMAR: 1) announcement suspension, 2) special suspension, 3) additional issuance plans, and 4) shareholders' meeting, while mandatory suspensions all belong to the second category. Daily stock prices, trading volume, market returns, length of suspension, and accounting variables and industry type are all obtained from the CSMAR database[7].

Table 1 presents the descriptive statistics of the sample. It shows that the frequency of suspension reasons in Shanghai and Shenzhen Stock Exchanges are quite similar. In terms of suspensions types, additional issuance plans is the least category while shareholder's meeting and special suspensions are most common in China. Table 2 reports the distribution of suspension duration. Suspensions vary from one hour to more than three months, depending on the reason for suspension. We use hour as the unit of suspension length since the minimum suspension period is one hour. Since the transaction hours in Shanghai and Shenzhen Stock Exchange is 9:30-11:30am and 1:30-3:30pm, a four-hour's halt is equivalent to one day's halt. We have noticed that the issuer-initiated suspensions tend to last longer and exhibit greater variability in length than regulator-initiated suspensions. The average suspension length is about one day for a regulator-initiated halt and six days for an issuer-initiated halt. Since the statistics are significantly influenced by a number of long suspensions, using median duration would better indicate the average suspension length. As shown in the table, the median suspension period is one day for both the mandatory group and the voluntary group. In terms of Exchange,

[7] Note that the information of sub categories of announcement suspension is not available. We can't analyze separately announcement suspensions due to merge & acquisitions or private placement.

we observe that suspensions in Shenzhen Stock Exchange tend to last longer and exhibit greater variability in length. But from median views, suspensions in both Exchange last one day. Considering the durations by suspensions types, special suspensions tend to last longest, whose average suspension days is more than 65 hours that is over 16 days and median suspension days is four days. And Additional issuance plans is second longer suspension. The average and median length is 13.94 hours and 12 hours receptively. The announcement suspension and shareholder's meeting suspension are similar in average length, nearly one day. But suspensions due to shareholder's meeting exhibit smaller volatility.

[Table 1 about here]

[Table 2 about here]

3. Empirical Analysis

3.1 Value Effects

In this section we investigate the value effects of suspensions. If the market is semi-strong efficient, we would expect that the price will be adjusted within the suspension period, thus there is no excess-returns during pre- and post-suspension periods.

We use the method of Wu (1998) to measure the performance of suspended stocks. Daily returns on each individual suspended stock are calculated up to 30 days before and 30 days after the suspension, using the buy-and-hold strategy suggest by Ritter(1991) and Michaely et al. (1995). For each suspended stock, excess return for a given period is defined as the geometrically compounded return on the stock minus the corresponding geometrically compounded return on the CSI 300 Index. The buy-and-hold return for a stock is

$$R_{i(t,T)} = [\prod_{t=a}^{T}(1 + r_{it}) - 1] * 100 \quad (1)$$

where r_{it} is the return on stock i at time t, and $R_{i(t,T)}$ is the holding period return on stock i from time t to T. The market return, $R_{m(t,T)}$, is calculated using the same method. The excess return for a stock from time t to T is then defined as

$$ER_{i(t,T)} = R_{i(t,T)} - R_{m(t,T)} \quad (2)$$

The average excess return for a holding period from time t to T is then

$$\overline{ER_{(t,T)}} = \frac{1}{N}\sum_{i=1}^{N} ER_{i(t,T)} \quad (3)$$

where N is the number of suspended stocks in the period.

Then, we take the actual number of suspension days of each halt as the holding period, compute the nominal returns over the suspension period and subtract the market return over the same period. The excess return for a stock during a suspension period is

$$ER_{i0} = \left[\frac{p_{i,T+1}}{p_{i,1}}\right]^{\frac{1}{T+1}} - \left[\frac{p_{m,T+1}}{p_{m,1}}\right]^{\frac{1}{T+1}} \quad (4)$$

where ER_{i0} is the excess return over the suspension period for stock i, $p_{i,1}$ and $p_{i,T+1}$ are prices of stock i on the last trading day before the suspension and the first trading day after the suspension, $p_{m,1}$ and $p_{m,T+1}$ are the CSI 300 Index on the last trading day before the suspension and the first trading day after the suspension respectively, and T is the number of days the suspension lasts.

Since the suspensions events could be cross-sectionally dependent and non-normally distributed, the ordinary event-study test may cause underestimation of the mean excess return variance. Therefore, it is necessary to provide a non-parametric test. Following Wu (1998), we provide a nonparametric rank statistics-Wilcoxon signed rank test. This test use the median to

avoid the misspecification due to asymmetry in the cross-sectional abnormal returns and non-normal distribution under the assumption of unknown distribution. As empirical results can be very sensitive to the changes in the estimation period and sample size, we also implement various sensitivity tests of the results.

