Trading Suspension Bias in China Stock Market Data

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Abstract

China A-share firms involve unusually high frequency and long-duration trading suspensions. This study investigates the potential bias in the most frequently used databases due to misreported and missing stock returns during the suspension periods. We find that the suspension bias can have important consequences on portfolio return calculation and factor estimation documented by prior research. We show that using the corrected suspension stock returns shrinks the documented size factor by 1.92 percent per year. For the smallest size decile, the corrected suspension stock return reduces the annualized average monthly return by 6.44 percent.

Keywords: Trading Suspension, China Stock Market, Size Factor

"A-share firms suspended for more than 50 days will be removed from the MSCI benchmark and reinclusion will not happen for a further 12 months" July, 2017, South China Morning Post

"In an extreme case, trading in shares of Xinjiang Yilu Wanyuan Industrial Investment, a loss-making ceramic products maker, has been suspended for about 20 months." July, 2017, Reuters

"More than half of all listed Chinese companies have suspended their own shares" July, 2015, CNN

1. Introduction

The trading suspension in China has unique characteristics in terms of frequency and duration. During the stock market crash in the year of 2015, over half of A-share stocks suspend trading and the average trading duration is approximately 45 days. By suspending trading, firms prohibit investors from selling shares in order to avoid plunge in share price. Although China's A shares have joined MSCI, the system of trading suspension has been questioned by international institutional investors. The portfolio liquidity can be significantly affected if a large proportion of stock holdings of the portfolio are suspended with long duration. And the trading suspension can exert a huge impact on representativeness of index value if suspended stocks are assigned with high index weights (Pong, 2018).

WIND and CSMAR are the most popular financial databases in China. As the largest financial data server, WIND provides financial information to 90% of financial institutions (see Liu, Stambaugh and Yuan, 2019). And CSMAR serves financial data for more than one thousand universities and academic institutions. Almost all of the empirical asset pricing studies on China stock market use financial data from these two databases. Therefore, the accuracy and quality of data in these databases are very crucial to the validity of empirical studies. The most frequently used Chinese financial databases treat stock returns during trading suspension in different ways. CSMAR treats stock returns during trading suspension as missing values, while WIND records closing stock price for all suspension months as the closing price on the last trading day prior to the suspension and calculate stock returns for suspension periods

as zero. If the trading suspensions can be anticipated by the market or firms announce suspensions when their stocks are still trading on exchanges, missing or misreported zero returns may not introduce bias. However, trading suspensions are largely unanticipated ex-ante, missing or misreported suspension returns lead to bias to the estimation for portfolio returns. We refer this as suspension bias.

Hu et al. (2019), Qiao et al. (2019), and Liu, Stambaugh and Yuan (2019) show significant size effect in China, and we find that the suspension bias can have important consequences on the size factor documented by prior literatures. We provide potential approaches to correct suspension bias and we show that using corrected stock returns during trading suspension shrinks the size factor by 1.6 percent per year. For the smallest size decile, the corrected suspension stock return reduces the annualized average monthly return by 5.04 percent. The documented significant impact of trading suspension is related to a large strands of empirical asset pricing works on China stock market and in view of suspension bias, treating suspension stock returns carefully is crucial to the validity of empirical research.

The rest of the paper is structured as follows. Section 2 provides an overview for the unique trading suspension in China. Section 3 reviews prior literatures and shows how the portfolio returns can be affected by suspension bias. Section 4 describes the data sources and methodology. Summary statistics are displayed in section 5. Empirical results are presented in section 6 and section 7 respectively. And section 8 concludes the study.

2. Trading Suspension in China

There are two main stock exchanges in mainland China, Shanghai Stock Exchange and Shenzhen Stock Exchange. The latest provisions about the firms' trading suspensions are directed in *Guiding Opinions on Improving the Trading Suspension and Resumption System of Listed Companies* by the *China Securities Regulation Commission* (CSRC) and specified in

Stock Exchange Listing Rules by stock exchanges. The regulations for listed stocks on both Shanghai and Shenzhen Stock exchanges are similar in several aspects.

Trading suspension in China can be mainly classified into two categories: mandatory and voluntary suspension. Mandatory suspension refers to the case that regulatory authorities force stocks to suspend, while voluntary suspension refers to the situation that firms voluntarily request to suspend trading. Comparing with mandatory suspension, the occurrence of voluntary suspension is more frequent. Voluntary suspension cases take account more than 97% suspension cases (He et al., 2019). According to the CSRC, firms could request to their listing stock exchanges for suspension of trading, and stock exchanges would permit if the requests are reasonable. Firms can request for trading suspension with following reasons: (1) If the stock price sensitive information that will be disclosed is difficult to keep confidential or has been leaked to the market before firm's disclosure. (2) If the listed companies carry out major asset restructuring. (3) If the listed company has an abnormal situation during the general meeting of shareholders. (4) If suspension is necessary to maintain an orderly market.

