



A (partial) resolution of the Chinese discount puzzle

The 2001 deregulation of the *B*-share market

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Abstract

Purpose – The purpose of this paper is to examine the changes in *B*-share discounts across 76 Chinese stocks around an important regulatory event to understand the importance of political risk in pricing stocks in emerging markets.

Design/methodology/approach – On February 19, 2001, the Chinese Securities Regulatory Commission announced that Chinese residents would be allowed to own *B*-share classes of stocks traded on both the Shanghai and Shenzhen stock markets. These share classes were previously restricted to foreign investors while domestic residents were only permitted to hold *A*-share classes of stock and were typically priced at a significant discount. This regulatory change triggered a dramatic decline of prevailing *B*-share discounts from 80 percent down to 40 percent.

Findings – The paper finds that the largest declines in the *B*-share discounts around this regulatory event are concentrated in the firms with low government ownership stakes and are unrelated to the firms' risks, relative supplies of shares outstanding and liquidity attributes.

Research limitations/implications – This surprising finding challenges the current wisdom about what influences the *B*-share discount and particularly the role of political risk in explaining the discount puzzle.

Originality/value – The paper offers an alternative interpretation for the *B*-share discount puzzle. The findings have important implications for China's future financial liberalization policies.

Keywords China, Political risk, Market segmentation, Stocks

Paper type Research paper

JEL classification – F30, G32, G15

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1. Introduction

Interest in foreign equity markets, especially in emerging economies, has continued to expand over the past decade. Even recent crises have not stopped global investors from seeking higher returns and international diversification opportunities in foreign stock markets. In many markets, foreign investors still have to contend with investment barriers in the form of restrictions on foreign equity ownership. Such barriers are of particular interest because the limits they impose can induce a form of capital market segmentation in which foreigners can trade local equities among themselves at a price premium (or discount) relative to those shares traded by local investors. Segmentation in the form of premiums and discounts on shares around the world with foreign ownership restrictions has received considerable attention in the finance and economics literature because it helps to understand what drives the demand for cross-border investments in the first place[1]. Researchers have rationalized the existence of these premiums/discounts with hypotheses about differences in risk, turnover and liquidity, differences in general supply and demand conditions of restricted and unrestricted shares, as well as the asymmetry of information or risk tolerances between foreign and local investors.

Foreign ownership restrictions in China's stock market have been especially perplexing for researchers because large and persistent price discounts, rather than the usual premiums, have continued to exist for those shares restricted to foreign investors (*B*-shares) relative to those only available to domestic residents (*A*-shares). Researchers have rationalized the Chinese *B*-share discount (on average 80 percent) with hypotheses about differences in risk (Bailey, 1994; Eun *et al.*, 2001), in turnover and liquidity (Chen *et al.*, 2001), in general supply and demand conditions of restricted and unrestricted shares (Sun and Tong, 2000), in the asymmetry of information between foreign and local investors (Chan *et al.*, 2008; Chakravarty *et al.*, 1998; Chen *et al.*, 2004), as well as in behaviors (Mei *et al.*, 2004). However, a consensus has not yet emerged.

As puzzling as is China's *B*-share discount, another mystery has attracted more attention; namely, how China has experienced the fastest economic growth with such a weak legal and institutional environment. Allen *et al.* (2005) argue that China's fast economic growth is driven mainly by the private sector rather than through the activities of the larger state-owned enterprises (SOEs). Indeed, considerable research has focused on the economic effects of the dominance of state-ownership in the *A*-share market. Contrary to research in other countries that shows how firms benefit from political connections, most of these papers on the *A*-share market unambiguously point out the detrimental effect of government ownership in China[2]. Firms with high state ownership have lower Tobin's *q* ratios (Tian, 2001; Bai *et al.*, 2004; Wei and Varela, 2003) and worse financial operating performance (Qi *et al.*, 2000). Firms with high state ownership experience significantly negative returns around the announcement of related-party transactions with controlling interests in SOEs (Cheung *et al.*, 2008). Firms with higher state ownership and legal entity ownership are more likely to be accused of fraud (Chen *et al.*, 2006). Firms with politically-connected CEOs experience significantly worse post-initial public offerings (IPO) long-term stock returns (Fan *et al.*, 2007).

Undoubtedly, state ownership plays an important, if not paramount, role in explaining Chinese firms' valuations. A natural question arises whether the level of state ownership can explain the *B*-share discount. If investors in the *B*- and *A*-share

markets have different perceived benefits (costs) of state ownership, the answer would be yes. In fact, Fernald and Rogers (2002) study a panel of firms that have both *A*- and *B*-shares from 1993 to 1997 and find that foreign investors did pay relatively less for stocks with high state ownership. One limitation of their study is that it is difficult to ascertain just how economically important state ownership is for the discount puzzle. Their study focuses on a period in which the level of state ownership did not change and, more importantly, there was little temporal variation in the *B*-share discounts. As a result, endogeneity problems likely inhibit analysis of the economic effects; do investors choose to price a bigger discount for *B*-shares of firms with higher levels of share ownership or has the state chosen to relinquish its stake in those firms with lower discounts? One way to circumvent these limitations is by means of an exogenous event that induces a significant change in the *B*-share discount and one that we could, in turn, use to identify whether the consequences were different for firms with different levels of state ownership.