Table 3 presents the estimations of excess returns around the suspension, with Panel A revealing that both mandatory and voluntary subsamples have significant price changes. During the pre-suspension period, both mandatory and voluntary suspensions show negative excess returns, while mandatory suspensions indicate a larger downfall (-0.42% from -10 to -1) compared with voluntary suspensions (-0.082% from -10 to -1). Mandatory suspensions present a similar pattern as voluntary suspensions in the post-suspension period. The overall post-suspension effects for both mandatory and voluntary suspensions are negative (for event window [1, 30]). Interestingly, the significance around the suspension day (day 0) is smaller than around any other day. The signed rank test indicate similar result in both sign and significance of coefficients. Figure 2 represents the distribution of excess return around the suspension day for both types of suspensions.

[Figure 2, Table 3 about here]

We divide voluntary suspensions into good-news suspensions and bad-news suspensions according to the excess return on day 0. If the excess return on day 0 is positive, then it is a good-news suspension; otherwise it is a bad-news suspension. For the good-news subsample, price starts to rise 10 days before (0.28% for [-10, -1]) until 10 days after the resumption of trading (0.065% for [1, 10]). In contrast to the valuation effect of good-news subsample, the bad-news subsample indicates a different pattern. Price starts to fall one month before (-2.25% for [-30, -1]). On the one hand, it may indicate a leak of information; on the other hand, since

these are issuer-initiated suspensions, the companies may suspend the stocks so as to slow down the price decline. The biggest fall appears one day after the resumption of trading of the stock, and the declining trend continues in the post-suspension period, which may be even fiercer compared with that in the pre-suspension period (See from -0.77% for [1, 10] and -0.43% for [-10, -1]). This can be explained by the incomplete market reaction of bad-news suspensions: as a trading halt reduces liquidity during the suspension period, after the resumption of trading, people will try to sell the stocks at a lower price in order to change their positions.

3.2 Return Volatility

We use the volatility prior to the suspension as a reference to compare the volatility after the suspension (Greenwald and Stein, 1991; Frino et al., 2011). We first estimate the variances of daily returns for the suspended stocks over the pre- and post-suspension periods separately. Then we use the variance of daily stock returns as our measure of stock price volatility and compute the variance ratio, which is defined as

$$\text{VARTIAO} = \frac{\sigma^2_{\text{post}}}{\sigma^2_{\text{pre}}} - 1 \quad , \tag{5}$$

where σ^2_{pre} and σ^2_{post} are the variances in the pre- and post-suspension periods respectively.

Panel A of Table 4 summarizes the results of volatility changes for the whole sample. We find that return volatility after a trading suspension is significantly higher. VARTIAOs for the mandatory and voluntary samples over days -15 to +15 are 0.25 and 0.67 with t-value 17.42 and 27.53 respectively, indicating that volatility is higher for voluntary suspensions than for mandatory suspensions. The difference between mandatory and voluntary subsamples is statistically significant (t-value: -2.78). However, changes in volatility are also influenced by the estimation period and sample size. For mandatory suspensions, VARTIAOs are higher when measured in a short event window (e.g., 30 days) than when measured in a long event window

(e.g., 120 days), vice versa for voluntary suspensions. Panel B summarizes the results for volatility changes of the four specific voluntary suspension types. For announcement suspensions, the significance of change in volatility increases. However, for shareholder's meeting and additional issuance plan suspensions, the significance of change in volatility decreases. These phenomena all suggest that high volatility in post-suspension periods may not be temporary.

[Table 4 about here]

3.3 Trading Volume

Following Wu (1998) and Engelen and Kabir (2006), high return volatility in the post-suspension period reflects a correspondingly high trading volume in the post-suspension period. We measure the trading volume of each stock for a 30-day period before and after the event day to examine the turnover rate around suspensions. Following Michaely et al. (1995) we first calculate the normal trading turnover for each stock as the benchmark, defined as the ratio of daily turnover to normal turnover over the estimation period from day-60 to day-31:

$$TO_{it} = \frac{TRDVOL_{it}}{TS_i} \quad i = 1.2 \ldots . N, and\ t = -60, -59, \ldots, -31 \tag{6}$$

where $TRDVOL_{it}$ is the number of traded shares of stock i at time t, and TS_i is the number of outstanding shares of stock i at time t. The daily average turnover across firms is then

$$TO_t = \frac{1}{N}\sum_{i=1}^{N} TO_{it} \ , \tag{7}$$

where N denotes the number of suspended firms in the sample. Then we calculate the average trading volume across all sample days:

$$\overline{TO} = \frac{1}{T}\sum_{t=-60}^{-31} TO_t \quad , \tag{8}$$

where T is the number of days in the estimation window. The abnormal trading turnover (AV_t) and standard deviation (SD_t) are defined as

$$AV_t = \frac{TO_t}{\overline{TO}} - 1 \qquad t = -30 \ldots 30 \tag{9}$$

$$SD_t = \frac{1}{T-1} \sum_{t=-60}^{-31} (AV_t - \overline{AV})^2 \tag{10}$$

$$\overline{AV} = \frac{1}{T} \sum_{t=-60}^{-31} AV_t \tag{11}$$

Panel A of Table 5 demonstrates the change in trading volume for the whole sample. It shows that the mean abnormal daily turnover is positive on most days for both mandatory and voluntary suspensions, which is consistent with our assumptions. Both ratios show a big increase immediately after the suspension, but there is no significant difference between mandatory and voluntary suspensions.