The trading suspension in China is used as a tool to prevent plunge in stock price (He et al., 2019; Pong, 2018). During the stock market crash in the year of 2015, over half of the A-share stocks suspend to avoid share price drop to stabilize market value. The frequent and long-duration trading suspension in China detriments market liquidity as well as market efficiency, which has drawn attentions from international institutional investors and regulators. In 2017, MSCI warns Chinese listed firms about suspension issues (Reuters, 30 July 2017). And the head of *Environmental, Social and Governance* (ESG) research at MSCI says 'Trading suspensions are obviously a big concern for international investors.' Although A-share has joined MSCI, trading suspension indeed hinders the pace of internalization of Chinese stock market. On 6 November 2018, the CSRC issued the *Guiding Opinions on Improving the Stock Trading Suspension and Resumption System for Listed Comp1anies* and introduced more

stringent regulations around the frequency and extensiveness of trading suspension: (1) The suspension periods are shortened to increase market liquidity. (2) Reduce the categories of corporate matters that are eligible to request trading suspension. (3) More stringent requirements for information disclosure related to trading suspensions are imposed on Chinese listed firms.

3. Size Effect in China

Banz (1981) first documents that small stocks generate higher returns than large stocks on average in the US, and this is subsequently labelled as the size effect. An explanation for the variation in expected return provided by Roll (1981) is that smaller stocks are riskier and therefore higher expected returns are required to compensate for bearing higher degree of risk. Fama and French (1992) show evidence for the predictability of firm size for stock returns. They document that stocks with smaller size relatively outperform with size measured by market capitalization. Since then, size is a frequently examined factor in asset pricing literature. Berk (1995, 1997) provides an alternative explanation for the size effect. He suggests that the size of firm always inversely relates to the expected returns. Because stocks that generate high expected returns have high discount rates for cash flows, leading to lower market value of firms.

Increasing number of studies examine the size effect in China. Hu et al. (2019) find significant size effect in China, and document that the SMB portfolio earns 0.61% per month. Stambaugh et al. (2019) constructs size factor in China and show that size factor generates premium over 12% per year on average. They exclude the smallest 30% stocks that are likely to be shells in reverse mergers, and they exclude stocks trade less than 15 trading days per month and stocks trade less than 120 trading days in a year, which excludes stocks with long trading suspension. Qiao et al. (2019) replicate anomalies in Chinses A-share stock market and

find the strategy that buys the smallest stocks and sells the largest stocks generates 1.32% returns per month.

Assuming a portfolio consisting of five stocks 1, 2, 3, 4 and 5. Five stocks have monthly returns with a, b, c, d, e respectively, the equal-weighted return of portfolio is calculated as:

$$EW_1 = \frac{1}{5} * a + \frac{1}{5} * b + \frac{1}{5} * c + \frac{1}{5} * d + \frac{1}{5} * e$$

If stock 5 suspends trading, and CSMAR treats stock return e during suspension as missing value, the equal-weighted return becomes:

$$EW_2 = \frac{1}{4} * a + \frac{1}{4} * b + \frac{1}{4} * c + \frac{1}{4} * d$$

In such case, EW_1 is not equal to EW_2.

Similarly, bias can also be introduced when using zero stock return during trading suspension. Consider the above case again, the actual equal-weighted return is calculated as:

$$EW_1 = \frac{1}{5} * a + \frac{1}{5} * b + \frac{1}{5} * c + \frac{1}{5} * d + \frac{1}{5} * e$$

While WIND treats stock return e during suspension as zero, the equal-weighted return becomes:

$$EW_3 = \frac{1}{5} * a + \frac{1}{5} * b + \frac{1}{5} * c + \frac{1}{5} * d$$

Again, EW_3 is not equal to EW_1.

As shown by figure 4, suspension stocks have smaller size comparing with stocks without trading suspensions, and firm size monotonically decreases as suspension duration increases. As suspension stocks concentrate on small stocks, the small portfolio returns are more likely to be affected by suspension bias and hence SMB portfolio return are also likely to be impacted by such bias.

[Insert Figure 4 here]

4. Data Source and Methodology

The stock trading data and financial data of A-share firms are collected from both CSMAR and WIND. We obtain suspension data from WIND. WIND provides detailed information for each suspension case, including suspension dates, suspension durations, suspension reasons, resumption dates and firm industry. We use suspension information to count suspension days for each stock per month and suspension information are merged with monthly stock trading data.

The period for portfolio analysis starts from January 1, 2000 to December 31, 2018, and the constructed portfolios in 2000 use accounting data in the year of 1999. The sample period is selected since regulations and requirements for corporate disclosure are more stringent and thorough after the year of 1998, which significantly eliminate the variations in adopted accounting standards across listed firms. For instance, Securities Law was passed at the end of 1998 and implemented in the year of 1999. And more detailed guidelines for corporate disclosure were issued in the year end of 1998 and implemented in 1999. Another reason for the period selection is to ensure sufficient stock numbers for analysis. We require each portfolio to consist of at least 50 stocks to guarantee the validity and precision of our analysis, however, less than 50 stocks are included in portfolios before the year of 2000.

Before 2002, firms report on semi-annual basis. Accounting information can be obtained for June and December. After 2002, firms are required to issue quarterly reports, and accounting information are available for March, June, September and December. Quarterly accounting data are cumulative values, and we deal with this by subtracting the value for prior quarter.