This paper exploits one such unique event which took place in 2001. On February 19, 2001, the Chinese Securities and Regulatory Commission (CSRC) announced that Chinese residents would be allowed to own *B*-shares previously restricted to foreign investors. The elimination of the foreign ownership restriction in China would have predictably reduced the *B*-share discount and the consequence of this impact would have been greater for those Chinese firms in which the foreign investors priced in the larger premium for the level of state ownership. Indeed, we find that the average *B*-share discount declined from 80 percent before the event to 40 percent by the end of 2001, but strikingly the “new” investors intensively pursued *B*-shares of those firms with lower, not higher, levels of state ownership. On average, firms with no state ownership experienced a 15 percent larger discount decline than those with higher state ownership. Furthermore, portfolios of *B*-shares with lower levels of state ownership experienced a statistically significant and economically large 7 percent abnormal return around this two-week period relative to those with higher state ownership.

Our cross-sectional regression analysis before and after the regulatory change confirms that *B*-share investors before the rule change undervalued stocks with higher state ownership on a relative basis (the discount difference between the highest state-ownership firms and lowest state ownership firms is 20 percent), but also shows that *B*-share investors after the event undervalued stocks with higher state ownership with even greater intensity (the average discount difference between the highest state-ownership firms and lowest state ownership firms grew to 35 percent). What we can infer is that those investors that took advantage of the new opportunity to enter the *B*-share market after February 2001 appear to be just as wary of state ownership as the previous foreign investors, and even more so at the margin. Existing studies indicate that foreign investors command a higher premium for state ownership than domestic investors, so we might expect that opening up the *B*-share market would dissipate the higher premium for *B*-shares. We provide evidence that these investors were mostly comprised of domestic Chinese residents – rather than new or existing foreign investors – and that they priced the *B*-shares with high levels of state ownership at a discount similar in magnitude to that by foreign investors. We explore several alternative hypotheses later in the paper to sharpen this inference.

Our paper is not the only study that has exploited the February 2001 event to examine the *B*-share discount. The other studies, however, focus on other potential drivers of the discount change around the event[3]. Our paper, however, is the first to document a shift of perceived political risk and its valuation consequences due to the participation of different groups of investors during the event[4]. Indeed, this contribution is important as we find that the level of state ownership is the only statistically significant variable in the cross-sectional regression explaining discount changes. In terms of explanatory power, it can explain 60 percent of the cross-sectional variation in discount changes. Our paper also contributes importantly to the large existing literature on the *B*-share discount puzzle in China, to the broader literature on foreign ownership restrictions and equity price premiums, and finally to the newer burgeoning literature on the pricing of political risk, privatizations and stock market development in emerging economies.

The next section provides a brief description of China's stock exchanges and offers institutional details about the CSRC announcement in 2001. Section 3 describes the data, research design and results. Section 4 discusses several alternative hypotheses and some anecdotal evidence along with our interpretation of the findings. Section 5 summarizes the paper. We specifically discuss why we title our paper only a "partial" resolution of the *B*-share puzzle and outline the institutional developments in this market since 2001.

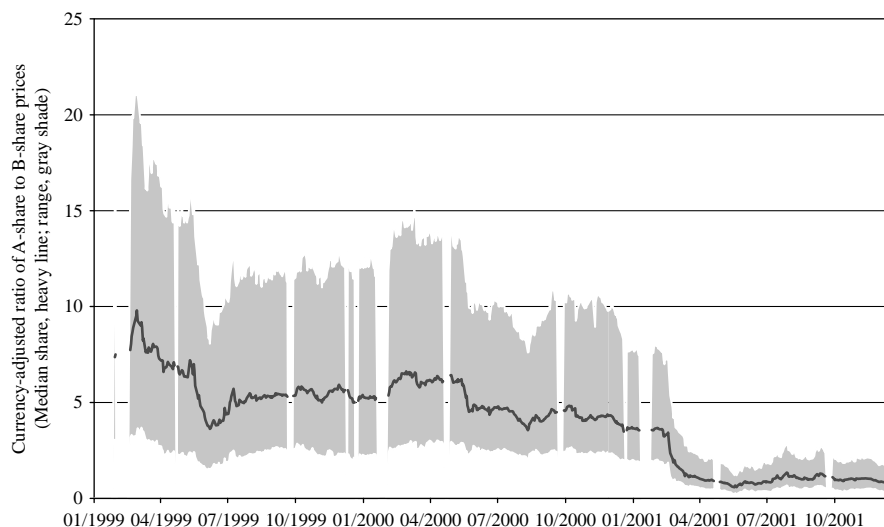
2. CSRC's opening of the *B*-share market in 2001

Prior to 1992, foreign investors were not allowed to trade China's stock. In 1992, the CSRC allowed companies to issue so-called "special shares" that were restricted for trading by foreign investors, denominated in either Hong Kong dollars (traded in Shenzhen) or US dollars (traded in Shanghai). While these "special shares" later were designated *B*-shares, the shares tradable by domestic residents were called *A*-shares. The Securities Law of China (passed on July 1, 1999) explicitly recognized the equal status of shareholders of both *A*- and *B*-shares[5]. Among over 1,250 *A*-shares, there are only 86 stocks with simultaneous *A*- and *B*-share listings as of 2006 (*Financial Times*, 2006). Overall, the *B*-share market has constituted a smaller proportion of the total market capitalization and has been much less actively traded during the past decade (Table 1 of Chen *et al.*, 2001).

