A Progressive Price Limit Mechanism to Facilitate the Market Fairness of China's Stock Market

Qili Huang[1,a]

[1] School of Economics, Sichuan University, Chengdu, Sichuan, China, 610065

[a] qili_huang@qq.com

Keywords: Price Limit Mechanism; Stock Market; Price Fluctuation

Abstract: With the advancement of China's Finance Sector Supply-side Structural Reform, some major institutional arrangements of China's stock market need to be altered and amended to satisfy the reforming requirements and promote the development of the stock market, among which the current stock market's price limit mechanism that has been adopted since 23 years ago has presented several inadaptabilities such as constraining the convergence to equilibrium price, triggering volatility spillover effect and retarding market fairness. By examining the pros and cons of the current stock market price limit mechanism, this paper introduces a progressive price limit mechanism with expanding price limit band that relaxes the price limits of a stock level by level, and proves that it is a feasible measure to improve stock price depression, the imbalance of stock buyers and sellers, and the market fairness of China's stock market.

1. Introduction

The stock market of a nation plays the role as the core of capital market by providing equity financing for enterprises, securities for investment and trading opportunities for resource allocation. A series of trading mechanisms such as Price Limits, Circuit Breaker, Trading Halt, Short Sale Bans and so on, have been invented and applied to maintain the fairness and effectiveness of a stock market. After decades of application, these trading mechanisms have been proved effective in most developed economies. However, in developing countries like China, due to the short history of establishment of the stock market and some institutional inmatureness, it requires some major alterations of these trading mechanisms. The price limit mechanism in China's stock market is one that presents major differences to thoese in developed economies (See Table 1). The current price limit mechanism was adopted in late 1996 by the China Securities Regulation Committee (CSRC), the regulatory authority of China's securities market, to moderate large price fluctuations. After 23 years of market testing, the price limit mechanism has shown some serious defects in market management. Fang Xinghai, Vice Chairman of the CSRC, pointed out that based on the statistical research on the price trend of new born stocks, the current 44% price limit on the first day of listing of new shares suppresses the real reflection of the stock price. In order to make the new shares rise for a longer time, the herd behavior of secondary market investors blindly chasing the rise becaomes more serious, and the GEM Board stocks with small market value are more likely to enlarge this price distorting effect. This institutional arrangement is unreasonable and acts like an obstacle to promote market fairness of the stock market, thus requires substantial amendments in the future, as the Finance Sector Supply-side Structural Reform advances.

DOI: 10.38007/Proceedings.0000534 ISBN: 978-1-80052-002-8

2. Defects of the Current Price Limit Mechanism

The price limit of securities price (the price limit bands or boards) refers to the range between the highest price and the lowest price that a stock may reach on each trading day. The adoption of price limit bands of securities price fluctuation is a common practice of securities regulatory bodies in various countries, with the main purpose of preventing excessive market fluctuation and cracking down on speculative activities. The common practice of securities regulatory authorities in developed economies is to set price limits on financial derivatives such as futures and foreign exchange currencies, while not to set price limits on common stocks. In contrast, the CSRC imposes strict limits on the maximum rise and fall of all stocks in Shanghai Stock Exchange and Shenzhen Stock Exchange, which makes China's stock exchanges have unique trading rules (see Table 1) compared to other major stock exchanges.

Table 1. Current Price Limit Mechanism in SHSE and SZSE

Main Board SHSE Main Board SZSE SME & GEM Boards SZSE	1. IPO Day: -44% to +44%. The rise and fall of IPO on that day are divided into two levels, each of which is 20%. When the price fluctuation reaches 20% for the first time, it can fluctuate another 20% in the same direction, that is, the maximum range on that day is 44% (120% * 120% - 1); 2. Normal Day: -10% to +10%.
STAR Board SHSE	1. IPO day and additional offering of listed shares: No price limit on the day of listing and the following 4 trading days. 2. Normal Day (the 6th trading day on): -20% to +20%.

Source: Shanghai Stock Exchange, Shenzhen Stock Exchange

According to the theory of equity evaluation, the stock price is the equilibrium price around the fluctuation of the real value of the stock, which is affected by the behaviors of both the buyer and the seller. Without restriction and friction, the stock price truly reflects the current equilibrium state of the stock value and the strength of both the buyer and the seller. Therefore, a reasonable flow of factors in the securities market should not take any price restrictions but to let the strength of both sides of the transaction and the enterprise value behind the stock to determine the its price. No price limit applied to the stock market should be a rational market regulatory act, like those in HKSE, LSE, Nasdaq and NYSE. Imposing a limit on stock prices may in one hand help moderate the excessive price fluctuation, but in other hand brings in problems that hinder the trading fluence of the whole stock market.