Figure 3 illustrates such patterns of abnormal trading volume for both suspensions. The abnormal trading volume for the four types of voluntary suspensions is presented in Panel B of Table 5. The results show that the abnormal trading volume is significantly positive from days -30 to +30. However, the magnitude of change is not the same among the four subgroups. Announcement suspensions and special suspensions trigger much bigger increase in volume than the other two categories.

[Figure 3, Table 5 about here]

3.4. Regression Analysis

In this section, we estimate a regression model to explain the effects of trading suspensions with variables mainly divided into three broad categories: corporate governance, accounting variables and suspension duration.

As the purpose of suspensions is to ensure that all investors have equal access to market information, it is interesting to examine whether, factors influencing information transparency, could play a role in the effects of suspension. A number of studies have shown that better corporate governance enhances the accuracy of information disclosure (Bailey et al., 2006; Fidrmuc 2015). China is not an exception. He and Rui (2016) investigate the effect of ownership structure on the information transmission of insiders trading, and find that firm-level governance can serve as an alternative mechanism to enhance information transparence in China's listed firms. Therefore, we expect that the structure of corporate governance, e.g. ownership structure, has a significant impact on the efficiency of trading suspension. More specifically, we include shareholding pledge ratio and ownership concentration ratio. Besides, previous studies analyzing the abnormal effect of individual stock find that accounting variables are important determinants. Banz (1981) shows that firms' sizes and their industries have significant impact on the risk adjusted returns. A number of studies show that corporate's earnings are strongly related with stock return (Liu et al., 2000; Jiao, 2011). Thus, we control ROE, the logarithm of asset amount and industry dummy in the regression. Ackert et al. (2001) shows that temporary halts and mandated closures affect differently in stock return, so it is necessary to include the duration of suspension in our analysis. A year dummy is also included to test if the suspensions effects are stable across the years. The regression model is as follows:

$$\mathrm{Y} = \alpha + \beta_1 PledgeProp + \beta_2 ShareCon + \beta_3 ROE + \beta_4 Log_{Asset} + \beta_5 Timeperd + \gamma Industry + \delta Year \quad (12)$$

where Y is the dependent variable; $PledgeProp$ refers to shareholding pledge ratio; $ShareCon$ refers to ownership concentration, measured by the shareholding ratio of the largest shareholder; ROE refers to return on equity; Log_{Asset} refers to the logarithmic form of asset amount; and

Timeperd refers to suspension duration. $Industry$ is an industry dummy variable, and $Year$ is a time dummy variable. All independent variables data are drawn from the CSMAR database. Table 6 shows the regression results.

For the results of abnormal returns, while ownership concentration has positive and significant effect on both suspensions, suspension duration has negative and significant effect on both suspensions. For the results of variance ratios, we only report the results of samples over days -15 to +15. The shareholding pledge ratio has a positive effect. The ownership concentration ratio has negative impact. Duration of suspension has positive influence because a long suspension period will reduce liquidity. For the results of abnormal trading turnover ratios, no variable has significant impact on mandatory suspensions, except on suspension duration. The shareholding pledge ratio and ownership concentration have significant positive effects, while the logarithm of asset amount has negative effect on voluntary suspensions.

[Table 6 about here]

4. Conclusion

In this paper, we compare the market reactions to mandatory suspensions and voluntary suspensions in Chinese stock markets. We find that there is information leakage in the pre-suspension period, and stock prices adjust to new information incompletely during suspensions, so the pre-suspension trend continues in the post-suspension period. We further divide the voluntary sample into good-news and bad-news subsample and find that the price discovery process starts prior to the suspension in both subsample. In the bad-news subsample, this phenomenon can be explained by information leakage or the situation that the company calls a suspension in order to prevent further decline in stock price. In the post-suspension period,

there is a price drift phenomenon in both good-news and bad-news subsamples. The good-news subsample is shown more effective than the voluntary suspensions in disseminating information.

Our results show that trading volatility increases in the post-suspension period, and the post-suspension volatility is relatively higher for voluntary suspensions than for mandatory suspensions. The trading volatility of mandatory sample drops as the event window is enlarged, while voluntary suspensions show an increase in volatility. We also find that turn-over rises significantly in the post-suspension period for both suspensions, and the magnitude of abnormal trading volume is the highest on the first day of resumption of trade for the voluntary sample and the second day of reopening of trade for mandatory suspensions.

