The Nontradable Share Reform in the Chinese Stock Market[*]

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Abstract

Nontradable shares (NTS) are an unparalleled feature of the ownership structure of Chinese listed companies and represented a major hurdle to domestic financial market development. After some failed attempts, in 2005 the Chinese authorities have launched a structural reform program aiming at eliminating NTS. In this paper, we evaluate the stock price effects of the actual implementation of this reform in 368 firms. The NTS reform generated a statistically significant 8 percent positive abnormal return over the event window, adjusting prices for the compensation requested by tradable shareholders. Results are consistent with the expectation of improved economic fundamentals such as better corporate governance and enhanced liquidity.

Keywords: Chinese equity market, financial market development, split-share structure

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1. Introduction

The Chinese equity market has several distint characteristics and segmentation is certainly one of the most prominent. Chinese listed firms have multiple classes of shares outstanding: shares which can be traded by domestic investors (A-shares), shares denominated in foreign currencies and reserved for foreign investors (B-shares), and shares of companies listed or cross-listed overseas (H-shares, for those listed in Honk Kong).[3]

Split-share structures are common around the world and typically warrant to owners different rights (Faccio and Lang, 2002). Yet an unparalleled feature of ownership structures in China are *non-tradable shares* (NTS) entitling the holders to exactly the same voting and cashflow rights assigned to the holders of tradable shares (TS) but which cannot traded publicly even if the company is listed. Typically these shares belong to the State or to domestic financial institutions ultimately owned by central or local governments.

NTS shares have been issued to the founders of a corporation, business partners or employees and served two main purposes: to keep firmly in government's hands the control of State-owned enterprises that were floated in the market, and to maximize IPO proceeds. Indeed, a fraction of capital was suppressed, reducing supply and pushing up the price of tradable shares. As Figure 1 shows, NTS turned out to be overwelmingly important in Chinese stock markets. As of February 2006, they account for 55 percent of the total number of shares outstanding, most of the NTS being represented by state-owned shares.

In fact, the Government and the regulatory authorities soon recognized that the predominance of NTS constituted a problem for the market from several points of view. First, the holders of TS were typically minority shareholders with limited power to affect management decisions. Second, the limited free float available made the domestic market extremely illiquid, volatile and thus prone to market manipulation and insider trading. Third, the inefficiency of the domestic market induced many valuable Chinese companies to list overseas, Hong Kong being one of the most preferred destinations. This adversely affected domestic investors who, prevented to invest in the best companies, were stuck with holdings the less performing local companies.

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[3] Market segmentation is relevant for pricing. Mei, Scheinkman and Xiong (2005) compare the performance of A and B shares for 75 companies for the period 1993-2001, finding a 421.8% premium for A shares over B shares regardless of equal property rights on dividends. Chen and Xiong (2001) study the irregularly scheduled auctions and OTC transactions of NTS and find an average discount of 81% with respect to their floating counterpart.

Chinese authorities have tried to deal with the problem of NTS on several occasions, particularly in 1999 and 2001. In the first attempt, two companies were selected to sell their state shares to the floating shareholders. The experiment was not well received by the investors and within 15 days from the announcement of the transfer program the share price of the two companies fell about 40 percent. The second attempt failed badly in 2001 reportedly because the proposal envisaged an equal pricing for tradable and non-tradable shares.

In January 2004, the Chinese government mentioned officially NTS as a major hurdle for domestic financial development and stated its commitment to face the problem in the immediate future. On April 29, 2005 the China Securities Regulatory Commission (CSRC) announced a new pilot program, inviting a first batch of four companies to transform NTS into TS by compensating existing shareholders through various ways like bonus shares, cash, and options. The main difference from previous attempts is that the new reform invites non-tradable and tradable shareholders to bargain over the transfer of NTS. Such flexibility seemed to work well. Among the four pilot companies, only Tsinghua Tongfang failed to pass its reform proposal due to floating shareholders' discontent about compensation.

On June 2005, the CSRC initiated the second pilot the program involving 42 companies worth 10% of overall stock market value. On August 19, this second program was succesfully accomplished. A few daus later the government issued guidelines to extend the reform share project to the rest of the stock market, setting the end of 2006 as the deadline of the process. In order to provide further incentives to the companies, the CSRC encouraged all mainland-listed companies to turn nontradable into tradable shares and stated that reform-compliant companies would be given priority to raise new capital (new issues of shares and IPOs have been frozen since the launch of the first pilot program). To facilitate the reform, the Chinese government has also taken a series of measures to help stabilize the stock market.[4]

At the end of March 2006, 769 listed companies had either completed or initiated their NTS reform process (see Figure 2). Should the process be accomplished for the whole stock market within the expected deadline, it would represent one of the most important experiments of structural reform ever attempted in a emerging stock market.

