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The Stock Market Reaction to the 2005 Split Share Structure Reform in China

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Abstract

During 2005-2006, the Chinese government implemented the split share structure reform, aimed at eliminating non-tradable shares (NTS), i.e. the shares typically held by the State or by politically connected institutional investors that were issued at the early stage of financial market development. Our analysis, based on the time series of risk factors and on the cross section of abnormal returns, confirms that the split share structure reform was particularly beneficial for small stocks, stocks characterized by historically poor returns, stocks issued by companies with low transparency and weak governance, and for less liquid stocks. Historically neglected stocks also witnessed an increase in the volume of trading and market prices. We conclude that the reform laid down the conditions for important future changes in ownership, liquidity and corporate governance in China.

Keywords: Ownership structure; Chinese stock market; financial reform; corporate governance; privatization; neglected stocks

JEL Ns: G14, G28, G32

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1. Introduction

Ever since the late 1980s the Chinese corporate sector was overwhelmingly dominated by State-Owned Enterprises (SOEs). Significant steps were taken with the establishment of two major stock exchanges in 1990 and 1991 and with the first wave of capital-raising IPOs, which initially diluted government ownership of the typical Chinese firms. Yet controls remained firmly in State hands, largely due to the peculiar structure of listed firms. At the beginning of 2005, about two thirds of the Chinese stock market was composed of non-tradable shares (NTS), a special class of shares entitling the holders to the same rights as holders of ordinary shares except for public trading. Typically, these shares belonged to the State or to domestic financial institutions ultimately owned by central or local governments[1]. There was an implicit contract between investors and the State that NTS would never be traded in the stock market. As we will document in this paper, companies characterized by a relevant proportion of NTS were typically neglected by investors.

In 2005, the Chinese authorities announced a reform aimed at eliminating NTS by the end of 2006 (the split share structure reform, henceforth "the reform"). The reform obliged the holders of NTS to compensate the holders of tradable shares (TS) for the possibility to sell their shares in the future. Apart from the compensation, the reform had very little *direct immediate* impact on the structure of the Chinese stock market in the short run. However, it can be regarded as value-enhancing for several reasons. First, stocks should benefit from the expectation of a more diffuse ownership structure[2]. Second, the reform sets the stage for an advancement of the privatization process and

[1] See Sun and Tong (2003) for a detailed explanation of NTS.
[2] Ownership diversification is one of the essential step toward the development of a more mature and representative stock market in China, OECD Economic Surveys: China 2010.

corporate governance improvements which in turn should enhance the value of the firm (see Stulz (2005), Doidge, Karolyi and Stulz (2007), Gompers, Ishii and Metricks (2003), Bebchuk and Cohen (2005), Cremers and Nair (2005), Bebchuk, Cohen and Ferrell (2009) and Morey et al. (2009)). [3] Third, the increase in the supply of TS should have a positive effect on liquidity (see Amihud (2002), Pastor and Stambaugh (2003) and Acharya and Pedersen (2005))[4] Finally, the resolution of uncertainty, created by previous failed attempts to reform the Chinese stock market, should be positive due to its elimination of a source of non-diversifiable risk and a consequent reduction in the risk premium.

Our hypothesis is that the announcement of the reform should positively affect the prices of those stocks that can benefit more from the reform. For example, a stock with a large proportion of NTS is typically associated with characteristics such as a small float, low turnover, high volatility, and weak corporate governance.

In this paper we evaluate the announcement effects of the reform by considering cross-sectional regressions of abnormal returns on firm variables related to their corporate governance (e.g. the proportion of shares held by non-controlling blockholders and board characteristics), ownership structure and stock market characteristics (e.g. liquidity) measured *before* the event period. We also use a portfolio time-series approach to study corporate governance, size and liquidity factors. We conjecture that the announcement of the reform would cause positive unexpected returns for stocks that are

[3] This has been the experience in many developed and developing countries in which privatisation has been found to improve firm profitability, real output and efficiency, see Megginson and Netter (2001) and Kikeri and Nellis (2004) even though Calomiris et al. (2010) point out that in the Chinese case privatization may be associated with a reduction in profits.

[4] A negatively sloped demand function would require a decrease in the equilibrium price to absorb the new supply, but Hong, Scheinkman and Xiong (2006) show that expectations of future supply shocks may be beneficial to current stock prices.

sensitive to systematic risk factors, particularly corporate governance and liquidity. We find that: (i) the market rose upon the announcement of the reform, (ii) portfolios representing factors associated with liquidity, governance and size reacted as predicted by the theory; (iii) the initial share of NTS, a proxy for the potential for further privatization and corporate governance improvements, is empirically very relevant in explaining the cross-section of stock returns; (iv) the best performing stocks in the event window were characterized by small size, low past returns, low liquidity, low profitability, high volatility, low coverage on the part of institutional and international investors; (v) only some of the variables explaining the cross section of abnormal returns also explain the cross section of compensation paid to holders of TS and, when they do so, their signs are often different, suggesting that Chinese investors looked beyond the short term compensation and (vi) increases in volume and liquidity are also biased towards the stocks whose price benefited from the reform announcement. The latter is not consistent with a simplistic explanation associated with speculation, as there is no reason why speculators should have preferred to trade stocks with such characteristics.

We are aware of several other papers studying this reform. Lu, Balatbat and Czernkowski (2008) examine the reaction of prices both to the general announcement of the reform and to the company-specific announcements with particular regard to compensation characteristics. Li, Wang, Cheung and Jiang (2011) study the reform on the basis of a general equilibrium model explaining compensation on the basis of company and shareholders characteristics and highlighting the role of risk sharing for efficiency gains. Haveman and Wang (2008) also discuss the struggle among different shareholders. Liao, Li, Liu and Wang (2008) study what happens to prices on the day of the lockup

expiration. To the best of our knowledge, this paper is the first attempt to empirically evaluate the effects of the reform using information from prices and volume after the announcement of the reform.

After this introduction, the second section illustrates some key institutional features of the Chinese stock market and the mechanics of the reform, the third section describes the relevant characteristics, the fourth section presents the empirical analysis and the fifth section concludes.

2. The Chinese stock market and the split share structure reform

Chinese listed firms have multiple classes of shares: shares that can be traded by domestic investors (A-shares), shares denominated in foreign currencies and reserved to foreign investors (B-shares), and shares of companies listed or cross-listed overseas (H-shares, for those listed in Honk Kong).[5] Split-share structures are common around the world and typically warrant shareholders different rights (Faccio and Lang, 2002). An unparalleled feature of ownership structures in China was the existence of NTS, typically belonging to the State or to domestic financial institutions ultimately owned by central or local governments. NTS shares had been issued to the founders of a corporation, business partners or employees. As of February 2005, NTS accounted for about two thirds of the total number of outstanding shares[6].

[5] Market segmentation is relevant for pricing. Mei, Scheinkman and Xiong (2009) 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.

[6] Transfer of NTS had become possible since the mid 1990s through irregularly scheduled auctions and over-the-counter transactions, but in the context of huge differences (about 80%) between market prices and prices expressed by OTC transactions, see Chen and Xiong (2001). Green and Black (2003) study 840 transactions taking place in the Shenzhen market in the period 1994-2003 and find that transfers often involved large blocks affecting the control of companies. The predominant sellers were State-controlled

Regulatory authorities soon recognized the issues associated with the predominance of NTS. First, NTS hindered the functioning of an active market for corporate control: holders of TS were typically minority shareholders with limited power to affect management decisions. Second, NTS made the major shareholders relatively indifferent to stock price movements due to the impossibility to sell the shares. Third, the limited free float made the domestic market extremely illiquid and volatile. Fourth, the inefficiency of the domestic market induced many valuable Chinese companies to list overseas, Hong Kong being one of the preferred destinations. This adversely affected domestic investors who were prevented from investing in the best companies, and were stuck with holdings of the less performing local companies.

