Who gains from stock market reform? Evidence from China

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Abstract

We evaluate the stock price effects of the 2005-2006 reform of the Chinese stock market associated with the elimination of nontradable shares and the consequent change in the ownership structure of firms. We claim that there are several reasons why the reform can affect stock prices, among which are corporate governance, dividends, liquidity, transparency, supply. We conjecture that, cross-sectionally, companies with weaker fundamentals but better positioned to profit from the change in ownership should be the main beneficiaries of the reform. We study abnormal returns at the time of the announcement of the reform and find that the prices of stocks characterized by lower liquidity, inactive investors and less transparency rise more than others. Size, earnings and lagged returns have a negative effect on returns after the announcement. Interestingly, investors also react to variables that are not associated with short term compensation.

Keywords: ownership structure, Chinese equity market, financial market development, liquidity, corporate governance, independent board.

JEL Ns: G14, G28, G32

1. Introduction

Do stock market reforms improve economic fundamentals? Academic scholars have been intrigued by this question at least since Stigler's (1964) seminal contribution, followed by Jarrell (1981) and Simon (1989) in-depth analyses of the effects of 1933 Security Act in the US stock market. In developed economies, one of the most prominent policy experiment in the field has been the enactment of the 2002 Sarbanes-Oxley Act (SOX) aimed at improving the corporate governance of US listed firms, severely hit by high profile scandals over the 2001-2002 crisis. A number of papers have studied the effects of SOX on firm value, providing mixed evidence about the costs and benefits of the reform (Jain and Rezaee, 2006; Zhang, 2007). Interestingly, Chhaochharia and Grinsten (2007) have shown that the announcement of these new rules had a significant impact on firm value, with special benefit accruing to firms which were less compliant with the rules.

Attention to financial reform in developing countries has been rising since the 1980s and resulted from the increased need to more efficiently mobilize domestic and international resources to foster capital accumulation and growth. In most cases, reforming efforts in the financial system often reflected a general reconsideration of the role of the State in the economy (Caprio et al., 1994)[1]. Several reforms have taken place in China over the last decade. Berkman, Cole and Fu (2009) study the market reaction to

[1] Johnson and Shleifer (1999) provide an interesting tale of two transition countries (Poland and the Czech Republic) about the effects security legislation enhancing investor protection, showing that ceteris paribus these rules fostered financial market development. In emerging countries, several event studies have been conducted to evaluate the economic implication of financial liberalizations, using the first issue dates of American Depositary Receipts (ADR) programs (see for example Bekaert and Harvey, 2000). Albeit related to corporate governance improvements in terms of compliance to stricter regulatory standards, ADR programs are in most cases initiated by the issuer rather than by legislative action. Furthermore, the positive effects of these improvements tend to affect domestic listed firms only indirectly, while financial reforms should have first order effects on the market as a whole.

three reforms aimed at reducing expropriation from minority shareholders by controlling shareholders that occurred in China in the second quarter of 2000. They find positive price increases, particularly for the companies where controlling block holders may more easily expropriate minority shareholders. Sun, Tong and Yan (2009) study the February 2001 reform of the Chinese B-market and find positive effects on volume and liquidity and a reduction in the spread with the A-market.

We study the 2005-2006 reform aimed at eliminating non-tradable shares (henceforth NTS) in the capital of listed firms. NTS were a special class of shares entitling the holders to exactly the same rights as holders of ordinary shares but which could not be publicly traded. Typically, these shares belonged to the State or to domestic financial institutions ultimately owned by central or local governments[2]. NTS represented more than two thirds of the overall capitalization of the stock market and had long been recognized as one of the major hurdles for domestic financial development. The reform is relevant in (at least) three dimensions. First, it reduces the public ownership of firms and introduces the possibility of a true privatization process following the corporatization described by Aivazian, Ge and Qiu (2005). Second, it improves corporate governance through an enhanced role for minority investors and a more vibrant market for corporate control. The benefits of corporate governance in the Chinese market have been studied by Chen, Firth, Gao and Rui (2006), Liu and Lu (2007) and Chang and Wong (2009). Third, it has an immediate impact on the liquidity of shares, which may reduce their expected returns, see Amihud (2002), Pastor and Staumbagh (2003) and Acharya and Pedersen (2005).

[2] See Sun and Tong (2003) for a detailed explanation

Previous attempts to eliminate NTS caused strong decreases in Chinese stock prices. The stock market also dropped after the first announcement of a reform pilot project in April 2005. Chinese investors have been worried by the supply shock associated with the transformation of NTS into TS. Indeed, economic theory suggests that increased supply must be accommodated by lower prices if the demand function is negatively sloped, see Petajisto (2008) for a recent theoretical framework and Hong et al. (2006) for an analysis of expected supply shocks. However, differently from previous attempts, some experimentation and learning through two pilot experiments convinced investors of the benefits of the 2005-2006 reform. In August 2005, after the successful completion of two pilot programs, the official authorities announced the extension of the NTS program to the entire market. Stocks gained about 5% in the month following this announcement.

We study the cross-sectional impact of the reform after the August announcement. We conjecture that the reform should be less relevant for companies characterized by a low proportion of NTS, transparent balance sheets, high liquidity. The reform should be more beneficial to companies characterized by inefficiencies. A reduction in the proportion of NTS is equivalent to a new round of privatization with positive impact of productivity, especially when active investors can gain a more substantial role in the overall governance. Moreover, the higher quantity of floating shares increases liquidity and reduces expected returns. In *relative* terms, therefore, we expect the pricing effect to be connected with several characteristics that are observable before the beginning of the reform.