This paper provides an early evaluation of the stock price effects of the reform process. Being a major structural change in the Chinese stock market, this reform may have important effects on the

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[4] At the end of January, 2006, a new law was enacted to facilitate the acquisition of stakes in listed companies by strategic investors; under the new regulation purchases of A-shares are not reserved any longer to the small group of qualified investors but extended to all the investors willing to buy a minimum stake of 10% of the company and hold the shares for longer than three years. Furthermore, the Company Law and the Securities Law has been recently amended to strengthen the legal framework concerning the capital market.

prices of stocks. Under the efficient markets hypothesis the price of a stock equals the present discounted value of the fundamentals. There are several reasons to believe that the reform could impact market economic fundamentals of Chinese listed firms. First, once all NTS become tradable, the company would have better governance as minority shareholders might play an increased role in management decisions. Second, the reform will facilitate privatization via secondary equity issuance, curbing political interference in firms and boosting operating performance. Third, the market would expect better liquidity for the stock given the substantial increase in the free float. Finally, the market would also definitely resolve uncertainty about the timing of the reform process, with positive effects on valuation. However, disentangling the effects of improved fundamentals is not trivial given the complexity of a price discovery process affected by compensation mechanisms and the expectations of future supply shocks.

In this paper we study empirically the price effects of the NTS reform. We conduct an event study on 368 companies that accomplished the NTS reform process. We isolate two event windows for each stock, related to the institutional detail of the implementation designed by Chinese regulators. The reason why we analyze two events is that the reform process implies two suspensions and two readmissions for each stock. The two readmission dates represent therefore moments at which we can assess the reaction of the price to the information released during the suspension periods. We analyze whether there was any abnormal reaction of prices over periods of twenty days centered on the event date. Our results can be summed up as follows: first, there is a runup in prices over the periods preceding the first suspension, especially in the two-three days prior to the suspension which is likely due to an information leakage. Second, the abnormal increase in prices continues throughout the process until the second suspension, which is the record date for the distribution of the compensation. Third, there is a large drop in prices after the second admission. However, the drop in price is explained by the compensation mechanism, mainly taking the form of emission of new bonus shares. The adjustment of prices ex bonus reveals a further but temporary increase in prices. The overall effect on shareholders wealth of the reform appears significant both statistical and economic terms.

After this introduction, section 2 describes the mechanics of the stock reform process, followed by Section 3 developing the conceptual framework the empirical test. Section 4 describes the event study, the econometric methodology and the results. Section 4 concludes.

2. The mechanics of the NTS reform and its implementation

On September 5th, 2005, CSRC issued the "Measures on administration of split share structure reform of listed companies", the first official document providing details about the implementation of NTS reform. Taking stock of previous failures, the new program followed some key principles. It decentralized decision making at the firm level, by allowing shareholders to bargain over the method and terms of the compensation. Furthermore, it dealt with the stock overhang problem by introducing lockup periods.

As Inoue (2005) observes, decentralization allowed the government to elicit a variety of proposals from shareholders and to avoid one-size-fits-all solution which could move the market in one direction. Furthermore, by allowing bargaining the terms of the transfer, the government implicitly endorsed the view that the owners of TS could be compensated in some way for any losses stemming from the reform. Even if the logical underpinning for compensation is debatable, the fact that NTS shares were sold at a significant discount at irregularly scheduled auctions and private placements (Chen and Xiong, 2001) and that the market adversely reacted at previous announcements supported this view.

The program addressed also the effect of price volatility by requiring the suspension of trading around the critical dates of the implementation of the reform, and the effect of a possible massive future supply of shares. In particular, a 12 month lockup period is established for the holders of NTS. Furthermore, in the two years after expiration of the lock-up, a holder of NTS with more than 5% of the total issued share capital of the listed company is further prohibited from trading on the stock exchange more than 5% (10%) of the company's total share capital within 12 (24) months. Furthemore, the company and the controlling shareholder are entitled to stabilize the market price of the shares for example through buy-backs (Wan, Yuan and Ha, 2005).

Furthermore, shareholders owning more than 5 percent of a company's NTS will be not permitted to sell more than 5 percent for 12 months (or more than 10 percent for 24 months) after the expiration of the one year lock up period.

The guidelines established the following stages for the implementation of the reform:[5]

1. holders of NTS request the board of directors to start the reform process;

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[5] See Jingu (2006) and Wan, Yuan and Ha (2005) for more detailed descriptions of the process.

2. the board must seek the cooperation of an external sponsoring institution and of a law firm to draft the proposal. The sponsor must consult the stock exchange about the feasibility of the proposal[6] and arrange a meeting with the relevant market shareholders;

3. date t_0: the board of directors then publicizes the date of the shareholders' meeting, a description of the reform proposal as well as the opinions of the recommending institution and the law firm. Trading in the shares of the stock is immediately suspended;

4. within date $t_0 + 10$ the board of directors and holders of NTS interact with holders of TS to receive comments and suggestions and form a consensus on the proposal;

5. if no change is carried out then a public announcement is made and trading is resumed (date t_1), otherwise some more days may pass before resumption of trading until all shareholders firmly agree on a given proposal. Importantly, proposals cannot be modified further after trading resumes;

6. registration starts for the shareholdeers'meeting (date t_2) and trading is suspended for the second time;

7. the shareholders' meeting is held. The proposal needs a qualified majority of two-thirds of the participants. If the proposal is accepted the board must publicize the timetable for actual implementation of the reform. Trading is restarted after the shareholder meeting ratifying the completion of the reform (date t_3).