Finally, our findings suggest that suspensions do not react to unusual market activities efficiently. Ownership structure and suspension duration may help explain the ineffectiveness of suspensions.

References

Abad, D., & Pascual, R. (2013). Holding back volatility: circuit breakers, price limits, and trading halts. *Market Microstructure in Emerging and Developed Markets: Price Discovery, Information Flows, and Transaction Costs*, 303-324.

Ackert, L. F., Church, B., & Jayaraman, N. (2001). An experimental study of circuit breakers: the effects of mandated market closures and temporary halts on market behavior. *Journal of Financial Markets*, 4(2), 185-208.

Avramov, & Doron. (2004). Stock return predictability and asset pricing models. *Review of Financial Studies*, 17(3), 699-738.

Bacha, O.I, Rashid, S.A. & Ramlee, R. (2008). The efficiency of trading halts: Emerging markets evidence. *International Journal of Banking and Finance,*5(2),125-148.

Banz, R. W. . (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics*, 9(1), 3-18.

Bailey, W., Karolyi, G. A., & Salva, C. (2004). The economic consequences of increased disclosure: evidence from international cross-listings. *Journal of Financial Economics*, 81(1), 175-213.

Chakrabarty, B., Corwin, S. A., & Panayides, M. A. (2011). When a halt is not a halt: An analysis of off-NYSE trading during NYSE market closures. *Journal of Financial Intermediation*, *20*(3), 361-386.

Chen, H., Chen, H., & Valerio, N. (2003). The effects of trading halts on price discovery for NYSE stocks. *Applied Economics*, *35*(1), 91-97.

Engelen, P. J., & Kabir, R. (2006). Empirical evidence on the role of trading suspensions in disseminating new information to the capital market. *Journal of Business Finance & Accounting*, *33*(7–8), 1142–1167.

Fidrmuc, J.. (2015). Insider trading and corporate governance: international evidence. *Social Science Electronic Publishing*.

Frino, A., Lecce, S., & Segara, R. (2011). The impact of trading halts on liquidity and price volatility: Evidence from the Australian Stock Exchange. *Pacific-Basin Finance Journal*, *19*(3), 298-307.

Greenwald, B. C., & Stein, J. C. (1991). Transactional risk, market crashes, and the role of circuit breakers. *The Journal of Business*, *64*(4), 443–462.

He, Q., Lu, L.P. & Ongena, S. R. G. (2016). Who Gains from Credit Granted between Firms? Evidence from Inter-Corporate Loan Announcements Made in China. *CFS Working Paper*, No. 529. Available at SSRN: https://ssrn.com/abstract=2734657.

He, Q., & Rui, O. M. (2016). Ownership structure and insider trading: evidence from china. *Journal of Business Ethics*, 134(4), 1-22.

Jiao, Y.. (2011). Corporate disclosure, market valuation, and firm performance. *Financial Management*, 40(3), 647-676.

Kim, Y. H., Yagüe, J., & Yang, J. J. (2008). Relative performance of trading halts and price limits: Evidence from the Spanish Stock Exchange. *International Review of Economics & Finance*, *17*(2), 197-215.

Kryzanowski, L. (1979). The efficacy of trading suspensions: A regulatory action designed to prevent the exploitation of monopoly information. *The Journal of Finance*, *34*(5), 1187-1200.

Lee, C. M. C., Ready, M. J., & Seguin, P. J. (1994). Volume, volatility, and New York Stock Exchange trading halts. *The Journal of Finance*, *49*(1), 183–214.

Liu, J. , Angeles, L. , & Thomas, J. . (2000). Stock returns and accounting earnings. *Journal of Accounting Research*, 38(1), 71-101.

Liu, Z. , & Wang, S. . (2017). Understanding the chinese stock market: international comparison and policy implications. *Economic and Political Studies,* 5(4), 441-455

Michaely R, Thaler R.H., & Womack K. (1995). Price Reactions to Dividend Initiations and Omissions: Overreaction or Drift? *The Journal of Finance*, 50(2), 573-608.

Ritter J R. (1991). The Long-Run Performance of Initial Public Offerings. *The Journal of Finance*, 46(1), 3-27.

Tan, R. S., & Yeo, W. Y. (2003). Voluntary trading suspensions in Singapore. *Applied Financial Economics*, 13(7), 517-523.

Wu, L. (1998). Market reactions to the Hong Kong trading suspensions: Mandatory versus voluntary. *Journal of Business Finance & Accounting*, *25*(3–4), 419–43

Xu, H. C., Zhang, W., & Liu, Y. F. (2014). Short-term market reaction after trading halts in Chinese stock market. *Physica A: Statistical Mechanics and its Applications*, 401, 103-111.