Our results show that relevant explanatory variables for the post-announcement increase in stock prices are the following: (a) certification by a local rather than an international auditor, (b) illiquid stock, (c) inactive shareholders. Other relevant characteristics are size (large companies gaining less than small companies), earnings per share (profitable companies gaining less than unprofitable companies) and lagged returns (cross sectional mean reversion). Our conclusion is that the Chinese reform has been very successful. By modifying the ownership structure of firms and increasing the float of the stocks, it has given a voice to the market and has started a process by which companies need to improve their transparency and efficiency. The main beneficiaries have been companies that, before the reform, used to exploit weak regulation and a largely public ownership structure but were, at the time of the reform, in a better position to improve their efficiency.

After this introduction, the second section illustrates some key institutional features of the Chinese stock market and the mechanics of the NTS reform, the third section discusses the factors affecting the fundamentals, the fourth section describes the event study, the fifth section presents the results and includes some robustness analysis. The sixth section concludes.

2. The Chinese stock market and the NTS reform

Chinese listed firms have multiple classes of shares: shares which 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).[3] Split-share structures are common around the world and typically warrant owners 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 and served two main purposes: to keep the control of State-owned enterprises in government's hands and to maximize IPO proceeds. As of February 2005, NTS accounted for about two third of the total number of outstanding shares.

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

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 tradable shares (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

[3] Market segmentation is relevant for pricing. Mei, Scheinkman and Xiong (2004) 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.

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 most preferred destinations. This adversely affected domestic investors who, prevented from investing in the best companies, were stuck with holdings 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 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 in 2001 because the proposal envisaged an equal pricing for tradable and non-tradable shares. The 2005 reform adopted the new strategy of forcing holders of NTS to pay a compensation to holders of TS 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 yet) and trading in the shares restarted. After few weeks, a shareholders' meeting would be called and the compensation proposal would pass only if two thirds of the votes of holders of TS were in its favor. Trading in shares would also be suspended between announcement of the shareholder 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, among which[4] a twelve-month lockup period for the holders of NTS in order to dilute the effect of a possible stock overhang due to a possible massive future sale of shares[5]. In the two years after expiration of the lock-up, NTS holders owning more than 5% of the listed company 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 NTS reform and fundamentals

We explain the cross-section of abnormal returns over a one month event period on the basis of characteristics measured *before* the event period. We regard the rate of return over the event period as being dominated by a surprise associated with announcement of the reform. Our central hypothesis is that the reform of the Chinese stock market has had heterogeneous effects on different companies depending on their starting conditions. For example, a particularly illiquid stock may be expected to become more liquid after the increase in supply and this may affect the stream of future expected

[4] Other relevant measures are (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 are 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 is not reserved anymore to the small group of qualified investors but is 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.

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

returns and the current price. In what follows we discuss which fundamentals may be affected by the reform. The discussion will clarify that usually fundamentals do not suddenly change during the reform period but may be expected to change after the end of the reform. However, forward-looking investors should react to new expectations of fundamentals. On the basis of the literature, we conjecture that the main drivers should be corporate governance, liquidity and transparency.

3.1. Dividends

The relevant channels are: ownership, corporate governance, the compensation.

Ownership: the reform immediately changes the ownership structure of Chinese companies by increasing the relative weight of holders of TS. Moreover, the reform paves the way to a "real" privatization, namely the possibility that public shareholders – at least in non strategic sectors - will eventually float a substantial amount of shares on the market, enhancing even further the role of minority investors in management decisions. In turn, this may create an active market for corporate control. Both elements may induce managers to more efficient actions leading to improved profitability. Some elements may partially offset the positive effects of a more diffused ownership. A less important role for the dominant shareholder may be consistent with a decrease in the cost of extraction of private benefits (see Burkart et al. 1997). This may be particularly important in China as Dyck and Zingales (2004) show that higher private benefits of control are associated with less developed capital markets. Moreover Shleifer and Vishny (1986) point out that the presence of a large shareholder can facilitate takeovers.

Corporate governance[6]: any improvement in corporate governance should be associated with an increased 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). The reform may help the investors to push companies towards a better governance, even though this may occur only in the long run. Doidge, Karolyi and Stulz (2007) find that country effects are more important than firm characteristics in explaining corporate governance, due to the relevance of the environment in determining the costs and benefits of investment in governance. Aggarwal et al. (2009) find that investment in internal corporate governance mechanism is associated with the level of economic and financial development of the country.

The degree of active participation of shareholders may also be an important contributor to the overall governance of the corporation, through the pressure exerted on managers. Even though the literature initially could not clearly measure a positive permanent impact of activism on corporate profitability, see e.g. Gillan and Starks (1998), Xi (2006) documents the effectiveness of shareholder activism in improving the governance of Chinese firms, while Del Guercio et al. (2008) provide empirical evidence about the real effects of "just vote no" campaigns in the US.

Compensation: one of the main differences between this reform and previous reforms lies in the compensation assigned to holders of TS. The announcement of the compensation scheme should have induced investors to consider a one-off payment, equivalent to an extraordinary dividend, with an immediate positive impact on prices of

[6] "The mechanisms that ensure minority shareholders receive an appropriate return on their investment" according to Shleifer and Vishny (1997).

NTS. It follows that variables related to the size of the possible compensation should also be helpful to explain the cross section of abnormal stock returns after the announcement.

3.2. Expected returns

Several channels may be relevant: liquidity, transparency, supply effects, uncertainty, corporate governance.

Liquidity: the reform increases the supply of TS in two stages. The first stage is when compensation is paid in the form of new shares, several weeks after the public announcement of the compensation itself. The mechanism can be regarded as a split because the price of TS rises with (or before) the announcement and then falls when the new shares are assigned. There are theories that predict abnormal returns following splits, based on the release of information, see e.g. McNichols and Dravid (1990) and Ikenberry and Ramnath (2002) and on liquidity enhancement, see e.g. Lin et al. (2009) and Kalay and Kronlund (2009). In the Chinese case the split is mandated by the reform process and therefore is unlikely to be a signal of future profitability. The second stage is when lock-ups expire and NTS can be freely traded. This is a true increase in the float of stocks, even though holders of previously NTS do not have any obligation to float their shares. The supply increase can therefore materialize in several stages and may be widely heterogeneous across stocks, for example depending on whether the firm belongs to a strategic sector.