The NTS Reform kicked off on May 9 2005, when the four companies of the first batch (Tsingua Tongfang, Hebei Jinniu Energy Resources, Shanghai Zi Jiang Enterprise Group, and Sany Heavy Industry) published the announcement of the start of the process. Three out of four companies accomplished successfully the transfer program in 35 days on average. They were followed by a second batch involving 42 companies. The duration of the programs of this batch ranged from 35 to 60 days, with an average of approximately of 47 days. As of March 2006, 28 batches has been launched involving a total of 769 companies (more than a half of listed companies), and 585 out of these have succesfully completed the reform. There are 21.6 companies per batch on average and the average duration of process is 37 days (see Table 1). The program is still underway and will likely involve the the entire market within 2006.

Compensation played an important role in the NTS reform package and took various forms such as cash, warrants, stock splits, and most frequently bonus shares. The terms of the compensation

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[6] The stock exchange neither "approves" the proposal nor provides any judgement on the amount of the proposed compensation, but just advises the company on the technical aspects of the proposal.

varied from company to company but it was generally based on the assumption of a substantial price drop in the aftermath of the implementation of the reform. Each company thus estimated its price/earning ratio or Net Asset Value once all shares were tradable and established the number of (existing) NTS to be transferred to tradable sharaholders as a compensation for this loss. For example, suppose that the market value of a company is 100 renminbi before and 80 renminbi after the reform, and that there are 10 TS and 10 NTS outstanding. TS lose 10 renminbi and will be made indifferent by receiving 2.5 NTS per 10 NTS shares owned.

We have been able to find detailed information about the compensation plan for 476 companies which have completed the reform process by the end of March, 2006.[7] In 436 cases, compensation took the form of free distribution of bonus shares. In other 23 cases, compensation was supplemented by payment of cash. In the remaining cases, it takes the form of stock splits, options or pure cash payment. We can thus conclude that in the large majority of cases TS shareholders have been compensated by means of bonus shares.

On average, companies in the first batch transferred 3.26 shares per 10 shares to tradable shareholders in order to make all their shares tradable, while those involved in the second round 3.49 distributed shares per 10 shares.

3. Hypotheses

According to the efficient markets hypothesis, a stock price is equal to the expectation of the future fundamentals. A reform process as the one described in the previous section might well affect the fundamentals of Chinese stocks. Once all shares become tradable, the public shareholders and State-owned financial institution may divest part of their holdings in secondary equity issues. Several studies have documented strong improvements in corporate governance following privatization, generally leading to better monitoring of management and more efficient decisions boosting profitability and dividends and also curbing risks (Megginson and Netter, 2001, Bortolotti and Siniscalco, 2004). Furthermore, the implementation of a NTS process could be associated with an improved liquidity of shares in the future. Indeed, the increased public float in the market should reduce the likelihood of information trading and thus the bid-ask spread, i.e. the premium that speculators and dealers charge to liquidity traders (Glosten and Milgrom, 1985; Kyle, 1985).[8]

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[7] We thank Takeshi Inoue (Nomura Institute of Capital Market Research) for kindly providing us with these data.
[8] Recent literature has documented the relation between liquidity and expected returns, showing empirically the existence of a liquidity premium (Amihud and Mendelson, 2001, Acharya and Pedersen, 2002).

Improved market fundamentals in terms of corporate governance and liquidity could push up the prices of the stocks experiencing the reform, even though this effect could be partly offset by the future supply of shares assuming downward sloping demand for stocks.

The null hypothesis that we test is that no price change is associated with the announcement and implementation of NTS reform for a given listed company. This hypothesis is consistent with the idea that the no change in economic fundamentals is expected from such reform and that a future supply shock will completely offset the upward shift in demand due to improved governance and liquidity.

However, the empirical test of this hypothesis is not trivial because the observed price changes will be also affected by the compensation offered to holders of TS. Furthermore, the economic relevance of NTS reform announcements at the company level is not easy assess given the extensive information already publicly avaiblable. In the next section, we will describe how we try to deal with both issues in our event study.

4. The event study

4.1 Price discovery and adjustment around NTS reform

The analysis of the institutional details of the NTS reform described in Section 2 identifies two periods of trading suspension which differ both in terms of length and most of all in terms of the quantity of information revealed to the market.

In particular, the first suspension period spanning from t_0 to t_1 is crucial because it conveys the news that the firm has officially entered the process, and it comprises all the negotiations between holders of NTS and holders of TS, with the resulting outcome disclosed at the end. The second period seems less relevant as it includes only the formal approval of the proposal, previously agreed upon on the part of the shareholders. Such ratification can generally be taken for granted. Indeed, all the possible changes to initial proposals have already been discussed during the first suspension period. Furthermore, virtually all of the reform proposals licensed at the end of the first period have been accepted at the relevant shareholders' meeting.