Stocks are sorted into portfolios based on financial statements, the portfolio construction at the end of a given month t uses financial statements reported on the latest actual

reporting date prior to that month end. The actual reporting dates are collected from both CSMAR and WIND, we compare actual reporting dates from two databases and replace missing reporting date in one database if reporting date is available in another database. Then we hold constructed portfolios from month t+1 for one month and calculate value-weighted portfolio returns at the month end of t+1.

According to Fama and French (1992), they divided stocks into two groups: small and big based on market capitalization. And stocks are also separated into high, median and low groups based on the book-to-market ratio. The intersections of those groups are used to construct six portfolios: S/L, S/M, S/H, B/L, B/M, and B/H. The size factor SMB is calculated as follows:

$$SMB = \frac{1}{3}\left(\frac{S}{H} + \frac{S}{M} + \frac{S}{L}\right) - \frac{1}{3}\left(\frac{B}{H} + \frac{B}{M} + \frac{B}{L}\right).$$

We construct size factor by following Fama and French (1992) approach while we use both book-to-market ratio and earnings-to-price ratio to capture value of stocks Liu, Stambaugh and Yuan (2019) run a horse race between book-to-market ratio and earnings-to-price ratio and document that earnings-to-price ratio outperforms in capturing value effect in China than book-to-market, which is frequently used in US finance research.

We propose four potential methods to correct missing or misreported stock returns during trading suspensions. First, we simply use market returns to proxy for suspension returns to recalculate size factors and compare the change between original size factors and recalculated factors. Second, considering the correlation of individual stocks with the market movement, the production of market return and individual stock beta is used to proxy for suspension returns. Third, industry return is used to correct suspension stock returns. Last, we calculate the value of information during suspension months and use it to replace missing or misreported suspension returns as follows:

Assuming stock i suspends trading in month t for n months, and the resumption monthly return is $R_{i,t+n}$, the market return for the resumption month is $R_{mkt,t+n}$, the value of information for the whole suspension periods is calculated as :

$$Value\ of\ information_i = R_{i,t+n} - \beta_1 R_{mkt,t+n}$$

The monthly return for stock i that suspends for m months is calculated as:

$$R_{i,t+m} = \beta_2 R_{MKT,t+m} + \frac{Value\ of\ information}{Duration_i} * Duration_{i,t+m}$$

$Duration_i$ represents the whole duration of trading suspension in days since month t for stock i, and $Duration_{i,t+m}$ stands for the suspension duration in month t+m in days. $R_{i,t+m}$ is used to correct for suspension returns.

5. Summary Statistics

Figure 1 displays the percentage of trading suspension stocks among universe stocks over the sample period. It is striking that over 50 percent of A-share stocks suspended trading in year 2015 during the stock market crash. Though the percentage of suspension stocks sharply decreases to less than 10% in year 2017.

[Insert Figure 1 here]

Figure 2 summarises the number and percentage of suspension cases over various suspension durations from 2000 to 2018. Over 70 percent of trading suspensions last 1 day, and the number of suspensions decreases as the suspension duration increases. Strikingly, 935 suspensions last more than 100 trading days, 29 suspensions last more than 300 trading day. We use the suspension information to count the number of suspension days for each stock over the sample period and calculate the average suspension duration for each year, which is displayed in Figure 3. The number of average suspension duration experienced a sharp increase

and reaches the peak during the stock market crash in the year of 2015 with roughly 45 trading days.

[Insert Figure 2 and Figure 3 here]

Figure 4 compares the characteristics of stocks without suspension and suspension stocks with different suspension durations. As displayed in Figure 4a, suspension stocks are associated with smaller market capitalization on average, and market capitalization decreases as suspension duration increases. Similar patterns can be spotted in Figure 4b and 4c as well. Suspension stocks have lower EP and BM ratio, and ratios decrease as suspension duration increases. The observed patterns are consistent with findings by Pong (2018). Pong (2018) investigates how the occurrence of trading suspension is related to firms' fundamentals and finds that stocks with smaller size are more likely to suspend trading.

[Insert Figure 4 here]

6. The Impact of Suspension Bias on Size Portfolio

To examine the impact of suspension bias on size portfolio, we first sort stocks into portfolios based on market capitalization only. Universe stocks are sorted into three, five and ten portfolios in Panel A, B and C respectively in Table 1. The difference between original portfolio returns and recalculated portfolio returns are reported in Column 1-Column 4. Introducing corrected suspension returns significantly decreases the return generated by small portfolios and SMB portfolios by 18-54 basis points and 16-54 basis points respectively. The magnitude of reduction in returns of small and SMB portfolios show monotonically increasing trend from Panel A to Panel C, suggesting that the corrected suspension returns shrink size effect more significantly for very small stocks.

[Insert Table 1 here]

We also compare the portfolio returns by using zero suspension returns from WIND and the corrected suspension returns, and results are reported in Appendix A. Similarly, using the corrected suspension returns shrinks the returns to small portfolio and SMB portfolio significantly.

7. The Impact of Suspension Bias on Size Effect

To examine the impact of suspension bias on size effect in China, universe stocks are sorted into six portfolios by following the Fama-French approach. EP and BM ratios are employed to capture stock value respectively in Panel A and B respectively in Table2. The corrected suspension return is used to recalculate portfolio returns and the difference of portfolio returns by using missing suspension return and corrected suspension returns are reported by Column 1-Column 4. Based on empirical results, introducing the corrected suspension returns shrink the size effect by 11-16 basis points per month (132-192) basis points per year) without affecting the returns generated by big portfolios.