The Chinese government tried to deal with the problem of NTS in 1999 and 2001. In the first attempt, two companies were selected to sell their state shares to the floating shareholders. The experiment did not meet the investors' expectations and within 15 days from the announcement of the transfer program the share price of the two companies had fallen by about 40 percent. The second attempt failed in 2001 because the proposal envisaged an equal pricing for tradable and non-tradable shares. The 2005 reform adopted the new strategy of forcing NTS holders to pay compensation to TS holders in exchange for the right to sell their shares. Each company had to make a compensation proposal that would be discussed among shareholders during a period of trading suspension. The proposal would then be publicly announced (but not implemented) and trading in the shares restarted. After a few weeks, a shareholders' meeting would be called and the compensation proposal would pass only if approved by a majority of two

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shareholding companies, and the dominant buyers were private companies. 32% (46%) of the deals were associated with a change in control in 2001 (2002).

thirds of the votes of TS holders. Share trading would also be suspended between the announcement of the shareholders' meeting and the final vote. Trading would be restarted and the compensation paid out after the final vote. See Li at al. (2007) for an extended description of this process.

Several other measures were taken to facilitate the 2005 reform,[7] among which a twelve-month lockup period for the holders of NTS in order to dilute the effect of a possible stock overhang due to a massive future sale of shares[8]. In the two years after expiration of the lock-up, NTS holders owning more than 5% of the listed companies were further prohibited from trading on the stock exchange more than 5% (10%) of the company's total share capital within 12 (24) months. By the end of 2006, and thus within the announced deadline, the restructuring process was virtually completed, see Figure 1.

INSERT FIGURE 1 ABOUT HERE

3. The relevant characteristics

We have collected market data for all the companies listed in the Shanghai Stock Exchange and in the Shenzhen Stock Exchange (the source is DataStream). Governance and capital structure data are from the China Listed Firm's Corporate Governance

[7] Other relevant measures are the following: (i) the CSRC stated that reform-compliant companies would be given priority to raise new capital (primary issues of shares and IPOs had been frozen since April 2005), (ii) the company and the controlling shareholder would be entitled to stabilize the market price of the shares for example through buy-backs (Wan, Yuan and Ha, 2005), (iii) the legislative department amended the Company Law and the Securities Law to perfect the legal framework concerning the capital market. At the end of January, 2006, there was a further rule change making it easier for strategic investors to buy stakes in listed companies. Under the new rules the purchase of A-shares was no longer reserved to the small group of qualified investors but was extended to all the investors willing to buy a minimum stake of 10% of the company and hold the shares for more than three years.

[8] Indeed, policy guidelines stated that the official objective of the reform was not to reduce state holdings, but just to eliminate NTS, and that control would remain tightly in the hands of the government in enterprises deemed strategic (Mattlin, 2007).

CSMAR Database. The Nomura Institute of Capital Market Research provided us with detailed information about the compensation plan of each company.

The reform started on April 29th, 2005 with four companies (Tsingua Tongfang, Hebei Jinniu Energy Resources, Shanghai Zi Jiang Enterprise Group, and Sany Heavy Industry). Three companies successfully accomplished the transfer program in 38 trading days on average. They were followed by a second batch involving 41 companies. The duration of the programs of this batch ranged from 35 to 60 trading days, with an average of 42 trading days. The program then spread out gradually to the entire market. By February 2007, 1,301 companies (98% of listed companies) had joined the process.

We use a survivorship bias-free sample. The original sample of alive and dead companies that we download from DataStream involves 1,440 cases, but we discard some for various reasons: (a) disappearance before the beginning of the reform process, (b) suspension from trading as of February 2007 for unspecified reasons, (c) suspension from trading during the event window, (d) listing after September 2005, (e) no NTS even before the beginning of the reform process (five cases), (f) discrepancies across data sets in the percentage of TS before and after the reform, (g) no data on corporate structure (15 cases). Finally, we do not include companies involved in the first two batches. The final sample includes 1,142 companies.

The percentage of TS before the reform was equal to 36% on average, with a minimum of 0% and a maximum of 79%. The standard deviation across firms was 11.61%. After the reform the average proportion of shares that can be freely traded (not being subject to lockups) is about 46%. In 1,124 cases, compensation took the form of

free distribution of bonus shares[9]. Companies in the first batch transferred on average 3 shares per 10 shares owned by holders of TS. Companies belonging to the second batch distributed 3.5 shares per 10 shares. In subsequent batches, the bonus ratio remained quite close to the values established in the two pilot programs, with an average of 3.

All the variables used in our empirical work are measured at the end of 2004, except for market-related characteristics which are measured in the period between *t*-130 and *t*-10 where *t* is April 29th, 2005, the date marking the beginning of the first pilot project.

Public, *Concentration*, *Dummy H*, *LPS*, *NCB*, *Largest*, *SOS*, *Dummy State* and *Institution* account for the structure of ownership. *Public*, the ratio between NTS and TS[10], may be taken as a proxy for involvement of the public sector (with the associated potential operational inefficiency). It may also proxy for corporate governance in the Chinese market as advocated by Xu and Wang (1999) and may be associated with future supply effects) because the larger the amount of current NTS the larger the potential for a future increase of TS). Overall, a higher initial level of *Public* should be associated with positive post-announcement returns, as in Hong et al. (2006).

Concentration represents the proportion of shares held by the ten largest tradable shareholders at the end of 2004. It measures potential coordination among tradable shareholders, who may extract a larger compensation from holders of NTS even though Haveman et al. (2008) claim that non-tradable shareholders made side-payments to mutual fund managers to induce them to accept a lower compensation. *Dummy H* is equal

[9] In other 52 cases, compensation was supplemented by payment of cash. In the remaining cases, it took the form of stock splits, options or pure cash payment.

[10] The sum of NTS and TS may be less than 100% due to the existence of H-shares and B-shares. When the variable is redefined as the ratio between NTS and the sum of TS and NTS the results are virtually the same.

to one when the firm has outstanding shares traded in Hong Kong. *LPS* is defined as the percentage of legal person shares[11]. Xu and Wang (1999) find a positive correlation between profitability and the fraction of legal person shares and a negative correlation between labor productivity and the proportion of state shares. *LPS* may also be relevant as a description of the ownership structure. *NCB* is the sum of the shareholding of the second through the tenth largest shareholder regardless of their holding NTS or TS. A large value of *NCB* may be a substitute for weak corporate governance, see Lins (2003) for evidence in emerging markets. *Largest* is the proportion of shares held by the largest shareholder. *SOS* is the percentage of State owned shares[12]. *Dummy State* is equal to one when the State is the major shareholder. *Institution* is the percentage of TS held by institutional investors.

We measure governance through the use of *Independent* and *Meeting*. *Independent* is the proportion of independent directors in the board. *Meeting* is the number of meetings of the board during the year. These indicators are standard in the literature (see e.g. Denis and McConnell (2003)). The previously defined variable *NCB* may also be considered as a proxy for governance.

We consider the following market-related characteristics: *Liquidity beta* (the sensitivity of the return of the stock with respect to aggregate liquidity shocks[13]), *Spread*

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[11] Shares formed by investment to non-tradable shares of a company limited by share with legally disposable assets by a legal entity or a public institution or a social body with legal entity status.

[12] Shares formed by investing to a company with state-owned assets by a state-authorized investment institution or department

[13] Following Pastor and Stambaugh (2003) the liquidity replicating portfolio is built starting from an indicator of liquidity for each stock, the estimate $\gamma_{i,t}$ from the regression $r^e_{i,d+1,t} = \theta_{i,t} + \phi_{i,t} r_{i,d,t} + \gamma_{i,t} sign(r^e_{i,d,t}) \times v_{i,d,t} + \varepsilon_{i,d,t+1}$ where the dependent variable is the excess return on the stock on day *d* in month *t* and the regressors are respectively the return on the stock in the previous day of the month and a variable obtained from the multiplication of the sign of the excess return and the volume of the stock. The indicator proxies liquidity by an estimate of return reversal. The liquidity

(the time series average of the ratio between the bid-ask spread and the average between the bid and the ask price), *Sales* (gross sales and other operating revenue less discounts, returns and allowances), *Market value* (the listed price of the TS multiplied by the total number of A shares), average *Turnover* (the ratio between the value of the total number of shares traded and the value of the total number of tradable shares), *Volatility* (the standard deviation of the residuals from the regression used to compute abnormal returns), *Leverage* (total debt over total assets), *ROE* (return on equity), *Lagged returns*. We do not include the price-to-book in view of the limitations highlighted by Wang and Xu (2004). To account for transparency, we use *Big4*, a dummy identifying firms which have accounts certified by a Big Four firm, Ernst & Young, KPMG, Pricewaterhouse Coopers and Deloitte & Touche, to which we also added BDO International, providing auditing service to several listed Chinese companies. These firms may be more likely to ensure transparency because they have a greater reputation to uphold, because they may be more independent than local firms, or because they face greater legal liability (Michaely and Shaw, 1995). Importantly, previous research in emerging countries has shown that significantly better stock price performance is associated with firms that had indicators of higher disclosure quality, such as a Big Four auditor (Mitton, 2002). *Dummy SEZ* is equal to one when the company belongs to a special economic zone.