In a surprise announcement by the CSRC on February 19, 2001 (with the official approval of the State Council as of 11 a.m. of that day), domestic investors were allowed to open trading accounts for *B*-shares. Immediately, both the Shanghai and Shenzhen Stock Exchanges (the two major exchanges in China) suspended trading in *B*-shares from February 20 through 23. Brokerages in China were inundated with so many applications to open accounts (with minimum fund requirement of US\$1,000) that the CSRC extended the trading suspension imposed on *B*-shares for two more days until February 28[6]. On February 28, 2001, the Shanghai and Shenzhen *B*-share markets opened and many stocks hit their 10 percent daily price limits within hours restraining potential trading volumes. Eventually, by early March 2001, *B*-share prices increased dramatically and trading volumes were unusually high[7].

Figure 1 shows the distribution of the price ratio of *A*- to *B*-shares for our sample of 76 Shanghai and Shenzhen stocks during this period and demonstrates a dramatic decline in the *B*-share discount. The median *A*-to-*B* share price ratio fluctuated around 6-to-1 through much of 2000 and fell to below 4-to-1 at the end of 2000. Following the

Figure 1.
Relative prices of *A*- to *B*-shares for Chinese stocks on Shenzhen and Shanghai exchanges



market closure in the last ten days of February 2001, the median *A*-to-*B* price ratio declined to just above 1-to-1 and remained until the end of 2001. We will present more formal statistics of the magnitude of this *B*-share discount decline in the next section.

3. Data, research design and results

3.1 Data

To conduct our study, we require data on share prices as well as firm characteristics. Datastream International is used to collect daily closing prices, trading volumes and the numbers of shares outstanding data for 76 Chinese stocks listing both *A*- and *B*-shares. These 76 stocks are evenly split between the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE). We also obtain the foreign exchange rates of the Chinese renminbi (Rmb.) yuan relative to the US dollar and Hong Kong dollar, the local *A*-share index return, the local *B*-share index return and the Morgan Stanley Capital International World Market Index (MSCI index) returns. China's Wind Info Company (www.wind.com.cn) has an equity database with financial statement data and is our source for the levels of state ownership as of 2001. We also checked these data by hand with the official websites of SHSE and SZSE.

Table I presents univariate tests of the changes in the *B*-share discounts around the opening of the *B*-share market in February 2001. We examine average daily discounts for each stock during the periods before and after February 2001 and test whether the differences were significantly different from zero. We also report similar tests for the ratio of shares outstanding (denoted as $SO_B / (SO_A + SO_B)$ where SO_i is the shares outstanding for share class i), market cap, relative volatility (denoted as σ_B / σ_A , where σ_i is the standard deviation of the returns for share class i), the volume ratio (or $VO_B / (VO_A + VO_B)$ where VO_i is the shares traded for share class i), the cumulative past-one-month returns performance on the *A*-shares (or Momentum), and for two market betas from market model regressions of the *A*-shares on an equally weighted-index of all *A*-share stocks (β_A^M) and of the *B*-shares on the MSCI index (β_B^W), respectively.

	Average discount	Government ownership of 2001	Market cap (Rmb, millions)	Volume ratio (VO_B/VO_{A+B})	Ratio of shares outstanding (SO_B/SO_{A+B})	Relative volatility (σ_B/σ_A)	Momentum	Local market betas of A-shares	World market betas of B-shares
<i>Panel A. Summary statistics before February 1, 2001</i>									
Mean	0.795	0.366	8.127	0.323	0.302	1.444	0.040	1.007	-0.046
Standard deviation	0.069	0.228	0.652	0.263	0.112	0.671	0.113	0.615	0.832
Skewness	-0.531	-0.427	0.348	0.642	0.443	1.514	1.676	-0.594	0.951
Kurtosis	0.417	-1.055	0.271	-0.770	0.727	3.809	8.164	2.897	3.234
<i>Panel B. Summary statistics after April 1, 2001</i>									
Mean	0.434	0.366	8.416	0.668	0.303	1.693	-0.025	1.063	0.140
Standard deviation	0.123	0.228	0.588	0.229	0.113	2.773	0.092	0.493	0.560
Skewness	-0.652	-0.427	0.697	-0.719	0.423	23.666	-0.090	-0.167	0.702
Kurtosis	1.252	-1.055	0.747	-0.352	0.730	601.958	0.573	1.875	2.340
Before vs after									
t-statistic (p -value)	25.48 (0.00)	NA	-2.98 (0.00)	-12.80 (0.00)	-0.04 (0.97)	-1.88 (0.06)	21.97 (0.00)	-1.19 (0.23)	-6.58 (0.00)
<i>Panel C. Correlations (before February 1, 2001 below diagonal, after April 1, 2001 above diagonal)</i>									
Average discount	1.000	0.085	0.030	0.594	0.359	0.153	0.193	-0.136	0.068
Government ownership	0.203	1.000	0.307	0.205	-0.372	0.110	-0.064	-0.080	-0.030
Market cap	-0.203	0.332	1.000	0.227	-0.249	-0.063	-0.145	-0.112	-0.058
Volume ratio	0.488	0.177	0.171	1.000	0.399	0.085	-0.030	-0.033	0.009

(continued)

Table I. Summary statistics of Chinese B-share discounts and other attributes before and after February 19, 2001

Table I.