Table 1: Summary statistics

Classification	Shanghai Stock Exchange		Shenzhen Stock Exchange	
Subsample	Mandatory	Voluntary	Mandatory	Voluntary
Announcement suspension		4130		3179
Special suspension	495	2609	422	7024
Additional issuance plans		17		18
Shareholder's meeting		8956		9694
Total	495	15712	422	19915

Notes:
The table reports the summary statistics of trading suspensions over the period of May 2005 to December 2016 in China's A-Share Market. Mandatory suspension refers to regulator-initiated suspension, while voluntary suspension refers to issuer-initiated suspension.

Table 2: Durations of suspensions

Durations	Mean	Median	St. Dev.	25%	50%	75%	99%
By types							
Mandatory	4.66	4	10.25	4	4	4	16
Voluntary	22.24	4	74.91	4	4	4	392
By exchange							
Shanghai	12.72	4	48.45	4	4	4	285
Shenzhen	29.03	4	88.66	4	4	8	448
By reasons							
Announcement suspension	3.57	1	20.34	1	1	1	52
Special suspension	65.97	16	126.32	4	16	56	536
Additional issuance plans	13.94	12	2.03	12	12	16	16
Shareholder's meeting	3.96	4	0.34	4	4	4	12

Notes:
The table reports the durations of trading suspensions by suspensions initiator, exchange and reasons. According to CSMAR, the trading hours are 9:30-11:30 (morning session) and 1:30-3:30 (afternoon session). Thus, a four hours' suspension equals to one day's suspension.

Table 3: Excess Return around Suspensions

Panel A Whole sample

Window	[-30,-1]	[-10,-1]	[-5,-1]	0	[1,5]	[1,10]	[1,30]
Mandatory suspensions							
Mean	-2.84***	-0.42***	-0.10	-0.002*	-0.46***	-0.97***	-1.54***
St. Dev	0.08	0.07	0.067	0.001	0.06	0.07	0.08
T-stat	-33.91	-6.021	-1.53	-1.62	-6.71	-14.00	-20.28
Wilcoxon	-29.65***	-5.52***	-1.69*	-1.97*	-6.13***	-8.68***	-14.77***
Voluntary suspensions							
Mean	-1.62***	-0.082***	0.0712***	-0.0004**	-0.28***	-0.44***	-1.15***
St. Dev	0.013	0.012	0.011	0.0002	0.016	0.017	0.012
T-stat	-120.13	-7.49	6.23	-2.04	-27.24	-40.98	-92.24
Wilcoxon	-94.01***	-27.12***	6.89***	-12.69***	-29.22***	-35.56***	-50.04***

Panel B Voluntary suspensions

Window	[-30,-1]	[-10,-1]	[-5,-1]	0	[1,5]	[1,10]	[1,30]
Good-news							
Mean	-0.94***	0.28***	0.26***	0.06***	-0.015	0.065***	-0.14***
St. Dev	0.018	0.018	0.017	0.00	0.015	0.015	0.017
T-stat	-49.85	15.78	15.07	130.32	-1.02	4.27	-8.11
Wilcoxon	-94.01***	27.12***	6.89***	13.53***	-1.21*	35.56***	-50.04***
Bad-news							
Mean	-2.25***	-0.43***	-0.99***	-0.02***	-0.28***	-0.77***	-1.83***
St. Dev	0.018	0.015	0.015	0.02	0.015	0.015	0.17
T-stat	-120.12	-27.49	-6.45	-150.43	-27.25	-40.98	-110.23
Wilcoxon	-91.17***	-35.27***	-9.18***	-1.98**	-31.27***	-45.27***	-62.19***

Notes:
The table presents estimations of the excess returns around the suspension period.

Table 4: Variance Ratios for Voluntary and Mandatory Suspension

Panel A The whole sample

Windows	[-15,+15]		[-30,+30]		[-60,+60]	
	Mandatory	Voluntary	Mandatory	Voluntary	Mandatory	Voluntary
Mean	0.25***	0.67***	0.17***	0.73***	0.11***	1.35***
St. Dev	0.014	0.024	0.011	0.037	0.0051	0.038
T-stat	17.42	27.53	15.14	19.79	24.21	33.63
Difference (Mandatory-Voluntary)	-0.42***		-0.56***		-1.19***	
	-2.78		-2.43		-4.95	
Wilcoxon	-2.14**		-2.33**		-5.17***	

Panel B Types of voluntary suspensions

Window	[-15,+15]				[-30,+30]				[-60,+60]			
	1	2	3	4	1	2	3	4	1	2	3	4
Mean	0.70***	0.76***	-0.60*	0.61***	1.99***	0.60***	-0.28*	0.30***	4.94***	0.72***	-0.24**	0.16***
St. Dev	0.042	0.034	0.031	0.043	0.17	0.016	0.019	0.017	0.19	0.011	0.017	0.018
T-stat	16.23	22.19	-1.82	15.51	11.32	36.90	-1.55	30.79	26.75	70.00	-2.49	52.48