[Insert Table 2 here]

Appendix B alternatively reports the difference in small and SMB portfolio returns by using zero suspension returns from WIND and corrected suspension returns. Similar to Table 2, corrected suspension returns reduce the size premium significantly while the magnitude of reduction is smaller comparing with using missing suspension return from CSMAR.

8. Conclusion

The most frequently used financial databases in China are CSMAR and WIND. CSMAR treats stock returns during trading suspension as missing value. Wind uses the stock price on the last trading day prior to trading suspension to proxy for stock price during suspension

period, and simply misreports stock returns during suspension as zero. Since trading suspensions are largely unanticipated ex-ante, missing or misreported suspension returns can introduce bias for portfolio return calculation and factor estimation. This paper documents such suspension bias in stock in Chinese financial databases and provide potential approaches for correction.

To correct the suspension bias, we first use market return to proxy for stock return during suspension periods and we alternatively use stock Beta multiplies market return as proxy by taking into account the correlation between individual stock and market movement. We find that the size factor in China could be overestimated without considering suspension bias and introducing the corrected suspension return shrinks size premium by 192 basis points per year.

Trading suspension is an important and unique issue in Chinese stock market, investors should carefully take into account the suspension bias when calculating feasible portfolio returns and making investment decisions. As the suspension bias could affect validity of empirical studies, researchers should also carefully handle missing and misreported suspension returns in financial databases.

Appendix

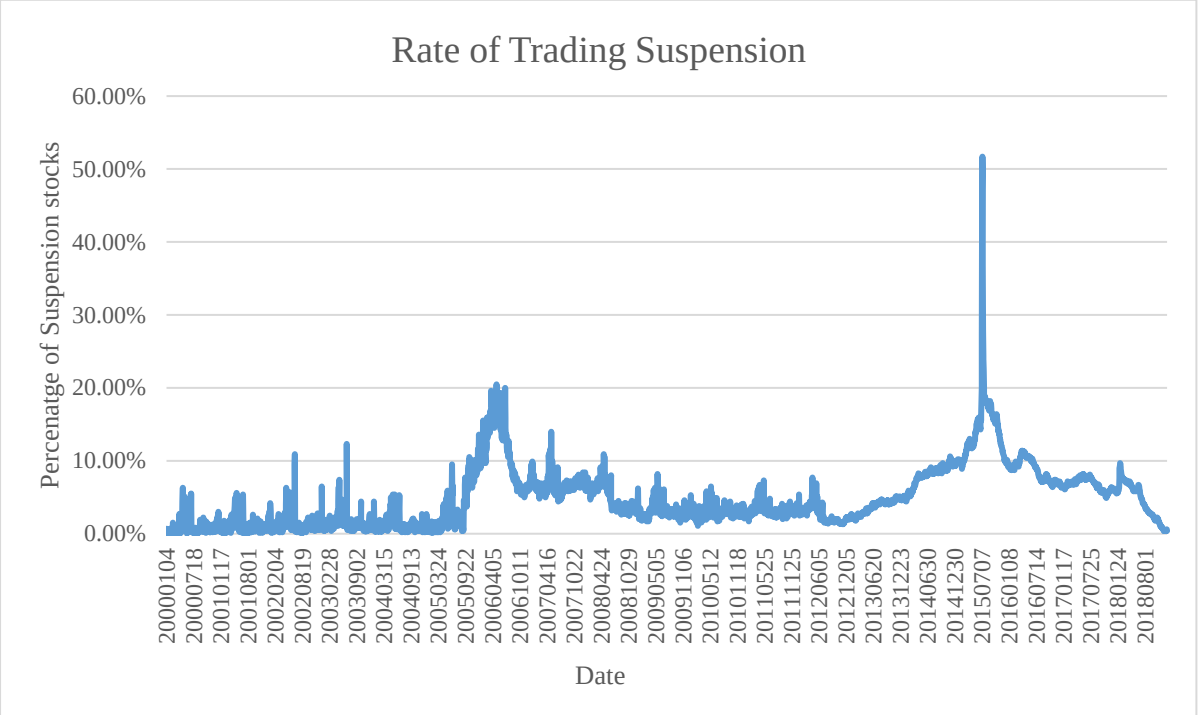

Figure 1. Rate of Trading Suspension. The figure displays the percentage of stocks that suspend trading from January 2000 to December 2018. The x-axis represents date and y-axis represents the percentage of suspension stocks.