	Average discount	Government ownership as of 2001	Market cap (Rmb, millions)	Volume ratio (VO_B/VO_{A+B})	Ratio of shares outstanding (SO_B/SO_{A+B})	Relative volatility (σ_B/σ_A)	Momentum	Local market betas of A-shares	World market betas of B-shares
Ratio of shares outstanding	0.121	-0.357	-0.302	0.365	1.000	-0.086	0.043	0.137	-0.076
Relative volatility	0.115	0.236	0.199	0.606	0.084	1.000	-0.017	-0.507	-0.046
Momentum	0.412	-0.091	-0.233	0.003	0.035	-0.242	1.000	0.134	0.161
Local market									
Betas of A-shares	-0.236	-0.127	0.021	-0.262	-0.022	-0.191	-0.218	1.000	0.224
World market									
Betas of B-shares	0.264	-0.152	-0.284	0.097	0.119	0.084	0.195	-0.064	1.000

Notes: The discount is computed as the difference between the closing A-share stock price (P_A) and closing B-share stock price (P_B) on a currency-adjusted basis divided by A-share price as $(P_A - P_B)/P_A$; number of days is the daily observations available from January 2, 2000 through December 31, 2001; the period from February 1, 2001 to March 31, 2001 is excluded; government ownership is the proportion of Chinese Government ownership in the enterprise; SO_B/SO_{A+B} is the fraction of B-shares outstanding (SO_B) to total shares outstanding (SO_{A+B}); relative volatility (σ_B/σ_A) is computed as the ratio of the trailing one-month standard deviation of daily returns on A and B shares, respectively; VO_B/VO_{A+B} is volume ratio of average daily trading volume of B shares (VO_B) relative to average daily total volume of A and B shares (VO_{A+B}); market cap is in logs and denominated in yuan; momentum is the cumulative past-one-month returns on A shares; local market Betas of A-shares is computed using OLS with daily returns over the trailing month of A-shares on an equally-weighted index of all A-shares and world market betas of B-shares is computed using OLS with daily returns over the trailing month of B-shares on the MSCI index; two correlation tables for each sub sample (pre- and post-event) are reported in Panel C; number of observations is 76

Other statistics reported include the sample standard deviation, skewness, kurtosis, as well as t -statistic associated with the null hypothesis that the variable of interest is equal across the two subperiods. Panel C presents the correlations among these variables before February 2001 (below the diagonal) and after February 2001 (above the diagonal).

The average B -share discount declines from 79.5 to 43.4 percent around February 2001, and this change is statistically significantly different from zero (t -statistic of 25.5). There is greater cross-sectional dispersion in the discounts after the rule change. We also observe statistically significant increases in the B -share volume ratio, market cap (though the magnitude is small), and in world market betas of the B -shares. The statistically significant but economically modest 4 percent A -share momentum observed in the month before February 2001 is reversed in the month after the rule change. The correlation between the discount and the government ownership stake is positive (0.203) before B -share market opened up, but it declines significantly afterward (0.085). The other variables with noteworthy correlations include the volume ratio, which is positively correlated with the discount before (0.489) and after the rule change (0.594), and the ratio of shares outstanding, which is large and positive after February 2001 (0.359), but smaller before that date (0.129).

3.2 Estimation methods

We estimate multivariate regression models of the B -share discounts computed before the B -share market opened up and afterward, as well as of the change in the B -share discounts over this period. One important concern is that we measure as accurately as possible the immediate impact of the rule change on the markets, but with as little statistical noise due to imprecise measurement as possible. The tradeoff concerns the period over which to measure the B -share discounts before and after the event as well as a number of the control variables. We attempted various sample periods but report the results using the “Before” period from February 1, 2001 through February 19, 2001 and the “After” period from February 28 to April 1, 2001. All estimation is with ordinary least squares (OLS) using t -statistics based on standard errors robust to heteroscedasticity using White (1980).

The following regression models are estimated:

$$\begin{aligned} \text{Discount}_{it} = & \gamma_0 + \gamma_1 \text{ Govt ownership}_{it} + \gamma_2 \text{ D_own}_{it} + \gamma_3 \left(\frac{\text{VO}_B}{\text{VO}_{A+B}} \right)_{it-1} \\ & + \gamma_4 \left(\frac{\text{SO}_B}{\text{SO}_{A+B}} \right)_{it-1} + \gamma_5 \text{ MCAP}_{it-1} + \gamma_6 (\text{Momentum})_{it-1} \\ & + \gamma_7 \left(\frac{\sigma^A}{\sigma^B} \right)_{it-1} + \gamma_8 \beta_{Ait-1}^M + \gamma_9 \beta_{Bit-1}^W + \gamma_{10} I_{\text{Shanghai},i} + \varepsilon_{it}, \end{aligned} \quad (1)$$

$$\begin{aligned} \Delta \text{Discount}_{it} = & \delta_0 + \delta_1 \text{ Govt ownership}_{it} + \delta_2 \text{ D_own}_{it} + \delta_3 \left(\frac{\text{VO}_B}{\text{VO}_{A+B}} \right)_{it-1} \\ & + \delta_4 \left(\frac{\text{SO}_B}{\text{SO}_{A+B}} \right)_{it-1} + \delta_5 \text{ MCAP}_{it-1} + \delta_6 (\text{Momentum})_{it-1} \\ & + \delta_7 \left(\frac{\sigma^A}{\sigma^B} \right)_{it-1} + \delta_8 \beta_{Ait-1}^M + \delta_9 \beta_{Bit-1}^W + \delta_{10} I_{\text{Shanghai},i} + \varepsilon_{it}, \end{aligned} \quad (2)$$