Note:

The variance ratio is defined as $\frac{\sigma^2_{post}}{\sigma^2_{pre}} - 1$ *where refers* $\sigma^2_{pre}(\sigma^2_{post})$ *refers to the pre-(post-) suspension variance calculated over event windows (e.g., 15 days, 30 days and 60 days) before (after) the suspension for each event, and then averaged across all the sample events. In addition, 1, 2 3, 4 refers to the different types of voluntary suspensions. 1: Announcement Suspension; 2: Special suspensions; 3: Additional issuance plans; 4: Shareholder's meeting.*

Table 5: Abnormal Trading Turnover around Suspensions

Panel A The whole sample

Days relative to the event day	Mandatory		Voluntary	
	Mean(%)	T-stat	Mean(%)	T-stat
-30	1.04***	18.24	1.03***	91.69
-20	0.99***	15.69	0.99***	91.52
-10	0.93***	16.92	0.97***	92.73
-5	0.98***	16.48	0.97***	90.98
-1	1.44***	17.08	1.46***	93.34
0	1.66***	17.96	1.62***	99.54
1	1.92***	21.38	1.58***	95.54
5	1.21***	17.13	1.32***	92.72
10	1.16***	14.97	1.17***	89.11
20	0.97***	14.62	1.03***	88.03
30	0.78***	13.98	0.97***	83.54

Panel B Types of voluntary suspensions

Days relative to the event day	Announcement Suspension	Special Suspension	Additional Plan	Shareholder's Meeting
	Mean(%)	Mean(%)	Mean(%)	Mean(%)
-30	1.02**	1.26**	0.21**	1.02**
-20	0.96**	1.30**	0.13**	0.29**
-10	1.00**	1.12***	0.08**	0.87**
-5	1.02***	1.23***	0.46**	0.79**
-1	2.04***	1.45***	1.26***	0.75***
0	2.82***	1.74***	1.41***	0.77***
1	2.72***	1.94***	1.21***	1.00***
5	1.83***	2.18***	0.64**	0.77**
10	1.61**	1.73***	0.52**	0.76**
20	1.37**	1.45**	0.23**	0.75*
30	1.07**	1.29**	0.005*	0.68*

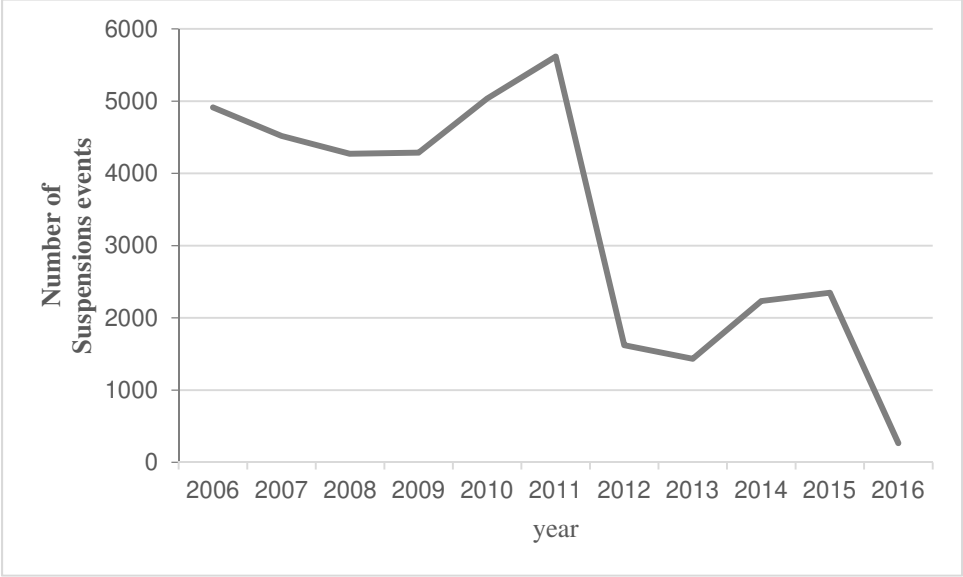
Note:
Normal turnover ratio is defined as the average daily turnover in day -60 to -31 relative to the suspension day. Abnormal turnover ratio, expressed as a percentage, is the daily turnover ratio minus the average daily turnover in the estimation period, relative to the daily average turnover ratio.

