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# The monitoring of short selling: Evidence from China

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ABSTRACT

In the world second largest economy, the largest emerging market, an environment that is characterized by a weak legal system, a high level of government intervention, and an under-developed but fast evolving financial market, we investigate whether short selling is associated with regulators' enforcement actions and reduces the future crash risk. By using manually collected firm level lawsuit data, we find that short selling is positively associated with probability for the firm of being targeted or punished by CSRC (China Securities Regulatory Commission). In addition, we find short selling reduces the future stock price crash risk. These findings suggest that short selling monitoring provides supplementary monitoring power to the financial markets. Moreover, our results provide information that can inform policy making.

## 1. Introduction

Ever since Miller's (1977) seminal theoretic work about short selling, numerous work has been done on the controversial question of how short selling impacts capital markets. When investors' beliefs or information about a security's value is heterogeneous and short selling is prohibited, Miller (1977) theorizes that the security is overvalued. As an efficient market is "a market in which prices always 'fully reflect' available information" (Fama (1970)), when overvalued stocks' prices are corrected, short sellers expect to gain abnormal positive returns. However, due to the frictions and other factors such as irrational market participants, we may not be able to observe the informativeness of short selling. Informed investors are generally sophisticated investors such as some institutional investors, and they have ample resources to study firms they are investing in or they are going to invest. Depending on the style of the investors, they may "vote by hand" by monitoring management closely or they may "vote by feet" by simply taking long or short position on their investment targets.

Based on Miller (1977)'s work, researchers have provided theoretical prediction and empirical evidence that short sellers are informed and able to predict negative returns (see, e.g., Diamond and Verrechia (1987), Senchak and Starks (1993), Aitken et al. (1998) , and Boehmer et al. (2008) and Diether et al. (2009)). Using different measures of informativeness, Christophe et al. (2004) and Liu et al. (2008) find increased short selling volumes before negative earnings announcements, analyst downgrades, and mortgage loss-related write-downs. On the other hand, Daske et al. (2005) do not find any evidence about predictability of short selling, and Henry and Koski (2010) find no evidence of informed short selling around SEO announcements. Most of these studies focus on security price responses only. However, we, instead, are testing the monitoring power of short selling by studying the interaction between short selling, government enforcement actions, crash risk and corporate governance at one time.

A noteworthy related study is Karpoff and Lou (2010). They find that when managers produce falsified financial statements, short sellers are able to identify, uncover, and mitigate the effects of financial misconduct. Another related study in the area is Chang et al.,

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2014, which studies the short-sales in China stock market accordingly. They find that removing short-sales constraints tends to cause price decrease. They also find evidence on short selling return predictability in China. They argue that short sellers in China are marginally informed and able to predict future negative returns. From a different perspective, we test the monitoring power and informativeness of short selling in China.

Similar to the functions and operations of SEC in the U.S., China Securities Regulatory Commission (CSRC) is in charge of enforcing the securities laws in China and regulating the public firms. The CSRC investigates allegations of corporate and securities fraud and makes enforcement actions in cases where fraud and malpractices are proved. Using a CSRC enforcement dataset, Chen et al. (2006) find that "the proportion of outside directors, the number of board meetings, and the tenure of the chairman are associated with the incidence of fraud". We examine the association among short selling, corporate governance, and these enforcement actions with a system model. In particular, we examine whether those heavily-shorted firms are associated with a stronger propensity to commit fraud, and whether short selling can be a supplement monitoring power in addition to inside corporate governance.

CSRC has recently removed prohibition on short sales on a group of firms for qualified investors, which provides a unique natural experiment to test the monitoring function of short selling. We find the increased short selling is related to a higher probability for the firm to be targeted by CSRC and included in the enforcement group, suggesting short sellers are able to identify the potential corporate fraud earlier and respond to it. Interestingly, because the bad news is not accumulated to a sudden future revelation, instead, it is integrated to security prices by shorting the firms with issues and problems, we find that the firms' future stock price crash risk reduces.

The above findings are robust with different measures of the stock price crash risk. We also address endogeneity issues with two stage linear squares regressions and a system regression model. We further find that the effects of increased short selling activities on reducing the crash risk are stronger for the firms of smaller size and lower state ownership. This suggests that short sellers in China can monitor the firms whose stocks are more available for shorting.

Our study makes several contributions to the literature. Firstly, our work contributes the literature of the monitoring role of short sellers in the stock market. Short selling is a controversial activity, and it has been banned generally in emerging markets and even during extreme market situations in developed markets. The benefits of removing the ban of short selling on a list of stocks may also serve as the evidence that the CSRC's experiment successfully improves stock price efficiency. Our work also contributes the argument about the informativeness of short selling. To our knowledge, this study is the first one that studies CRSC investigation and individual stock price crash risk within a unique short selling regulation environment in emerging markets.[1] Moreover, our results provide information that can inform policy making within the CSRC and other regulation bodies in emerging markets.

The rest of this paper is organized as follows. Section 2 provides a detailed overview of short-sales practices in two stock exchanges in China. Section 3 reviews related literature and develops hypotheses. Section 4 describes our data and research design. In Section 5 we provide empirical analyses. Section 6 shows robustness check. Section 7 concludes.

## 2. Institutional details

Short selling and margin trading were prohibited in mainland China. On March 31, 2010, the two major exchanges (Shanghai Exchange and Shenzhen Exchange) in mainland China allowed qualified investors to buy eligible stocks on margin or short-sell those stocks under a pilot scheme. In total, 90 Blue chips stocks in the SSE 50 Index (on the Shanghai exchange) and SZSE Component Index (on the Shenzhen exchange) on a designated list were eligible for margin trading and short selling. The list was revised twice in 2010, with six stocks being deleted and six new stocks being added, and the total number of eligible stocks remained at 90. On December 5, 2011, the list was substantially expanded to include 280 constituent stocks in the SSE 180 Index and SZSE 100 Index, as well as 7 exchange-traded- funds (ETFs). The Table 1 reports the timeline of the eligible stocks listing development.

Stocks and ETFs have to meet several criteria to be eligible for short-selling and margin trading. According to the implementation rules promulgated by the Shanghai exchange, eligible stocks must satisfy size, liquidity, and volatility requirements. According to the administrative rules promulgated by the CSRC (China Securities Regulatory Commission), only qualified investors can join this game. Regularly, the investing account balance for individuals should be at least 500,000 CNY in order to buy stocks on margin or sell stocks short. Naked short-selling is strictly prohibited.

The cost of short-selling and margin trading is extraordinarily high. For example, Haitong Securities charge about 8–9% of stocks value for security lending and margin trading for all stocks. However, in the U.S., only 9% of stocks have a loan fee above 1%. As the statistics up to Nov. 2012, on average the short interest is very significant, about 10% (mean = 9.915% and median = 11.409%) for the pilot firms during our sample period in China, and the short selling volume is increasing through the sample period.

## 3. Related research and hypotheses

### 3.1. The information content of short selling

One purpose of this study is to find out whether short sellers are able to identify stocks with crash risk. In this sense, our

[1] A non-comprehensive list of the studies on the relationship between short selling and crash risk on the U.S. market and other international markets includes Bris et al., (2007), Charoenrook and Daouk (2009), and Callen and Fang (2015).