Suspension Duration	No. of cases	Percentage of Suspension Cases
D=1	47517	71.38%
1<D<=5	6941	10.43%
5<D<=10	3600	5.41%
10<D<=30	3562	5.35%
30<D<=50	1002	1.51%
50<D<=100	1961	2.95%
100<D<=300	935	1.40%
300<D	29	0.04%

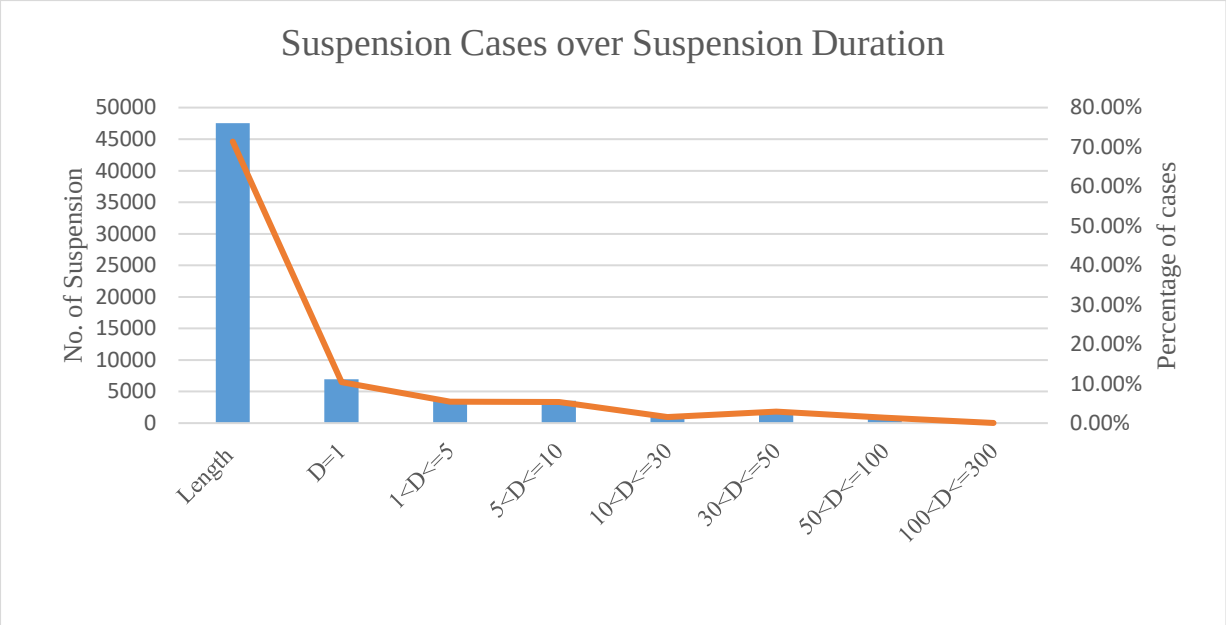

Figure 2. Summary of suspension cases across suspension durations. The figure shows the number of suspension cases and percentage of suspension cases across different suspension durations. 'D' stands for number of suspended trading days. Over 50% of suspensions last 1 trading day, and 0.04% of suspension cases last more than 300 trading days.

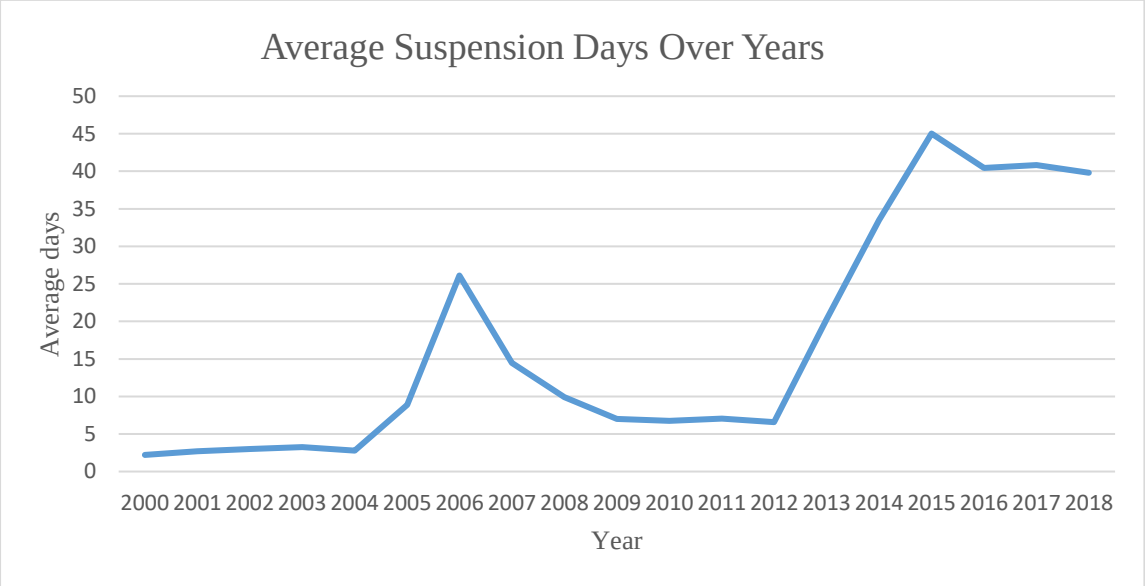

Figure 3. Average suspension days over years. The figure displays the average suspension days of stocks over the sample period from 2000 to 2018. The length of suspension reaches the peak with approximately 45 days during the stock market crash in 2015.