4. Empirical analysis

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factor replicating portfolio is constructed each month by going long stocks with low liquidity and shorting stocks with high liquidity. Liquidity beta is the sensitivity of the rate of return of a stock with respect to the rate of return of the liquidity factor replicating portfolio, estimated with daily data during the period between t-130 and t-10, where t is April 29, 2005.

We first present summary statistics of the relevant characteristics, then we move on to the portfolio time-series approach and consider cross-sectional results and robustness analysis. We finally present some statistics about the changes in volume and liquidity.

4.1. Summary statistics

Table 1 reports summary statistics about the variables.

INSERT TABLE 1 ABOUT HERE

Due to the large proportion of NTS existing before the reform, there is a 207% average increase in the potential supply of TS. Other interesting characteristics of the ownership structure are the following. Only 2% of firms in our sample had outstanding H shares. On average, legal person shares represent 25.63% of the total equity and State-owned shares represent 34.02%. The average percentage of shares held by the second to the tenth shareholders is equal to 19.49%, close to the value reported by Berkman et al. (2009) while the largest shareholder holds on average 42.73% of the shares. On average, institutional investors hold 7.95% of the tradable shares, a percentage that is much lower than what happens in more mature equity markets. 16% of the firms in our sample belong to a special economic zone, which Calomiris et al. (2009) interpret as an indicator of the possibility to interfere with the management of a firm on the part of the local government. The average proportion of independent directors is 34.21% and the maximum is 50%. On average boards meet once a month.

As to characteristics, the average sensitivity to the illiquidity premium is very small but highly variable across firms, with a minimum of -1.71 and a maximum of 1.85.

The average bid-ask spread is 0.38% with a maximum of 0.89%. The distribution of the spread across firms is non-normal, as the minimum is 0.15% and the standard deviation is 0.14%. The average return on equity is 5.11%. Average idiosyncratic volatility is 1.81%, corresponding to an annualized value of 28%.

Table 2 reports correlation coefficients among relevant variables. Returns are computed on a three-day window starting from the announcement day (August 24).

INSERT TABLE 2 ABOUT HERE

The table shows that returns are negatively correlated with *Institution*, *Sales*, *Turnover*, *ROE* and *Lagged returns* and positively correlated with *Spread*, *Volatility* and *Leverage*. Some of these correlations (see for example the coefficients between *Returns* and *Volatility*, *Spread*, *ROE*, *Sales*, *Institutions)* show that characteristics can be useful to learn which stocks benefited most from the announcement of the reform. However these are simple correlation coefficients and may depend on the influence of third variables.

Table 3 presents mean values of the variables for two different groups of firms.

INSERT TABLE 3 ABOUT HERE

The first (second) group is composed of firms belonging to the first (fourth) quartile of the return distribution during the event period. The table also reports the p-value of the t-test for the hypothesis that the values in the first and fourth quartiles are significantly different. The table reveals that firms in the best quartile of returns are less present in the portfolios of institutional investors, are smaller, have a larger presence of non-controlling block-holders, larger spreads, larger volatility, more leverage, lower ROE, more negative lagged returns, pay less compensation during the reform, have a lower percentage of shares held by the largest shareholder, are less likely to be audited by an international

firm, have lower concentration and have smaller market value. The results of the interquartile analysis are therefore consistent with those obtained from the simple correlation coefficients. However these comparisons do not account for the impact of third variables and do not take into account the return of firms relatively to the market. In what follows we turn to multivariate analysis and consider abnormal returns.

4.2. Portfolio time-series approach

The first announcement of the pilot program goes back to April 29th , 2005. At that time, a real concern was that a bad market reaction could scrap the reform entirely, due to the potential overhang associated with the supply increase[14]. At that stage the credibility of the public authorities to carry out the reform was weak due to previous failed attempts to reform. Moreover, there was uncertainty about relevant details of the reform, like the timing of its extension to the whole market and the choice of the compensation mechanism devised by the government. Not surprisingly, the early reaction by the market was negative. The date of April 29th, 2005, corresponds to the beginning of an extended period of weakness bringing the index from 1,169 on April 28th to 1,013 on June 3rd (due to holidays, Chinese stock markets were closed until the week starting on May 9th). The market return was negative in the four weeks following the announcement (-4.4%, -0.75%, -4.3%, -3.6% respectively).

On June 20th, the reform process was formally extended to a second batch of 42 companies. By confirming the basic structure of the negotiation mechanism tested in the

[14] The China Daily, on the basis of interviews with Chinese security analysts, reported on May 10th that "The short-term impact of the news of the non-tradable share flotation could be limited as regulators will not allow all non-tradable 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".

first batch, this announcement provided clues on the amount of compensation for tradable shareholders. Yet at this stage the timing of the extension of the process to the market as a whole was still completely uncertain. The market was again mostly negative in the weeks following the announcement, with returns of -1.23%, -4.20%, -3.56% and 0.80% respectively. Investors' skepticism about the reform may well have been justified by the reform experience of the first batch that, as shown by Bengtsson (2005), was not particularly attractive to investors[15].

On Friday, August 19th, the companies of the second experimental batch concluded their reform. On August 24th the CSRC announced a set of rules for the application of the reform to all the remaining companies. On September 4th the third batch of 40 companies started the reform. During the four trading weeks after August 19th, the market returns were 0.37%, 1.45%, 0.07% and 1.96% for the Shanghai stock market and 0.41%, 2.85%, 0.95% and 3.34% respectively for the Shenzhen market.

To provide a comprehensive view of the stock market reactions we have estimated a simple regression of daily returns on dummy variables for the April, June and August announcements[16]. We have also built three risk factors which may help interpret investors' perceptions. The size and floating ratio factors have been built following the methodology described by Fama and French (1996). For example, in the case of size, at

[15] The price of Sany Heavy Industry (one of the three companies included in the pilot project) dropped 30% on the day of the payment of the compensation and kept falling thereafter, forcing the managers to revise the original offer. The capitalization of Shanghai Zijiang Enterprise Group, a second company included in the pilot project, also decreased importantly around the event date.

[16] We compute a market index by considering the actual float of each company. This is important in view of the large difference between float and capitalization caused by the existence of NTS. A capitalization index would include the quantity of both TS and NTS to compute the weights assigned to the various stocks and would not reflect market conditions. Wang and Xu (2004) also compute a float-weighted market index. We use the Shenzhen GTA Information Technology Co Limited data in order to build a unique float-weighted market index mixing companies traded both in Shanghai and Shenzhen.

the beginning of each month, Shanghai (SSE) and Shenzhen (ZSE) stocks are allocated to two groups (small or big, S or B) based on whether their market value (MV) during the previous month is below or above the median MV for the specific market. Stocks are then sorted in three floating ratio groups (low, medium, or high: L, M, H) based on the bottom 30 percent, middle 40 percent and top 30 percent of the floating ratio. Value-weighted portfolio returns are then computed for each portfolio. Floating is defined as the difference between the average returns of the two high-FR and of the two low-FR[17] portfolios. It can therefore be interpreted as a portfolio that is long good governance firms and short bad governance firms. With a similar methodology we built a liquidity portfolio after ranking stocks on the basis of their liquidity indicator as in Pastor and Stambaugh (2003).