Chen et al. (2006) pointed out that the price limit mechanism in China's stock market has posed three major disadvantages compared to those in developed economies. The price limit mechanism delays the process of price discovery, triggers the volatility spillover effect and liquidity inteference effect, all of which hinder the fluence of trading activities in the stock market and hurt market fairness. Fan et al. (2007) carried out a test to examine the price limit policy of China's stock market, and result shows that the price limit policy impedes the fulfillment of traders and delays the discovery of equilibrium price of a stock. They argued that the price limit policy should be abolished to release the activeness of the market trading activities. Wu et al. (2016) conducted a quantitative anlysis on the post-hit dynamics of stock prices after the stock price hitting the up-limit or the down-limit occurs based on data of common stocks in China's stock market from year 2000 to year 2011, and their analysis found that the price-hit opening dynamics is dependent on both the price trend and the time span of continuous hits. Such finding of post-hit dynamics has been observed and manipulated by stock speculators, and is being used to make profits. Their research gives us evidents that a flexible and ajustable price restriction mechanism is necessary to replace the present fixed one with the intention to maintain trading fairness and prevent market manipulation.Tao et al. (2017) re-examine the effectiveness of the current price limit policy in a recent time span (Year 2007 to Year 2012) adopting the methodology of event study and regressional analysis of a sample of 300 common A-share stocks, their analysis gives a conclusion that the price limit band of -10% to 10% exaggerated the market voliatility and causing volatility spillovers.

To sum up, the current price limit mechanism has 3 major defects. First, the narrow price limit band delays the convergence to equilibrium price of a stock. By imposing a narrow limit band of 20% (Main, SME and GEM boards) and 40% (STAR board), the convergence to equilibrium price of a stock is disrupted artificially to a series of narrow daily steps, which results in a seriously delay. Second, the price distorting effect of the stock price is amplified by the narrow price limit bands of new born shares. The price limit of the first day's new shares blurs the market's response to the real stock price and produces a "spring effect", which is an invalid institutional arrangement. Third, the narrow price limit band leads to the imbalance of trading power in the secondary market. Due to the low range of stock price limit (20% for Main, SME and GEM boards, 40% for STAR board), when the stock price reaches the maximum range, one of them can no longer trade in the same direction, artificially causing the shortage of stock supply on that day, and cutting off the liquidity of the stock. When the market plummeted, the shares in the hands of investors could not be sold below the limit, and artificially prevented the market from clearing. This kind of temporary imbalance of supply and demand makes room for the big speculators and manipulation of stock prices. Speculators only need to use enough funds to seal the stocks near the price limit bands, which can trigger the retail investors' mood of chasing up and killing down, and then obtain a gain by reverse selling or buying. According to the above point of view, the current price limit widely implemented in China's securities market is a systematic constraint imposed on investment and trading activities from the supply-side of the securities market, which is not conducive to fair trading and needs a major amendment immediately[1,2].

3. A Progressive Price Limit Mechanism

Although the present price limit mechanism in China's stock market has a great constraint on securities trading, from the perspective of stable market operation and political stability, it is not feasible to abolish the system and immediately change to one similar to the developed securities markets like those in USA. China's securities regulatory authorities have made great progress in implementing a new limit system (No limit on the first five days of listing, and the maximum +20% and -20% every day) with STAR Board in SHSE. Therefore, in order to solve the above two system defects, this paper proposes a progressive price limit mechanism to China’s stock market which is similar to that in the futures exchange, through relaxing the constraints of the old rules, operating for a period of time and then gradually transiting to the unconstrained state, to complete the transformation of trading rules. Farag (2013) investigated the effect of imposing different price limit bands on stock market by samples from the stock exchanges in Egypt, Thailand and South Korea, and his invesigation found that the switch from a narrow price limit band to a wide price limit band helpls improve the asymmetric volatility and market efficiency.

The price limit mechanism adopted by China's futures market, which is developed later than the stock market, is a progressively increasing constraint mechanism, which is usually used together with the measures to increase the trading margin. By expanding the limit bands and increasing the margin ratio at the same time, the dual purposes of expanding the commodity price fluctuation range and controlling the trading risk of futures poles can be achieved. For example, Shanghai Futures Exchange copper futures price limit provisions (See Table 2). If a trading day (D1) has price limit and unilateral market, the price limit will be increased from 3% to 5%, and the margin level will be increased from 5% to 7%; if the second trading day (D2) has price limit and unilateral market continuously, the price limit will be increased to 6% and margin will be increased to 9%. If the third trading day (D3) has price limit and unilateral market again, the decision will be made according to the situation of the fourth trading day, if it is still positive On a regular trading day, the futures exchange shall adjust or maintain the level of the previous trading day according to the current situation of the commodity. According to the price fluctuation, the rules of the price limit in the futures market realized the gradual relaxation of the contract price constraint, more truly reflected the market supply and demand, corrected the distortion of some securities prices, and avoided the continuous speculation and market manipulation to a large extent.