where Discount_{it} and $\Delta\text{Discount}_{it}$ denotes the pre- and post-event discount (a positive value denotes a discount) and the change in the discount for firm i . The subscript t denotes the period after the event and $t - 1$ denotes that before the event. $\text{Govt ownership}_{it}$ denotes the state ownership level in 2001 and D_own_{it} is a dummy variable that is equal to one if the firm's government ownership in 2001 is equal to zero. We also introduce a dummy variable for those stocks traded on the SHSE (I_{Shanghai}). The rest of the variables are as defined above.

Our central hypothesis outlines what we expect for the government ownership in the B -share discount regression models in equations (1) and (2). Based on Fernald and Rogers (2002), we expect a positive relationship ($\gamma_1 > 0$) before the rule change and that this relationship should weaken after the B -share market opened up ($\delta_1 < 0$). The dummy variable for firms with no state ownership stakes are designed to capture potential non-linearity in this relationship; we expect that the discount should be smaller for these firms ($\gamma_2 < 0$) and that this difference should decline after the rule change ($\delta_2 < 0$).

We have expectations about the control variables in these equations. The volume ratio is a (inverse) proxy for the relative liquidity in the A - and B -share markets, which studies by Chen *et al.* (2001) have found to be important for the B -share discount puzzle. If the liquidity hypothesis is correct, more liquid and thus more actively traded B -shares should be associated with a smaller discount ($\gamma_3 < 0$) and this should weaken toward zero if the B -share market opens up ($\delta_3 > 0$). The differential demand hypothesis is based on a model by Stulz and Wasserfallen (1995). They propose that demand functions for domestic and foreign investors differ in terms of price elasticity. Their model would predict that the B -share discount is smaller as foreign demand increases[8]. As an empirical proxy, we use the ratio of outstanding B -shares to total outstanding shares. In equilibrium, of course, the distinction between measures of supply and demand may not be clear. If outstanding shares are primarily determined by supply of shares by firms rather than demand by investors, we may observe the discount across firms as a positive function of the ratio of B -shares to total shares outstanding ($\gamma_4 > 0$)[9]. After the rule change, the discount should decline more for firms with greater excess supply ($\delta_4 < 0$).

The differential risk hypothesis – first delineated by Bailey (1994) for China and later tested by Ma (1996) and Eun *et al.* (2001) – proposes that price differences are influenced by investors' attitudes toward risk. Since Chinese investors cannot readily diversify overseas, the B -share discount will be greater the lower the systematic exposures of the A -shares relative to other A -shares traded in China ($\gamma_8 < 0$) and the higher the systematic exposures of the B -shares relative to world market returns ($\gamma_9 > 0$). Sun and Tong (2000), Chen *et al.* (2001) and Eun *et al.* (2001) test the hypothesis between the discount and these risks, but they uncover mixed evidence. We also consider the volatility ratio as a proxy for relative risks and would predict that higher relative total risk of B -shares should be associated with a larger B -share discount ($\gamma_7 > 0$). All three of these risk sensitivities should diminish toward zero with the rule change ($\delta_8 > 0$, $\delta_9 < 0$ and $\delta_7 < 0$). Finally, the asymmetric information hypothesis suggests that B -shares trade at a discount because foreign investors have less information than local investors (due to language barriers, different accounting rules). Following Sun and Tong (2000) and Chen *et al.* (2001), we would expect that this disadvantage is smaller for larger firms, so γ_5 is expected to be negative, but that this would diminish after the B -share market opens up ($\delta_5 > 0$).

The second experiment in our study constructs portfolios of stocks based on the level of state ownership and the tests for differences in their risk-adjusted returns performance during the event period. We estimate a system of equations using Zellner's (1962) seemingly-unrelated (SUR) model and a multi-index returns generating model for daily *A*- and *B*-share returns, respectively:

$$R_{iPt} = \alpha_P + \beta_{PB}R_{iMt}^B + \beta_{PA}R_{iMt}^A + \gamma_P D_{it} + \beta_{PBD}R_{iMt}^B \times D_{it} + \beta_{PAD}R_{iMt}^A \times D_{it} + \varepsilon_{it}. \quad (3)$$

D_{it} is a dummy variable that is equal to one if t is between February 28, 2001 and March 6, 2001 for the period (first five trading days) that Chinese residents were allowed to trade *B*-shares, and zero, otherwise. R_{iPt} is the return on an equally-weighted portfolio of *A*-share or *B*-share stocks in quintile portfolio P sorted according to the level of state ownership of shares in 2001. Equally-weighted *A*- and *B*-share index returns (R_{iMt}^A and R_{iMt}^B , respectively) are translated using that day's prevailing exchange rate into either Hong Kong or US dollar-denominated returns depending on the firm's traded exchange for the *B*-shares. The sample period is the same as that for the cross-sectional regressions starting from February 1, 2001 and ending on March 31, 2001. We estimate the SUR model for quintile portfolios by level of state ownership and apply the Gibbons *et al.* (1989) test that the intercepts, α_P , are jointly equal to zero, distributed as an F -statistic, to measure whether the returns different from each other on a risk-adjusted basis. We also compute a supplementary test whether the risk-adjusted returns are significantly different during the period of the rule change by evaluating whether $\alpha_P + \gamma_P$ are equal across the five portfolios. Finally, the same tests are computed for the extreme (highest and lowest state-ownership level quintile) portfolios only.