For each of these portfolio returns we run a regression on a constant and dummy variables for the three event periods[18], using 243 daily observations between October 15th 2004 and October 15th 2005 (see table 4 for the results).

INSERT TABLE 4 ABOUT HERE

In the case of the market return and the size factor, we find that the August dummy is significantly positive while the other two dummy variables are not. The floating ratio portfolio is significantly negative both in June and in August while the liquidity portfolio is significantly positive in June and negative in August. Overall, April has not caused any noticeable market reaction, while in June the floating ratio portfolio is

[17] We have followed Wang and Xu (2004) and have used the part of floating ratio that is orthogonal to size measured as the log of the market value. Theoretically, the average return of FR should be negative as it represents a portfolio long good governance companies and short bad governance companies. However, Wang and Xu (2004) themselves find that the average return of FR is negative and explain their result on the basis of the better performance offered by companies with more efficient governance.

[18] We use a three-day return involving the announcement day and two days after the announcement.

significant with the expected sign (companies with a weak corporate governance increasing more than companies with a good corporate governance) but the liquidity portfolio has the wrong sign. In August, all factor portfolios reacted coherently: the market rose, small companies gained more than large companies, companies with a weak governance gained more than those with a good governance, and the price of illiquid stocks rose more than liquid stocks.

This pattern of returns is not consistent with investors being concerned with future supply shocks. While the market increase could in principle be explained by over-compensation and/or by speculation, the joint reaction of the four portfolios is coherent with a fundamental-based explanation looking at future improvements in fundamentals themselves. Finally, contrary to the hypothesis of Calomiris et al. (2010), the observed changes in the systematic risk factors are not consistent with an explanation of the reform as a profit-minimizing strategy on the part of the government.

4.3. Cross sectional results

Table 5 reports the results of multivariate regressions of abnormal returns during the event period[19] on characteristics measured before the start of the reform.

INSERT TABLE 5 ABOUT HERE

The dependent variable is the residual of a market model estimated with daily data between *t-130* and *t-10* where *t* is the date of the first reform announcement (April, 29th). The event window includes the day of the announcement and two days after the announcement. The market portfolio is either the Shanghai or the Shenzhen index

[19] We regard the rate of return over the event period as being dominated by a surprise associated with announcement of the reform.

depending on the listing of the specific company. All the cross-sectional regressions include sector fixed effects[20] and robust standard errors. The explanatory variables have been winsorized at the 1st and 99th percentiles.

The first column considers variables related with corporate governance and ownership. In this regression, shares held by the non-controlling blockholders and the potential increase in NTS have positive coefficients while holdings of institutional investors and the H-shares dummy have negative coefficients. Abnormal returns have been larger in firms with stronger monitoring on the part of large shareholders, with a larger potential for privatization, neglected by institutional investors and not traded by international investors through H-shares. This is consistent with the view that investors have marked up the prices of firms that had the best potential to profit from the reform.

The second column considers variables related with liquidity and finds that companies with a larger *Spread* had better returns after the announcement. The *Liquidity beta* is not significant. This might be consistent with liquidity risk not being priced in the Chinese stock market[21]. The third column considers both governance and liquidity variables together and finds that the results of the previous regressions are unaffected. The fourth column considers a regression with various characteristics. The relevant variables are *Sales* (negative), *Volatility* (positive), *Turnover* (negative), *ROE* (negative), *Lagged returns* (negative). Smaller, more volatile, less traded and less profitable companies enjoy better returns after the reform announcement. There is mean reversion in cross-sectional returns.

[20] Control for industry effects is important as strategic industries are not expected to change control, see Mattlin (2007).
[21] Acharya and Pedersen (2005) also find that the premium associated with liquidity risk is much smaller than the illiquidity premium.

The fifth column considers the joint impact of ownership, corporate governance, liquidity and characteristics. The regression confirms all the previous results except for the relevance of *NCB*. It is noteworthy that stocks neglected by institutional investors have larger returns even after accounting for characteristics. In principle institutions may have disliked stocks on the basis of observable characteristics so that the effect of Institution could simply proxy for omitted variables. Our evidence shows that holdings of institutional investors are relevant above and beyond stock characteristics. Also of interest is that *Public* is significantly positive but that other variables characterizing the current corporate governance structure are not relevant. Investors attached positive value to the discontinuous change associated with the potential sale of NTS.

The final column of table 5 considers a regression where the dependent variable is given by the compensation paid by each company. In evaluating the rationality of investors' response to the announcement, it is interesting to understand whether the variables that explain the cross-section of abnormal returns are also relevant for compensation differences. The empirical analysis shows that the relevant variables are *Public* (positive), *Dummy H* (negative), *NCB* (negative), *Spread* (negative), *Volatility* (negative), *Dummy Cash* (negative)[22]. Comparing the fifth and the sixth columns of the table we observe that there is only partial overlap between variables affecting returns and variables affecting compensation. Sometimes the sign changes across the two regressions (this happens for bid-ask spread and volatility), sometimes variables are significant in only one of the two regressions (*Institution*, *Sales*, *Turnover*, *Roe*, *Lagged returns*). Investors have used available information to determine returns ahead of compensation

[22] The negative impact of the dummy for cash payment is consistent with firms transferring less shares. In general, our results are consistent with those of Li et al. (2010).

payment, but the impact of the information set is clearly not limited to those elements useful to form a short run expectation of the one-off compensation.

4.4. Robustness analysis

We compute abnormal returns using our market index rather than the location-specific index. The results are very similar to our previous results and are not reported but are available upon request from the authors. The second robustness test looks at different definitions of the relevant window and estimation in other periods, see table 6.

INSERT TABLE 6 ABOUT HERE

We repeat the regressions using both a four-day window (including one day before and two days after the announcement) and a six-day window (starting two days before and finishing three days after the announcement). The results are virtually unchanged except for Dummy SEZ becoming significantly positive. Next, we separately consider a three-day window after the announcements made in April and June. We have argued that the best period to gauge the impact of the reform is the August announcement, however investors may have reacted in earlier periods. In April some variables are significant and coherent with the signs found in August. This happens to *Institution* and *Lagged returns*. However *Public*, *H-shares*, *Volatility*, *Turnover* and *ROE* are not significant in April (but they were in August). Moreover, *Meeting* and *Liquidity beta* are significant in April but not in August and *Sales* is significant in both periods but the sign is opposite. In June *Institution* is positive rather than negative, *Spread* is not significant, *Volatility* is negative, *Turnover* is positive, and *ROE* is not significant.

Finally, in table 7 we consider some robustness analysis including some other variables.

INSERT TABLE 7 ABOUT HERE

We include the shares held by the largest shareholder (and exclude NCB due to extremely large negative correlation between the two variables). The latter is significant and the variables that were significant in table 5 are still significant here with the same sign[23]. Next we go back to the original specification and include in turn the percentage of State-owned shares, the percentage of legal person shares, a dummy equal to one when the State is the main shareholder. These variables are not significantly different from zero and the other results are unaffected. Then we exclude *Dummy H* and *Sales* and include *Big4*. The latter is significant: ceteris paribus, companies with better accounting quality had lower returns than others. We next include *Concentration* (here we exclude *Institution* due to the large correlation between this and *Concentration*). The sign is coherent with the hypothesis that a larger concentration in the holdings of NTS may be negative for investors due to the possibility of a coalition of mutual fund managers in accepting lower compensation. We also measure the dimension in terms of *Market value* rather than *Sales* but there is no change in results. Finally we include contemporaneous *Turnover* rather than lagged *Turnover* and the sign is positive, consistently with the idea that abnormal returns were more positive for stocks characterized by larger speculation.

4.5 Liquidity and trading during the event period

[23] The same happens when we consider the share held by the ten largest holders of NTS and the Herfindal index of concentration among the ten largest shareholders.

