

# An Examination of China's Regulations on Insider Trading of Unlocked Restricted Stocks

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# **An Examination of China's Regulations on Insider Trading of Unlocked Restricted Stocks**

## **Abstract**

In this paper, we examine the effectiveness of China's regulations on insider trading in general and a specific rule in particular that requires insiders to sell their unlocked restricted stocks through the block trading system in which only institutions and wealthy individuals can participate. The results show that the regulations failed to prevent the stock prices from declining following insiders' sales of unlocked restricted stocks. We find evidence that the main culprit is actually the affiliated company shareholders who possess insider information about future earnings of their firms. The results point out the weaknesses of the general regulations which mainly target individual insiders and of the specific rule which merely alters the profit distributions between insiders and the institutions/wealthy individuals who buy discounted stocks from the insiders in block trades.

JEL Classification: E52

Key words: insider trading regulation, unlocked restricted stock, block trading, affiliated companies.

Most countries have regulations on insider trading. There are heated debates in academic research on the pros and cons of these regulations. The proponents of the regulations focus on the fairness because insiders typically possess superior information about the value of their own companies and they may trade the securities of their own companies at the expense of other investors. Leaving insider trading unregulated will deter stock market investments by the public and hurt the stock market liquidity. The opponents of the regulations argue that insiders bring information to the market and make asset prices more efficient, that insider profits can be viewed as one form of executive compensation, that heavy regulations may destroy the incentives of entrepreneurs and managers to create value for public investors, and that the enforcement of insider trading regulations is difficult and ineffective anyway. While there is no consensus reached, perhaps only a few extremists would argue that insider trading should be left completely unregulated. Given that most countries do have regulations on insider trading, how effective these regulations are, how insiders actually trade legally under the regulations, and the implications for the outside investors in their trading are the focuses of recent empirical studies on insider trading.

In this paper we examine the effectiveness of the insider trading regulations in China. Insider trading regulations in China are special in many aspects and the research on the effectiveness of these regulations can provide insights for other markets in understanding why certain regulations do not achieve their intended goals and how regulations can be made better to strike a balance between market efficiency and fairness.

China resumed its stock market about twenty years ago as part of its economic reform from a centrally planned economy. The stock market in China is unique in the sense that most listed companies are former state-owned enterprises. For a long time, the majority of the shares have been owned by governments at various levels. These shares were initially deemed non-tradable until the so-called split-share reform in 2005 in which the restriction on tradability was removed and the shares became tradable after a lockup period. The fast expansion of the stock market in recent years also generated vast amounts of restricted stocks held by the insiders which were unlocked over time. At the end of the first quarter in 2008, the market value of the unlocked stocks was 1.42 trillion RMB, almost 20% of

the total value of the stock market. In fear of the impact on the market by sales of these unlocked stocks, the security authority issued a *Guideline* in April 2008 which required that sales of unlocked stocks exceeding a certain amount be conducted in the block trading system in which only institutions and wealthy individuals can trade.

We address the following questions. Is the 2008 regulation, i.e., the *Guideline*, effective in preventing stock prices from declining due to insider sales and protecting small, outside investors? If not, what could be the potential problems? What explains the abnormal returns associated with the sales of unlocked stocks? What kind of insiders are more responsible for negative cumulative abnormal returns? Are the insider sales informative about future prospects of the companies?

Our results indicate that the 2008 regulation is not effective. The average cumulative abnormal returns associated with all insider sales of the unlocked stocks in the post-*Guideline* period are negative, declining by -5% over 100 trading days, no better than in the pre-*Guideline* period. In particular, the average cumulative abnormal returns associated with insider block sales declined more than 8% over 100 trading days. The losses were permanent. The cumulative abnormal returns tend to be more negative if the insider sale size relative to the total number of outstanding shares is greater and the time between unlock date and the sale date is shorter. For insider block trades, the cumulative abnormal returns in the retail market are more negative if the discount in the insider block trade relative to the retail market is greater. Our interpretation of the result is the following. The *Guideline* created an equilibrium which separates insiders who sell their shares for diversification purposes from those who sell shares for informed trading. In the former cases, insiders choose to sell in retail markets in smaller amounts over longer periods while in the latter cases insiders choose to sell through the block trading system in larger amounts at discounts immediately before bad news leaks to the market. The market (including the counterparties of the insiders in the block trading system) correctly infers this and reacts to the sales through the block trading system more negatively. The reason the *Guideline* fails to stabilize stock prices and protect small investors is that the regulatory authorities did not fully understand the consequence of such a separating equilibrium and designed corresponding regulations that prevent the counterparties (i.e.,

the buyers) in the block trading system from reselling the shares in the retail market.

Based on the special ownership structure of China's listed companies, in which the parent companies and other affiliated companies hold the majority of shares and control the listed companies, this paper investigates the sales of unlocked shares by various types of insiders. Further analyses reveal that it is the sales by the affiliated companies, rather than individual insiders, that are responsible for the negative cumulative abnormal returns. The sales of the affiliated companies are informative in the sense that they predict lower future company earnings.

The findings in this paper contribute to the literature on the effectiveness of insider trading regulation and corporate governance. Because of the unique features in China, which are not considered in most studies of insider trading regulation, the findings offer valuable insights on how regulations can be designed better to achieve their goals.

The rest of the paper is organized as follows. Section 1 gives a brief review of the relevant literature. Section 2 provides the institutional background of China's stock market with a special emphasis on the unlocked restricted stocks, the corporate structure, insider trading regulations, and the block trading system. Section 3 introduces the data and provides descriptive statistics on the variables to be used in later sections. Section 4 presents the basic results on the cumulative abnormal returns associated with the sales of unlocked stocks and their determinants. Section 5 further analyzes the cumulative abnormal returns according to the types of insiders and the predictive power of the insider sales for future company earnings. Section 6 discusses the implications of the findings and concludes the paper.

## 1. The Related Literature

The literature on insider trading is voluminous. The following is a brief account of a number of studies that are the most relevant to our work in this paper. These studies focus on the pros and cons of insider trading regulation, the empirical evidence on the effectiveness of the regulation, insiders' behavior under regulation, and the impact of

unlocked insider shares.

### **1.1. Pros and Cons of Insider Trading Regulation**

The debate on insider trading regulations centers on the stock price efficiency versus the fairness to the outsider investors. The advocates argue that insider trading, if allowed, will create perverse incentives for insiders to profit on bad news as well as good news, to invest in risky projects, and to delay information disclosure. The opponents disagree. Manne (1966) argues against regulation of insider trading on the basis of efficiency gained from insider trading, which allows security prices to better reflect information and financial investments to better allocate resources. He also argues that the insider trading profits can be viewed as one type of executive compensation for entrepreneurial services. Carlton and Fischel (1983) argue that insider trading can be beneficial if the property right in information is more valuable to the firm's managers. Allowing insider trading can be a value-maximizing arrangement between insiders and outside investors. Dye (1984) shows in a principal-agent model that if managers are initially compensated with earnings-contingent contracts, then the welfare of the managers and all of the firm's shareholders can be improved by allowing the managers to trade on their private information. To counter such arguments, Ausubel (1990) presents a model in which investors anticipate that insiders may take advantage of them and refrain from investing in the firm in the first place, resulting in efficiency losses. Insiders can be made better off if they can pre-commit not to trade on their private information. Manove (1989) makes similar arguments. In a rational expectations model, Leland (1992) shows that allowing insider trading makes stock prices higher on average and more accurate in reflecting information; it also makes expected investments higher, markets less liquid, insiders better off, and outsiders and liquidity traders worse off. In this more balanced setting, the effect on overall social welfare is difficult to determine. DeMarzo, Fishman and Hagerty (1998) discuss the optimal enforcement policy of insider trading regulation, which balances the benefit and cost of the enforcement, in terms of when to enforce, how large the penalty should be, and how much tax should be imposed to finance the enforcement.

## 1.2. The Effectiveness of Insider Trading Regulation

The empirical work on insider trading regulation takes the regulations as given and studies their effects. Bhattacharya and Daouk (2002) document that, out of 103 countries that have stock markets, 87 of them have insider trading laws, but only 38 enforce them. The cost of equity does not reduce when the law is passed, but it does after the first prosecution. Bhattacharya, Daouk, and Jorgenson (2000) study the case of Mexico in which insider trading laws are not enforced. They document that there are no gains associated with corporate events and interpreted it as evidence that all the gains are reaped by insiders. Banerjee and Eckard (2001) examine the sample period 1897-1903, during which the first wave of mergers in the US took place and insider trading was not restricted. They conclude that insider profit patterns are similar to those in modern times with regulations. Bris (2005) study the insider trading profits associated 4541 acquisitions in 52 countries and find that, on average, the profits are actually bigger after regulations are passed. However, in countries like the US with severe penalties, insider trading profits are lower. Durnev and Nain (2007) use a sample of 2189 firms from 21 countries and find that, on average, stricter insider trading regulations reduce private information trading. However, for firms with high agency costs, insider trading restrictions are less effective in deterring private information trading.

One of the arguments against insider trading regulations is that regulations merely shift the distribution of profits from insiders to a handful of outsiders, consisting of arbitrageurs and stock analysts, known as information specialists, but benefit public investors very little. In their analyses of news reports preceding takeover bids, Jarrell and Poulsen (1989), Pound and Zeckhauser (1990), and Meulbroek (1992) attribute significant portions of preannouncement price run-up to these information specialists, rather than (illegal) insider trading.

Insider trading regulation may have impacts on executive compensation. Roulstone (2003) examines the relationship at the firm level in the US. Denis and Xu (2011) examine the relationship in a sample in 2006 consisting of 1,852 US firms and 468 non-US firms with American Depository Receipts (ADRs) from 40 different countries. Unrestricted insider

trading is found to be a substitute for executive compensation. Both studies find that firms with stricter insider trading restrictions tend to award higher total compensation and higher equity-based incentive pay to the managers. Another line of studies examine the relationship between insider trading restrictions and market liquidity. Bettis, Coles and Lemmon (2000) use survey questionnaires to examine policies and procedures used by companies. They find that blackout periods imposed by companies successfully suppress insider trading, both purchases and sales, and that the blackout period is associated with a narrower bid-ask spread by about two basis points. Frijns, Gilbert, and Tourani-Rad (2008) find that, after a stricter insider trading rule is enacted in New Zealand, the bid-ask spread is reduced.

### **1.3. Strategic Behavior of Insiders under the Regulations**

Regulations may change insiders' trading behavior. Hillier and Marshall (2002) examine the UK evidence on how effective the trading ban before earnings announcement is and conclude that the ban is ineffective. Insiders can easily bypass the ban and time their trading. Ke, Huddart and Petroni (2003) provide evidence that insiders trade upon the knowledge of specific and economically significant forthcoming accounting disclosures. However, in order to avoid potential legal action against them, they tend to trade well ahead of future disclosures. Korczak, Korczak and Lasfer (2010) find similar results for the UK firms.

Most broad definitions of insiders include large shareholders, especially controlling shareholders. Whether insider trading is regulated also effects the behavior of the large shareholders in monitoring company managers. Maug (2003) argues that, without insider trading regulation, managers may "bribe" large shareholders by passing to them non-public information. The large shareholders then profit by trading on the information and, in return, reduce their monitoring of managers. The context of Maug's analysis is especially relevant to the study in this paper, as China's corporate structure is featured by the dominance of the large shareholders. In their study of UK firms, Fidrmuc, Gørgen, and Renneboog (2006) also touch on the relationship between insider trading and

corporate governance.