This reform design fits well with the empirical analysis and allows us to interpret the reaction of prices. Any price change taking place from the start date t_0 to the end of the first suspension period

t_1 should be interpreted as a reaction to the new information carried by the final proposal. Any price change occurring between the first readmission t_1 and the second suspension t_2 could be interpreted in terms of delayed reaction to the new information carried out by the proposal. Any price change taking place between the second suspension t_2 and second readmission t_3 should be interpreted as a reaction to the payment of the compensation to shareholders.

Let's examine the first price changes in detail. If the market were totally surprised by the announcement that the company enters the reform process then the price change might potentially be very large. All the factors which have been mentioned in the introduction potentially affecting economic fundamentals would be relevant.

It is however unlikely that the price would react to all of these factors at the first announcement date. It was noted in the introduction that on August 24th, 2005, after the first two pilot projects, the government issued guidelines to extend the reform share project to the rest of the stock market, setting the end of 2006 as the deadline of the process. August 24th is therefore a candidate date when the market should have discounted all the various benefits of the reform proposal for all Chinese companies. Uncertainty persisted about exactly when each company would start and finish the process, but such uncertainty was relatively limited given the short time frame (16 months) explicitly imposed by the government to complete the process for all the companies. Such a time frame is very short if we compare it to the very long period of time over which the reform process should display most of its positive effects. Indeed, the reform should affect permanently a number of variables outlined, particularly efficiency and therefore operating profits. When the price of the stock discounts the expected dividends for all the infinite future, there shoud be a strong reaction to an improvement in fundamentals. It follows that the change between the price at date t_1 and the price at date $t_0 - 1$ may not be as large because the price on the latter date already discounted many relevant effects.

On the other hand, price discovery process has hardly been a linear process on the part of Chinese investors. Investors have been swayed back and forth by the fear that the reform process may adversely affect the stock market and by the belief that the process may eventually be beneficial. The early reaction was negative. The government announced the first batch on April 29th, 2005, at the beginning of an extended period of weakness bringing the SSE Composite Index from 1,169 on April 28th to 1,013 on June 3rd. This period includes May 9th, the day of the first suspension of the four pilot companies in the first batch. The China Daily, on the basis of interviews with local security analysts, reported on May 10th that "some investors worried that they may not get sufficient compensation…but some investors also bought actively on stocks that market rumours said might

become the next pilot firms to try the nontradable share sell-off scheme. The short-term impact of the news of the nontradable share flotation could be limited as regulators will not allow all nontradable shares to flood the market in one go…But in the long run, the flotation of these shares may push down average price/earnings ratios and further polarize share prices".

Yet subsequent reactions have been much more positive. On June 21st, Dow Jones Newswires reports that "investors have reacted warmly to a large expansion in China's trial program to float nontradable shares, interpreting the bigger-than-expected size and scope of the second batch of firms tapped to participate as a sign of the government's commitment to, and confidence in, the reform process". Therefore only few weeks after a period of deep falls in stock prices, and only few days after a negative reaction to the start of the reform process, investors welcomed the news that the government was taking seriously the NTS process and starting to involve large and well-known companies. The market went up almost 3% on June 20th, after the announcement about the second batch made over the previous week-end of the 18th and 19th of June. But then the market lost about 10% between the end of June and early July. On August 24th, the day of the announcement of the extension of the reform to all the Chinese companies, the market went up 1.5%.

These observations depict an uncertain price discovery process faced by Chinese investors, caught between the fear of a supply shock and the hope of improving fundamentals. They also show that the market as a whole reacted to the new information acquired by the evolution of companies undergoing the reform. This implies that the price change on the day of the first readmission for any given company joining the process should not be naively interpreted as a reaction to a completely unexpected event. Investors have had time to adjust valuation to take into account that sooner or later each company would enter the reform process. Therefore they have had time to adjust valuation to expectations of improving future fundamentals as well as to expectations of increasing future supply of the stock. The price change after the first readmission must be interpreted as the reaction to the final resolution of uncertainty about the timing of NTS reform and to the difference between the program initially revealed by the company and the one agreed upon by all shareholders.

As to the price change between the second suspension and the second readmission, no reaction should be expected as far as information about fundamentals is concerned, for the reasons outlined above. However, date t_3 represents the completion of the reform process, involving payment of the compensation from holders of NTS to holders of TS. The specific type of compensation may therefore affect the market price of the stock simply because of accounting issues, very much like in the case of distribution of a dividend, which does not change the total wealth of the shareholder but deeply affects how his wealth is kept in the form of cash and shares.