In order to evaluate the changes to liquidity and trading during the event period we consider four dimensions: volume of trading, average daily turnover, average daily bid-ask spread, average daily price range. In table 8 we report the value of each variable for each decile before the event window (between *t*-130 and *t*-10 where *t* is the date of the first reform announcement of April 29th 2005) and during the event window (the day of the announcement and two days after the announcement of August 24th 2005) as well as their percentage changes. Variables are sorted into deciles based on the average daily value of the period before the event window.

INSERT TABLE 8 ABOUT HERE

Before the announcement, the first decile accounted for only 1% of total volume and the tenth decile accounted for 47% of the volume. After the event the two numbers are 2% and 38% respectively. In general there is a negative relationship between the percentage increase during the event and the initial distribution of volume. The second block of the table is about the average daily turnover. Here we observe a percentage increase in turnover in all the deciles, which reflect the increase in trading during the event period. Again, the larger percentage increases are associated with lower initial turnover. The third block reports information about the bid-ask spread, which decreases for the less liquid stocks and increases for the other deciles. The overall increase in the spread may be coherent with the increased volatility during the event period. The latter is also apparent from the fourth block of table 8. In unreported results, we find that the average daily spread during the 60 days after the announcement decreases for all deciles, coherently with the idea that the reform increased liquidity.

This evidence is not consistent with a simple generalized increase in speculation or with disagreement about the ultimate consequences of the reform. Investors showed a preference for trading stocks that were neglected before the beginning of the reform.

5. Conclusions

We have studied the price and volume effects of the announcement of the split share structure reform in the Chinese stock market. The reform had no impact on the ownership structure of firms in our event period, but laid down the conditions for important future changes in ownership, liquidity and corporate governance, ultimately leading to improved profitability and decreased expected returns. Our hypothesis is that in a forward-looking stock market, expectations of future changes to fundamentals should immediately affect market prices and liquidity. We observe the cross section of abnormal returns and find that stocks with less attractive characteristics (stocks that were small, characterized by historically poor returns, issued by companies with less transparent accounts and poorer governance, illiquid) benefited from this reform relatively more than stocks that already had better characteristics. We also study the time series of factor portfolio returns and find that systematic risk factors (size, corporate governance and liquidity) were affected by the announcement of the reform. Finally, turnover indicators confirm that more attention was given to historically neglected stocks.

The variables explaining the cross section of compensations do not correspond entirely with the variables explaining the cross section of stock returns. This is an interesting result which suggests that, when reacting to the announcement of the reform, Chinese investors have looked beyond short run compensation effects. Moreover, the

prices of stocks with “worse” characteristics increased more than the prices of stocks with “better” characteristics. The results are robust also to including several other variables and considering different event windows. Revealingly, the same variables were not relevant in other sample periods when investors did not believe that the reform was feasible.

The Chinese stock market may provide several other research opportunities. One interesting avenue of research is to study the changes in corporate governance of companies after their reform. Lin (2009) documents an important effect on related party transactions. Sales of stocks on the open market by non-tradable shareholders are likely to cause changes in the ownership structure that may also affect corporate governance in the future. The intensification of shareholders’ activism and its impact on the performance of companies is another interesting topic where evidence from China may be useful. The study of what happened after the split share structure reform promises important insights into the relative role of endogenous mechanisms for corporate governance improvements in emerging countries.

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Figure 1. Market Performance and Progress of the split share structure reform.
The figure reports the daily Return Index for the Shanghai Stock Exchange Composite Index (left scale) and the percentage of companies entering the split share structure reform (right scale) from January 2005 to March 2007.

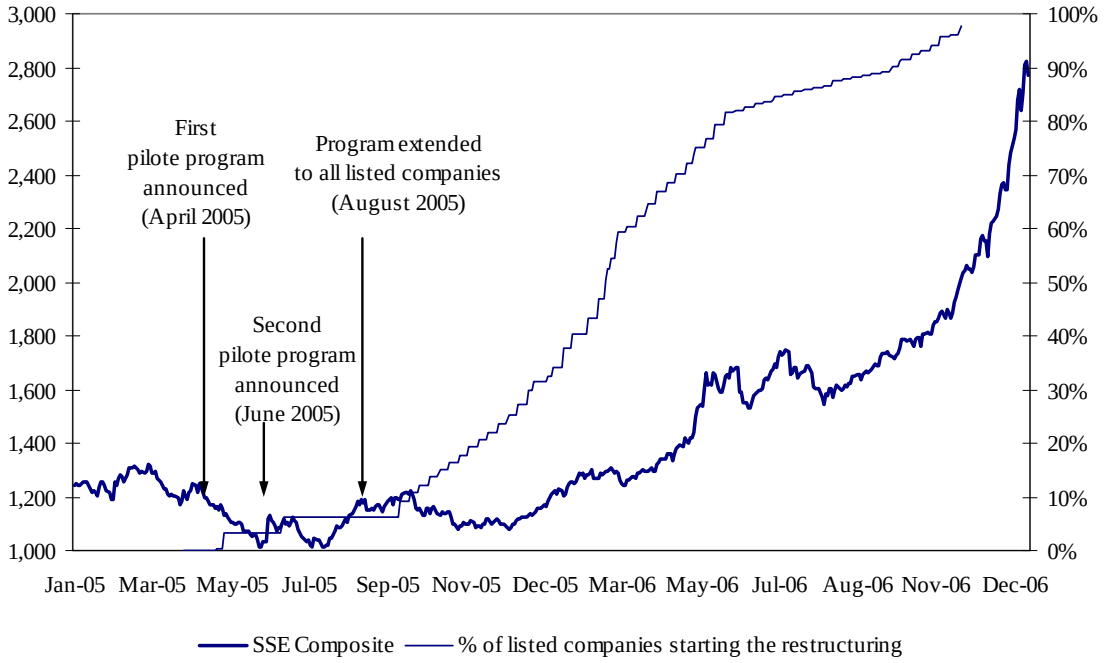

Table 1. Summary statistics of the relevant variables.

The table reports summary statistics about the variables. Returns are computed over a three-day window starting from the day of the announcement (August 24). All the variables are measured at the end of 2004, except for market-related characteristics which are measured in the period between *t*-130 and *t*-10, where *t* is April 29th. Public: NTS over TS; Dummy H: a dummy equal to 1 when the firm has outstanding H shares; NCB: the sum of the shareholding of the second through the tenth largest shareholder; Largest: the proportion of shares held by the largest holder; Concentration: the proportion of TS held by the ten largest holders; LPS: the % of legal person shares; SOS: the % of state-owned shares; Dummy State: a dummy equal to 1 when the State is the major shareholder; Dummy SEZ: a dummy equal to 1 when the company belongs to a special economic zone; Independent: the proportion of independent directors in the board; Meeting: the number of meetings of the board during the year; Institution: the % of TS held by institutional investors; Big4: a dummy identifying firms which have accounts certified by a Big Four firm; Liquidity beta: the sensitivity of the return of the stock with respect to aggregate liquidity shocks; Spread: the daily average bid-ask spread of the closing prices; Sales: gross sales and other operating revenue less discounts, returns and allowances; Market value: the listed price of the TS multiplied by the total number of A shares; Turnover: the daily average ratio between the total number of shares traded in a given day and the total number of TS; Volatility: the standard deviation of the residuals from the regression used to compute abnormal returns; Leverage: total debt over total assets; ROE: returns on equity; Lagged returns: the returns over the period; Compensation: the number of shares that NTS holders pay to holders of TS.