## **1.4. Stock Market Behavior at Lockup Expiration**

There is one strand of research on the effect of lockup expiration. Lockup here refers to the restriction on insiders from selling their own stocks for a certain period. In the US, these restrictions are imposed by the underwriters during IPOs and SEOs. The lockup period varies across stocks and types of events, but typically lasts between six months to three years. Field and Hanka (2001) examine 1948 IPO lockup cases in the US during 1988-1997. They report a 40% permanent increase in average trading volume and -1.5% average three-day abnormal returns after the expiration date of lockups. Ofek and Richardson (2003) regard lockup expiration as a major trigger of the internet bubble. Hong, Scheinkman, and Xiong (2006) elaborate on this with a more detailed model.

## **2. Institutional Background**

### **2.1. Restricted (Nontradable) Shares**

China established its stock exchanges in 1991, one in Shanghai and the other in Shenzhen. The stock market grew rapidly, especially in more recent years. At the end of 2005, there were 1358 listed companies with a combined market value of RMB 228 billion for tradable shares. By the end of 2010, the number of stocks became 2041 with a combined market value of RMB 1916 billion for tradable shares.

One of the unique phenomena in China's stock market is its huge amount of restricted (or nontradable) shares, both in the absolute term and in proportion. The restricted shares are of two types. The first type is generated at initial public offerings (IPOs) or seasoned equity offerings (SEOs). At IPOs, the shares held by the original owners become restricted for certain lock-up periods. Some institutional investors who obtained IPO allocation ahead of public share distribution are barred from selling the stock for a period. Seasoned equity offerings (SEOs) or rights offerings also generate restricted stocks, which are sold to existing or new institutional investors and are restricted from

being sold for a lockup period. Unlike the case in, say, the US, where the lockups are required by the underwriters for easier marketing of IPO shares, the lockups in China's stock market are enforced by regulatory authorities. For controlling shareholders, the lockup period is three years, while for other insiders, the lockup period is one year. There are also some small institutional investors at IPOs who are not listed in the prospectus. The lockup period for these investors can be as short as three months.

The second type of restricted shares, which is unique to China, is the shares resulted from China's massive privatization scheme. As part of its economic reform, state-owned enterprises (SOEs) were privatized through listing on the stock exchanges. In the early years, almost all of the listed companies were created from SOEs. To maintain control, however, the governments at various levels retained most shares, so the listed companies were majority-owned by governments and by some affiliated companies and other institutions. The state shares and legal-person shares were designated as nontradable indefinitely, until much later.<sup>1</sup> In mid-2005, after a long period of attempting different methods of privatizing the retained shares, the central government started the so-called split-share reform.<sup>2</sup> Negotiations were conducted between tradable and nontradable shareholders such that nontradable shares became tradable after a lockup period, while tradable shareholders received certain compensations. By the end of 2006, most firms had completed the deal, but the negotiations of a small number of firms dragged on until sometime in 2007. In the typical deals, holders of nontradable stocks compensated holders of tradable stocks with cash and stock dividends. In return, the originally non-tradable shares become tradable after a lock-up period. The lock-up period has a ladder structure: after one year, insiders can sell their holdings up to 5% of the total company shares; after two years, they can sell up to 5% additional holdings; and after three years they can sell all the remaining shares. Most restricted stocks resulted from the split-share reform became unlocked during the period of 2006-2010.

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<sup>1</sup>The term nontradable means that the stocks cannot be traded on the exchanges, but some stocks, known as legal person shares, owned by companies and institutions can be traded off-exchange. Trading off-exchange entails a huge discount, averaging near 80%, off the exchange-traded prices, as documented by Chen and Xiong (2001).

<sup>2</sup>See Sun and Tong (2003), Deng, Gan and He (2008), and Li, Wang, Cheung and Jiang (2011) for descriptions of the privatization process in China and the split-share reform.

Figure 1 plots aggregated market and book values of various quantities during the 2006-2010 period. All market values are based on the prices of tradable shares. The stock prices during that period experienced massive fluctuations. The Shanghai Exchange composite index surged from 1161.06 in the December 2005 to 6124.16 in October 16, 2007, plunged to 1664.28 in October 28, 2008 during the global financial crisis, and fluctuated between 2000 and 3500 during 2009-2010. The pattern for the Shenzhen composite index is similar. These fluctuations are reflected in the differences between the market values and book values in the plots. In Panels A and B of the figure, the values of restricted and unrestricted shares are plotted. Before the end of 2008, the value of restricted shares was about twice as large as that of unrestricted shares. The situation had reversed by the end of 2010. Panel C shows the value of unlocked (but unsold) shares held by insiders at the end of each quarter. These unlocked and unsold shares were viewed as the sword of Damocles by many stock market investors. Panel D shows the value of newly unlocked shares during each quarter. They were not evenly distributed over time and had two spikes during the fourth quarter of 2009 and 2010.

Figure 1 here

## 2.2. Corporate Structure

When China re-established its stock exchanges in 1991, almost all companies at the time were owned by governments at various levels in the centrally planned economy. The profitability of most companies was poor. Re-establishing the stock market was part of the privatization plan to revitalize the economy. Partially for maintaining the control and partially for keeping an orderly stock market, the governments initially set a tight quota scheme which allowed only a limited number of companies to be listed on the exchanges. The quotas were then rationed to various provinces and ministries. To meet the listing criteria, the governments encouraged state-owned enterprises to carve out their best assets and to list them as separate companies, majority-owned by the parent companies. Some parent companies owned several listed companies. Over time, as the stock market developed, the quota system was replaced by more standard criteria. However, the corporate

structure remained more or less the same as before. In 2006, the beginning of the sample period, most listed companies were still majority-owned by their parent companies and by other affiliated, listed or non-listed, companies. Some of these affiliated companies were fully or partially owned by the same parent companies.

Figure 2 provides a quantitative perspective of the corporate structure. Panel A of Figure 2 shows the simple average proportions of shares held by the largest shareholder and by the top ten largest shareholders in the 2001-2010 period. These plots indicate that the largest shareholder held roughly 40% of the shares, while the largest top ten shareholders held roughly 60% of the shares, throughout the ten-year period. This concentrated shareholding structure is typical of China's listed companies.

Figure 2 here

Panel B of Figure 2 shows the simple average proportions of shares held by two broad types of insiders. The affiliated companies include parent companies and other affiliated companies, while other insiders include institutional strategic investors, managers, and other individual insiders who own more than 5% of the company shares. Panel B indicates that affiliated companies held almost 60% of the total shares during 2001-2005. The proportion reduced in 2006-2010, but remained above 40%. The shares held by other insiders increased slightly over the ten-year period, but remained below 25%.

The ownership structure determines the governance structure. Panel C of Figure 2 shows the simple average proportion of board directors who represent legal persons (consisting of the parent company, other affiliated companies, and strategic investors) in all directors. The majority is from the parent company and other affiliated companies. The figure shows that, although the proportion of directors representing legal persons had been declining, it remained above 35% throughout the sample period. Therefore, the parent companies and other affiliated companies can exert large influence on the listed companies and can obtain valuable insider information about the listed companies' performance through board meetings.

The ownership structure also affects the management of the listed companies directly.

As many listed companies were carved out from their parent companies, the top managers of the listed companies were typically subordinates of those in the parent companies. Panel D of Figure 2 shows the proportion of listed companies that have at least one top officer (defined as CEO, CFO or COO) who used to work for the parent company. A more relevant statistic should include those who used to work for the other affiliated companies. The data, however, are difficult to come by.

### **2.3. Insider Trading Regulations**

Like other countries, China has its insider trading restrictions. The restrictions on trading and requirements for reporting are stated in various laws and regulations. *The Corporate Law* and *The Securities Law* were passed by the National People's Congress. The regulations were mostly issued by the regulatory body of the security market, the China Securities Regulatory Committee (CSRC). Many of the laws and regulations resemble those in other countries.

In *The Administrative Measures on Disclosure of Share Changes of Listed Companies*, issued by CSRS and effective from December 1, 2002, Item 15 states that an investor whose holding of a company's shares exceeds 5% of the total shares should report to the authority within three business days and, before reporting, should not trade further any of the company's stocks.

In *The Corporate Law*, effective from January 1, 2006, it is stated that the original shareholders of listed companies are not allowed to sell the shares within the first year of listing. Board directors and top managers are required to report share changes of their own companies. They are not allowed to sell more than 25% of the total company shares when they are still in office. They are not allowed to sell any shares within six months of resigning from office. In *The Securities Law*, also effective from January 1, 2006, it is stated that the shareholders whose holding exceeds 5% of total company shares are not allowed to sell shares within six months of any purchases or to buy shares within six months of any sales, same as the no-short-swing rule in the US. In *The Administrative Rules on Share Changes by Directors and top Managers of Listed Companies* issued on April

10, 2007, CSRC specified further insider trading bans (a) within 30 days before a regular company announcements, (b) within 10 days before the company's earnings forecasts, and (c) on any major corporate events and within 2 days after their public announcement. In addition, the information of share changes by directors and top managers should be disclosed through the website of the Shanghai or Shenzhen Stock Exchange within two trading days.

The advent of large amounts of unlocked restricted stocks from the split-share reform caused market jitters simply because of their sheer volumes. What makes the situation worse is the fact that unlocked stocks are mainly held by insiders who have information advantages over the average investors. To alleviate the problem, the CSRC issued several rules specific to the unlocked shares. In *The Administrative Measures on Split-share Reform* issued on September 15, 2005, insiders are not allowed to sell more than 5% (10%) of total company's shares within any twelve-month (twenty-four-month) period on the exchanges. In addition, each time the cumulative sale of the shares increases by 1%, the seller must report to the authorities within two business days.

On April 20, 2008, the CSRC issued a *Guideline on Transfer of Unlocked Restricted Shares of Listed Companies* (hereafter, the *Guideline*), which requires insiders, who anticipate selling stocks within a month with cumulative shares exceeding 1% of total company shares, to sell the shares through the block trading system, instead of the usual retail market. The two exchanges quickly adopted the *Guideline* as an official rule. In addition, the exchanges suggest that, if a sale amounts to 1.5 million shares or more, it should be conducted through the block trading system even if the sale is less than 1% of total company shares. The effect of the *Guideline* is a focus of this paper.

In September 2008, the Shanghai Stock Exchange proposed certain rules aimed at curbing insider trading by controlling shareholders. For unknown reasons, however, the CSRC did not act on it and the proposal died unborn.

While the laws and regulations exist, enforcement has been very weak. From January 1, 2006 to December 31, 2010, CSRS, the Shanghai Stock Exchange and the Shenzhen Stock Exchange brought up 57 cases of violations involving 39 companies. Among the 57

cases, 31 of them received only verbal condemnation. For the remaining 26 cases, only punitive fines were issued, ranging from 30,000 Yuan to 3 million Yuan. No criminal or civil lawsuits were ever filed against the perpetrators.<sup>3</sup>

## 2.4. Block Trading System

Block trading in the two exchanges was contemplated in 2001 and implemented in 2002-2003. After a brief trial period, the rules specified that transactions exceeding half a million shares or 3 million Yuan can be traded through the block trading system. The transactions were conducted after the regular retail markets close. Initially, the transaction price was restricted to lie between the daily low and daily high. After May 15, 2006, the transaction price was no longer restricted that way, but was still subject to the price limit.<sup>4</sup> A block trade had to be entered into the trading system from one broker account through its seat at one of the exchanges. A block trade conducted in an exchange is revealed by the exchange immediately with the identity of the broker account, but not with the identity of the actual traders.

There are allegedly three reasons as to why the *Guideline* of CSRC requires that large sales of unlocked shares be traded through the block trading system. The first is that block trades occur on a different platform between two parties and do not interfere with the normal trading in the retail market. Therefore, hopefully, the trades would not affect the stock prices in the retail market. Second, since the traders in the block trading system tend to be institutions and experienced wealthy individuals, the counterparties of the insider sales are more knowledgeable about the trades and can better protect themselves by negotiating the prices. Third, since the trades are disclosed shortly afterward to the public, the information contained in these block trades can be quickly conveyed to the market. This can reduce the unfairness caused by asymmetric information between insiders and average investors. The purpose of this paper is to examine whether or not the *Guideline* is effective in achieving the goal of stabilizing the price and protecting average

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<sup>3</sup>There were a few lawsuit cases involving mutual fund employees who traded using their relatives' accounts ahead of client accounts.