Table 6: Regression Analysis

	Excess Return		Variance Ratio		Turnover Ratio	
	Voluntary	Mandatory	Voluntary	Mandatory	Voluntary	Mandatory
PledgeProp	0.12	-0.18	0.003***	0.009***	0.007***	0.054
	(1.31)	(0.85)	(5.24)	(5.36)	(2.18)	(1.50)
ShareCon	0.003***	0.042***	-0.005***	-0.002	0.016***	-0.018
	(3.11)	(6.19)	(-5.94)	(-1.37)	(2.18)	(-0.72)
ROE	0.021	1.15***	0.006***	-3.54***	0.005*	-1.82
	(0.88)	(5.87)	(6.71)	(-9.65)	(1.75)	(-0.21)
Log_Asset	0.10***	-0.53***	-0.002	0.16***	-0.40***	-0.56
	(11.31)	(-8.06)	(0.012)	(5.13)	(-9.25)	(-1.44)
Timeperd	-0.12***	-0.07***	0.002***	0.007	0.012***	0.40**
	(-47.26)	(-10.18)	(18.61)	(0.55)	(2.76)	(2.14)
Year	1.11***	0.87***	-0.58***	0.12*	0.15**	0.92
	(20.35)	(23.27)	(-53.15)	(1.75)	(2.03)	(1.09)
Cons	-2.22***	-1.74***	2.06***	-0.37***	-2.72***	2.56***
	(-20.42)	(-23.25)	(53.31)	(-4.36)	(-29.79)	(-12.25)

Note:
The regression model is $Y = \alpha + \beta_1 PledgeProp + \beta_2 ShareCon + \beta_3 ROE + \beta_4 Log\_Asset + \beta_5 Timeperd + \gamma Industry + \delta Year$. *Here Industry is a dummy variable.*

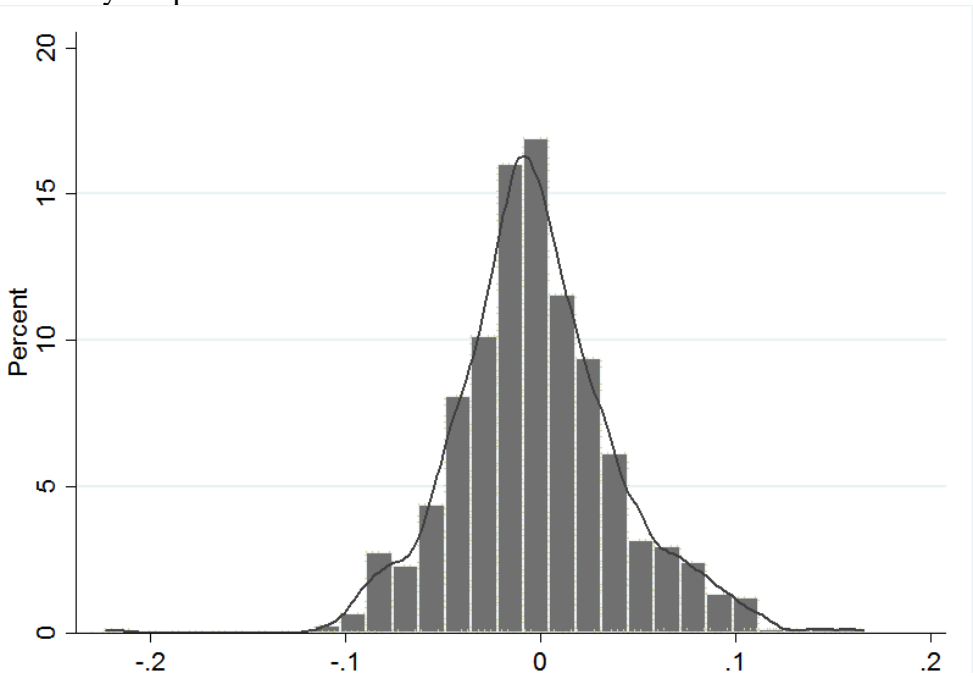
Figure 1: Suspensions events over 2006-2016



Note: The figure depicts the number of trading halts over 2006-2016. Since we need to ensure to have at least 60 trading days to calculate excess return, the events in 2016 only calculated until September.