	Mean	Std. Dev.	Min	Max
Returns	1.47%	0.04	-9.53%	25.27%
Public	207%	1.50	48%	1065%
Dummy H	0.02	0.15	0	1
NCB	19.49%	0.14	0.62%	52.95%
Largest	42.73%	0.16	6.14%	84.85%
Concentration	4.54%	0.06	0.46%	35.65%
LPS	25.63%	0.26	0.00%	84.97%
SOS	34.02%	0.26	0.00%	75.32%
Dummy State	0.22	0.41	0	1
Dummy SEZ	0.16	0.36	0	1
Independent	34.21%	0.05	18.18%	50.00%
Meeting	12.36	3.89	6	25
Institution	7.95%	0.14	0.00%	63.54%
Big 4	0.08	0.27	0.00	1.00
Beta	0.00	0.69	-1.71	1.85
Spread	0.38%	0.00	0.15%	0.89%
Sales	1.61	2.81	0.00	17.71
Market value	2.21	2.72	0.40	19.75
Turnover	2.96	2.40	0.31	13.07
Volatility	1.81	0.48	0.94	3.30
Leverage	31.39%	0.20	0.00%	95.41%
ROE	5.11%	0.13	-69.26%	32.33%
Lagged returns	-14.46%	0.17	-48.74%	41.91%
Compensation	2.61	1.25	0.00	11.00

Table 2. Correlation coefficients across returns and relevant variables.

The table reports correlation coefficients. Returns are computed over a three-day window starting from the day of the announcement (August 24). All the variables are measured at the end of 2004, except for market-related characteristics which are measured in the period between *t*-130 and *t*-10, where *t* is April 29th. Public: NTS over TS; Dummy H: a dummy equal to 1 when the firm has outstanding H shares; NCB: the sum of the shareholding of the second through the tenth largest shareholder; Largest: the proportion of shares held by the largest holder; Concentration: the proportion of TS held by the ten largest holders; LPS: the % of legal person shares; SOS: the % of state-owned shares; Dummy State: a dummy equal to 1 when the State is the major shareholder; Dummy SEZ: a dummy equal to 1 when the company belongs to a special economic zone; Independent: the proportion of independent directors in the board; Meeting: the number of meetings of the board during the year; Institution: the % of TS held by institutional investors; Big4: a dummy identifying firms which have accounts certified by a Big Four firm; Liquidity beta: the sensitivity of the return of the stock with respect to aggregate liquidity shocks; Spread: the daily average bid-ask spread of the closing prices; Sales: gross sales and other operating revenue less discounts, returns and allowances; Market value: the listed price of the TS multiplied by the total number of A shares; Turnover: the daily average ratio between the total number of shares traded in a given day and the total number of TS; Volatility: the standard deviation of the residuals from the regression used to compute abnormal returns; Leverage: total debt over total assets; ROE: returns on equity; Lagged returns: the returns over the period; Compensation: the number of shares that NTS holders pay to holders of TS. Significance levels are denoted by * for 1%.

	Returns	Public	Dummy H	NCB	Dummy SEZ	Independent	Meeting	Institution	Beta	Spread	Sales	Turnover	Volatility	Leverage	ROE	Lagged returns
Returns	1															
Public	-0.01	1														
Dummy H	-0.07	0.34*	1													
NCB	0.05	0.11*	0.18*	1												
Dummy SEZ	0.05	-0.02	0.01	0.09*	1											
Independent	-0.01	0.029	0.03	0.05	0.08*	1										
Meeting	0.00	0.03	0.06	0.06	0.03	0.06	1									
Institution	-0.31*	0.03	0.19*	0.09*	0.01	0.00	0.01	1								
Liquidity beta	0.04	0.04	0.07	0.00	0.00	-0.02	0.08*	0.01	1							
Spread	0.20*	-0.04	-0.12*	0.09*	0.01	0.02	0.03	-0.15*	0.14*	1						
Sales	-0.19*	0.20*	0.32*	-0.10*	0.01	0.01	0.04	0.26*	-0.01	-0.19*	1					
Turnover	-0.10*	-0.016	0.01	0.12*	-0.02	0.03	0.03	0.14*	-0.12*	0.00	-0.06	1				
Volatility	0.19*	-0.053	0.01	0.12*	0.00	-0.01	0.09*	-0.06	0.01	0.04	-0.14*	0.36*	1			
Leverage	0.08*	-0.07	-0.04	-0.02	-0.02	0.05	0.06	-0.03	0.01	0.11*	0.02	0.03	0.07	1		
ROE	-0.29*	0.09*	0.06	0.03	0.02	0.02	-0.10*	0.29*	-0.08*	-0.19*	0.21*	0.10*	-0.23*	-0.02	1	
Lagged returns	-0.25*	0.068	0.01	0.05	0.00	0.00	0.01	0.36*	0.05	0.06	0.04	0.14*	0.00	-0.07	0.09	1
Compensation	-0.08	0.25*	0.01	-0.05	-0.05	0.02	-0.04	-0.06	-0.04	-0.10*	0.00	-0.10*	-0.06	-0.05	0.07	-0.03

Table 3. Quartile analysis.

The table shows the mean values of the variables for two different groups of firms. Returns are computed over a three-day window starting from the announcement day (August 24). All the variables are measured at the end of 2004, except for market-related characteristics which are measured in the period between *t*-130 and *t*-10, where *t* is April 29th. Public: NTS over TS; Dummy H: a dummy equal to 1 when the firm has outstanding H shares; NCB: the sum of the shareholding of the second through the tenth largest shareholder; Largest: the proportion of shares held by the largest holder; Concentration: the proportion of TS held by the ten largest holders; LPS: the % of legal person shares; SOS: the % of state-owned shares; Dummy State: a dummy equal to 1 when the State is the major shareholder; Dummy SEZ: a dummy equal to 1 when the company belongs to a special economic zone; Independent: the proportion of independent directors in the board; Meeting: the number of meetings of the board during the year; Institution: the % of TS held by institutional investors; Big4: a dummy identifying firms which have accounts certified by a Big Four firm; Liquidity beta: the sensitivity of the return of the stock with respect to aggregate liquidity shocks; Spread: the daily average bid-ask spread of the closing prices; Sales: gross sales and other operating revenue less discounts, returns and allowances; Market value: the listed price of the TS multiplied by the total number of A shares; Turnover: the daily average ratio between the total number of shares traded in a given day and the total number of TS; Volatility: the standard deviation of the residuals from the regression used to compute abnormal returns; Leverage: total debt over total assets; ROE: returns on equity; Lagged returns: the returns over the period; Compensation: the number of shares that NTS holders pay to holders of TS. Quartile 1 is composed of firms belonging to the first quartile of the return distribution over the day of the announcement and two days after the announcement of August 24; Quartile 4 is composed of firms belonging to the fourth quartile of the return distribution over the same period. The table also reports the p-value for the hypothesis that the values in the first and fourth quartiles are significantly different.

	Quartile 1	Quartile 4	P-value
Returns	-3.48%	7.43%	0.00
Public	210%	208%	0.88
Dummy H	1.25	0.63	0.19
NCB	18.52%	21.31%	0.02
Largest	44.91%	39.47%	0.00
Concentration	6.52%	3.50%	0.00
LPS	23.60%	26.47%	0.18
SOS	35.63%	33.11%	0.25
Dummy State	0.21	0.23	0.54
Dummy SEZ	0.13	0.16	0.24
Independent	34%	34%	0.48
Meeting	12.34	12.27	0.84
Institution	14.53%	3.10%	0.00
Big 4	0.15	0.03	0.00
Liquidity beta	-0.01	0.07	0.16
Spread	0.35%	0.42%	0.00
Sales	2.46	1.01	0.00
Market value	3.28	1.34	0.00
Turnover	2.86	3.62	0.00
Volatility	1.76	1.96	0.00
Leverage	30.47%	34.56%	0.02
ROE	8.53%	0.71%	0.00
Lagged returns	-7.53%	-19.90%	0.00
Compensation	2.59	2.40	0.09

Table 4. Portfolio time-series analysis.

The table shows the regression coefficients of each of the three dummy variables for the event periods. April is a dummy variable equal to one for the day of the announcement and two days after the announcement of April 29th. June is a dummy variable equal to one for the day of the announcement and two days after the announcement of June 20th. August is a dummy variable equal to one for the day of the announcement and two days after the announcement of August 24th. The dependent variables in the columns are the returns (i) of the market, (ii) of the size factor, (iii) of the float factor, (iv) of the liquidity factor. For each of these factor returns a regression is run on a constant and a dummy using 243 daily observations between October 15th, 2004 and October 15th, 2005. Robust standard errors are reported in parentheses; significance levels are denoted by * for 10%, ** for 5% and *** for 1%.