We have seen in Section 2 that shareholders have been typically compensated by bonus shares. The scheme foresees that holders of NTS offer holders of TS a certain number of their shares (SH) and/or a certain amount of Yuan (CASH) for every 10 shares. We compute the compensation-corrected price by assuming that the stock price should react in such a way that the total wealth of the tradable shareholders does not change when the compensation is paid. Formally:

$$p_0 QTS = p_1 \left[QTS + \frac{QTS}{10} SH \right] + \frac{QTS}{10} CASH \; ;$$

where p_0 is the price before the second suspension, p_1 is the price after the second suspension, QTS is the number of outstanding TS. Rearranging we get:

$$Jump = -Cash\_Comp - Sh\_Comp = -COMP \; ;$$

where $Jump \equiv \dfrac{p_1 - p_0}{p_0}$, $Sh\_Comp \equiv \dfrac{SH}{10 + SH}$ and $Cash\_Comp \equiv \dfrac{CASH}{p_0 (10 + SH)}$, and COMP is the total compensation The larger are the factors *Sh_Comp* and *Cash_Comp* the larger is the negative jump in the stock price.

The impact of the payment of the compensation on the price of TS should be large and materialize after the first and the second resumption of trading, t_1 and t_3, respectively. Indeed, after the compensation package has been agreed upon, shares will be start trading cum bonus. On the day of the second readmission, namely the record date for the issue, price shoul fall as it happens when dividends are distributed.

4.2 Sample and estimation

We started with the 585 companies listed in Shanghai and Shenzen stock exchanges which have completed the reform program before March 31st 2006. We have then collected data on daily prices for these stocks from Datastream and on the compensation schemes, endind up with a sample of 386 companies. For all these, we identified the four critical announcement dates: (i) the start date of the reform process, time t_0; (ii) the date of the resumption of trading after discussion of the compensation plan, time t_1; (iii) the record date for registered shareholders, time t_2; (iv) the date of the second resumption after shareholders meeting and share distribution, time t_3.

For each company involved in the NTS reform process we estimate a CAPM equation:

$$r_{it} = \alpha_i + \beta_i r_{Mt} + \varepsilon_{it}$$

over an estimation period including observations between t_0-120 and t_0-10, where t_0 is start date of the process. Define with a_i, b_i the estimated parameters. Such parameters are used to estimate the abnormal returns over the event windows:

$$ar_{it} = r_{it} - a_i - b_i r_{Mt}$$

The abnormal returns are then summed to form company specific cumulative abnormal returns (*CAR*) defined as:

$$CAR_{i0} = ar_{i0}$$
$$CAR_{it} = CAR_{it-1} + ar_{it}, t = 1,2...T$$

where T is the length of the event window. The event window extends before and after the specific event date. For example, if the event date is the first re-admission t_1, we are be interested in computing the abnormal returns for 10 days before the readmission and 10 days after the readmission. Abnormal returns are then averaged across companies:

$$\bar{CAR}_t = N_t^{-1} \sum_{i=1}^{N_t} CAR_{it}$$

Notice that the summation is divided by a number of firms that depends on the specific calendar date, as we have to allow for different event periods for the various firms for the interval between the first readmission and the second suspension. Remember in fact that such an interval is not fixed and may differ across firms depending on the timing of the reform process. In several cases this time interval is very short, of the order of 3-4 days; in other cases this time period is long, extending beyond 10-15 days. It follows that for a given horizon, e.g. 10 days, we can compute the cumulative abnormal return for a number of firms that is different from the number of firms over which we can compute abnormal returns for a different horizon.[9]

In order to test for the existence of non-negative cumulative abnormal returns we need to estimate the variance of the average CARs. We measure such a variance in two different ways. The first approach is the cross-sectional variance across cumulative abnormal returns of the different

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[9] For example suppose we want to compute a 5 day return after the first readmission. We will be able to consider all the companies for which the date of the second suspension is 5 days away from the first readmission. If we compute a 10 day return we will only be able to consider all the companies for which the date of the second suspension is 10 days away from the date of the first readmission. The second set of companies is a subset of the first set of companies. Obviously, for event windows going back before the first suspension and going forward after the second readmission there are no differences across firms.

companies (see Lynch and Mendenhall, 1997). This is simply the cross sectional variance of the cumulative average abnormal returns across firms, that is:

$$Var^{CS}(CAR_{it}) = N_t^{-1} \sum_{i=1}^{N_t} \frac{(CAR_{it} - \overline{CAR_t})^2}{N_t - 1}$$

The second approach is to assume normality and independence of residuals across securities taking into account sampling error for estimated parameters, using the estimator described by Campbell, Lo and MacKinlay (1997). Such a measure computes the variance of the average CAR as:

$$Var^{TS}(\overline{CAR}_{it}) = N_t^{-2} \sum_{i=1}^{N_t} V_i$$

where V_i is the variance of the i-th company. The company variance is computed as:

$$V_i = \sigma_{\varepsilon_i}^2 I + \sigma_{\varepsilon_i}^2 X_i^* (X_i' X_i)^{-1} X_i^{*'}$$

where X_i is the matrix of regressors (the constant and the market return in this case) used in the estimation period and X_i^* is the matrix of the same variables over the event window.