The reform may therefore cause some increase in liquidity in the short run, due to the split and to speculation associated with enhanced investor attention, see Merton (1987), and an even larger increase in the long run, due to a supply increase. Several

contributions highlight the role of liquidity on expected stock returns. Amihud (2002) stresses the component of expected returns associated with the average illiquidity. Pastor and Stambaugh (2003) and Acharya and Pedersen (2005), discuss the crucial role of the sensitivity of company-specific liquidity shocks to market-wide liquidity shocks. The reform impacts both aspects of liquidity. By increasing the proportion of shares that can be actively traded, it increases liquidity and decreases the illiquidity premium. Therefore, the main beneficiaries should be those stocks that were particularly illiquid before the reform.

Transparency: Chinese companies traded in the stock market are not regarded to be as transparent as the companies traded in more mature stock markets. Wang and Xu (2004) for example note that book-to-market may not be a relevant factor in pricing Chinese stocks due to opacity of accounting procedures. The market is therefore likely to demand an extra premium from corporations that are regarded as less transparent than the average Chinese company. A reform that is perceived as an attempt to improve the quality of the stock market may be particularly beneficial to less transparent companies.

Supply effects: the failure of past attempts to tackle NTS had created one source of risk. Investors felt that a massive increase in supply following the reform could have depressed prices. While this concern does not apply when the demand curve for stocks is horizontal, there are various cases where it may be relevant. The impossibility of short selling in the Chinese stock market should produce negatively sloped demand curves. When demand curves slope down, an increase in per capita risk, associated with a supply increase in a closed financial market, causes a larger expected return that is discounted back and immediately has an impact on the price. In the Chinese reform there is no

immediate increase in the supply of shares due to already described lock-ups. Supply effects may therefore be relevant only in terms of expectations of future increases, consistent with the model of Hong, Scheinkman and Xiong (2006).

Uncertainty: the negative reaction of investors to previous reform attempts implies that, before 2005, non-diversifiable uncertainty about a potential future reform could have been incorporated into a higher expected return. The elimination of uncertainty associated with a credible announcement of the reform may have decreased the risk premium and, ceteris paribus, increased market valuation.

Corporate governance: the improvement in corporate governance associated with the elimination of NTS may reduce the risk premium. Better corporate governance stemming from the reform may curb the risk of management entrenchment and expropriation of minority investors, which has been shown to affect the value of the firm (La Porta et al., 2002). However, empirical analyses usually find a positive association between governance indicators and average stock returns, see Gompers et al. (2003), Cremers and Nair (2005) and Wang and Xu (2004) for the Chinese case. Core, Guay and Rusticus (2006) claim that weak governance does not cause poor stock returns.

4. The event study

4.1. Data

We have collected daily data from DataStream for all the companies listed in the Shanghai Stock Exchange and in the Shenzhen Stock Exchange. Governance and capital structure data are from China Listed Firm's Corporate Governance CSMAR Database. Nomura Institute of Capital Market Research provided us with detailed information about

the compensation plan of each company. The original sample from DataStream involves 1,440 companies, but we discard some data for various reasons: (a) some companies disappeared before the beginning of the reform process, (b) some companies are reported from DataStream to be suspended from trading as of February 2007 for unspecified reasons, (c) some companies were listed after September 2005 so they are not used because of their short trading history, (d) 5 companies did not have nontradable shares even before the beginning of the reform process, (e) in some cases the data are not fully convincing due to discrepancies across data sets in the percentage of tradable shares before and after the reform, (f) in 15 cases we do not have data on corporate structure; (g) we do not include companies involved in the first three batches. These considerations leave us with a sample of 1,192 companies for the cross sectional analyses carried out in April, June and August 2005.

The reform started on April 29, 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. As of February 2007, 1,301companies (98% of listed companies) had joined the process.

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[7]. 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.

4.2. The relevant characteristics

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

NTS and Concentration account for the structure of ownership. NTS is the proportion of nontradable shares. This variable may have several different interpretations: (i) it may proxy for involvement of the public sector and operational inefficiency, (ii) it may be taken as a proxy for expectations of future supply effects, (iii) as advocated by Xu and Wang (2004), it may be a proxy for corporate governance in the Chinese market. A higher initial level of NTS should be associated with positive post-announcement returns if (i) and (iii) dominate, or with a negative return if (ii) is more important.

Concentration represents the proportion of TS held by the ten largest holders at the end of 2004. It measures potential coordination among tradeable shareholders which may extract larger compensation on the part of holders of NTS even though Haveman et al. (2008) claim that non-tradable shareholders can make side-payment to mutual fund managers to induce them to accept a lower compensation.

[7] 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.

We use two variables to account for the profitability and productivity of the firm. Legal is defined as the percentage of legal person shares. 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. Legal may also be relevant as a description of the ownership structure. Earnings is the earnings per share of the company relatively to the sector average.

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 and recognizability (Michaely and Shaw, 1995; Dye, 1993). 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).

We measure governance through the use of Independent, Board size, Meeting and Active. Independent is the proportion of independent directors in the board. Board size is the number of directors in the board. Meeting is the number of meetings of the board over the year. These indicators are standard in the literature, see e.g. Denis and McConnell (2003). We also consider Active, defined as the ratio between the capital owned by the shareholders being present to the annual shareholders' meeting and total capital, as a proxy for shareholders' activism (similarly to Deng and Wang, 2006). In our empirical

work we include Interaction, the product between Active and Big4, to explore the possibility that the market perceives the existence of complementarity between transparent firms and active shareholders as tools to improve corporate governance.