<sup>4</sup>In China's regular retail markets, there is a 10% price limit, so the price fluctuation is restricted to the 90%-110% range of the closing price on the previous trading day.

investors.

### 3. Data and Preliminary Analysis

The data we use in this paper are from Wind Data Inc. Besides the usual stock market prices and company accounting variables, the dataset contains all the information about insiders' filing of their transactions and all the block trading transactions. By matching the two sets of transactions, it is easy to identify insider block trades. The sample period is 2006-2010.

Table 1 reports the descriptive statistics of all the insider trades, block trades, their intersection, and their complements, before and after the *Guideline*. The first three columns are the total value in billion Yuan, the number of firms involved, and the number of transactions involved. The remaining seven columns are the descriptive statistics of individual transaction values in million Yuan.

Table 1 here
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Before the *Guideline*, there were a total of 2453 cases of insider trading involving 470 listed companies. Most of the insider trading cases were conducted through the regular retail markets. Only ten insider trading transactions were recorded in the block trading system. The transaction size of block trades tends to be much greater than that of a retail trade, however. The distribution of the value is extremely right skewed, caused by the trades of some very large companies. The mean is greater than even the 75th percentile. There are a total of 401 block trades involving 134 companies. The distribution of block trade value is also right skewed, but less so than that of insider trading.

After the *Guideline*, the number of cases of insider trading more than quadrupled, reaching 10267, while the number of companies involved doubled to 783. Only slightly above a quarter of them were conducted in the block trading system. The transaction size of insider trading after the *Guideline* was much smaller than before. One may be tempted to attribute this to the market value levels before and after the *Guideline*, recalling that

the stock market had a bull run during 2007, before the *Guideline*. The transaction size of block trades, however, actually increased after the *Guideline*. The number of block trade transactions also increased dramatically to 6609.

Table 2 reports the total value, the number of transactions, and the descriptive statistics of insider trade value, before and after the *Guideline*, by insider type. We classify all the insiders considered in this paper into four categories: affiliated companies (consisting of parent companies and other affiliated companies), (institutional) strategic investors, managers (consisting of chairmen, top managers, other directors and other managers), and other individuals who own more than 5% of the total company shares, but are not company employees. We call the first two categories legal person insiders and the latter two natural person insiders for obvious reasons.<sup>5</sup>

Table 2 here

The total value of insider trading by the legal persons (affiliated companies and strategic investors) is much greater than that by natural persons (managers and other individuals). Before the *Guideline*, natural persons did not trade through the block trading system at all. That situation changed after the *Guideline*. While the total transaction value and the number of transactions conducted through the block trading system by natural persons are still small, the transaction size is comparable to that of legal persons. It should be noted that managers did trade a lot, especially after the *Guideline*, but their total transaction value remained the smallest.

Panel A of Table 3 reports the descriptive statistics of block trade discounts by insider type. The block trade discount, Disc, is defined as

$$\text{Disc}_j = \frac{-(P_j - P_c)}{P_c}, \quad (1)$$

where  $P_j$  is the price of the block trade  $j$ , and  $P_c$  is the closing price of the day in the retail market. From the table, most of block trades have positive discounts, indicating

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<sup>5</sup>The insiders considered in this paper do not include underwriters, retained law firms, and other business associates, who may have insider information about the firm but do not own the firm or work directly for the firm.

that block trade prices are lower than the closing price of the day, so the block trades are most likely initiated by sellers. After the *Guideline*, the distributions of the block trade discounts appear to be similar, either between insiders and non-insiders, or across different insider types. The block trade discount has predictive power for the stock performance after the block trade, as will be shown in the next section.

Table 3 here

Panel B of Table 3 reports the descriptive statistics of the number of days between the unlock date and sale date by insider type. Among the different types of insiders, managers tend to hold the unlocked stocks longer than other types. The number of days turns out to be useful in predicting after-sale's stock performance, as will be shown in the next section. Denoting the number of days as  $D_j$ , we use a variable in the next section, termed as eagerness, for an insider trade,

$$\text{Eag}_j = \frac{\bar{D} - D_j}{365}, \quad (2)$$

where  $\bar{D}$  is the sample average of all the  $D_j$ s. The greater the value of  $\text{Eag}_j$ , the more eager the insider is to sell the unlocked stocks. The average,  $\bar{D}$ , serves as an arbitrary, but innocuous, benchmark for the eagerness.

## 4. The Impact of Insider Trading on Returns of Affected Stocks

### 4.1. The Cumulated Abnormal Returns

In order to evaluate the effectiveness of the *Guideline* in stabilizing prices and protecting average investors, we adopt the event-study methodology and examine the cumulative abnormal returns (CARs) surrounding the insider trading date. The CARs are defined in terms of certain systematic factors that are initiated by Fama and French (1993) for the US market and are used by many researchers for international markets. We construct daily observations of MKT, SMB and HML where MKT is the market return in excess

of the riskfree rate, SMB is small-stock returns minus big-stock returns, and HML is high book-to-market stock returns minus low book-to-market stock returns. We use the combined Shanghai and Shenzhen composite index return with reinvested dividend as the market return, and the one-year deposit rate as the riskfree rate. The market size is defined by the latest end-of-April market value and the median is used to classify small and big stocks and to construct SMB. The book-to-market ratio is based on the year-end value and the bottom 30% and the top 30% are used to construct HML for stock returns over the next year.

The CARs are defined as follows. For each insider trading transaction  $j$  of a stock  $i$  on a date labeled as day 0, we estimate a model

$$r_{it} = \alpha_{ij} + \beta_{ij,\text{MKT}}\text{MKT}_t + \beta_{ij,\text{SMB}}\text{SMB}_t + \beta_{ij,\text{HML}}\text{HML}_t + \varepsilon_{it}, \quad t = -120, \dots, -21, \quad (3)$$

where  $r_{it}$  is the return on stock  $i$  on day  $t$  in excess of the riskfree rate. We then fix the estimates of the coefficients and calculate the CAR for insider trading transaction  $j$  as

$$\text{CAR}_{js} = \sum_{t=-20}^s r_{it} - \alpha_{ij} - \beta_{ij,\text{MKT}}\text{MKT}_t - \beta_{ij,\text{SMB}}\text{SMB}_t - \beta_{ij,\text{HML}}\text{HML}_t, \quad (4)$$

$s = -20, \dots, 0, \dots, 100.$

It should be noted that all the CARs we calculate are based on the returns on the retail markets. Insider trading is used as the definition of the event which may occur in the regular retail market or through the block trading system. Similarly, we calculate the CARs using non-insider block trades as the events.

Since the coefficients of the Fama-French model may be time-varying, it is important to guarantee that they do not vary too quickly to render the estimated coefficients obsolete in the application window. To check the validity of the CAR calculation, we also calculate CARs for non-event dates. The non-event CARs estimated in the window (-120, -21) should averaged around zero for the application window (-20, 100). We arbitrarily choose the last trading day of each quarter as the event date and use the same methodology to calculate CARs for all the stocks.

Figure 3 plots the average CARs. In Panel A, the average CARs for all insider trades and non-insider trades post-*Guideline* are plotted. The CARs for non-insider trades post-

*Guideline* use all the quarter-ends after the *Guideline* as event dates. The average CARs slightly fluctuate around zero, indicating that the coefficient estimates are unbiased for the application window. The average CARs associated with insider trading in the post-*Guideline* period start at around zero on day -20, quickly climb to about 3%, and slip to about -2% on day 100, generating a roughly 5% loss in the window (0, 100). The rise in CARs from day -20 to 0 reveals that insiders tend to sell their stocks after the stocks gain in value. The sales, however, tend to send signals to the market and cause the stock price to decline.

Figure 3 here

Panel B of Figure 3 compares the CARs associated with insider trading before and after the *Guideline*. For the time window (-20, 0), both average CARs look very similar. However, for the time window (0,100), the two series appear different. The pre-*Guideline* average CARs drift downward, but remain positive until about 60 days later, and go back up to almost 3%. The post-*Guideline* average CARs, however, drop sharply in the first few days and fall further until day 100. The stock market conditions before and after the *Guideline* are quite different. Therefore, it is unfair to claim that the *Guideline* made things worse. But, in the absence of concrete evidence, it is fair to say that the *Guideline* did not help too much to prevent the market from reacting negatively. According to Panel A, other stocks do not experience any loss on average during the post-*Guideline* period.

Panel C of Figure 3 compares the average CARs associated with insider trading on the retail market and through the block trading system. In generating the plot, we exclude trades that are less than 100 trading days apart with one traded in the retail market and another traded through the block trading system. The CARs are therefore clean in the sense that they are not contaminated by the other type of trading. It is interesting to see that, the insiders' sales in the retail market do not cause the retail market prices to fall too much, with the average CARs remaining positive until 50 trading days later, while the insiders' sales through the block trading system cause the retail market prices to fall dramatically. The average abnormal loss from day 0 to day 100 exceeds 8%. Since sale sizes are different across the two markets, we cannot guess what may happen to the

CARs if the shares sold through the block trading system were allowed to be sold in the retail market in the absence of the *Guideline*. However, judging from the result in Panel B for the pre-*Guideline* period during which large sale sizes were allowed, it does make one wonder why the market react more negatively to the insiders' sales through the block trading system. One observation, which is worth noting, is that the pre-sale behavior of the CARs during the window  $(-20,0)$  is quite different between insiders' retail sales and block sales. There is no obvious run-up in the retail market prices associated with insiders' block sales. We will explain this phenomenon later.

Panel D of Figure 3 compares the average CARs associated with insider block trading and non-insider block trading in the post-*Guideline* period. The average CAR associated with non-insider block trades does not have the run-up before the trades. It drifts to -3% by day 100. Obviously, this is not entirely due to selling pressure. A conjecture is that, although the sellers are not classified as insiders because their holding does not exceed the threshold of 5%, they may still have connections with the managers of the firms. Therefore, their sales of the stocks contain certain information that causes the market to react negatively. We do not delve further into this as detailed information about the block holders is not available. In any case, insiders' block trades have much greater impact than non-insiders' block trades.

We interpret the plots in Figure 3 as follows. In general, insiders sell their stock holdings for two main reasons. One is driven by information. The other is for diversification purposes. The former sends bad signals to the market, while the latter may cause temporary selling pressures only. In the pre-*Guideline* period, insiders predominantly choose to sell in the retail market simply because that way other investors will have difficulty in gauging what the exact motives behind the sales are. The market does not react too negatively and, therefore, insiders can sell large amounts over a reasonably short period without incurring too much loss. The *Guideline* makes it illegitimate (or potentially costly) for the insiders to sell large amounts within a month. The insiders then face two alternatives: either sell the intended large amounts over longer time periods or sell them immediately through the block trading system at discounts. If the selling motive is purely for diversification, then there should be no rush to sell and no reason to sell them through

the block trading system at discounts, so the insiders tend to choose to sell the stocks gradually over longer periods. If the selling motive is to avoid big losses from their private information and there is a possibility that the information may leak within a month, it would then be optimal for the insiders to sell the large amounts immediately through the block trading system even at discounts. Thus, theoretically speaking, the *Guideline* created an separating equilibrium. The result in Panel C is a reflection that the market correctly recognizes the insiders' motives from the actions they take. In practice, since diversification and informed sales are not mutually exhaustive motives and identifying an insider sale through the block trading system takes time, the market reaction is not as prompt as it should be theoretically.

The previous observation that there is a retail price run-up before the insiders' retail sales, but there is no such a price run-up, is consistent with the interpretation of the separating equilibrium. For diversification purposes, the insiders do not have the urgency and can bide their time until the prices are high. For information driven sales, the insiders do not have the luxury of waiting and have to act as quickly as possible. As a result, there is no particular pattern observed in the retail market prices before the insiders' block sales.

