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Trading on inside information: Evidence from the share-structure reform in China

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ABSTRACT

We examine stock trading activities in days before Chinese listed firms made public announcement to start share-structure reform. There is significant evidence that, relative to a benchmark period, institutional investors bought more event firms' shares in the last two trading days prior to announcement. Randomization tests show significant differences in institutional trading activities between event firms and matched control firms, which suggests that some institutions had inside information. Moreover, large trades account for a significant proportion of daily stock price changes in the last 2 days. The evidence is consistent with the prediction by Holden and Subrahmanyam (1992) that, when multiple informed investors acquire the same piece of information, they will trade aggressively. We also find that over the reform period, the median share value change of event firms is 6% higher than that of control firms. Our findings have important implications for enforcement of insider trading regulations in China.

1. Introduction

In a public statement dated September 6, 2005, the China Securities Regulatory Commission (CSRC) reported that it took administrative enforcement actions in seven insider trading cases between January 1992 and June 2005.[1] On the other hand, Meulbroek (1992) reports that between 1980 and 1989, the US Securities and Exchange Commission (SEC) brought charges against 464 individuals involved in 183 insider trading episodes. Although the number of enforcement cases in China appears relatively small, it is commonly believed that insider trading is widespread in China (Du and Wei, 2004). It is hard to detect illegal insider trading because all trades appear innocent unless the link between a trade and material inside information can be established. This paper attempts to provide empirical evidence for trading on inside information in China through a large-scale and systematic study.

Our study is based on a unique setting in which inside information can be identified precisely. When the Chinese government pursued the share-issued privatization (SIP) program, they took a split share structure in which SIP firms had both tradable and non-tradable shares. As will be discussed in detail in Section 2.3, the split share structure fostered such serious problems that the Chinese government decided in April 2005 to require all Chinese listed firms to convert their non-tradable shares to tradable. To avoid destabilizing the stock market when a large amount of non-tradable shares suddenly become tradable at the same time, firms were asked to implement the share-structure reform in batches.[2] A key feature of the reform is that non-tradable-share holders must pay some compensation to tradable-share holders.[3] The form and amount of the compensation must be determined through the reform process and approved by the majority of tradable-share holders who are eligible to vote for or against the compensation plan proposed by non-tradable-share holders. According to the regulations, firms must make a public announcement to officially start the reform process. It is also required by law and regulations that the information about which firms are about to make the announcement be kept strictly confidential until public release. This paper aims to investigate if some investors had such inside information and attempted to make profits by buying shares before reform announcement.

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[1] The public release was widely reported by news media in China, both in print and online. For example, see one online report at http://news.xinhuanet.com/stock/2005-09/06/content_3452215.htm.

[2] The reform usually takes weeks to complete, and the reform process is described in detail in Section 2.3.

[3] Firth et al. (2010) and Li et al. (2011) discuss reasons for such compensation. First, non-tradable-share holders benefit from the reform because their shares gain liquidity. On the other hand, tradable-share holders may suffer from the adverse price impact associated with a large increase in the supply of tradable shares. Second, giving shares to tradable-share holders in exchange for liquidity of their shares, non-tradable-share holders gain from risk sharing and diversification of their investments. Third, the Chinese government effectively controls the majority of non-tradable shares. As the government is eager to complete the reform quickly and smoothly, non-tradable-share holders tend to give generous compensation to tradable-share holders.

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We hypothesize that if investors tried to profit from inside information, there would be a significant increase in trading activities during the days before reform announcement. In fact, Beltratti and Bortolotti (2006) report evidence of a significant price run-up over the two or three trading days prior to announcement. They suggest that this may be due to information leakage.[4] While their evidence is based on daily stock returns, we use intraday transactions and follow the approach pioneered by Lee (1992) to look for evidence of abnormal trading activities. Lee (1992) examines buyer-initiated trades before a sample of good-news earnings announcements and seller-initiated trades before a sample of bad-news earnings announcements. He also distinguishes large trades from small ones and provides evidence that large trades tend to be initiated by institutions while small ones by individuals. In this paper, we follow the same approach to test whether institutions or individuals obtained inside information about which firms were about to make reform announcement.

In addition, we study the cumulative price impact of large, medium and small trades in days before reform announcement. We adopt Barclay and Warner's (1993) approach and use the proportion of the cumulative price impact of trades in the same size category to examine which size category contains the highest volume of insider trading. Theories suggest that informed traders can trade stealthily or aggressively under different circumstances. Kyle (1985) shows that informed traders prefer to trade stealthily (i.e., with multiple small trades over a long period) to avoid revealing private information to other market participants too soon. Moreover, informed investors who are afraid of being caught for illegal insider trading may use medium trades. Cornell and Sirri (1992) and Meulbroek (1992) analyze prosecutions for insider trading in the US and find that people prosecuted for insider trading attempt to profit from medium trades. On the other hand, Holden and Subrahmanyam (1992) find that when there are multiple informed investors who know the same piece of information, they will compete for shares with large orders. In a more general model that allows informed investors to have heterogeneous information, Foster and Viswanathan (1996) find that their trading strategy depends on the correlation of their information contents. When the correlation is high, they compete aggressively; when the correlation is low, they tend to trade cautiously. Back et al. (2000) develop a continuous-time version of Foster and Viswanathan's model and reach the same conclusion.