We consider the following market-related characteristics: Beta (the liquidity beta interpreted as the sensitivity of the return of the stock with respect to aggregate liquidity shocks[8]), Spread (the time series average of the ratio between the bid-ask spread and the average between the bid and the ask price), average Turnover (the ratio between the value of the total number of shares traded in a given day 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), Size (capitalization of TS), Lagged returns. We do not include the price-to-book in view of the limitations highlighted by Wang and Xu (2006).

5. Results

We first discuss market level empirical evidence to explain the choice of the sub-period used to study the impact of the reform announcement. We then present summary statistics and cross-sectional results and conclude with robustness analysis.

[8] 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 factor replicating portfolio is constructed each month by going long stocks with low liquidity and shorting stocks with high 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.

5.1. Market reaction around the event date

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

On June 20, the reform process was announced to be extended to a large and representative second batch of 42 companies. By confirming the basic structure of the negotiation mechanism tested in the first batch, this announcement provided clues on the 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 negative in the weeks following the announcement, with returns respectively of -1.23%, -4.20%, -3.56% and 0.80%. Investors' skepticism about the reform may well have been

[9] The China Daily, on the basis of interviews with Chinese security analysts, reported on May 10 that "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".

justified by the reform experience of the first batch, that, as shown by Bengtsson (2005), was not particularly attractive to investors[10].

On Friday, August 19, the companies of the second experimental batch concluded their reform. On August 24 the CSRC announced a set of rules for the application of the reform to all the remaining companies. On September 4 the third batch of 40 companies started the reform. During the four trading weeks after August 19, the market returns have been respectively 0.37%, 1.45%, 0.07% and 1.96% for the Shanghai stock market and 0.41%, 2.85%, 0.95% and 3.34% for the Shenzhen market. The overall increase in the market is consistent with the expectation of implementation of a reform that is friendly towards investors and may offset the expected increase in supply through compensation.

5.2. Summary statistics

Table 1 reports summary statistics about the variables.

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The data show the large proportion of NTS before the reform with an average of 63% and a minimum of 23%. These data are also useful to understand the limitations of Chinese corporate governance. The average proportion of independent directors is 34% and the maximum is 66%. Only 15 firms out of the 1192 in our sample have a board characterized by a percentage of independent directors that is larger than or equal to 50%. The average size of the board is 20, with a minimum of 8 and a maximum of 43. On

[10] 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.

average boards meet once a month. The average attendance rate is 59%. As to characteristics, the average sensitivity to liquidity shocks, proxied by Beta, is very small but highly variable across firms. The average spread is 0.38% with a maximum of 2.17%, average turnover is more than 60%, confirming the existence of large trading in the Chinese stock market also highlighted by Mei et al. (2005). The 11.72% average return in table 1 is the mean across the stocks in our sample. It is much larger than the market return over the same period that we have documented in section 5.1. as the latter is obtained from a capitalization weighted index.

Table 2 reports correlation coefficients among the selected variables in the four weeks following August 19.

INSERT TABLE 2 ABOUT HERE

The table shows that returns are negatively correlated with Concentration, Big4, Board Size, Active, Turnover, Size, Earnings and Lagged returns. There is a positive correlation with Volatility and Spread; there is a positive but small correlation with Legal, NTS, Independent, meeting and Beta. Some of these correlations are broadly consistent with the idea that the stocks which had more benefits from the announcement of the reform were the riskier and lower quality stocks, see for example the correlation coefficients between returns and Volatility, Spread, Big4, Earnings, Size. 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 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 had lower Concentration, a higher percentage of legal person shares, a higher percentage of nontradable shares, a smaller attendance rate on the part of shareholders, a lower average value of the Big4 dummy, lower Turnover and larger Volatility, smaller Size, a larger Bid-Ask spread, smaller earnings per share, lower lagged returns.

The results of the interquartile analysis are therefore consistent with those obtained from the simple correlation coefficients. Interestingly, better return companies show characteristics that are usually associated with neglected firms: they are smaller, less liquid, less profitable and show low volume and negative past returns. Moreover, they also have specific characteristics that are associated with riskier firms in the Chinese market: a larger percentage of their shares is nontradable, they are less likely to interact with an important international auditor and to have active shareholders. 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.

5.3. Cross sectional results

Table 4 reports the results of multivariate regressions of abnormal returns during the event period on characteristics measured before the start of the reform.

INSERT TABLE 4 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, 29).

The market portfolio is either the Shanghai or the Shenzhen index depending on the listing of the specific company. All the cross-sectional regressions include sector fixed effects. All the standard errors are computed after clustering for quartiles of nontradable shares. The explanatory variables have been winsorized at the 1st and 99th percentiles.

The first column considers variables related with corporate governance and finds a positive impact of the percentage of NTS and Interaction and a negative impact of Big4, Concentration and Active. The positive sign of NTS is consistent with the roles of corporate governance and liquidity overcoming the expected supply shock. The other variables also have the expected sign. Our interpretation is that the investors perceived the reform as an incentive device to improve the quality of less transparent firms and as a tool for the market to speak also through the voice of active shareholders, perhaps also in anticipation of a decrease in the cost of shareholders' activism.

The second column considers variables related with liquidity and finds that companies with a larger Bid-ask spread before the reform had better returns after the announcement, again consistent with the idea that worse quality firms reacted more positively than others. The liquidity beta is not significant. This might be consistent with liquidity risk not being priced in the Chinese stock market[11]. The third column considers both governance and liquidity variables together and finds that the results of the previous regressions are almost unaffected except for Concentration which loses statistical significance.

The fourth column considers a regression with various characteristics. The relevant variables are Size, earnings-per-share, lagged returns, all negative. Smaller and

[11] Acharya and Pedersen (2005) also find that the premium associated with liquidity risk is much smaller than the illiquidity premium.

less profitable companies enjoy better returns after the reform announcement. There is mean reversion in cross-sectional returns. The fifth column considers corporate governance, liquidity and characteristics. The regression confirms the previous results, except for Earnings and Interaction, which are not significant. NTS, Big4, Active, Spread, Size and Lagged returns are the drivers of the cross section of abnormal returns after the announcement. The winners were companies characterized by a large proportion of NTS and bid-ask spread and by lower transparency and shareholders' activism before the reform. Typical winners were small firms with a poor stock market performance before the announcement.