	(i) Market	(ii) Size	(iii) Float	(iv) Liquidity
April	-1.213	-0.478	-0.074	-0.072
	(0.743)	(0.626)	(0.088)	(0.094)
June	0.829	0.227	-0.166***	0.077***
	(0.930)	(0.180)	(0.049)	(0.027)
August	0.549**	1.178***	-0.189*	-0.288**
	(0.254)	(0.350)	(0.098)	(0.143)

Table 5. Multivariate regressions.

The table presents the results of cross sectional analysis where the dependent variable in the columns from (i) to (v) is the residual of a market model estimated with daily data over the period *t*-130 and *t*-10 where *t* is the date of the first reform announcement of April 29; the residuals are computed over the day of the announcement and two days after the announcement of August 24th. The dependent variable in column (vi) is the compensation paid by each company. Returns are computed over a thee-day horizon starting from the announcement day (August 24th). All the variables are measured at the end of 2004, except for market-related characteristics which are measured in the period between *t*-130 and *t*-10, where *t* is April 29th. Public: NTS over TS; Dummy H: a dummy equal to 1 when the firm has outstanding H shares; NCB: the sum of the shareholding of the second through the tenth largest shareholder; Dummy SEZ: a dummy equal to 1 when the company belongs to a special economic zone; Independent: the proportion of independent directors in the board; Meeting: the number of meetings of the board during the year; Institution: the % of TS held by institutional investors; Liquidity beta: the sensitivity of the return of the stock with respect to aggregate liquidity shocks; Spread: the daily average bid-ask spread of the closing prices; Sales: gross sales and other operating revenue less discounts, returns and allowances; Turnover: the daily average ratio between the total number of shares traded in a given day and the total number of TS; Volatility: the standard deviation of the residuals from the regression used to compute abnormal returns; Leverage: total debt over total assets; ROE: returns on equity; Lagged returns: the returns over the period; Compensation: the number of shares that NTS holders pay to holders of TS. Dummy Cash is a dummy equal to one if the compensation includes cash and/or warrants. All regressions include sector fixed effects; robust standard errors are reported in parentheses; the explanatory variables have been winsorized at the 1st and 99th percentiles; significance levels are denoted by * for 10%, ** for 5% and *** for 1%.

	Residuals from market Model					Compensation
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Institution	-0.094***		-0.088***		-0.027***	-0.029
	(0.008)		(0.008)		(0.008)	(0.034)
Public	0.594***		0.593***		0.669***	2.287***
	(0.096)		(0.091)		(0.087)	(0.339)
Dummy H	-1.938***		-1.507**		-1.277**	-5.855**
	(0.662)		(0.645)		(0.599)	(2.273)
NCB	0.026***		0.020**		0.011	-0.044*
	(0.008)		(0.008)		(0.008)	(0.025)
Independent	0.454		0.296		1.024	3.157
	(2.761)		(2.699)		(2.391)	(6.869)
Meeting	0.038		0.031		0.004	-0.030
	(0.030)		(0.030)		(0.027)	(0.088)
Dummy SEZ	0.416		0.394		0.443	-0.787
	(0.321)		(0.316)		(0.280)	(0.924)
Liquidity beta		0.063	0.068		-0.032	-0.294
		(0.202)	(0.190)		(0.177)	(0.532)
Spread		0.063***	0.048***		0.043***	-0.084***
		(0.011)	(0.011)		(0.010)	(0.029)
Sales				-0.221***	-0.203***	-0.136
				(0.035)	(0.035)	(0.208)
Volatility				2.021***	1.567***	-2.328***
				(0.258)	(0.247)	(0.816)
Turnover				-1.212***	-0.631***	-0.423
				(0.219)	(0.213)	(0.639)
Leverage				0.621	0.611	-1.279
				(0.545)	(0.500)	(1.786)
ROE				-0.044***	-0.043***	0.045
				(0.011)	(0.011)	(0.035)
Lagged returns				-0.063***	-0.065***	-0.013
				(0.007)	(0.007)	(0.022)
Dummy Cash						-10.543***
						(1.935)
Constant	0.088	-0.347	-1.504	-2.153***	-5.038***	28.337***
	(1.135)	(0.642)	(1.174)	(0.650)	(1.151)	(3.391)
Observations	1142	1142	1142	1142	1142	1142
R-squared	0.193	0.089	0.216	0.291	0.371	0.156

Table 6: Robustness analysis: Other periods.

The table presents the results of cross sectional analyses where the dependent variables are the residual of a market model estimated with daily data between *t*-130 and *t*-10 where *t* is the date of the first reform announcement, April 29th. In column (i) the residuals are computed between *t*-1 and *t*+2 where *t* is August 24th; in column (ii) the residuals are computed between *t*-2 and *t*+3 where *t* is August 24th; in column (iii) the residuals are computed between *t* and *t*+2 where *t* is April 29th; in column (iv) the residuals are computed between *t* and *t*+2 where *t* is June 20th .Returns are computed over the day of the announcement and two days after the announcement of August 24th. All the variables are measured at the end of 2004, except for market-related characteristics which are measured in the period between *t*-130 and *t*-10, where *t* is April 29th. Public: NTS over TS; Dummy H: a dummy equal to 1 when the firm has outstanding H shares; NCB: the sum of the shareholding of the second through the tenth largest shareholder; Dummy SEZ: a dummy equal to 1 when the company belongs to a special economic zone; Independent: the proportion of independent directors in the board; Meeting: the number of meetings of the board during the year; Institution: the % of TS held by institutional investors; Liquidity beta: the sensitivity of the return of the stock with respect to aggregate liquidity shocks; Spread: the daily average bid-ask spread of the closing prices; Sales: gross sales and other operating revenue less discounts, returns and allowances; Turnover: the daily average ratio between the total number of shares traded in a given day and the total number of TS; Volatility: the standard deviation of the residuals from the regression used to compute abnormal returns; Leverage: total debt over total assets; ROE: returns on equity; Lagged returns: the returns over the period. All regressions include sector fixed effects; robust standard errors are reported in parentheses; the explanatory variables have been winsorized at the 1st and 99th percentiles; significance levels are denoted by * for 10%, ** for 5% and *** for 1%.

	Residuals from market Model			
	August [-1;+2]	August [-2;+3]	April [0;+2]	June [0;+2]
	(i)	(ii)	(iii)	(iv)
Institution	-0.014*	-0.017**	-0.032***	0.053***
	(0.008)	(0.009)	(0.012)	(0.009)
Public	1.186***	0.805***	-0.036	0.281***
	(0.119)	(0.098)	(0.129)	(0.077)
Dummy H	-2.679***	-2.320***	-0.601	-1.781***
	(0.772)	(0.739)	(1.093)	(0.583)
NCB	-0.003	0.012	-0.004	0.016**
	(0.008)	(0.009)	(0.012)	(0.008)
Independent	-1.693	-0.568	2.771	-0.505
	(2.542)	(2.989)	(4.037)	(2.066)
Meeting	0.066**	0.016	0.077*	0.040
	(0.029)	(0.030)	(0.044)	(0.025)
Dummy SEZ	0.676**	0.829**	0.683	-0.060
	(0.291)	(0.327)	(0.523)	(0.241)
Liquidity beta	0.252	0.165	-0.691**	-0.022
	(0.185)	(0.212)	(0.282)	(0.148)
Spread	0.030***	0.060***	-0.032**	-0.003
	(0.010)	(0.012)	(0.014)	(0.008)
Sales	-0.107***	-0.116***	0.168***	-0.212***
	(0.036)	(0.037)	(0.061)	(0.034)
Volatility	0.748***	1.368***	-0.580	-0.723***
	(0.267)	(0.301)	(0.387)	(0.249)
Turnover	0.115	-0.462*	-0.304	0.792***
	(0.215)	(0.251)	(0.341)	(0.215)
Leverage	0.452	0.654	0.335	-0.373
	(0.557)	(0.615)	(0.860)	(0.512)
ROE	-0.046***	-0.060***	0.012	-0.002
	(0.012)	(0.014)	(0.020)	(0.010)
Lagged returns	-0.039***	-0.066***	-0.046***	-0.002
	(0.007)	(0.008)	(0.010)	(0.007)
Constant	-4.999***	-6.576***	-0.343	0.420
	(1.229)	(1.405)	(1.829)	(0.962)
Observations	1142	1142	1142	1142
R-squared	0.291	0.319	0.099	0.106

Table 7: Robustness analysis: Other variables.