The following are our main findings. First, the number of large buyer-initiated trades increases significantly in the 2-day window $(-2,-1)$ (i.e., the last two trading days prior to announcement) relative to the benchmark window $(-15,-3)$.[5] In contrast, the number of small buyer-initiated trades decreases significantly in the window $(-2,-1)$ relative to the window $(-15,-3)$. There is no significant change in seller-initiated trades (large or small) in the window $(-2,-1)$. In addition, the difference between the window $(-2,-1)$ and the window $(-15,-3)$ is significant for all buy–sell imbalance measures, which suggests that institutional investors bought more shares in the days immediately before announcement.

Second, we study trading activities in matched control firms over the same period to test whether institutions targeted to buy shares of the event firms or they simply speculated which firms were about to make announcements and bought shares of similar firms. Randomization tests show that trading activities are similar between event firms and control firms in the benchmark window $(-15,-3)$, but trading activities of event firms are significantly different in the window $(-2,-1)$ compared with control firms. We thus conclude that some institutions traded on inside information before reform announcement.

Third, in the benchmark window $(-15,-3)$, large trades account for about 6.3% of the total number of trades and 34.7% of the total volume, and contribute to 56.8% of daily price changes; whereas, in the event window $(-2,-1)$, large trades account for 7.4% of the total number of trades and 38.6% of the total volume, and contribute to 67.7% of daily price changes. At the same time, the contribution of medium trades to daily price changes drops from 49.9% in the window $(-15,-3)$ to 39.3% in the window $(-2,-1)$. The evidence suggests that informed investors used large trades to compete for shares aggressively. Finally, we find that over the reform period, the median share value change of event firms is 6% higher than that of control firms.[6]

In summary, we find evidence consistent with the conjecture that some Chinese institutional investors obtained inside information and traded aggressively on it before reform announcements. This paper hence adds to the limited empirical literature on insider trading. Our findings also echo the views in the law and finance literature that what really matters is the efficacy of law enforcement (Bhattacharya and Daouk, 2002). Some law scholars have recently pointed out the weaknesses in China's legal and regulatory framework that hinder effective enforcement of insider trading regulations, such as loopholes in the legal definition of insiders, conflicting objectives that the CSRC strives to achieve, limited enforcement mechanisms, and inadequate resources for the CSRC. Our study has important policy implications for enforcement of insider trading regulations in China.[7] First, our findings prompt lawmakers and regulators to give serious consideration to the weaknesses in the current legal and regulatory framework. Second, we present scientific and systematic evidence on the extent of insider trading in China, which helps to justify additional resources for the fight against insider trading. Third, the documented pattern of trading on inside information in China (i.e., large trades by institutions) suggests a direction for regulators' supervisory and enforcement efforts.

The rest of the paper is organized as follows. Section 2 provides a review of related literature and the institutional background of our study. Section 3 describes data and methodologies. Section 4 presents our main empirical results while Section 5 documents robustness analysis. Section 6 summarizes the paper.

2. Related literature and institutional background

2.1. Insider trading regulation and enforcement

Insider trading regulation has been debated for many years. Bainbridge (2000) compiles a bibliography on insider trading and discusses the arguments for and against regulating insider trading. Advocates of regulation argue that (1) insider trading discourages investors and market professionals from participating in the stock market (Ausubel, 1990; Fishman and Hagerty, 1992; Leland, 1992);

[4] Chinese news media have not reported any insider trading case related to the reform. While Beltratti and Bortolotti (2006) study daily returns, our study focuses on intraday transactions and uses randomization tests with matched control firms to document systematic evidence for reform-related insider trading.

[5] Since firms always made announcement after market close, day −1 refers to the last trading session before the announcement.

[6] The value is comparable to the study by Beltratti and Bortolotti (2006) who report that, after taking into account the compensation, the cumulative abnormal return on tradable shares is, on average, about 8% from 10 days before the reform was started till the first day after the reform was completed.

[7] This paper is not the first academic study on insider trading in the Chinese stock market. Huang (2007) investigates insider trading in China based on 31 interviews with regulatory officials, judges, academics, brokers, lawyers, stock exchange officials, financial journalists, and ordinary investors. While his study documents certain features of insider trading in China, it does not provide systematic empirical evidence on insider trading. Huang (2007) quotes one official of the Shanghai Stock Exchange as saying that "insider trading does exist, but it is wrong to say that it is widespread. This is, in my view, due to the exaggerated media reports".