3.3 Results

Table II reports the cross-sectional regression results. The dependent variables for Panels A, B and C are, respectively, the average *B*-share discount before and after the opening of the *B*-share market and the change in the average discount from the pre- to post-event period. We report a series of univariate and then one multivariate specification (always Model 9 in each panel) with coefficient estimates, associated t -statistics and the adjusted R^2 .

State ownership is the only firm characteristic that significantly affects the discount levels and changes. Before February 19, 2001 (in Panel A), *B*-share investors (foreign investors) penalize by way of a larger *B*-share discount those firms with higher government ownership. The coefficient in Model 2 is statistically significant and positive (0.157) and that in Model 9 with all the control variables is of a similar magnitude (0.148). To get a sense of the economic importance, a firm with 75 percent state ownership (the highest in our sample) has a 19 percent higher discount than a firm with no state ownership. Given the average discount level is 80 percent during this period, a 19 percent change in discount level is substantial; it is equivalent to 24 percent higher discounts for firms with high state ownership. After February 19, 2001 (Panel B), the penalty that *B*-share investors impose on firms with high state ownership does not abate, but even widens further. The coefficient is 0.268 in Model 2 and 0.274 in Model 9 with all the controls. A firm with 75 percent state ownership now has an even larger 33 percent higher discount than a firm with no state ownership. Given that the average discount level is 55 percent during this post-February 2001 period, a 33 percent difference in discount level means that firms with high state ownership have almost

Table II.
Regressions of *B*-share discounts around the February 28, 2001 opening of the market to domestic Chinese investors

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Panel A. B-share discount before February 19, 2001</i>									
Constant	0.764 ^{***} (87.71)	0.780 ^{***} (51.16)	0.724 ^{***} (54.73)	0.733 ^{***} (32.53)	0.843 ^{***} (9.22)	0.751 ^{***} (34.37)	0.793 ^{***} (24.76)	0.793 ^{***} (36.82)	1.063 ^{***} (11.63)
Govt ownership		0.157 ^{***} (3.72)							0.148 ^{***} (2.63)
Govt own dummy		-0.093 ^{***} (-3.80)							-0.079 ^{***} (-2.65)
(VO _B /VO _{A+B})			0.153 ^{***} (4.09)						0.148 ^{***} (3.25)
(SO _B /SO _{A+B})				0.110 (1.49)					0.005 (-0.08)
MCAP					-0.010 (-0.86)				-0.034 ^{***} (-3.66)
Momentum						-0.109 (-0.73)			-0.051 (-0.55)
Volatility ratio							-0.026 (-0.87)		-0.025 (-0.95)
Local beta (<i>A</i>)								-0.006 (-0.47)	-0.014 (-1.37)
World beta (<i>B</i>)								0.044 [*] (1.85)	0.018 (1.22)
Shanghai dummy	-0.020 (-1.47)	-0.017 (-1.51)	-0.073 ^{***} (-3.81)	-0.023 (-1.65)	-0.018 (-1.39)	-0.014 (-1.00)	-0.020 (-1.54)	-0.019 (-1.47)	-0.061 ^{***} (-3.26)
Adjusted R ²	0.0147	0.1471	0.2377	0.0442	0.0112	0.0152	0.0306	0.0517	0.4071
<i>Panel B. B-share discount after February 28, 2001</i>									
Constant	0.526 ^{***} (38.69)	0.542 ^{***} (23.95)	0.470 ^{***} (25.38)	0.483 ^{***} (13.59)	0.595 ^{***} (4.42)	0.497 ^{***} (15.84)	0.560 ^{***} (12.84)	0.585 ^{***} (17.65)	0.910 ^{***} (6.93)
Govt ownership		0.268 ^{***} (4.29)							0.274 ^{***} (3.83)

(continued)

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Govt own dummy		-0.143*** (-4.07)							-0.128*** (-3.59)
(VO_B/VO_{A+B})			0.211*** (4.16)						0.177*** (3.02)
(SO_B/SO_{A+B})				0.151 (1.34)					0.051 (0.53)
MCAP					-0.008 (-0.52)				-0.046*** (-3.42)
Momentum						-0.234 (-0.97)			-0.172 (-1.19)
Volatility ratio							-0.031 (-0.79)		-0.027 (-0.75)
Local beta (A)								-0.021	-0.031* (-1.90)
World beta (B)								0.020 (0.79)	
Shanghai dummy	0.070*** (3.50)	0.072*** (3.99)	-0.003 (-0.10)	0.066*** (3.20)	0.072*** (3.61)	0.083*** (4.04)	0.070*** (3.50)	0.073*** (3.79)	0.025 (0.96)
Adjusted R ²	0.1272	0.2689	0.2925	0.1476	0.1183	0.1406	0.1314	0.1665	0.4693
<i>Panel C. B-share discount change from before February 19, 2001 to after February 28, 2001</i>									
Constant	-0.238*** (-33.79)	-0.239*** (-20.28)	-0.254*** (-28.53)	-0.250*** (-14.15)	-0.247*** (-4.45)	-0.254*** (-20.46)	-0.233*** (-14.41)	-0.209*** (-12.74)	-0.153*** (-2.26)
Govt ownership		0.111*** (3.62)							0.126*** (4.06)
Govt own dummy		-0.049*** (-2.93)							-0.05*** (-3.57)
(VO_B/VO_{A+B})			0.058** (2.58)						0.029 (1.26)

(continued)

Table II.