The table presents the results of cross sectional analyses where the dependent variable is the residual of a market model estimated with daily data; the estimation period is between *t*-130 and *t*-10 where *t* is the date of the first reform announcement, April 29th;. The residuals and the variable Turnover Cont are computed over the day of the announcement and two days after the announcement of August 24th. Returns are computed over a three-day window starting from the announcement day (August 24th). All the variables are measured at the end of 2004, except for market-related characteristics which are measured in the period between *t*-130 and *t*-10, where *t* is April 29th. Public: NTS over TS; Dummy H: a dummy equal to 1 when the firm has outstanding H shares; NCB: the sum of the shareholding of the second through the tenth largest shareholder; Largest: the proportion of shares held by the largest holder; Concentration: the proportion of TS held by the ten largest holders; LPS: the % of legal person shares; SOS: the % of state-owned shares; Dummy State: a dummy equal to 1 when the State is the major shareholder; Dummy SEZ: a dummy equal to 1 when the company belongs to a special economic zone; Independent: the proportion of independent directors in the board; Meeting: the number of meetings of the board during the year; Institution: the % of TS held by institutional investors; Big4: a dummy identifying firms which have accounts certified by a Big Four firm; Liquidity beta: the sensitivity of the return of the stock with respect to aggregate liquidity shocks; Spread: the daily average bid-ask spread of the closing prices; Sales: gross sales and other operating revenue less discounts, returns and allowances; Market value: the listed price of the TS multiplied by the total number of A shares; Turnover: the daily average ratio between the total number of shares traded in a given day and the total number of TS; Volatility: the standard deviation of the residuals from the regression used to compute abnormal returns; Leverage: total debt over total assets; ROE: returns on equity; Lagged returns: the returns over the period. All regressions include sector fixed effects; robust standard errors are reported in parentheses; the explanatory variables have been winsorized at the 1st and 99th percentiles; significance levels are denoted by * for 10%, ** for 5% and *** for 1%.

	Residuals from market Model							
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Institution	-0.025***	-0.027***	-0.027***	-0.027***	-0.035***		-0.020**	-0.022**
	(0.009)	(0.008)	(0.008)	(0.008)	(0.009)		(0.010)	(0.009)
Public	0.725***	0.673***	0.670***	0.673***	0.588***	0.677***	0.684***	0.652***
	(0.083)	(0.087)	(0.087)	(0.087)	(0.088)	(0.088)	(0.089)	(0.079)
Dummy H	-1.307**	-1.265**	-1.354**	-1.274**		-0.505	-1.491**	-1.064*
	(0.578)	(0.601)	(0.609)	(0.596)		(0.852)	(0.605)	(0.577)
NCB		0.010	0.013	0.011	0.014*	0.011	0.012	0.008
		(0.008)	(0.008)	(0.008)	(0.007)	(0.008)	(0.008)	(0.007)
Independent	1.083	1.010	1.039	0.999	1.097	1.172	1.134	-0.060
	(2.387)	(2.394)	(2.394)	(2.394)	(2.422)	(2.394)	(2.430)	(2.308)
Meeting	0.003	0.004	0.004	0.004	-0.003	0.006	0.001	-0.000
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.025)
Dummy SEZ	0.393	0.431	0.463	0.443	0.471*	0.454	0.433	0.501**
	(0.284)	(0.286)	(0.283)	(0.279)	(0.284)	(0.281)	(0.280)	(0.255)
Liquidity beta	-0.027	-0.033	-0.029	-0.034	-0.048	-0.035	-0.031	0.061
	(0.177)	(0.177)	(0.178)	(0.178)	(0.180)	(0.178)	(0.180)	(0.158)
Spread	0.042***	0.043***	0.044***	0.043***	0.048***	0.045***	0.041***	0.020**
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.009)
Sales	-0.198***	-0.202***	-0.204***	-0.203***		-0.219***		-0.192***
	(0.035)	(0.036)	(0.036)	(0.036)		(0.035)		(0.035)
Volatility	1.562***	1.570***	1.566***	1.566***	1.687***	1.567***	1.615***	0.489*
	(0.246)	(0.248)	(0.247)	(0.247)	(0.248)	(0.249)	(0.248)	(0.250)
Turnover	-0.704***	-0.637***	-0.632***	-0.640***	-0.623***	-0.643***	-0.661***	
	(0.214)	(0.214)	(0.213)	(0.215)	(0.215)	(0.216)	(0.215)	
Leverage	0.610	0.610	0.610	0.620	0.427	0.579	0.503	0.281
	(0.498)	(0.501)	(0.500)	(0.500)	(0.505)	(0.502)	(0.504)	(0.475)
ROE	-0.042***	-0.043***	-0.043***	-0.043***	-0.046***	-0.047***	-0.046***	-0.045***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Lagged returns	-0.065***	-0.065***	-0.065***	-0.065***	-0.063***	-0.069***	-0.064***	-0.052***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Largest	-0.021***							
	(0.007)							
SOS		-0.002						
		(0.004)						
LPS			-0.003					
			(0.004)					
Dummy State				-0.136				
				(0.236)				
Big4					-0.951**			
					(0.390)			
Concentration						-0.042*		
						(0.023)		
Market Value							-0.182***	
							(0.045)	
Turnover Cont								0.157***
								(0.030)
Constant	-4.067***	-4.977***	-4.992***	-5.000***	-5.371***	-5.151***	-4.890***	-2.695**
	(1.171)	(1.177)	(1.147)	(1.160)	(1.160)	(1.153)	(1.180)	(1.091)
Observations	1142	1142	1142	1142	1142	1142	1142	1142
R-squared	0.376	0.371	0.371	0.371	0.355	0.368	0.364	0.441

Table 8: Liquidity and trading during the event period.
The table reports the values of variables for each decile before the event window (between *t*-130 and *t*-10 where *t* is the date of the first reform announcement, April 29th) and during the event window (the day of the announcement and two days after the announcement of August 24th) as well as their percentage changes. Variables are sorted into deciles based on the average daily value of the period before the event window. The variables of interest are: (i) the volume of trading, (ii) the daily turnover, (iii) the average daily bid-ask spread, (iv) the average daily price range. Block (i) shows the percentage of the total volume of the market in each decile in the period of reference. Blocks from (ii) to (iv) show the daily average value of the variable in each decile.

	(i) VOLUME			(ii) TURNOVER			(iii) SPREAD			(iv) PRICE RANGE		
DECILE	Before	Event window	Change	Before	Event window	Change	Before	Event window	Change	Before	Event window	Change
LOW	1%	2%	104%	0.67	3.44	413%	0.69	0.62	-11%	5.00	5.96	19%
2	2%	3%	42%	1.08	3.36	211%	0.49	0.48	-2%	4.27	5.77	35%
3	3%	4%	47%	1.36	5.01	269%	0.43	0.45	5%	3.95	5.31	34%
4	4%	5%	30%	1.61	4.70	192%	0.39	0.41	5%	3.75	4.91	31%
5	5%	7%	50%	1.90	5.72	200%	0.36	0.41	14%	3.60	4.88	36%
6	6%	7%	22%	2.26	7.81	245%	0.33	0.35	7%	3.44	4.64	35%
7	8%	8%	6%	2.70	7.38	173%	0.30	0.34	14%	3.29	4.44	35%
8	10%	11%	8%	3.40	9.15	169%	0.27	0.33	20%	3.14	4.37	39%
9	15%	14%	-6%	4.66	10.33	122%	0.24	0.29	17%	2.93	4.07	39%
HIGH	47%	38%	-18%	8.62	15.80	83%	0.19	0.23	22%	2.54	3.45	36%