The final column of table 4 considers a regression where the dependent variable is given by the compensation paid by each company under the form of transfer of shares. 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 also explain the compensation differences. The empirical analysis shows that the relevant variables are Concentration (negative), the percentage of nontradable shares (positive), Active (positive), past volatility (negative), Legal (negative), a dummy for cash payment (negative)[12]. Comparing the fifth and the sixth columns of the table we observe that only NTS is significant and has the same sign in both regressions, while the sign of Active changes. Concentration, Volatility, Legal and the Cash dummy explain the cross-section of compensation but not the cross section of abnormal returns. Bid-ask, Size and lagged returns explain the cross-section of abnormal returns but not the cross section of compensation.

[12] The negative impact of the dummy for cash payment is consistent with firms transferring less shares.

Investors have used available information to move prices, 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 dividend arising from the compensation process. In particular, previous regressions showed that firms with larger bid-ask spreads had better returns while compensation itself was not related to these characteristics. This is understandable as there is no reason for market liquidity to affect compensation decisions that should be related to the capital structure and to the negotiation process between classes of shareholders. This confirms that investors have tried to look beyond the short run compensation effect in order to evaluate the impact of the reform announcement.

5.4. Robustness analysis

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 provide a measure not reflecting current 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 results obtained on the basis of this float-weighted index are very similar to our previous results and are not reported but are available upon request from the authors.

As a second robustness test, we compute abnormal returns as the residuals from a factor model including the market, the size factor, a float factor and a liquidity factor:

$$r_{i,t} - r_{f,t} = \alpha_i + \beta_{i,M}(r_{M,t} - r_{f,t}) + \beta_{i,S} r_{S,t} + \beta_{i,F} r_{F,t} + \beta_{i,L} r_{L,t} + \varepsilon_{i,t} \quad (1)$$

Equation (1) is consistent with the extension of the Fama and French (1996) model proposed by Wang and Xu (2003) for the Chinese market and with Pastor and Staumbagh (2003). The size and floating ratio factors have been built following Fama and French (1996) [13]. The construction of the liquidity portfolio (long high liquidity stocks and short low liquidity stocks) follows Pastor and Stambaugh (2003).

Wang and Xu (2004) propose including a floating ratio portfolio as a proxy for risk of bad governance and expropriation of holders of TS. For each company, the floating ratio is estimated by the percentage of TS. Wang and Xu (2004) also suggest that book-to-market is unlikely to play an important pricing role because of poor accounting quality in the Chinese stock market. FR is the difference between the average returns of the two high-FR portfolios and the average returns of the two low-FR[14]. 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, explaining this result on the basis of the better performance offered by companies with more efficient governance. It is therefore unclear whether FR is a true proxy for a non-diversifiable risk factor[15].

[13] At 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. Then the stocks are sorted in three float 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.

[14] 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.

[15] If corporate governance and liquidity are relevant risk factors at the aggregate level, then the reform might decrease the corresponding risk premia. We do not wish to over-emphasize the difference between the market model and the factor model given existing uncertainty about the structure of the risk model for the Chinese stock market. While aggregate risk has been long studied in the US stock market, there are very few studies for China. The short history of the Chinese stock market and its frequent structural breaks are further elements that complicate the discovery of a stable risk structure.

A successful factor model would capture most of the cross sectional sensitivities to the reform announcement through the reaction of the common risk factors and would leave small correlations between the abnormal returns and the characteristics. This conjecture is supported by the results of table 5.

INSERT TABLE 5 ABOUT HERE

In the first column only Concentration and Board size are weakly significant. In the second column Bid-ask is still significant. In the third Concentration and Bid-ask spread are still significant. In the characteristics regression only lagged returns is significant. In the extended regression Concentration and Board size are weakly significant whereas Spread and lagged returns are again significant. As expected, the factor model captures the importance of most variables, especially corporate governance variables. It may be interpreted as very supportive of the Wang-Xu model. However this result does not mean that corporate governance and liquidity variables are not useful to interpret the impact of the reform. The cross-sectional regressions reported in table 4 are useful to understand which specific aspects of corporate governance and liquidity are considered by investors.

The third robustness test looks at estimation of the cross section in other periods, see table 6.

INSERT TABLE 6 ABOUT HERE

We separately consider the month following the April announcement and the month following the June announcement. We have argued that the best period to gauge the impact of the reform is the one following the August announcement. We therefore test the signs of the relevant variables in regressions for April and June *differ* from those that

we have found in August[16]. In April the percentage of nontradable shares, attendance rate and Bid-ask are not significant, differently from what happens in August, while Concentration, Board size and liquidity beta are weakly negative. In June NTS and Spread are not significant. Moreover, Active has a positive rather than negative sign. These results further support our choice of the event period.

The final robustness test modifies the specification to include contemporaneous turnover rather than lagged turnover. Hong, Scheinkman and Xiong (2006) interpret contemporaneous turnover to be a proxy for speculative activity while Mei, Hong and Scheinkman (2005) consider it in a cross-sectional study of the A-B premium in the Chinese market. When contemporaneous turnover is added to our regressions[17], the sign of turnover switches and becomes significant, coherently with the hypothesis of price increases induced by speculative activity. However, the significant variables correspond (also in their sign) to those highlighted by table 3.