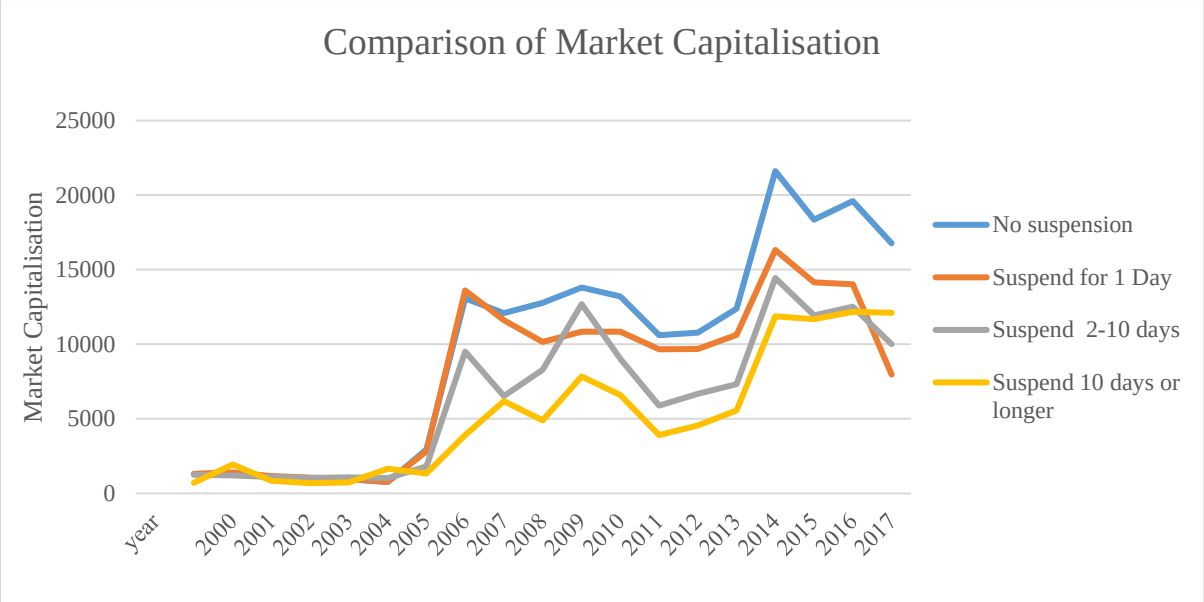

Figure 4a. The figure compares the market capitalization of stocks without trading suspension, stocks with suspension for 1 day, suspension for 2-10 days, and suspension for 10 or more days over the sample period. The x-axis represents year and y-axis stands for the market capitalization.

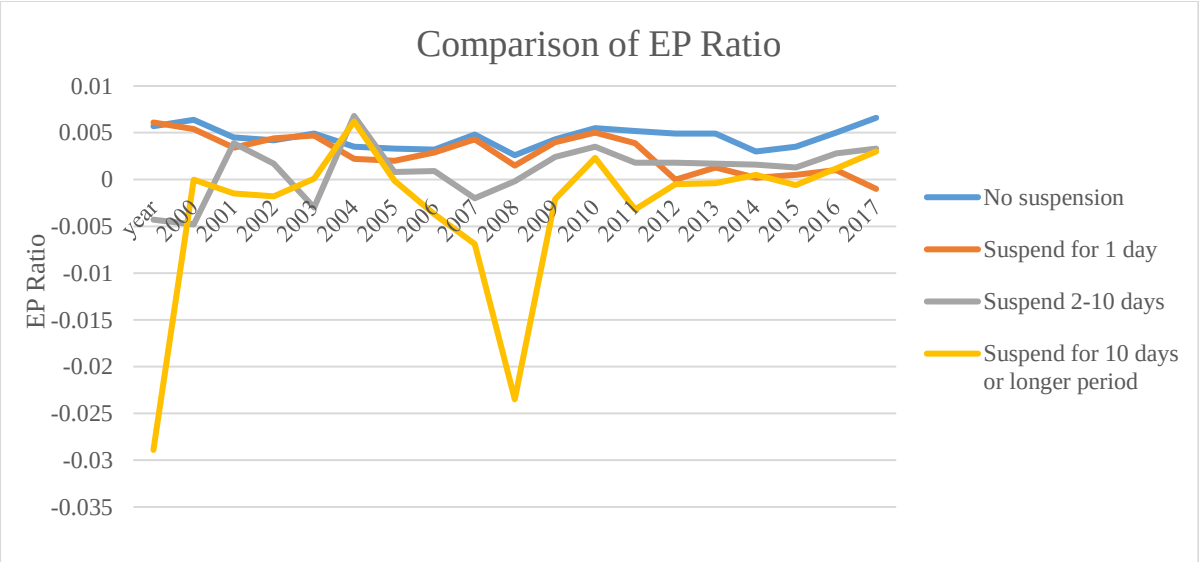

Figure 4b. The figure compares the earnings-to-price (EP) ratio for stocks without trading suspension, stocks with suspension for 1 day, suspension for 2-10 days, and suspension for 10 or more days over the sample period. The x-axis represents year and y-axis stands for the EP ratio.