## 4.2. The Determinants of CARs

We now study the determinants of cross-sectional differences among the CARs. We conjecture that both the sale size and the eagerness of the insider to sell have long-lasting effects on the CARs. For the insider trading sample, we run the following regression,

$$\text{CAR}_{js} = b_0 + b_{\text{PG}}\text{PG}_j + b_{\text{BT}}\text{BT}_j + b_{\text{SS}}\text{SS}_j + b_{\text{Eag}}\text{Eag}_j + b_{\text{SZ}}\text{SZ}_i + b_{\text{BM}}\text{BM}_i + \varepsilon_{js}, \quad (5)$$

where  $\text{CAR}_{js}$  is the cumulative abnormal return for sale  $j$  over the interval  $[-20, s]$ ,  $i$  is the firm corresponding to the insider trade  $j$ ,  $\text{PG}_j$  is the post-*Guideline* dummy variable taking one for sales after the *Guideline* and zero before the *Guideline*,  $\text{BT}_j$  is the dummy for block trade,  $\text{SS}_j$  is the sale size as the percentage of outstanding shares,  $\text{Eag}_j$  is the eagerness defined in (2),  $\text{SZ}_i$  is the log total market value of the stock, and  $\text{BM}_i$  is the log book-to-market ratio of the stock. The market value and the book-to-market ratio

are included for control purposes only. In some of the regressions, we also add two fixed effects. One is a time fixed effect, QTR, indicating the quarter of the year during which the sale occurs. The other is the industry fixed effect, IND, indicating the industry the involved firm belongs to.<sup>6</sup> The results of the regression are reported in Table 4. The t-ratios in parentheses are clustered by QTR.<sup>7</sup>

Table 4 here

The results in Table 4 show that all the explanatory variables have the anticipated effects on the CARs. The post-*Guideline* period tends to have lower CARs than the pre-*Guideline* period. The sales through the block trading system cause lower CARs than the sales in the retail markets. The greater the relative sale size, the lower the CARs. In addition, the more eager insiders are to sell, the lower the CARs. The block trade dummy and sale size are positively correlated, so one of them becomes less significant when they are used together. The fixed effects boost the goodness-of-fit.

We then turn to the block trade sample. For all the block sales after the *Guideline*, we run the following regression,

$$CAR_{js} = b_0 + b_{\text{Ins}}\text{Ins}_j + b_{\text{SS}}\text{SS}_j + b_{\text{Disc}}\text{Disc}_j + b_{\text{SZ}}\text{SZ}_i + b_{\text{BM}}\text{BM}_i + \varepsilon_{js}, \quad (6)$$

where  $\text{Ins}_j$  is the dummy for insider sale and  $\text{Disc}_j$  is the discount (in percentage) of the block trade price relative to the retail market closing price, defined in (1). Similarly, we include control variables, SZ and BM, and, for some regressions, we add QTR and IND fixed effects. The results are reported in Table 5.

Table 5 here

The results in Table 5 show that for sales through the block trading system, whether the sales are initiated by insiders and how large the discount is are important in determining the CARs. The sale size is not that important.

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<sup>6</sup>The industry classification is based on that by CSRC. There are a total of 13 broadly classified industries. When QTR fixed effect is added, PG becomes poorly identified, so it is dropped from the regression. The same principle applies to other regressions that follow.

<sup>7</sup>The OLS t-ratios without clustering are much higher than with clustering. The t-ratio clustered by IND is slightly higher than those clustered by QTR in general. Two-way clustering generates a non-positive estimated variance of the estimator, as discussed by Cameron et al (2011) in Section 2.3.

### 4.3. Block Trade Discounts

In this subsection, we investigate the determinants of the block trading discounts. For the sample of all block trades, we run the following regression,

$$\text{Disc}_j = b_0 + b_{\text{Ins}}\text{Ins}_j + b_{\text{SS}}\text{SS}_j + b_{\text{SZ}}\text{SZ}_i + b_{\text{BM}}\text{BM}_i + \varepsilon_j, \quad (7)$$

with and without the QTR and IND fixed effects. For the sample of insider block trades, we run the following regression,

$$\text{Disc}_j = b_0 + b_{\text{Eag}}\text{Eag}_j + b_{\text{SS}}\text{SS}_j + b_{\text{SZ}}\text{SZ}_i + b_{\text{BM}}\text{BM}_i + \varepsilon_j, \quad (8)$$

with and without the QTR and IND fixed effects. The results are reported in Table 6.

Table 6 here

The results in Panel A of Table 6 show that all the explanatory variables in (7) contribute strongly to the discounts with the anticipated signs. Insider sales tend to increase the discounts, in line with the observations from Panel D of Figure 4 and Table 3. The relative sale size contributes to a larger discount. Small firms and growth firms tend to have larger discounts. Within the insider sale sample, the eagerness also contributes positively to the discounts.

### 4.4. Insider Trading and Future Earnings

A common theme in the literature of insider trading is that insiders possess information about the value of the firms, and so do their trades if sales are not for diversification purposes. To examine whether insider trades contain any information about future performance of the firms, we run the following regressions, at the firm/quarter level, for the post-*Guideline* period,

$$\text{ROE}_{i,q+k} = b_0 + b_{\text{BT}}\overline{\text{BT}}_{iq} + e_{\text{SS}}\overline{\text{SS}}_{iq} + b_{\text{Eag}}\overline{\text{Eag}}_{iq} + e_{\text{ROE}}\text{ROE}_{iq} + \varepsilon_{i,q+k},$$

where  $\text{ROE}_{iq}$  is the return-on-equity of firm  $i$  in quarter  $q$ . Other variables with a bar on top have a similar meaning, but are either aggregated (for SS) or averaged (for BT

and  $E_{i,t}$ ) within firm  $i$  and quarter  $q$ . The regressions are run for  $k = 1, 2, 3$  and  $4$ , with and without fixed effects QTR and IND. The results are stronger for  $k = 3$  and  $4$  than  $k = 1$  and  $2$ , which are in line with the results in the literature for other countries. Table 8 reports the one-quarter-ahead ( $k = 1$ ) and the four-quarter-ahead ( $k = 4$ ) earnings forecasts.

Table 7 here

The results in Table 7 show that future ROEs can be predicted by current ROEs, as has been found in many other contexts. The intensity of block trades by insiders contains bad news; the aggregate sale size and average eagerness also contain bad news about future earnings. Roughly speaking, the magnitudes of the coefficients are greater for the four-quarter-ahead forecasts than for the one-quarter-ahead forecasts. Overall, insider sales of the unlocked stocks contain bad news about future earnings of the firms.

## 4.5. Flipping

As we explained earlier, insider sales conducted through the block trading system may reveal bad news about the company, so the counterparties (i.e., the buyers) from the block trading system tend to protect themselves by requiring a larger discount. To complete the story, we need to show that the same counterparties also have incentives to dispose of the shares they buy quickly before more investors recognize the motives of the insiders and before the prices fall enough to wipe out their gains from the discounts.<sup>8</sup>

The complete data on what the counterparties in the block trading system do with their acquired stocks are not available. We infer their behavior from two sources. One source is the block trading system. Since the counterparties of the insider block trades are not restricted from reselling the stocks through the block trading system, if they do resell there, records are available. Let  $CB_{j0}$  be the block purchase in terms of shares by

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<sup>8</sup>In the IPO literature, hot issues are rationed. Some buyers who obtain rationed stocks choose to sell them on the first day of trading and are known as flippers. We borrow the term to describe the counterparties of the insiders in the block trading system who sell the acquired shares shortly after the block trades as flippers.

the counterparty and  $CS_{jt}$  be the block sale in terms of shares by the counterparty on day  $t$  after the block sale. The cumulative percentage shares sold by the counterparty on day  $s$  is

$$CPS_{js} = \sum_{t=1}^s \frac{CS_{jt}}{CB_{j0}}. \quad (9)$$

Panel A of Figure 4 plots the average  $CPS_{js}$  against  $s$  for the next 100 trading days. It shows that, by day 100, an average of 20% of shares are sold by the counterparties of the insiders to other parties. The average return earned by the counterparties in reselling the stocks through the block trade system is positive, but insignificant, as discounts prevail when they resell the stocks even though the counterparties are not insiders.

Figure 4 here

A more plausible scenario is that the counterparties resell the stocks they acquire from the block trading system in the retail market. We explore a particular report to find traces of such activities. This report is known as *The Report of Unusual Price Fluctuation*, filed by the two exchanges which lists all the stocks/days that experience unusual fluctuations and the five broker branches that have the largest trading volumes of those stocks on those days. The report is maintained by Wind Data Inc. For each insider block trade  $j$ , we follow it for the next 30 trading days  $t$ . We name  $UPF_{jt} = 1$  if day  $t$  is a day with unusual price fluctuations and the daily return is negative and  $UPF_{jt} = 0$  otherwise. We also name  $BR_{jt} = 1$  if one of the five broker branches is used by the counterparty and  $BR_{jt} = 0$  otherwise. We then sum  $UPF$  and  $BR$  across all  $js$  and plot them in Panel B of Figure 4. Note that the definition of unusual price fluctuations is very stringent.<sup>9</sup> Panel B shows that, even for such a stringent definition, we can identify many cases in which unusual price fluctuations follow the insider block trades and the branches are those used by the counterparties of the block trades.

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<sup>9</sup>A stock is regarded as having an unusual price fluctuation on a day if (a) the difference in absolute value between the daily return on the stock and daily return on the market index is greater than 7%, (b) the difference between the daily maximum price and daily minimum price is more than 15% of the closing price of the last trading day, (c) daily turnover exceeds 20%, (d) the cumulative difference in absolute value in the last three trading days between the daily return on the stock and daily return on the market index is greater than 20%, or (e) the sum of turnovers in the last three trading days exceeds 20% and the ratio of average turnover in the last three trading days to that in the previous five trading days exceeds 30.

The counterparties of the insider block trades can dispose of the stocks they acquire in the retail market. There are numerous trading strategies to realize such flipping trades. To get a sense of how profitable these strategies can be, we calculate hypothetical returns, assuming the counterparty sells the entire block of the stock  $t$  days after the block trade in the retail market at the closing price on day  $t$  (without further disturbing the closing price). Panel C of Figure 4 plots the average abnormal returns against  $t$ .<sup>10</sup> The results show that the hypothetical abnormal returns are positive on average if the counterparties sell the stock within 50 days. Of course, it is unlikely that the counterparties would sell the entire block of the stock on one day without disturbing the market. It is more conceivable that the counterparties would sell the acquired stock from the block trading system piecemeal in the retail market. Panel (D) plot the average abnormal returns to the hypothetical strategies that sell the stock in equal installments within the first  $k$  days after the block trade, where  $k = 10, 20, 30, 40, 50$  and  $60$ . As expected, the faster the counterparties resell the stocks, the higher the returns are on average. As such, the scenario described earlier that insiders sell the stocks through the block trading system at discounts to avoid future losses, while the counterparties resell the stocks they buy at discounts in the retail market with profits, is very plausible.

## 5. Cumulative Abnormal Returns and Earning Forecasts by Insider Type

In this section, we address the question of what types of insiders are the culprits who drive the stock prices down and signal more bad news about the future earnings. We first analyze CARs according to the insider type and then analyze the predictive power of the insider type for the future company earnings.

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<sup>10</sup>Out of the 2605 cases, there are only 80 cases in which the counterparties became insiders because they acquired more than 5% of the total outstanding shares and, therefore, are restricted from selling more than 1% of the total outstanding shares within one month. We exclude these 80 cases.

## 5.1. The Cumulative Abnormal Returns for Various Types of Insiders

Figure 5 plots the average CARs associated with the four types of insiders: affiliated companies, strategic investors, managers, and other individual insiders. In order to obtain clean results, observations of different types with their sales within 100 trading days are deleted.