Table II.

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(SO_B/SO_{A+B})				0.042 (0.76)					0.056 (1.15)
MCAP					0.001 (0.17)				-0.012* (-1.71)
Momentum						-0.125 (-1.13)			-0.120 (-1.61)
Volatility ratio							-0.005 (-0.41)		-0.002 (-0.14)
Local beta (A)								-0.016* (-1.82)	-0.017 (-1.55)
World beta (B)								0.015 (0.81)	0.002 (0.14)
Shanghai dummy	0.090*** (9.62)	0.089*** (9.28)	0.070*** (6.71)	0.089*** (9.48)	0.090*** (9.67)	0.097*** (10.56)	0.090*** (9.59)	0.092*** (10.57)	0.086*** (6.89)
Adjusted R^2	0.5430	0.5957	0.5691	0.5427	0.5369	0.5541	0.5377	0.5605	0.6350

Notes: All panels share the same independent variables that are computed as the averages of daily observations from February 1, 2001 to February 19, 2001, which include the level of government ownership (govt ownership) as of 2001, a government ownership dummy (govt own dummy) that is equal to one if the firm has no state ownership and zero otherwise, ratio of shares outstanding (SO_B/SO_{A+B}), market capitalization (MCAP, in logs), momentum computed as the cumulative monthly A-share returns over the preceding month, the volatility ratio (σ_B/σ_A) is computed as the ratio of the trailing one-month standard deviation of daily returns on A and B shares, respectively; VO_{A+B} is the volume ratio of average daily trading volume of B shares (VO_B) relative to average daily total volume of A and B shares (VO_{A+B}), local betas of A-shares relative to the equally weighted local A-share market portfolio, and world market betas of B-share relative to the Morgan Stanley world market index; we also include a dummy variable for those stocks that trade on the SHSE (Shanghai dummy equals one), the dependent variable for Panels A, B and C are defined, respectively, as the average B-share discount from February 1, 2001 to February 19, 2001, from February 28 to March 31, 2001, and the average discount change from the pre- period to post-event period; OLS estimators are reported with *t*-statistics (in parentheses) based on standard errors using White (1980) methods robust to heteroskedasticity; adjusted R^2 is *K*-squared adjusted for degrees of freedom. The number of observations is 76

60 percent more discount, *ceteris paribus*. Comparing pre- and post-event changes in sensitivities of *B*-shares valuation to state ownership, we find that when domestic investors are allowed to hold *B*-shares, those firms with no state ownership or low state ownership are strongly preferred. This is verified in our key regression model in Panel C; the coefficient on government ownership is statistically significant and positive (0.111). This implies that a firm with 75 percent state ownership experiences 14 percent smaller decrease in its discount than a firm with no state ownership. This difference constitutes about 40 percent of the discount decline of one of the low state ownership firms. Overall, this state ownership variable is statistically and economically important for the *B*-share discount levels, as previous research by Fernald and Rogers (2002) has shown. However, it is even more important after the opening of the *B*-share market, which is not what we would have expected if, as Fernald and Rogers claim, domestic residents entering the *B*-share market revalued the state ownership stakes with a smaller discount than foreign residents.

Interestingly, few of other firm characteristics appear to explain the discount level and discount changes in a significant way. The relative liquidity variable (relative volume ratio) has a significantly positive coefficient in both Panels A and B for discount levels, but has no explanatory power in Panel C for discount changes when the state ownership variable is present in the model. But, even in Panels A and B, the signs of the liquidity variable are the opposite of what we would expect according to the liquidity hypothesis. The market capitalization variable is not significant in either of the univariate specifications (Models 5 in Panels A and B), but it is statistically significant in the multivariate specification of Model 9 and with a large negative coefficient (-0.034 in Panel A, -0.046 in Panel B). This is consistent with the asymmetric information hypothesis in that the discount is smaller for larger firms for which foreign investors are less likely to be at an information disadvantage. In Panel C, for the discount change, the sensitivity to size is statistically weak and surprisingly negative (-0.012). The asymmetric information cost to foreigners embedded in the *B*-share discount should have diminished, not widened further. All other variables which proxy for differential demand or differential risk fail to have any significant explanatory power.

Based on the consistent results from different regressions and the explanatory power of state ownership, we conclude that state ownership, our proxy for political risk, is a key factor in explaining the *B*-share discount. New investors that entered the liberalized *B*-share market appeared to be even more averse to firms with high state ownership than the original *B*-share investors, *ceteris paribus*. This is a surprising result.