6. Conclusions

We have studied the impact of the reform of the Chinese stock market associated with the elimination of non-tradable shares, analyzing the cross section of abnormal returns after the announcement of the extension of the reform to the market as a whole. In our sample period the reform has a small impact on the ownership structure of firms, but lays down the condition for important future modifications to ownership and corporate governance. In a forward-looking stock market expectations of future changes are enough to move market prices, stock demand and liquidity. We pay attention to the cross section

[16] We use market returns to facilitate the comparison with table 4
[17] We are cautious about this test due to possible correlation between turnover and the shock to returns.

of abnormal returns to test the hypothesis that stocks with less attractive characteristics (small stocks, stocks characterized by historically poor returns, stocks issued by companies with less transparent accounts and poorer governance, less liquid stocks) benefit from this reform relatively to stocks that were already characterized by better characteristics.

Our econometric results provide support to the claim that Chinese investors altered company valuation to take into account the possible long run effects of the reform. Moreover, the variables explaining the cross section of compensations do not correspond entirely with the variables explaining the cross section of returns. This is an interesting result. Chinese investors are described in the academic literature as short-sighted and speculative and very oriented to the short run and to heavy trading. Our results do not necessarily contradict this evidence, but at the minimum they point out that some of the speculative activity may be motivated by fundamentals.

The prices of stocks with "worse" characteristics increased more than the price of stocks with "better" characteristics. Among the relevant explanatory variables, the most relevant are the bid-ask spread, international auditing of the accounts, shareholders' activism, the percentage of NTS, size and lagged returns. These variables are relevant even accounting for other characteristic. The results are robust also to including current turnover rather than lagged turnover. Revealingly, the same variables were not relevant in other sample periods when investors did not believe that the implementation of the reform was credible.

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 on the part of non-tradable shareholders are likely to cause changes in the ownership structure that may in the future also affect corporate governance. The intensification of shareholders' activism and its impact on the performance of the company is another interesting topic, where there is much need of evidence coming from international countries. The study of this process promises to offer important insights on the relative role of dynamically changing internal mechanisms for corporate governance in the context of a global environment which may lag in terms of general protection of investors.

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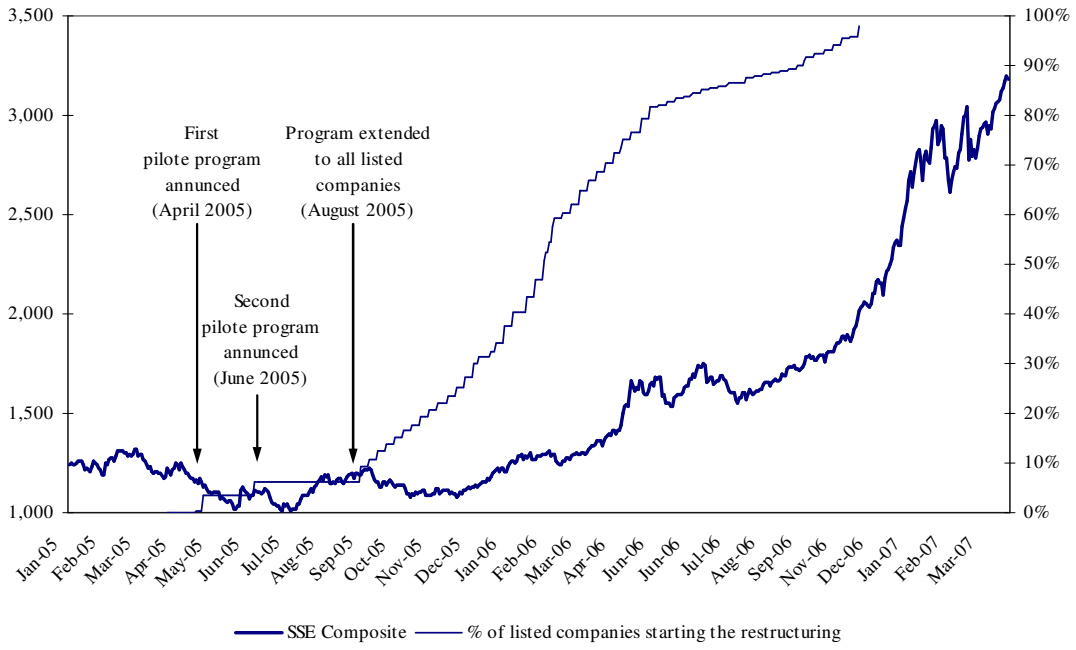

Figure 1. Market Performance and Progress of NTS Reform.
The figure reports the daily Return Index for the Shanghai Stock Exchange Composite Index (left scale) and the percentage of the companies entered the NTS reform program (right scale) from January 2005 to March 2007.

	Minimum	Maximum	Average	Median	Standard Deviation
Returns	-17.68%	65.96%	11.72%	10.86%	0.082
Concentration	0.36%	53.42%	4.60%	2.24%	0.064
NTS	23.32%	97.61%	63.41%	63.87%	0.123
Big4	-	-	8.47%	0.00%	0.278
Independent	0.00%	66.67%	34.20%	33.33%	0.051
Board size	8.00	43.00	20.08	19.00	4.203
Active	13.66%	100.00%	58.88%	60.18%	0.145
Meeting	5.00	37.00	12.44	12.00	4.134
Beta	-2.376	3.248	0.005	0.018	0.713
Spread	0.09%	2.17%	0.38%	0.36%	0.002
Legal	0.00%	84.97%	25.43%	16.56%	0.253
Turnover	2.10%	721.23%	61.06%	41.64%	0.653
Volatility	0.007	0.071	0.018	0.017	0.005
Size	0.115	302.548	2.643	1.325	9.699
Earnings	-4.31%	1.74%	0.08%	0.07%	0.004
Lagged returns	-70.70%	101.61%	-14.44%	-17.30%	0.181

Table 1. Summary statistics of the relevant variables.
Returns are computed over the four weeks following August 19th 2005. Concentration, Legal, NTS, Big4, Independent, and Earnings are measured at the end of 2004. Concentration is the proportion of TS held by the ten largest holders; Legal is the percentage of legal person shares; NTS is the proportion of nontradable shares; Big4 is a dummy identifying firms which have accounts certified by a Big Four firm; Independent is the proportion of independent directors in the board; Earnings is the earnings per share of the company relatively to the sector average. Turnover, Volatility, Size, Beta, Spread, Value, and Lagged returns are computed over the period between t-130 and t-10 where t is April 29, 2005. Turnover is the daily average ratio between the value of the total number of shares traded in a given day and the value of tradable shares; Volatility is the standard deviation of the residuals from the regression used to compute abnormal returns; Size is the daily average capitalization of TS; Spread is the daily average bid-ask spread of the closing prices; Value is the daily average book-to-price; Beta is the sensitivity of the return of the stock with respect to aggregate liquidity shocks; Lagged returns is the return of the period. We have 1192 observations for all variables.