Panel A shows that, before the *Guideline*, affiliated companies and the strategic investors did not contribute much to the price decline. Panel B shows that, before the *Guideline*, managers actually contributed very positively to the CARs, which is the main reason for the overall average CARs in Panel B of Figure 3 to turn upward, while other individual insiders caused the CARs to drift slightly lower.

Figure 5 here

The post-*Guideline* period provides different pictures of CARs associated with the various types of insiders. Panel C shows that strategic investors contributed positively to the CARs, while the affiliated companies are the most serious trouble makers who caused the CARs to be strongly negative. Panel D shows that the managers contributed slightly positively to the CARs, while contributions by other individuals are close to zero.

The sharp contrasts before and after the *Guideline* are interesting to explore. The difference in average CARs between the pre- and post-*Guideline* periods for the managers is small. Recall that both the total value or the number of sales by managers are small. The more interesting part is the role played by the affiliated companies, which are responsible for the negative average CARs in the post-*Guideline* period. A clue can be found in Table 2 where it is shown that more than half of the managers' sales in terms of total value and the number of transactions are sold through the block trading system in the post-*Guideline* period, whereas almost none is so in the pre-*Guideline* period. As we explained before, sales through the block trading system with discounts are viewed by outside investors as informative about firm performance in the future and hence the negative CARs. Further supportive evidence will be given in the next subsection.

In regression analysis of the cross-sectional differences, we define four dummy variables for the different types of insiders: affiliated companies (Affi), strategic investors (Stra), managers (Mana), and other individual insiders (Indi). Regressions similar to (5) are run with added dummies variables for the four types of insiders specified above for the post-*Guideline* period. All the control variables are demeaned. The results are reported in Table 8.

Table 8 here

The results in Table 8 confirm the plots in Figure 5. Affiliated companies contributed negatively, while other types of insiders contributed positively, to the CARs.

## 5.2. Insider Trading and Future Earnings

To explore the role played by the different types of insiders, we investigate again the information about future earnings. We run the regressions similar to (9) with added dummy variables representing insider types. The regression results are reported in Table 9 for one-quarter-ahead and four-quarter-ahead earnings forecasts. All the variables, except for the insider type dummies, are demeaned. Their coefficient estimates are similar to those in Table 7 and thus are omitted here.

Table 9 here

The results in Table 9 confirm that all the variables have coefficients with signs consistent with the predictions of the hypotheses put forward in this paper. In particular, the sales by affiliated companies strongly predict lower future earnings. This finding completes the story for why sales by affiliated companies became the main driver of the negative CARs.

## 6. Conclusion

In this paper, we investigate the effectiveness of a specific regulation, in the *Guideline*, issued by the China Securities Regulatory Commission that requires corporate insiders to

sell their unlocked restrictive shares through the block trading system if the amount they expect to sell within a month exceeds one percent of the outstanding shares. The alleged purpose of the regulation is to reduce the negative impact on the prices of affected stocks and to protect outside investors. We find that the regulation is ineffective. There is an average of a 5% risk-adjusted loss over a 100-day holding period in the post-*Guideline* period if investors buy the stocks at the time insiders sell. This is worse than in the pre-*Guideline* period. The loss is even higher, roughly 8%, if the insiders sell through the block trading system.

We hypothesize that the main reason the regulation does not work is that the regulatory authority fails to recognize that the regulation creates a separating equilibrium in which insiders with diversification purposes tend to sell gradually in the retail market whereas insiders with negative views about the company tend to sell large quantities immediately through the block trading system. The market recognizes this mechanism and reacts to the sales through the block trading system more negatively. The regulation does not work also because it does not impose a corresponding restriction of resale on the counterparties of the insiders in the block trading system. As a result, the regulation simply redistributes part of the gains from insiders to the counterparties. This is somewhat like the case in the US where regulations merely redistribute the gains from insiders to a handful of information specialists.

The evidence we document in the paper is consistent with our hypotheses. The loss is bigger in the post-*Guideline* period than in the pre-*Guideline* period on average, when the discount in the block sale is greater, when the insider sale size as a percentage of all shares is bigger, and when the insider is more eager to sell. The discount also positively depends on the sale size and the eagerness. We find insider sales predict lower future earnings. We also find some evidence of flipping by the counterparties in the block trading system.

While we have focused on a specific regulation on insider trading in China, the findings in this paper have broader implications about insider trading regulation in general. For China's regulatory authorities, an immediate lesson is the consistency and the game-theoretical aspects which they need to pay more attention to in designing future regula-

tions. More serious problems lie in the areas of corporate governance. The finding that affiliated company insiders are the main culprits of the negative cumulated abnormal returns indicates that the insider trading regulations in China, which imitate those in other countries and mainly target individual insiders, are far from being appropriate in dealing with the institutional reality that China's listed companies are mostly controlled by their parent and other affiliated companies.

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**Table 1.**  
**Descriptive statistics of the insider trade sample and the block trade sample**

This table reports the total values (in billion Yuan), the number of firms involved and the number of transactions of insider trading and block trading before and after the *Guideline*. It also provides descriptive statistics of the values (in million Yuan) of individual transactions.

	Total Value (bil. Yuan)	Firms #	Trans. #	Transaction Value (million Yuan)						
				mean	std	5%	Q1	med	Q3	95%
<i>A. Before Guideline</i>										
Insider trades	123.2	470	2453	50.2	127.0	0.1	1.8	17.4	47.2	197.5
Retail	121.9	469	2443	49.9	127.1	0.1	1.7	17.3	47.0	196.4
Block	1.3	8	10	126.4	85.5	16.4	83.4	100.3	200.8	245.9
Block trades	10.5	142	411	25.5	45.9	2.1	5.0	8.7	26.9	96.1
Non-insider	9.2	134	401	23.0	41.6	2.1	4.9	8.3	25.4	79.2
<i>B. After Guideline</i>										
Insider trades	207.5	783	10267	20.2	88.3	0.1	0.7	4.7	19.0	73.7
Retail	126.5	717	7662	16.5	98.9	0.1	0.4	1.8	11.0	58.5
Block	80.9	382	2605	31.1	42.6	3.6	8.3	17.9	37.0	99.6
Block trades	187.3	756	6609	28.3	56.0	3.3	6.8	14.2	31.1	93.5
Non-insider	106.4	578	4004	26.6	63.2	3.2	6.1	11.9	27.2	88.1

**Table 2.**  
**Descriptive statistics of the sales made by various types of insiders**

This table reports the total values (in billion Yuan), the number of cases, and descriptive statistics (in million Yuan) of insider trades before and after the *Guideline* by insider type.

	Total Value (bil. Yuan)	Trans. #	Transaction Value (million Yuan)						
			mean	std	5%	Q1	med	Q3	95%
<i>A. Before Guideline</i>									
Affiliated companies	79.8	1230	64.8	89.4	4.1	18.6	35.2	201.8	224.2
Retail trades	78.6	1221	64.4	89.8	4.1	18.6	35.0	73.7	220.5
Block trades	1.2	9	131.8	88.9	15.6	98.7	101.8	219.7	247.5
Strategic Investors	37.3	342	109.0	272.3	4.4	14.8	31.1	70.9	440.5
Retail trades	37.2	341	109.1	272.7	4.4	14.8	30.9	70.8	440.6
Block trades	0.1	1	78.3	78.3	78.3	78.3	78.3	78.3	78.3
Managers	2.2	773	2.9	12.7	0.0	0.2	0.7	2.1	8.5
Retail trades	2.2	773	2.9	12.7	0.0	0.2	0.7	2.1	8.5
Block trades	0	0	0	0	0	0	0	0	0
Other individuals	3.9	108	36.3	102.4	0.1	1.0	4.7	23.5	201.8
Retail trades	3.9	108	36.3	102.4	0.1	1.0	4.7	23.5	201.8
Block trades	0	0	0	0	0	0	0	0	0
<i>B. After Guideline</i>									
Affiliated companies	116.9	3659	31.9	100.1	1.4	7.4	16.9	35.9	100.5
Retail trades	57.8	1892	30.5	131.5	0.5	6.1	16.1	34.1	91.2
Block trades	59.1	1767	33.4	47.2	3.5	8.4	18.0	41.4	110.2
Strategic Investors	58.5	1232	47.5	166.0	0.7	5.3	14.1	33.0	136.0
Retail trades	48.4	880	55.0	194.7	0.4	3.8	12.7	32.2	173.9
Block trades	10.1	352	28.7	35.9	4.4	7.6	17.3	34.9	81.9
Managers	15.5	4577	3.4	8.6	0.0	0.3	0.7	2.4	16.0
Retail trades	8.5	4260	2.0	4.9	0.0	0.2	0.6	1.8	8.1
Block trades	6.9	317	21.8	19.6	3.7	8.2	16.3	28.7	61.4
Other individuals	16.6	799	20.8	89.7	0.1	0.8	4.3	17.1	73.8
Retail trades	11.8	630	18.7	99.7	0.1	0.5	2.1	8.4	60.1
Block trades	4.8	169	28.4	31.1	4.6	9.9	19.8	34.2	95.6

**Table 3.**  
**Block trade discount and insider trade timing**

Panel A of this table reports the descriptive statistics of block trade discounts. Panel B of this table reports the descriptive statistics of the days between the unlock date and sale date of insiders' unlocked restricted shares.

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A. Block trade discounts (%)							
	mean	std	5%	Q1	med	Q3	95%
Before <i>Guideline</i>	2.27	3.85	-2.16	0.00	0.78	3.76	10.69
After <i>Guideline</i>	5.84	4.78	-0.97	2.49	5.90	9.26	13.13
Insider	6.30	3.97	0.00	3.99	6.22	8.84	12.54
Affiliated companies	6.27	4.05	0.00	3.99	6.25	8.82	12.53
Strategic investors	7.44	3.79	1.59	4.47	7.51	10.13	13.95
Managers	5.91	3.62	-0.05	4.00	5.33	8.00	12.05
Other individuals	5.02	3.61	-1.51	3.17	5.03	6.94	11.01
Non-insiders	5.54	5.23	-1.51	1.04	5.42	9.67	13.50
B. Number of days between unlock date and sale date							
	mean	std	5%	Q1	med	Q3	95%
All Insiders	309.12	303.76	7.00	66.00	217.00	457.00	946.00
Affiliated companies	266.78	246.91	6.00	69.00	200.00	398.55	772.00
Strategic investors	260.15	261.02	6.00	54.00	182.00	371.00	803.38
Managers	376.71	352.43	10.00	80.00	288.00	566.00	1121.00
Other individuals	223.60	258.33	3.00	35.00	114.00	328.80	791.70

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**Table 4.****Determinants of cumulative abnormal returns: insider trade sample**

This table reports the regressions of 50-day and 100-day cumulative abnormal returns (CARs) on the post-*Guideline* dummy (PG), block-trade dummy (BT), sale size (SS), eagerness (Eag), firm size (SZ), and book-to-market ratio (BM). QTR and IND indicate quarter and industry effects. The numbers in parentheses are t-ratios, clustered by QTR.