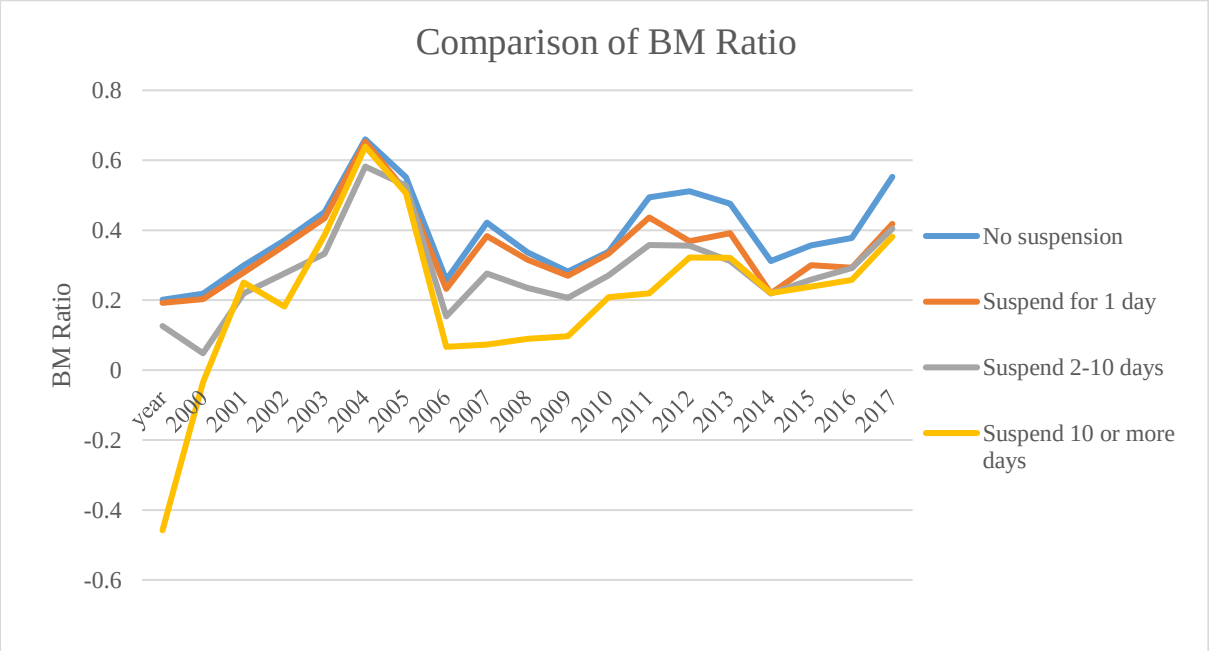

Figure 4c. The figure compares the book-to-market (BM) ratio for stocks without trading suspension, stocks with suspension for 1 day, suspension for 2-10 days, and suspension for 10 or more days over the sample period. The x-axis represents year and y-axis stands for the BM ratio.

Table 1. Impact of Trading Suspension on Size portfolio in China (CSMAR)

This table reports the impact of trading suspension bias on size portfolios using stock returns from CSMAR database. In Panel A, universe stocks are sorted into three portfolios based on market capitalization. In Panel B, universe stocks are sorted into five portfolios based on market capitalization. In Panel C, universe stocks are sorted into ten portfolios based on market capitalization. Column (1)-(4) report the difference of portfolio returns using the original data and corrected suspension returns. Column (1) to Column (4) use market return, individual beta, industry return and value of negative news to proxy for suspension returns respectively. Small represents the monthly returns for small size portfolio, big represents the monthly returns for big size portfolio, SMB represents the difference of returns between small and big portfolios, t-statistics are reported in parentheses.

Panel A	(1) MKT	(2) Beta	(3)Industry Return	(4) Value of news
Small	0.2240050	0.2147461	0.1775822	0.2421191
t-stat	(4.16)	(4.08)	(5.20)	(3.71)
Big	0.0229427	0.0163219	0.0193258	0.0135704
t-stat	(3.30)	(2.11)	(1.83)	(0.94)
SMB	0.2010623	0.1984242	0.1582564	0.2285487
t-stat	(3.96)	(4.04)	(4.68)	(3.95)

Panel B	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.2846778	0.2765630	0.2299732	0.3183751
t-stat	(4.23)	(4.15)	(5.23)	(3.79)
Big	0.0210442	0.0141383	0.0174096	0.0090534
t-stat	(3.20)	(2.05)	(1.73)	(0.66)
SMB	0.2636336	0.2624247	0.2125636	0.3093217
t-stat	(4.05)	(4.08)	(4.87)	(3.93)

Panel C	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.4440703	0.4529614	0.3749315	0.5454382
t-stat	(4.50)	(4.52)	(5.45)	(4.22)
Big	0.0190984	0.0123744	0.0169992	0.0083665
t-stat	(2.91)	(1.99)	(1.86)	(0.58)
SMB	0.4249718	0.4405870	0.3579323	0.5370717
t-stat	(4.36)	(4.44)	(5.21)	(4.24)

Table 2. Impact of Trading Suspension on the Size Premium in China (CSMAR)

This table reports the impact of trading suspension bias on size premium using stock returns from CSMAR database. Column (1)-(4) report the difference of portfolio returns using the original data and corrected suspension returns. Column (1) to Column (4) use market return, individual beta, industry return and value of negative news to proxy for suspension returns respectively. Small represents the monthly returns for small size portfolio, big represents the monthly returns for big size portfolio, SMB represents the difference of returns between small and big portfolios, t-statistics are reported in parentheses. In Panel A, earnings-to-price (EP) ratio is used to break universe stocks into high, medium and low groups. In Panel B, book-to-market (BM) ratio is used to break universe stocks into high, medium and low groups.