	Returns	Concentration	NTS	Big4	Independent	Board size	Active	Meeting	Beta	Spread	Legal	Turnover	Volatility	Size	Earnings	Lagged returns
Returns	1	-0.15	0.06	-0.18	0.04	-0.12	-0.06	0.00	0.06	0.22	0.06	-0.05	0.18	-0.31	-0.21	-0.21
Concentration		1	0.13	0.35	0.04	0.13	0.03	0.05	0.07	-0.08	-0.10	0.06	-0.02	0.34	0.09	0.23
NTS			1	0.27	0.04	0.05	0.58	0.03	0.04	-0.07	0.05	-0.25	0.06	0.24	-0.08	0.04
Big4				1	0.06	0.15	0.08	0.09	0.00	-0.17	-0.05	-0.06	-0.08	0.47	-0.01	0.10
Independent					1	-0.13	0.01	0.06	-0.03	0.01	0.03	0.02	-0.01	0.02	0.06	0.00
Board size						1	0.10	0.01	-0.01	-0.15	-0.13	-0.03	-0.07	0.24	0.07	0.01
Active							1	-0.06	-0.04	-0.15	-0.01	0.00	-0.09	0.19	0.13	0.08
Meeting								1	0.08	0.04	0.02	0.03	0.08	0.07	-0.12	0.00
Beta									1	0.14	-0.01	-0.20	0.01	0.00	-0.11	0.06
Spread										1	0.10	-0.01	0.04	-0.31	-0.16	0.06
Legal											1	0.06	0.04	-0.10	0.03	-0.02
Turnover												1	0.36	-0.08	0.11	0.14
Volatility													1	-0.16	-0.32	0.00
Size														1	0.00	0.18
Earnings															1	0.064
Lagged returns																1

Table 2. Correlation coefficients across returns and relevant variables.
Table reports correlation coefficients among the selected variables defined as in Table 1.

	Quartile 1	Quartile 4	P-value
Concentration	6.83%	3.80%	0.000
NTS	63.70%	65.05%	0.108
Big4	19.53%	3.68%	0.000
Independent	32.66%	33.78%	0.508
Board size	20.86	19.39	0.000
Active	59.88%	57.99%	0.081
Meeting	12.60	12.47	0.950
Beta	-0.002	0.028	0.442
Spread	0.34%	0.42%	0.000
Legal	23.29%	28.67%	0.012
Turnover	65.83%	54.70%	0.013
Volatility	1.742	1.935	0.000
Size	4.188	1.361	0.000
Earnings	10.97%	-2.21%	0.000
Lagged returns	-8.98%	-18.79%	0.000

Table 3. Mean values of the variables for two different groups of firms.
Variables are defined as in table 1. Quartile 1 is composed of firms belonging to the first quartile of the return distribution in the four weeks after August; Quartile 4 is composed of firms belonging to the fourth quartile of the return distribution over the same period. The table also reports the t-test for the hypothesis that the values in the first and fourth quartiles are significantly different. Significance levels are denoted by (*) for 10 percent, (**) for 5 percent and (***) for 1 percent.

	Residuals from the Market Model					Compensation
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Concentration	-0.166*		-0.163		0.038	-0.184**
	(0.062)		(0.072)		(0.041)	(0.035)
NTS	0.131***		0.115***		0.052*	0.291***
	(0.013)		(0.014)		(0.018)	(0.031)
Big4	-11.123***		-9.873***		-5.800**	-1.775
	(1.261)		(1.168)		(1.380)	(3.051)
Independent	4.227		4.655		5.411	0.788
	(3.837)		(3.454)		(3.620)	(7.512)
Board size	-0.086		-0.041		-0.027	0.097
	(0.042)		(0.043)		(0.022)	(0.084)
Active	-0.132***		-0.111***		-0.037**	0.111**
	(0.017)		(0.015)		(0.011)	(0.028)
Interaction	0.098**		0.093**		0.062	-0.027
	(0.030)		(0.027)		(0.032)	(0.041)
Meeting	0.032		-0.002		-0.037	-0.012
	(0.045)		(0.049)		(0.043)	(0.114)
Beta		0.590	0.541		0.566	-0.138
		(0.559)	(0.636)		(0.421)	(0.446)
Spread		0.153***	0.124***		0.129***	-0.063
		(0.018)	(0.014)		(0.012)	(0.028)
Legal				0.009	-0.000	-0.032*
				(0.009)	(0.011)	(0.013)
Turnover				-1.993	-1.446	-0.509
				(0.958)	(0.969)	(0.753)
Volatility				1.589	1.435	-1.486**
				(0.767)	(0.867)	(0.293)
Size				-0.697**	-0.479**	-0.053
				(0.127)	(0.142)	(0.166)
Earnings				-2.422**	-1.414	3.177
				(0.688)	(0.608)	(1.895)
Lagged returns				-0.196***	-0.214***	-0.008
				(0.011)	(0.008)	(0.038)
Dummy Cash						-9.807***
						(0.796)
Constant	5.745*	0.293	0.145	2.618	-4.896	6.025*
	(1.999)	(0.939)	(1.826)	(2.841)	(3.514)	(1.900)
Observations	1192	1192	1192	1192	1192	1192
Adj R-squared	0.067	0.060	0.100	0.257	0.295	0.196

Table 4. Multivariate regressions.