A. 50-day CAR									
Const.	PG	BT	SS	Eag	SZ	BM	QTR	IND	$R^2$
27.11 (4.77)	-1.87 (-3.06)				-1.12 (-3.97)	3.36 (6.72)	No	No	0.01
26.17 (4.58)		-3.69 (-2.98)			-1.13 (-4.06)	3.18 (6.41)	No	No	0.01
28.43 (4.95)			-0.48 (-2.17)		-1.23 (-4.39)	3.27 (6.58)	No	No	0.01
30.30 (5.00)				-0.46 (-1.56)	-1.34 (-4.53)	3.16 (6.38)	No	No	0.01
33.98 (5.54)	-2.98 (-4.28)	-2.09 (-1.64)	-0.71 (-2.96)	-0.79 (-2.45)	-1.37 (-4.61)	3.38 (6.80)	No	No	0.02
42.06 (3.99)		-4.01 (-3.16)			-1.97 (-6.04)	5.74 (10.88)	Yes	Yes	0.08
46.36 (4.40)			-0.46 (-2.85)		-2.08 (-6.35)	5.82 (11.00)	Yes	Yes	0.08
46.66 (4.38)				-0.62 (-1.98)	-2.18 (-6.49)	5.71 (10.81)	Yes	Yes	0.08
47.25 (4.41)		-3.40 (-2.62)	-0.39 (-2.36)	-0.31 (-1.98)	-2.14 (-6.29)	5.72 (10.87)	Yes	Yes	0.08
B. 100-day CAR									
Const.	PG	BT	SS	Eag	SZ	BM	QTR	IND	$R^2$
78.90 (8.73)	-7.65 (-7.71)				-3.16 (-7.14)	7.31 (9.17)	No	No	0.03
76.16 (8.37)		-10.75 (-5.38)			-3.30 (-7.44)	6.61 (8.36)	No	No	0.03
79.68 (8.72)			-0.28 (-0.76)		-3.47 (-7.84)	6.77 (8.53)	No	No	0.02
81.58 (8.48)				-0.39 (-0.85)	-3.58 (-7.64)	6.69 (8.49)	No	No	0.02
93.49 (9.51)	-9.64 (-8.46)	-6.37 (-3.09)	-1.14 (-2.79)	-1.91 (-3.85)	-3.74 (-7.90)	7.24 (9.03)	No	No	0.04
118.19 (5.61)		-10.02 (-4.86)			-4.71 (-9.19)	12.67 (14.30)	Yes	Yes	0.10
127.12 (6.02)			-0.93 (-3.37)		-4.94 (-9.60)	12.85 (14.47)	Yes	Yes	0.10
130.66 (6.16)				-1.70 (-3.46)	-5.28 (-9.95)	12.57 (14.19)	Yes	Yes	0.10
130.50 (6.14)		-8.60 (-4.09)	-0.73 (-2.62)	-0.97 (-1.98)	-5.14 (-9.61)	12.58 (14.18)	Yes	Yes	0.11

**Table 5.****Determinants of cumulative abnormal returns: block trade sample**

This table reports the regressions of 50-day and 100-day cumulative abnormal returns (CARs) on the insider dummy (Ins), sale size (SS), block-trade discount (Disc), firm size (SZ), and book-to-market ratio (BM). QTR and IND indicate quarter and industry effects. The numbers in parentheses are t-ratios, clustered by QTR.

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A. 50-day CAR								
Const.	Ins	SS	Disc	SZ	BM	QTR	IND	$R^2$
21.99 (3.76)	-2.03 (-2.65)			-0.87 (-3.48)	4.13 (9.17)	No	No	0.02
11.12 (1.93)		0.44 (1.38)		-0.43 (-1.75)	4.18 (9.29)	No	No	0.02
21.01 (3.87)			-0.31 (-3.71)	-0.78 (-3.39)	4.09 (9.07)	No	No	0.03
25.01 (3.82)	-2.18 (-2.85)	0.47 (1.47)	-0.30 (-3.67)	-0.94 (-3.44)	4.00 (8.88)	No	No	0.03
21.08 (2.81)	-1.85 (-2.14)			-1.08 (-3.56)	4.37 (9.08)	Yes	Yes	0.06
19.00 (2.42)		-0.19 (-0.77)		-0.97 (-3.07)	4.39 (9.10)	Yes	Yes	0.06
25.50 (3.41)			-0.32 (-4.41)	-1.15 (-3.92)	4.39 (9.12)	Yes	Yes	0.06
32.42 (3.90)	-1.71 (-1.98)	-0.22 (-0.88)	-0.33 (-4.43)	-1.46 (-4.39)	4.38 (9.11)	Yes	Yes	0.06
B. 100-day CAR								
28.89 (3.30)	-3.97 (-3.03)			-1.12 (-3.07)	7.58 (9.98)	No	No	0.04
4.97 (0.56)		1.05 (1.50)		-0.16 (-0.43)	7.65 (10.03)	No	No	0.03
24.60 (3.07)			-0.49 (-3.64)	-0.88 (-2.64)	7.55 (9.92)	No	No	0.04
32.27 (3.17)	-4.28 (-3.28)	1.12 (1.61)	-0.48 (-3.52)	-1.18 (-2.85)	7.44 (9.80)	No	No	0.04
38.38 (3.19)	-3.04 (-2.15)			-1.90 (-3.92)	8.02 (9.75)	Yes	Yes	0.08
26.47 (2.06)		0.55 (0.79)		-1.36 (-2.66)	8.03 (9.70)	Yes	Yes	0.08
42.45 (3.51)			-0.42 (-3.08)	-1.90 (-4.04)	8.07 (9.76)	Yes	Yes	0.09
44.29 (3.28)	-3.31 (-2.35)	0.63 (0.91)	-0.42 (-3.03)	-2.02 (-3.78)	8.06 (9.81)	Yes	Yes	0.09

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**Table 6.**  
**Determinants of block trade discounts**

Panel A of the table reports the regression of the block-trade discounts (Disc) on the insider dummy (Ins), sale size (SS), firm size (SZ), and book-to-market ratio (BM) for the block trade sample. Panel B of the table reports of the regression of the block-trade discounts (Disc) on the eagerness (Eag), sale size (SS), firm size (SZ), and book-to-market ratio (BM) for the insider block trade sample. QTR and IND indicate quarter and industry effects. The numbers in parentheses are t-ratios, clustered by QTR.

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A. Block-trade sample							
Const.	Ins	SS	SZ	BM	QTR	IND	$R^2$
19.94	0.93		-0.70	-0.53	No	No	0.09
(14.22)	(5.15)		(-11.80)	(-5.24)			
26.33		0.33	-0.96	-0.56	No	No	0.09
(18.97)		(4.53)	(-16.25)	(-5.54)			
22.87	1.02	0.37	-0.82	-0.51	No	No	0.10
(15.14)	(5.67)	(5.11)	(-12.89)	(-5.09)			
20.46	1.36		-0.77	-0.26	Yes	Yes	0.19
(9.05 )	(4.39)		( -9.52)	(-2.00)			
23.14		0.53	-0.85	-0.20	Yes	Yes	0.19
(9.62 )		(4.75)	( -9.88)	(-1.51)			
23.97	1.15	0.46	-0.90	-0.23	Yes	Yes	0.20
(9.94 )	(3.68)	(4.10)	(-10.39)	(-1.72)			

B. Insider block-trade sample							
Const.	Eag	SS	SZ	BM	QTR	IND	$R^2$
26.66	1.38		-1.05	-0.72	No	No	0.08
(4.10 )	(3.36)		(-3.47)	(-2.01)			
43.17		0.65	-1.78	-0.76	No	No	0.10
(6.62 )		(4.33)	(-5.92)	(-2.20)			
36.57	1.17	0.59	-1.47	-0.53	No	No	0.11
(5.33 )	(2.89)	(3.97)	(-4.64)	(-1.49)			
26.59	1.05		-1.21	-0.58	Yes	Yes	0.38
(3.37 )	(2.34)		(-3.80)	(-1.61)			
34.20		0.14	-1.51	-0.82	Yes	Yes	0.37
(4.37 )		(0.98)	(-4.91)	(-2.42)			
28.23	1.01	0.10	-1.26	-0.56	Yes	Yes	0.38
(3.42 )	(2.23)	(0.69)	(-3.86)	(-1.55)			

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**Table 7.****Return-on-equity predictive power of insider trading: post-*Guideline***

This table reports the regression of  $k$ -quarter ahead return-on-equity ( $ROE_k$ ) on the average block-trade dummy ( $\overline{BT}$ ), sale size ( $\overline{SS}$ ), eagerness ( $\overline{Eag}$ ), and the current ROE ( $ROE_0$ ), with or without quarter (QTR) and industry (IND) fixed effects. Panel A is for the one-quarter-ahead ROE and Panel B is for the four-quarter-ahead ROE. The numbers in parentheses are t-ratios, clustered by QTR.

A. One-quarter ahead ROE ( $ROE_1$ )							
Const.	$\overline{BT}$	$\overline{SS}$	$\overline{Eag}$	$ROE_0$	QTR	IND	$R^2$
1.02 (2.78)	-0.67 (-1.22)			0.40 (3.44)	No	No	0.18
1.34 (3.67)		-0.36 (-4.20)		0.39 (3.39)	No	No	0.19
0.89 (2.46)			-0.27 (-1.72)	0.39 (3.41)	No	No	0.18
1.26 (3.22)	-0.14 (-1.94)	-0.33 (-1.99)	-0.18 (-1.61)	0.39 (0.98)	No	No	0.19
0.03 (0.05)	-0.77 (-1.62)			0.38 (3.39)	Yes	Yes	0.22
0.31 (0.47)		-0.32 (-3.75)		0.38 (3.35)	Yes	Yes	0.22
0.03 (0.05)			-0.09 (-0.80)	0.38 (3.35)	Yes	Yes	0.22
0.30 (0.45)	-0.36 (-5.63)	-0.29 (-2.83)	0.00 (0.03)	0.38 (1.61)	Yes	Yes	0.22
B. Four-quarter ahead ROE ( $ROE_4$ )							
Const.	$\overline{BT}$	$\overline{SS}$	$\overline{Eag}$	$ROE_0$	QTR	IND	$R^2$
1.82 (7.43)	-1.92 (-2.74)			0.18 (2.72)	No	No	0.06
2.00 (8.09)		-0.27 (-2.14)		0.18 (2.67)	No	No	0.05
1.65 (7.36)			-0.32 (-2.22)	0.18 (2.69)	No	No	0.05
1.92 (7.90)	-1.52 (-13.02)	-0.16 (-1.43)	-0.21 (-3.16)	0.18 (0.72)	No	No	0.06
1.66 (2.25)	-1.93 (-2.73)			0.17 (2.59)	Yes	Yes	0.07
1.97 (2.45)		-0.26 (-1.85)		0.17 (2.55)	Yes	Yes	0.06
1.76 (2.24)			-0.32 (-1.87)	0.17 (2.54)	Yes	Yes	0.06
1.84 (2.38)	-1.53 (-11.81)	-0.15 (-1.10)	-0.20 (-3.07)	0.17 (1.13)	Yes	Yes	0.08

**Table 8.****Determinants of cumulative abnormal returns by insider type**

This table reports the regression of cumulative abnormal return (CAR) on the various insider-type dummies of affiliated companies (Affi), strategic investors (Stra), managers (Mana), other individual insiders (Indi), and control variables, consisting of the block-trade dummy (BT), sale size (SS), and eagerness (Eag), whose coefficients are not reported, with or without quarter (QTR) and industry (IND) fixed effects. Panel A is for the 50-day CARs and Panel B is for the 100-day CARs. The numbers in parentheses are t-ratios, clustered by QTR.