The null hypothesis of no abnormal returns is tested by means of the statistic:

$$J_t = \frac{\overline{CAR}_{it}}{\sqrt{Var(\overline{CAR}_{it})}}$$

which is asymptotically standard normal, where the variance is alternatively computed either from the cross section or from the time series.

4.4 Results

Table 2 reports results of the CAR analysis for all the companies included in our sample. In the first estimation window covering the pre-announcement period of NTS reform for a given company, CAR starts to become significant 2 days before the first suspension (see Panel A). The CAR is about 1 percent the day before the announcement and strongly statistically significant in both version of the test. The abnormal returns on the day before the initial announcement suggest the existence of substantial information leakages about the timing of the reform.

The second window is particularly important for the aim of our analysis in that it allows measuring the market reaction to the resolution of uncertainty about the NTS reform program and about the

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compensation package.We strongly reject the null hypothesis with both versions of the test. Indeed, the actual implementation of the reform has been accompanied by a significant abnormal return both in statistical and economic terms. In the first day after first resumption of trading, we document an excess return of 2.6 percent, which keeps momentum for the entire event window to finally grow to more than 5 percent.

A similar reaction is observed during the third estimation window, covering the period before the record date for registered shareholders. We also observe a strong and statistically significant run up in prices starting nine days before the event, with at CAR reaching 2 percent at the end of the period.

The fourth estimation window starts from the date of the shareholder meeting and of the issue of bonus shares. Not surprisingly, we find an average large drop in prices, amounting to about 20% (not reported in the table) which is largely attributable to the fact that stock traded from the record date ex bonus. Panel 4 reports the analysis of abnormal residuals derived from compensation-adjusted prices, using the formula presented in Section 4.1. The table shows that, even after accounting for market movements and compensation, prices still increase on average 2%, even though this effect is temporary. Over the following 10 days in fact prices fall by about the same amount.

Finally, we have performed a preliminary analysis of the cross-sectional determinants of the daily CARs in the day after the first resumption of trading t_1. As explanatory variables, we have included *COMP*, the total compensation defined in Section 4.1, and the total number of tradable shares outstanding before the reform, *QTS*. We try to control for firm characteristics by using the price-to-book ratio (*PTB*), and size, gived by the (log of) market capitalization MV. A cross sectional regressions of abnormal returns yielded the following result:

$$CAR(t_1) = 5.018 - .005\ COMP - .064\ QTS + .040\ PTB - .0333\ MV \qquad R^2 = .01$$

$$(1.92)\quad(-1.18)\qquad(-2.43)\qquad(.20)\qquad(-.11)$$

(t-values in parentheses below the coefficients)

The poor fit of our regressions does not allow drawing any conclusive evidence. Yet an interesting result is that the terms of the compensation appear quite irrelevant in explaing the abnormal returns accompanying the first resumption of trading. Indeed, the variable COMP is never statistically significant at conventional levels. On the contrary, the quantity of tradable shares outstanding seems

to matter. Companies entering the reform process with a larger percentage of NTS experienced a *more* pronounced positive abnormal return, suggesting that the positive effects on corporate governance and liquidity tend to overweigh possible supply effects.

5. Conclusions

Our empirical analysis has shown that the structural reform currently taking place in the Chinese market had strong effects on prices. Such effects are generally positive. Prices of the companies that transformed NTS into TS experienced some increase before the announcement of the implementation of the stock reform, and rose strongly throughout the process, i.e. between the first announcement and the second suspension. TS prices increase also once the reform is accomplished and compensation is paid, even though this latter increase is temporary and disappears within the following ten days. Overall we estimate that thanks the NTS reform, total shareholder wealth increased reform increases about 8%, after correcting for bonus share issues: 1% before the first suspension, 5% after the first suspension, building up gradually from an initial rise of 2.5% on the day of the first readmission, and finally 2% before the second suspension.

Preliminary results from cross-sectional analysis suggest that compensation did not play a major role in explaining initial the abnormal returns. Rather, improvements in economic fundamentals seem to account for the price effects of this important structural reform that we document. Exploring further these issues appears an interesting avenue for future research.