Figure 2: Excess return distribution for Mandatory and Voluntary Suspensions

A. Mandatory Suspension



B. Voluntary Suspension

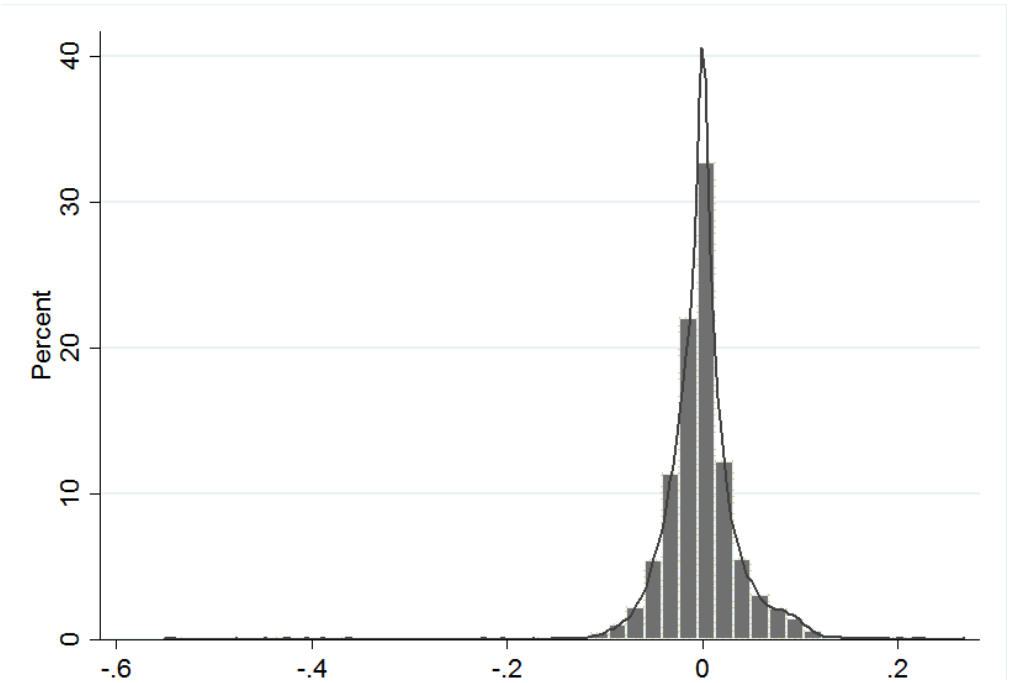
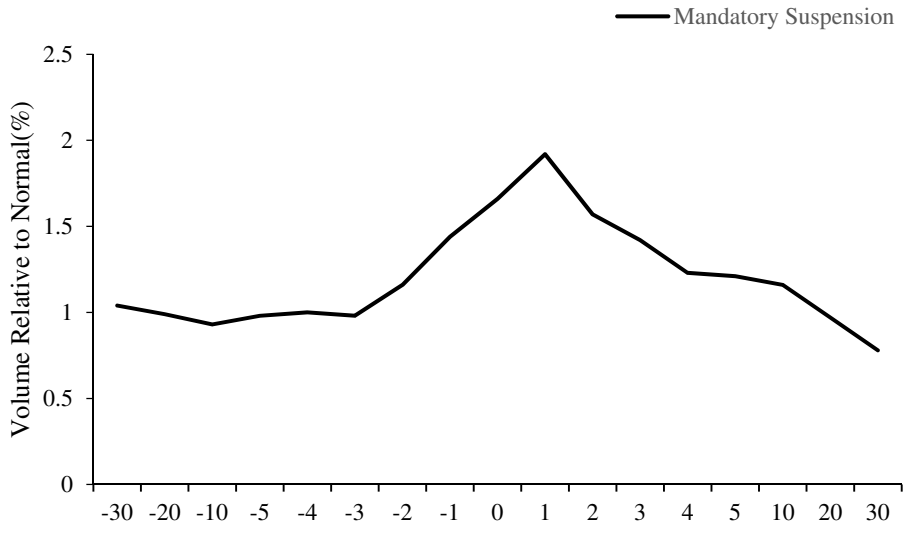
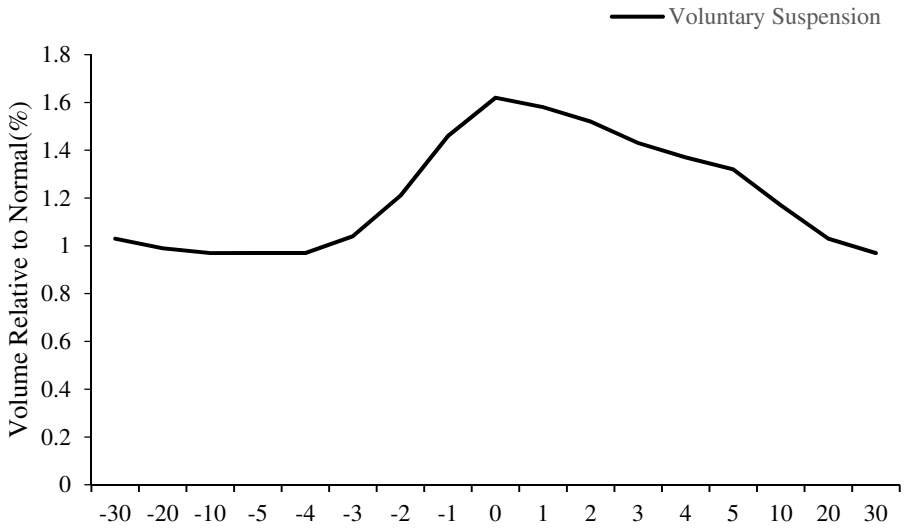


Figure 3: Abnormal Trading Volume for Mandatory and Voluntary Suspensions

A. Mandatory Suspension



B. Voluntary Suspension


Voluntary Suspension
Volume Relative to Normal(%)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-30 -20 -10 -5 -4 -3 -2 -1 0 1 2 3 4 5 10 20 30