Table 2: Copper Futures Price Limit Mechanism in SHFE

Day	Triggerring Condition	Band Setting	Margin Setting
D1	Price limit reached, and unilateral market (unilateral no continuous quotation) Price limit reached and unilateral market	3%（Original）	5%（Original）
D2	Price limit reached and unilateral market	5%	7%
D3	Price limit reached and unilateral market	6%	9%
D4	In case of delivery date, direct delivery. If it is the last trading day of the contract, trade at D3 level; In addition, the trading is suspended for one day, and the futures exchange shall decide the adjustment measures according to the situation on the next trading day.	Maintain 6% or set to margin required by the exchange	Maintain 9% or set to margin required by the exchange

Source: Shanghai Futures Exchange

There are 3 main advantages to replace the current fixed price mechanism by the proposed progressive one.

First , the progressive price limit mechanism helps solve the problems of stock price depression and imbalance between supply and demand. This measure of gradually expands the daily stock price amplitude which substantially relaxes the price depression compared to the current one. By expanding the price limit band from 20% to 40%, a new-born stock that needs 7 days to double its issued price under the current price limit bands can reach the same level within only 4 days. With a shortening time span, the process of stock price converging to its equilibrium level is speeded up, which is good to reduce the tention of imbalance between the buyer and the seller, and the intention of market manipulators can be made more obvious to small and medium investors as well, especially on new-born stocks[3, 4].

Second, a progressive price limit mechanism brings in a substantial increase of the cost of market manipulators and hit the excessive investment speculatory activities. If the up and down band of the main board stock in China can be increased from 20% to 40%, 50% and 60% after reaching certain conditions, it means that the funds of market manipulators also need to be multiplied correspondingly, as a consequence, the speculation behavior will be greatly hit.

Third, a progressive price limit mechanism helps small investors to adapt to the investors' psychological set of stock price fluctuations. The institutional arrangement of increasing the limit of stock price step by step makes the "much higher stocks" and "worse stocks" conform to people's general expectation of the trend of the relationship between stock price and quality. Investors can observe the fitting degree between their expectation and stock price from the relatively freer stock price movement, and get closer to the next round of investment decisions Information on the true value of shares.

In the Finance Sector Supply-side Structural Reform, the CSRC may consider abolishing the current price limit mechanism and establishing one that resembles the above-mentioned futures price limit mechanism as one of the comparative institutional arrangements, and use it as a structural reform in the China’s stock market. A policy advicement for the securities regulation authorities in China’s stock market is to adopt different progressive price mechnisms for different stock boards.

For the Main Board and SME Board in SHSE and SZSE, it is suitable to design and adopt a slowly increasing price limit band, according to the fact that most stock on these boards a blue-chip stocks with very large market value and low volatility. Most stocks listed on these boards are of state-owned enterprises and from sectors like Energy, Finance and Manufacturing, whose values are large and unlikely to experience largely daily fluctuation. The prices of such stocks tend to have low volatilities and are unlikely to become targets of market manipulators. Therefore a slowly increasing price limit bands like 5% can have good control on its price volatility.

For the GEM Board in SZSE and the STAR Board in SHSE, it is better to adopt a quickly increasing price limit band, due to the small market value and volatile price behaviourss of the listed stocks. The features of these stocks and the tech companies and innovative enterprises behind them make them attractive targets for market manipulators. By making fake news and rumors, the shortage of stocks on market and verly large price fluctuations can be easily obtained by market manipulators, which hurts the market fairness and small and medium investors. For example, a piece of fake news on blockchain easiy triggered price up-limit hits of several related GEM stocks, regardless of their involvement into the research,developemtn and application of blockchain.According to market statistics, the first 25 stocks on STAR Board have all doubled their IPO prices within only 2 weeks of trading since July 22 2019. Therefore, a quickly rising price limit band gives better and strong restrictions on stock manipulators, helping the securities regulation authorities maintain the fainess of the market[5].

4. Conclusion

From the review of the present price limit mechanism of China’s stock market, major alterations can be seen needed to meet the requirements of the Finance Sector Suppliy-side Structural Reform, and the proposed progressive price limit mechanism is proved to be an effective amendment to the current one and is able to enhance the fairness of the stock market by speeding up the price discovery process, improving the imbalance between stock buyers and sellers, and hitting the market manipulators.

References

[1] Hao-Wu, Chen , F. Li-Min , and T. Yuan-Hu . "Price limit and informed investor behavior:Evidence from China stock market."Journal of Systems Engineering21.5(2006):524-528.

[2] L. Fan, Z.P. Long, and B.J. Zhu. "Price Limit, Superior Information and Investor Behavior: Evidence from China Stock Market." Journal of Donghua University(English Edition) 24.4(2007):560-564.

[3] Wu, Ting , Y. Wang , and M. X. Li . "Post-hit dynamics of price limit hits in the Chinese stock markets." Physica A: Statistical Mechanics and its Applications465(2016):464-471.

[4] Tao, Juan , W. Yingying , and Z. Jingyi . "The performance of China’s stock market price limits: noise mitigator or noise maker?." China Finance Review International7.1(2017):85-97.

[5] Farag, Hisham . "Price limit bands, asymmetric volatility and stock market anomalies: Evidence from emerging markets." Global Finance Journal24.1(2013):85-97.