Panel A	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.1430705	0.1310078	0.1089941	0.1582792
t-stat	(3.72)	(3.39)	(4.66)	(3.30)
Big	0.0084364	-0.000590164	0.0024208	-0.0035575
t-stat	(0.6)	(-0.04)	(0.20)	(-0.15)
SMB	0.1346342	0.1315979	0.1065733	0.1618367
t-stat	(4.52)	(4.53)	(4.81)	(4.56)

Panel B	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.1502796	0.1404045	0.1110800	0.1557179
t-stat	(3.58)	(3.30)	(4.52)	3.16
Big	0.0184579	0.0143438	0.0116803	0.0122062
t-stat	(1.55)	(0.99)	(1.21)	0.57
SMB	0.1318218	0.1260607	0.0993997	0.1435118
t-stat	(3.92)	(3.80)	(4.12)	3.96

Appendix A. Impact of Trading Suspension on Size portfolio in China (WIND)

This table reports the impact of trading suspension bias on size portfolios using stock returns from WIND database. In Panel A, universe stocks are sorted into three portfolios based on market capitalization. In Panel B, universe stocks are sorted into five portfolios based on market capitalization. In Panel C, universe stocks are sorted into ten portfolios based on market capitalization. Column (1)-(4) report the difference of portfolio returns using the original data and corrected suspension returns. Column (1) to Column (4) use market return, individual beta, industry return and value of negative news to proxy for suspension returns respectively. Small represents the monthly returns for small size portfolio, big represents the monthly returns for big size portfolio, SMB represents the difference of returns between small and big portfolios, t-statistics are reported in parentheses.

Panel A	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.1276363	0.1184875	0.1076058	0.1324589
t-stat	(5.24)	(5.19)	(5.87)	(3.05)
Big	0.0248412	0.0218378	0.0197612	0.0163417
t-stat	(3.42)	(3.17)	(2.63)	(1.22)
SMB	0.1027951	0.0966497	0.0878447	0.1161172
t-stat	(4.76)	(4.71)	(5.41)	(3.01)

Panel B	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.1419801	0.1346107	0.1219533	0.1621382
t-stat	(4.70)	(4.58)	(5.43)	(2.97)
Big	0.0232203	0.0197824	0.0181759	0.0125174
t-stat	(3.39)	(3.05)	(2.61)	(0.96)
SMB	0.1187598	0.1148283	0.1037774	0.1496208
t-stat	(4.21)	(4.13)	(4.93)	(2.91)

Panel C	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.1752683	0.1763619	0.1560891	0.2627371
t-stat	(3.88)	(3.91)	(4.80)	(3.20)
Big	0.0206487	0.0162621	0.0158745	0.0109360
t-stat	(3.16)	(2.68)	(2.36)	(0.77)
SMB	0.1546195	0.1600997	0.1402146	0.2518011
t-stat	(3.470	(3.59)	(4.38)	(3.10)

Appendix B. Impact of Trading Suspension on the Size Factor in China (WIND)

This table reports the impact of trading suspension bias on size premium using stock returns from WIND database. Column (1)-(4) report the difference of portfolio returns using the original data and corrected suspension returns. Column (1) to Column (4) use market return, individual beta, industry return and value of negative news to proxy for suspension returns respectively. Small represents the monthly returns for small size portfolio, big represents the monthly returns for big size portfolio, SMB represents the difference of returns between small and big portfolios, t-statistics are reported in parentheses. In Panel A, earnings-to-price (EP) ratio is used to break universe stocks into high, medium and low groups. In Panel B, book-to-market (BM) ratio is used to break universe stocks into high, medium and low groups.

Panel A	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.0927385	0.0830691	0.0795855	0.0967176
t-stat	(5.26)	(5.19)	(5.61)	(3.09)
Big	0.0302024	0.0261350	0.0249571	0.0101833
t-stat	(2.89)	(2.70)	(2.56)	(0.54)
SMB	0.0625360	0.0569341	0.0546284	0.0865343
t-stat	(4.80)	(4.59)	(4.89)	(3.52)

Panel B	(1) MKT	(2) Beta	(3) Industry Return	(4) Value of news
Small	0.0953341	0.0876001	0.0820532	0.0885096
t-stat	(5.12)	(5.11)	(5.65)	(2.81)
Big	0.0299929	0.0275742	0.0231478	0.0175548
t-stat	(3.37)	(3.32)	(2.86)	(1.03)
SMB	0.0653411	0.0600259	0.0589054	0.0709549
t-stat	(4.55)	(4.38)	(5.03)	(2.87)

Appendix C. Variable Definitions

1. Size: The stock's A-share market capitalization is used.
2. Earning-price ratio (EP). Earnings equals to the most recently reported net profit excluding nonrecurring gains/losses. EP is the ratio of earnings to the total market capitalization of A, B and H shares.
3. Book-to-market ratio. Book equity equals to total shareholder equity minus the book value of preferred shares. BM is the ratio of book equity to the total market capitalization of A, B and H shares.

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