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A. 50-day CAR							
Affi	Stra	Mana	Indi	Controls	QTR	IND	$R^2$
-2.14	2.51	2.14	1.01	No	No	No	0.01
(-5.88)	(3.69)	(5.78)	(0.64)				
-2.14	2.36	2.07	2.49	No	Yes	Yes	0.05
(-5.77)	(3.29)	(5.40)	(1.62)				
-1.80	1.81	1.92	0.26	Yes	No	No	0.03
(-4.74)	(2.59)	(4.38)	(0.16)				
-1.20	1.02	1.26	1.30	Yes	Yes	Yes	0.08
(-3.08)	(1.41)	(2.75)	(0.86)				
B. 100-day CAR							
Affi	Stra	Mana	Indi	Controls	QTR	IND	$R^2$
-3.18	4.79	2.57	5.67	No	No	No	0.01
(-5.31)	(4.39)	(4.18)	(2.35)				
-3.75	4.75	3.20	7.91	No	Yes	Yes	0.04
(-6.16)	(4.24)	(4.93)	(3.28)				
-2.43	3.59	1.97	4.49	Yes	No	No	0.04
(-3.96)	(3.15)	(2.73)	(1.85)				
-1.85	2.06	1.54	5.66	Yes	Yes	Yes	0.10
(-2.94)	(1.80)	(2.04)	(2.44)				

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**Table 9.****Return-on-equity predictive power by insider type: post-*Guideline***

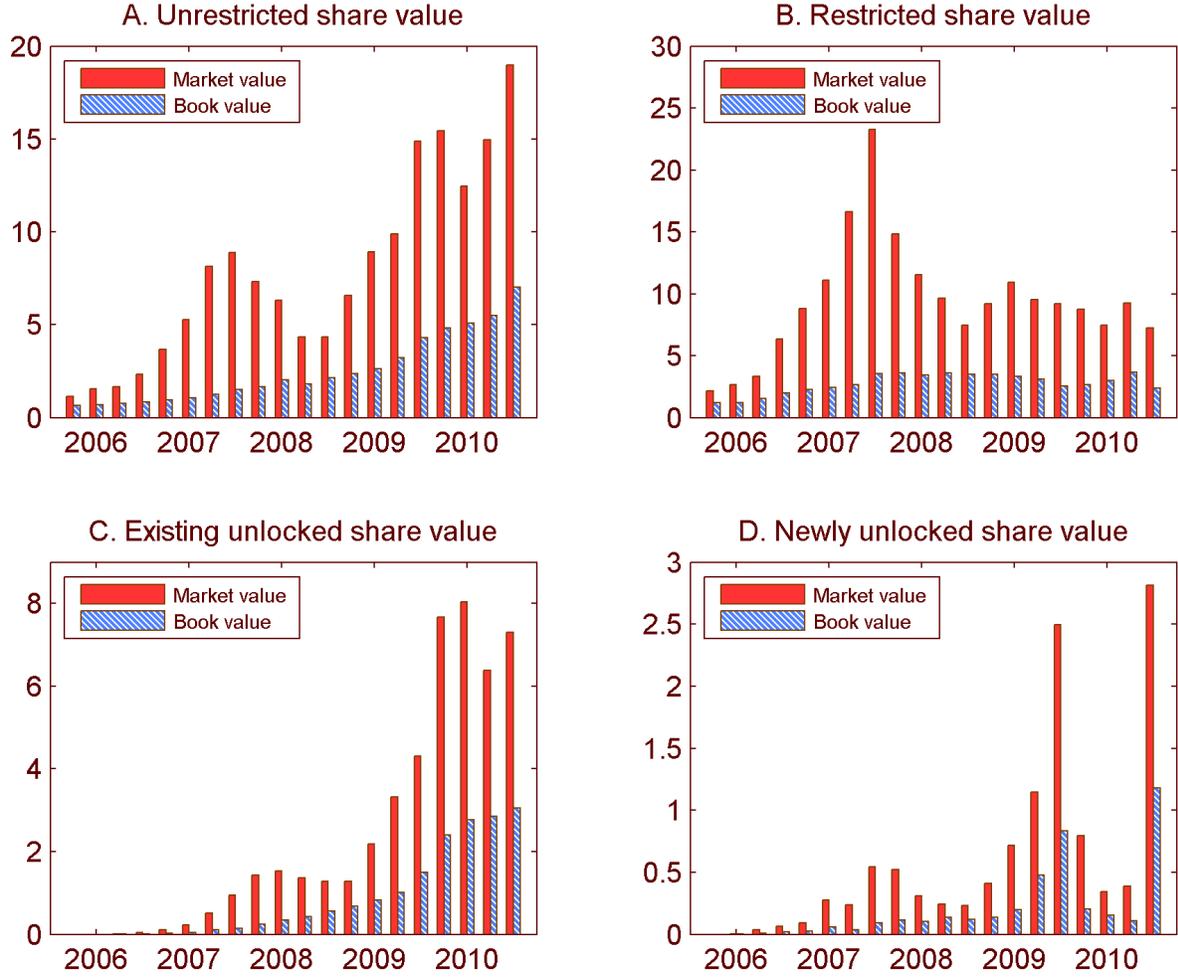
This table reports the regression of  $k$ -quarter-ahead return-on-equity ( $ROE_k$ ) on the various insider-type dummies of affiliated companies ( $\overline{\text{Affi}}$ ), strategic investors ( $\overline{\text{Stra}}$ ), managers ( $\overline{\text{Mana}}$ ), other individual insiders ( $\overline{\text{Indi}}$ ), and control variables, consisting of average block-trade dummy ( $\overline{\text{BT}}$ ), aggregated sale size ( $\overline{\text{SS}}$ ), average eagerness ( $\overline{\text{Eag}}$ ), and the current ROE ( $ROE_0$ ), whose coefficients are not reported, with or without quarter (QTR) and industry (IND) fixed effects. Panel A is for the one-quarter-ahead ROE and Panel B is for the four-quarter-ahead ROE. The numbers in parentheses are t-ratios, clustered by QTR.

A. One-quarter ahead ROE ( $ROE_1$ )

$\overline{\text{Affi}}$	$\overline{\text{Stra}}$	$\overline{\text{Mana}}$	$\overline{\text{Indi}}$	Controls	QTR	IND	$R^2$
-0.52 (-1.99)	0.77 (2.85)	1.00 (5.31)	1.77 (3.16)	No	No	No	0.02
-0.54 (-2.96)	0.59 (1.99)	1.22 (5.77)	1.77 (2.80)	No	Yes	Yes	0.07
-0.22 (-1.65)	0.47 (1.97)	0.25 (1.09)	1.81 (3.10)	Yes	No	No	0.19
-0.26 (-1.75)	0.34 (1.05)	0.47 (1.60)	1.76 (1.96)	Yes	Yes	Yes	0.22

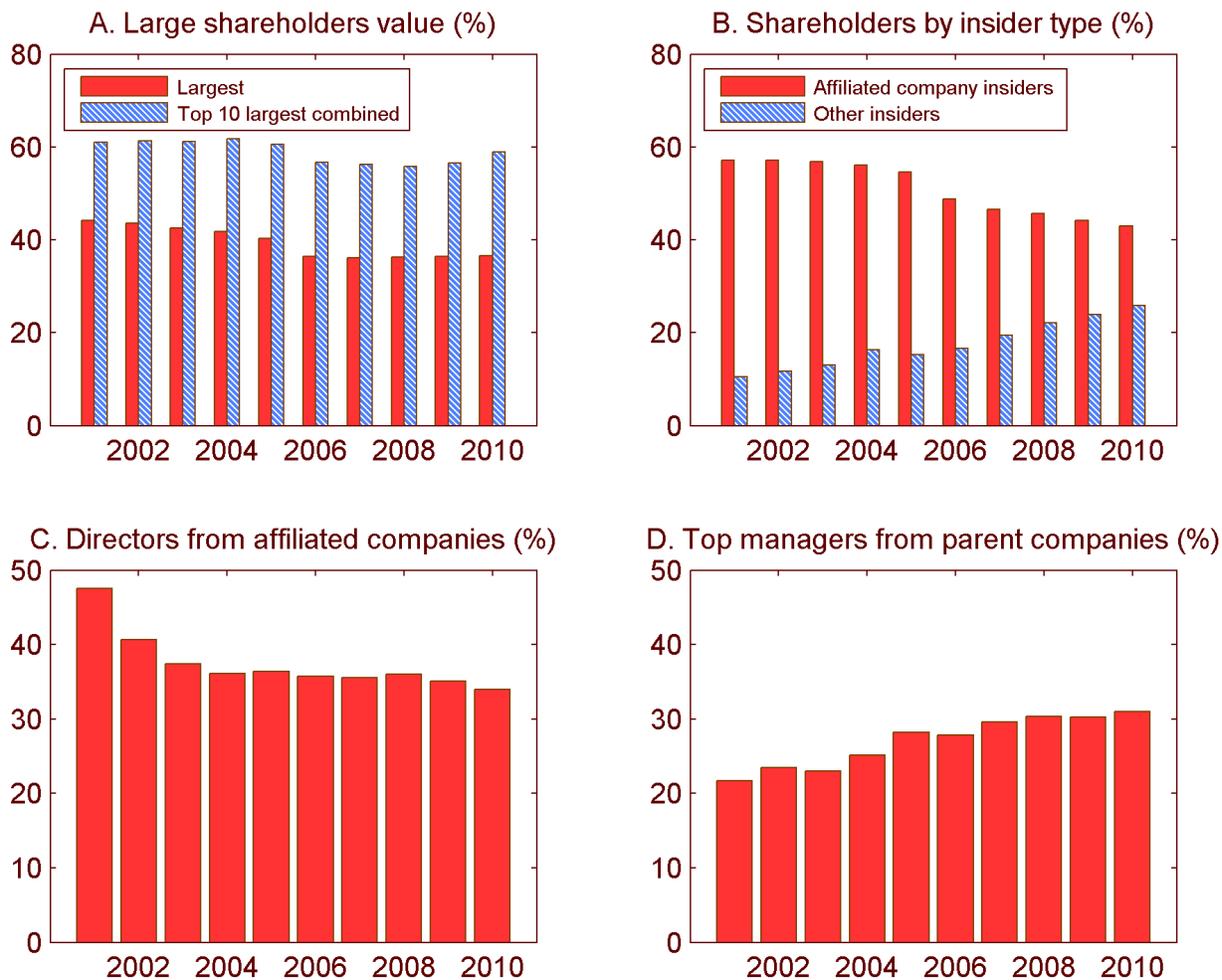
B. Four-quarter ahead ROE ( $ROE_4$ )

$\overline{\text{Affi}}$	$\overline{\text{Stra}}$	$\overline{\text{Mana}}$	$\overline{\text{Indi}}$	Controls	QTR	IND	$R^2$
-0.73 (-3.40)	1.08 (4.42)	1.70 (9.12)	1.74 (2.83)	No	No	No	0.03
-0.67 (-3.61)	0.75 (1.78)	1.76 (4.84)	1.42 (1.29)	No	Yes	Yes	0.09
-0.46 (-2.39)	0.92 (3.84)	0.84 (2.90)	1.34 (2.49)	Yes	No	No	0.11
-0.45 (-2.45)	0.66 (1.59)	1.05 (2.70)	1.18 (1.10)	Yes	Yes	Yes	0.14