The dependent variable in the columns from (i) to (v) 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, 29); the residuals are computed over the four weeks following August 19th 2005. The dependent variable in column (vi) is the compensation paid by each company. Independent variables are defined as in table 1. Interaction is the product between Active and Big4. DummyCash is a dummy equal to one if the compensation is paid also in the form of cash and/or warrants. All regressions include sector fixed effects; the standard errors are computed after clustering for quartiles of nontradable shares and are reported in parentheses; the explanatory variables have been winsorized at the 1st and 99th percentiles; significance levels are denoted by (*) for 10 percent, (**) for 5 percent and (***) for 1 percent.

	Residuals from the Factor Model				
	(i)	(ii)	(iii)	(iv)	(v)
Concentration	0.096*		0.107*		0.152*
	(0.038)		(0.039)		(0.060)
NTS	0.010		0.006		0.009
	(0.017)		(0.018)		(0.013)
Big4	-0.457		0.175		1.159
	(2.337)		(2.436)		(1.768)
Independent	5.400		5.169		3.702
	(5.468)		(4.687)		(4.988)
Board size	-0.054*		-0.030		-0.063*
	(0.020)		(0.021)		(0.024)
Active	0.012		0.021		0.023
	(0.018)		(0.019)		(0.013)
Interaction	-0.016		-0.017		-0.043
	(0.036)		(0.037)		(0.023)
Meeting	-0.018		-0.027		-0.015
	(0.029)		(0.033)		(0.034)
Beta		-0.578	-0.625		-0.461
		(0.578)	(0.599)		(0.575)
Spread		0.084***	0.087***		0.107***
		(0.002)	(0.004)		(0.004)
Legal				0.007	0.003
				(0.007)	(0.007)
Turnover				-0.062	-0.140
				(1.260)	(1.440)
Volatility				-1.806	-1.705
				(0.956)	(0.975)
Size				0.038	0.156
				(0.127)	(0.165)
Earnings				0.464	0.798
				(0.507)	(0.565)
Lagged returns				-0.077**	-0.095***
				(0.016)	(0.012)
Constant	-2.542	-3.870**	-6.482**	1.209	-5.392
	(2.274)	(0.894)	(1.576)	(2.848)	(2.970)
Observations	1192	1192	1192	1192	1192
Adj R-squared	0.022	0.037	0.037	0.050	0.075

Table 5: Robustness analysis: residuals from Factor Model.
The dependent variable in the columns from (i) to (v) is the residual of a factor model allowing for the market, the size factor, a float factor and a liquidity factor 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, 29); the residuals are computed over the four weeks following August 19th 2005. Independent variables are defined as in table 1 Interaction is the product between Active and Big4. All regressions include sector fixed effects; the standard errors are computed after clustering for quartiles of nontradable shares and are reported in parentheses; the explanatory variables have been winsorized at the 1st and 99th percentiles; significance levels are denoted by (*) for 10 percent, (**) for 5 percent and (***) for 1 percent.

	Residuals from the Market Model		
	April 29th 2005 (i)	June 20th 2005 (ii)	Contemporaneus turnover (iii)
Concentration	-0.247**	0.170	0.028
	(0.059)	(0.084)	(0.047)
NTS	0.046	-0.023	0.117***
	(0.024)	(0.034)	(0.008)
Big4	-19.042***	17.885*	-6.420**
	(0.853)	(6.133)	(1.963)
Independent	2.878	-16.414	3.347
	(6.269)	(9.021)	(3.127)
Board size	-0.086*	-0.052	0.001
	(0.034)	(0.103)	(0.024)
Active	-0.039	0.164**	-0.062**
	(0.019)	(0.047)	(0.019)
Interaction	0.312***	-0.281*	0.068
	(0.019)	(0.096)	(0.043)
Meeting	0.049	0.128**	-0.054
	(0.039)	(0.033)	(0.041)
Beta	-0.764**	0.101	1.000
	(0.147)	(0.278)	(0.465)
Spread	-0.006	0.050	0.112***
	(0.037)	(0.023)	(0.011)
Legal	-0.011	0.009	-0.005
	(0.005)	(0.015)	(0.009)
Turnover	-1.128	3.122*	1.372**
	(0.977)	(1.222)	(0.429)
Volatility	-0.142	-3.299**	0.021
	(0.297)	(0.828)	(0.786)
Size	-0.717***	0.518***	-0.429*
	(0.102)	(0.062)	(0.157)
Earnings	-0.514	1.433	-2.130**
	(0.496)	(0.609)	(0.645)
Lagged returns	-0.491***	-0.061***	-0.214***
	(0.015)	(0.006)	(0.008)
Constant	4.300	-8.367	-5.821*
	(3.003)	(4.293)	(2.454)
Observations	1192	1192	1192
Adj R-squared	0.569	0.092	0.305

Table 6. Robustness analysis: other periods and contemporaneous turnover.
The dependent variable is the residual of a factor 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, 29). In column (i) the residuals are computed over the four weeks following April 29th 2005; in column (ii) the residuals are computed over the four weeks following June 20th 2005; in column (iii) the residuals are computed over the four weeks following August 19th 2005. Independent variables are defined as in table 1. Turnover in column (iii) is contemporaneous and is computed as the daily average over the four weeks following August 19th 2005. Interaction is the product between Active and Big4. All regressions include sector fixed effects; the standard errors are computed after clustering for quartiles of nontradable shares and are reported in parentheses; the explanatory variables have been winsorized at the 1st and 99th percentiles; significance levels are denoted by (*) for 10 percent, (**) for 5 percent and (***) for 1 percent.