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Figure 1. Outstanding Shares of Chinese Listed Companies by Class, February 2006
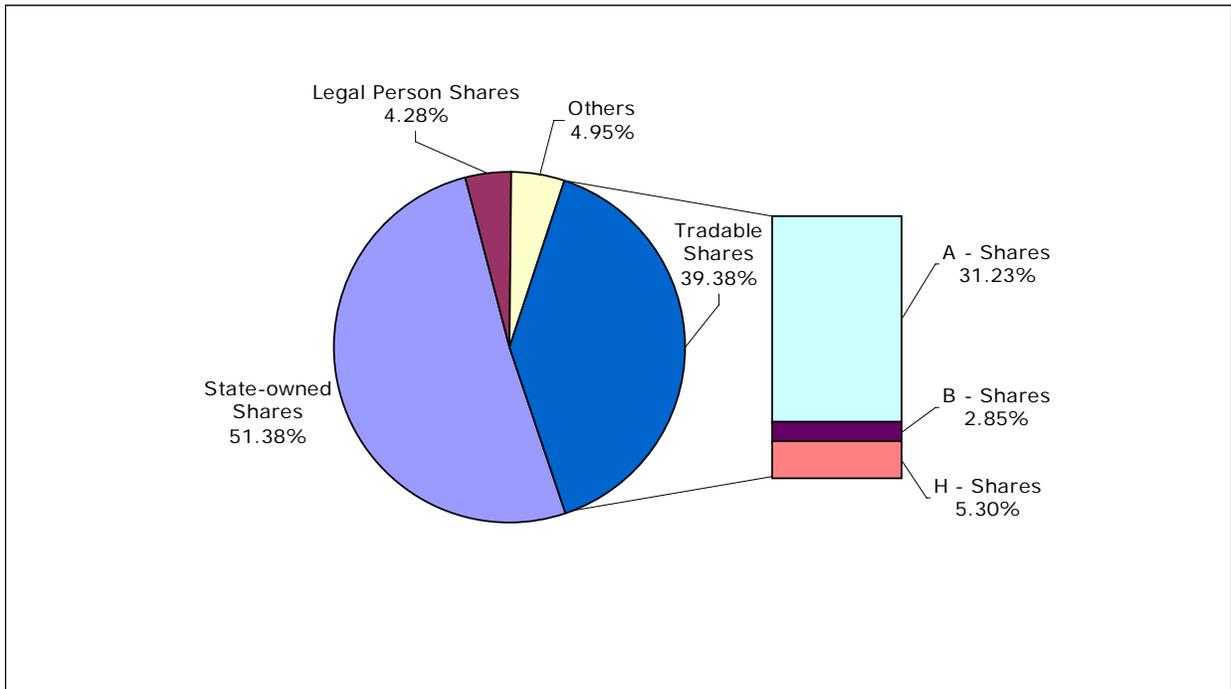
Source: *China Securities Regulatory Commission*

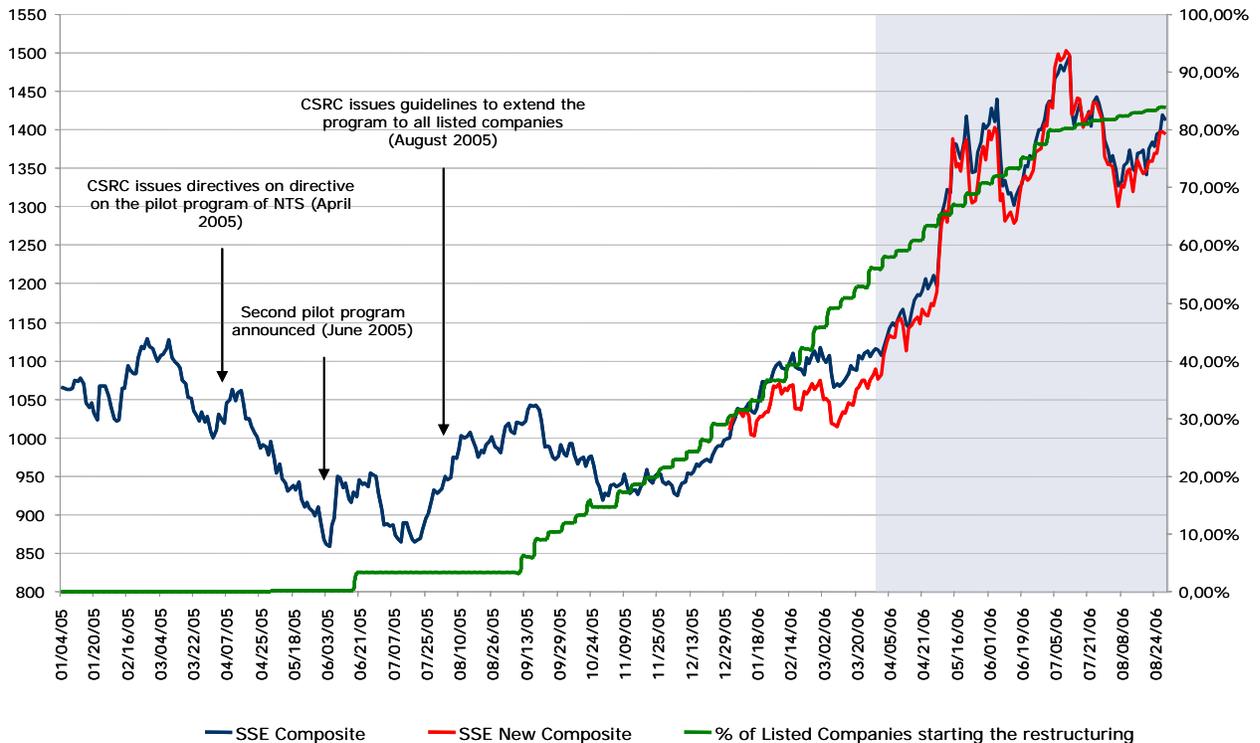**Figure 2. Market Performance and Progress of NTS Reform**
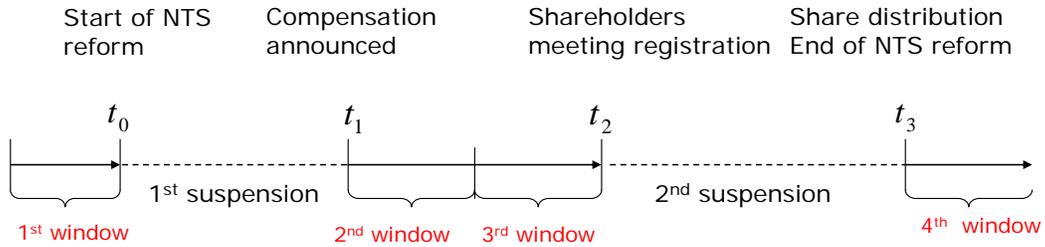
Figure 3. The Time Frame of NTS Reform