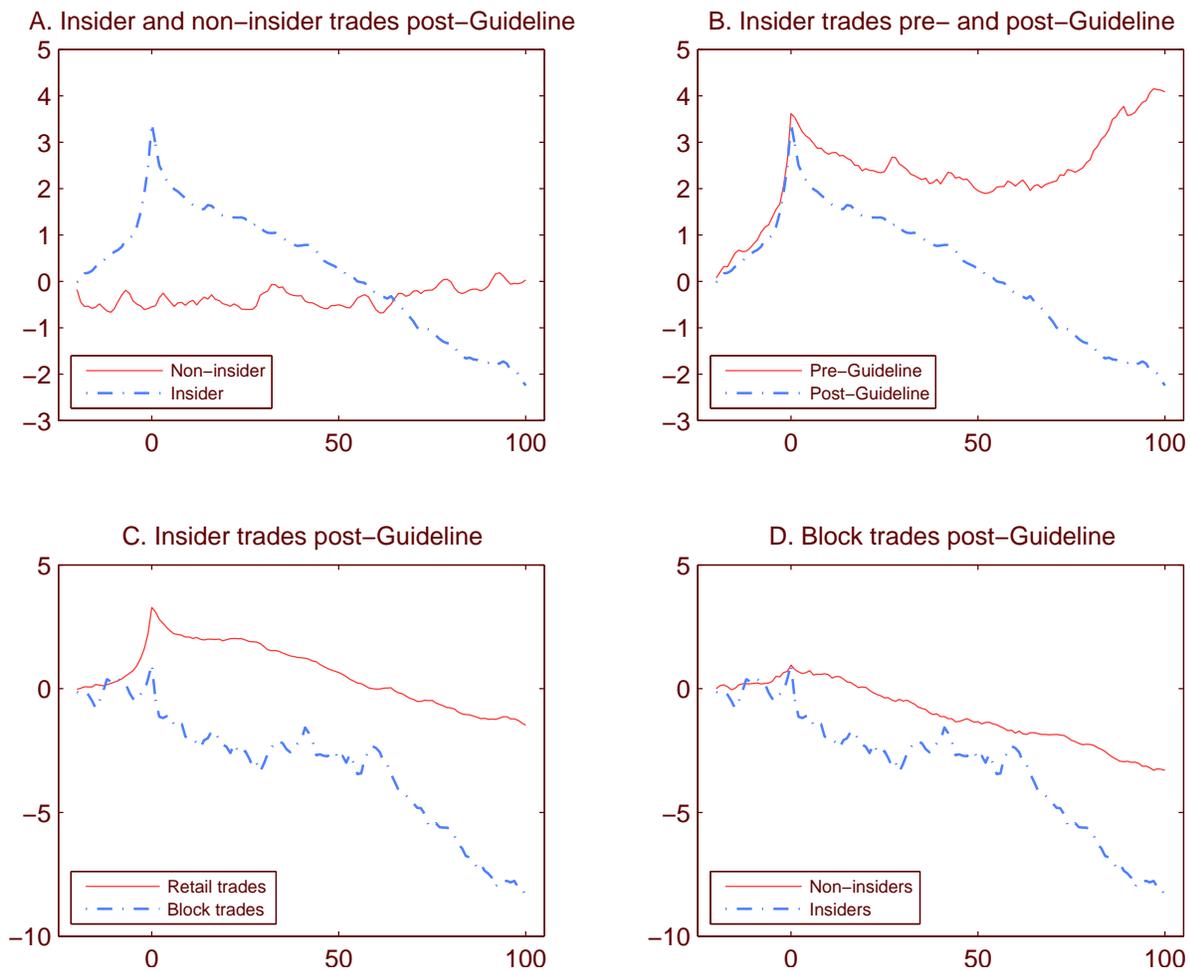
**Figure 1. Values of restricted, unrestricted, and unlocked shares (trillion yuan)**

This figure plots (A) the quarter-end market and book values of unrestricted (tradable) shares, (B) the quarter-end market and book values of restricted (non-tradable) shares, (C) the quarter-end market and book values of existing unlocked (and unsold) shares, and (D) the quarter-end market and book values of the shares unlocked during the quarter.



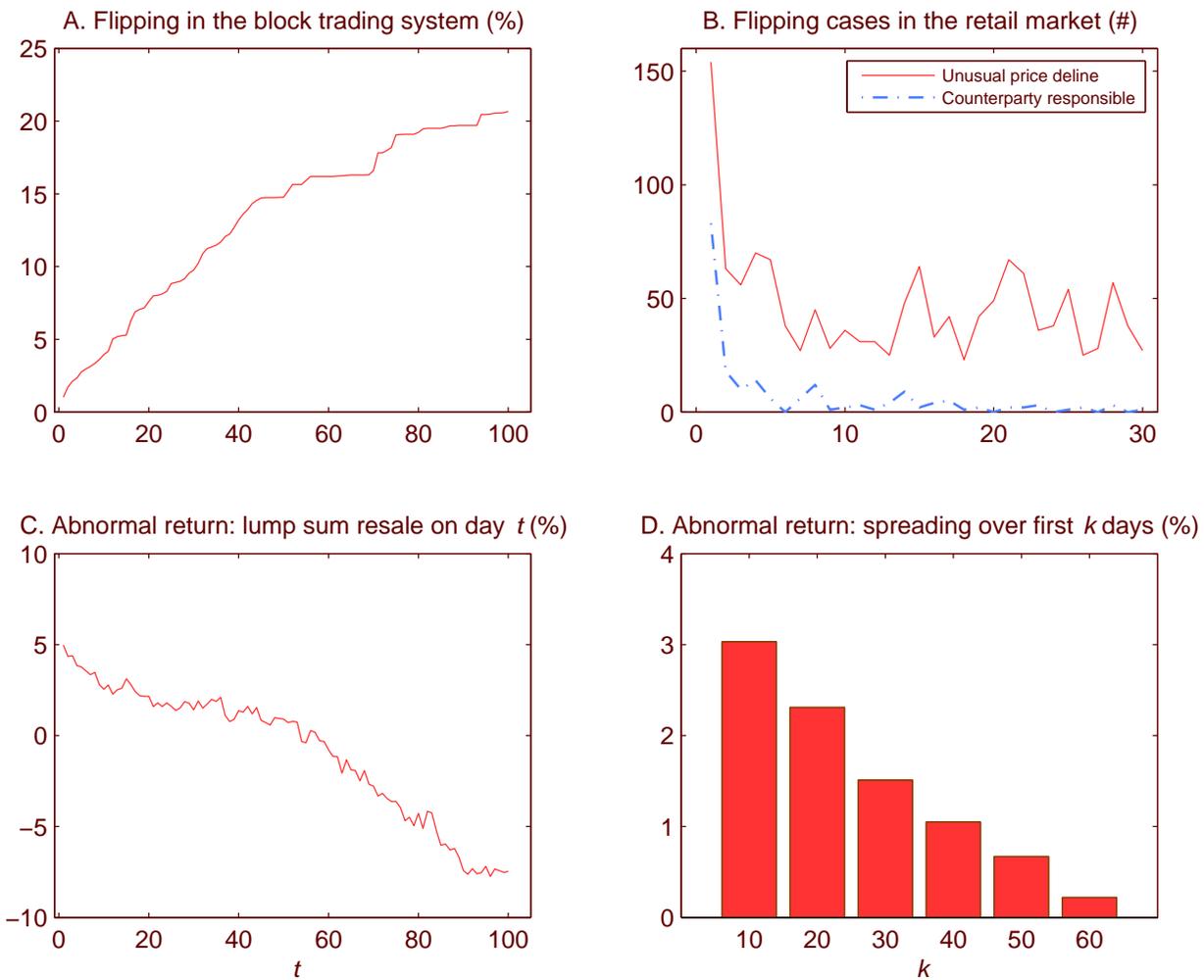
**Figure 2. Corporate structure**

This figure plots the simple average across all firms of (A) the largest shareholders' shares and the top ten largest shareholders' shares as percentages of total shares, (B) shares held by affiliated companies (consisting of parent and other affiliated companies) and other insiders (consisting of strategic investors, managers and individuals) as percentages of total shares, (C) the proportions of the directors from the legal person insiders (consisting of the parent company, the other affiliated companies, and the strategic investors), and (D) the percentage of companies whose top managers used to work for the parent company in all companies.



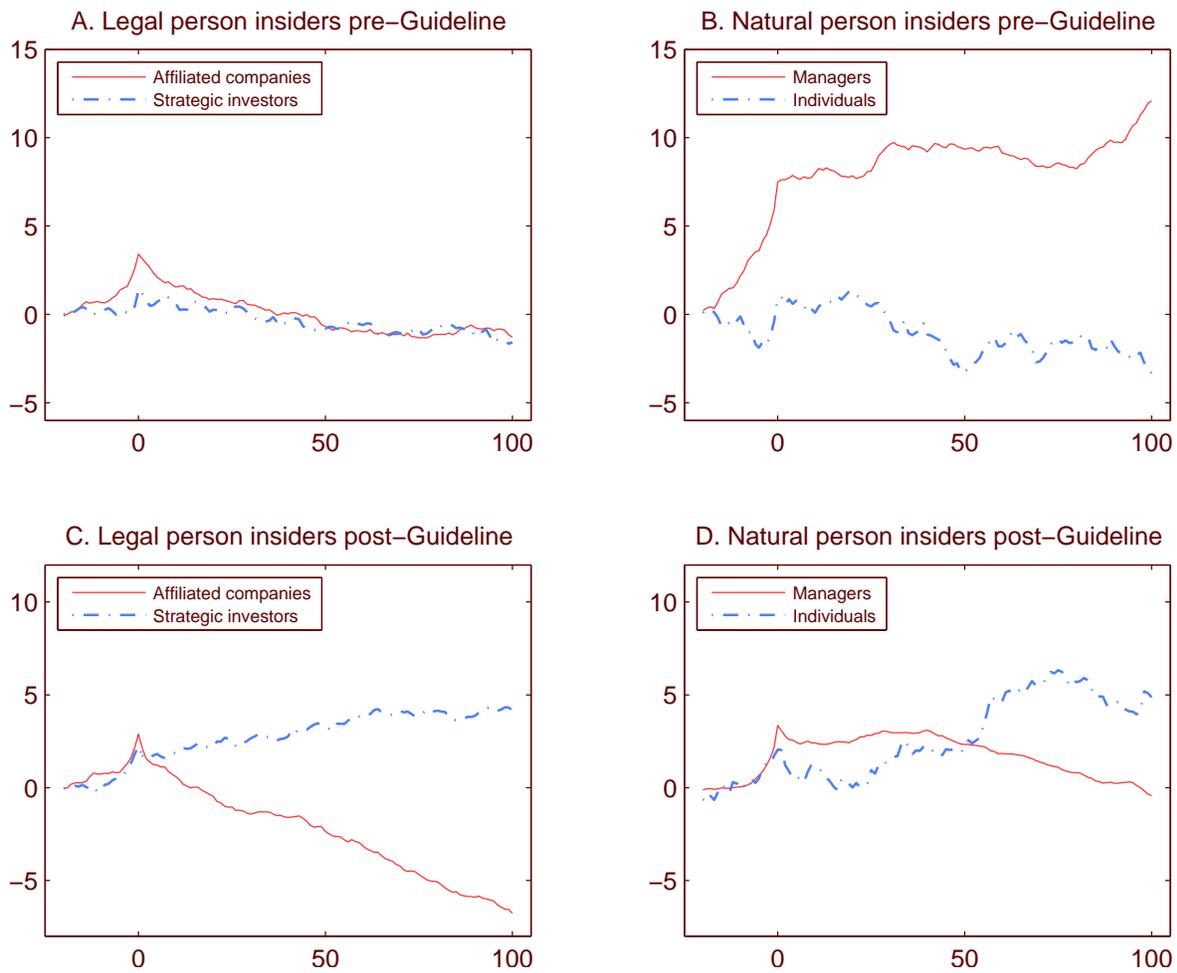
**Figure 3. Cumulative abnormal returns by sale type**

This figure plots the simple average CAR across all cases of (A) insider trades and non-insider trades after the *Guideline*, (B) the insider trades before and after the *Guideline*, (C) the insider retail and block trades after the *Guideline*, and (D) insider and non-insider block trades after the *Guideline*.



**Figure 4. Evidence of flipping and hypothetical returns**

This figure plots (A) the average percentage of cumulative shares sold by the counterparty in block trades over time, (B) the number of unusual price decline cases following insider block sales and the number of broker branches which are responsible and which the counterparty uses, (C) hypothetical abnormal returns to the lump sum resale on day  $t$  in the retail market by the counterparty, (D) hypothetical abnormal returns to the strategy of selling the stake equally on the first  $k$  days.



**Figure 5. Cumulative abnormal returns by insider type**

This figure plots the simple average CAR across all insider sales by (A) affiliated company insiders and strategic investors before the *Guideline*, (B) managers and individual insiders before the *Guideline*, (C) affiliated company insiders and strategic investors after the *Guideline*, and (D) managers and individual insiders after the *Guideline*.