Table 1. Implementation of the NTS Reform Process

Batch #	Launch Date	# of companies completing NTS process by March 2006	Average Duration of NTS Process (days)	Average % of NTS outstanding
1	05/09/05	3	35.33	66.62
2	06/20/05	42	47.52	67.11
3	09/12/05	40	37.70	65.70
4	09/19/05	38	37.45	65.45
5	09/26/05	21	35.86	66.53
6	10/10/05	20	36.95	60.45
7	10/17/05	21	38.33	60.16
8	10/24/05	17	37.59	60.17
9	10/31/05	17	41.53	61.64
10	11/07/05	18	34.78	57.14
11	11/14/05	20	33.65	63.73
12	11/21/05	17	34.71	60.52
13	11/28/05	21	33.90	59.73
14	11/30/05	1	30.00	52.67
15	12/05/05	20	38.85	61.82
16	12/12/05	20	35.25	59.73
17	12/19/05	27	33.33	62.77
18	12/23/05	37	36.46	60.95
19	12/31/05	17	43.82	62.38
20	01/05/06	1	36.00	65.48
22	01/09/06	13	41.54	63.28
23	01/16/06	21	42.76	63.58
24	01/23/06	43	41.44	57.16
25	02/13/06	35	29.86	59.58
26	02/20/06	31	30.87	59.77
27	02/27/06	19	27.79	64.67
28	03/06/06	5	22.60	59.49
Total		**585**	**37.06**	**62.05**

Table 2: CARs around event dates

This table reports the cumulative abnormal returns estimated over four periods where t_0 is start date of the NTS reform process, t_1 is the date of the resumption of trading after discussion of the compensation plan, t_2 is the record date for registered shareholders, t_3 is the date of the second resumption after shareholders meeting and share distribution. t-tests calculated using cross sectional variance and the estimator by Campbell, Lo and MacKinlay (CLM) (1997).

Panel A			
Day	**CARs before t_0**	*t*-**test using cross sectional variance**	*t*-**test using CLM variance**
-9	0.03	0.37	0.50
-8	0.23	1.89	3.01
-7	0.10	0.65	1.12
-6	0.17	0.96	1.63
-5	-0.01	-0.08	-0.13
-4	-0.21	-1.03	-1.64
-3	0.09	0.40	0.67
-2	0.49	1.83	3.27
-1	1.09	3.72	6.78
Panel B			
	CARs after t_1	*t*-**test using cross sectional variance**	*t*-**test using CLM variance**
1	2.62	11.07	23.73
2	2.86	9.60	18.44
3	3.11	9.49	16.17
4	3.42	9.47	14.83
5	3.69	8.82	13.12
6	4.00	8.13	11.75
7	4.21	6.97	9.88
8	4.85	6.70	9.57
9	4.87	5.74	8.08
10	5.35	5.57	7.81
Panel C			
	CARs before t_2	*t*-**test using cross sectional variance**	*t*-**test using CLM variance**
-10	-0.18	-1.41	-1.70
-9	0.32	1.81	2.08
-8	0.90	4.47	4.74
-7	1.00	4.17	4.39
-6	1.15	4.04	4.11
-5	1.54	4.69	4.56
-4	1.56	3.74	3.67
-3	1.84	3.65	3.65
-2	1.64	2.64	2.72
-1	1.98	2.77	2.89
Panel D			
	CARs after t_3	*t*-**test using cross sectional variance**	*t*-**test using CLM variance**
1	1.99	3.00	16.45
2	1.49	2.22	9.20
3	1.09	1.62	5.56
4	0.69	1.02	3.06
5	0.59	0.86	2.34
6	0.38	0.56	1.39
7	0.25	0.36	0.85
8	0.17	0.25	0.54
9	0.44	0.64	1.31
10	0.19	0.28	0.54