Table III provides further evidence based on portfolio analysis. Panel A shows the SUR results for *A*-share quintile portfolios grouped by the level of state ownership. Panel B is for *B*-share quintile portfolios. The only significant variables in Panel A are the *A*-share market beta (β_{PA}), which are all above one. They are positive and statistically significant for these 76 firms during this period from February through March in 2001. The February 19 regulatory event did not change *A*-share betas in any significant way (β_{PAD} equals zero for all portfolios). All the risk-adjusted returns on these *A*-share quintile portfolios (α_P) equal zero and they are not significantly different after the regulatory change (γ_P equals zero for all portfolios). Gibbons, Ross and Shanken (GRS) tests with associated *F*-statistics of the joint equality of the γ_P and of their zero exclusion (γ_P equals zero for each portfolio) confirm that there were no changes in the risk-adjusted returns over this period.

Table III.
SUR models for daily
returns on state
ownership portfolios
around February 19, 2001

	A-share portfolios					B-share portfolios				
	Lowest govt Q1	Q2	Q3	Q4	Highest govt Q5	Lowest govt Q1	Q2	Q3	Q4	Highest govt Q5
α_P	-0.001 (0.42)	0.000 (0.26)	0.000 (0.01)	0.001 (0.66)	0.008 (3.05)***	0.006 (2.35)**	0.002 (1.82)*	0.003 (2.57)**	0.008 (3.38)***	
β_{PB}	0.027 (0.54)	-0.044 (0.78)	-0.010 (0.19)	0.002 (0.03)	-0.036 (0.57)	0.866 (8.73)***	0.974 (11.2)***	0.954 (20.2)***	0.954 (22.5)***	0.783 (9.26)***
β_{PA}	1.612 (10.61)***	1.701 (9.76)***	1.361 (8.95)***	1.627 (7.97)***	1.438 (7.30)***	0.426 (1.40)	0.400 (1.50)	0.243 (1.67)*	0.174 (1.33)	0.407 (1.57)
γ_P	-0.002 (0.15)	-0.003 (0.14)	-0.005 (0.32)	-0.009 (0.39)	0.008 (0.37)	0.070 (2.05)**	0.060 (2.00)**	0.011 (0.68)	0.012 (0.80)	0.019 (0.64)
β_{PBD}	0.090 (0.10)	-0.137 (0.14)	-0.526 (0.61)	-0.143 (0.12)	-0.991 (0.89)	-0.721 (1.80)*	-0.653 (1.86)*	-0.106 (0.55)	-0.169 (0.98)	-0.172 (0.50)
β_{PAD}	-0.017 (0.09)	0.022 (0.09)	0.068 (0.34)	-0.001 (0.00)	-0.047 (0.18)	-0.407 (0.24)	-0.551 (0.36)	-0.322 (0.39)	0.074 (0.10)	-0.422 (0.29)
Adjusted R^2	0.812	0.778	0.756	0.722	0.659	0.867	0.909	0.968	0.973	0.877
	Test 1 $H_0: \gamma_1 = 0$					Test 1 $H_0: \gamma_1 = 0$				
	Test 2 $H_0: \gamma_1 = \gamma_2 = \dots = \gamma_5$					Test 2 $H_0: \gamma_1 = \gamma_2 = \dots = \gamma_5$				
	Test 3 $H_0: \gamma_1 = \gamma_5$					Test 3 $H_0: \gamma_1 = \gamma_5$				
	Test 4 $H_0: \alpha_1 + \gamma_1 = \alpha_5 + \gamma_5$					Test 4 $H_0: \alpha_1 + \gamma_1 = \alpha_5 + \gamma_5$				
						12.89 (0.02)				
						12.87 (0.01)				
						11.02 (<0.01)				
						11.29 (<0.01)				

Notes: Significance at the *10, **5, ***1 percent levels; regression results for A and B share portfolios based on government ownership quintiles are reported; we estimate market model regressions of portfolio return, $R_{P,t}$, on a constant, α_P , a local B-share index return, $R_{M,t}^B$, a local A-share index return, $R_{M,t}^A$, as shown in equation (2); the model is estimated with a dummy variable D_{it} , which is equal to one if t is between February 28, 2001 and March 6, 2001 for the period that Chinese residents were just allowed to trade B-shares, zero otherwise; equally-weighted B share returns are calculated in either Hong Kong dollars or US dollars depending on its traded exchange; our data sample starts from February 1, 2001 and ends at March 28, 2001; quintile portfolios are constructed based on the fraction of shares representing government ownership in 2001; we run the SUR model of Zellner (1962) on these quintile portfolios and apply the Gibbons *et al.* (1989) F -test on the dummy coefficients to test whether the event has the same effect on different portfolios; Gibbons *et al.* (1989) F -test results are reported at the bottom of the table with associated p -values in parentheses

The opening-up of the *B*-share market, however, did affect the *B*-share market significantly and in an unequal way. Portfolios with lowest state ownership stocks experience 7 percent daily risk-adjusted returns after the regulatory change whereas those with high state ownership stocks experience none. Interestingly, the risk-adjusted returns on all five portfolios are significantly positive during this special two-month period of analysis, though not in a significantly different way. We apply the GRS test to examine whether the February event has an impact and whether it is a significantly different one across portfolios in Tests 1 and 2, respectively. Indeed, the effect of the regulatory change on the *B*-share portfolios is different across portfolios at the 1 percent significance level (Test 4 *F*-statistic is 11.29).

4. Tests of alternative hypotheses

Our cross-sectional regressions and portfolio analysis revealed the following facts:

- before February 2001, foreign investors have lower valuation for firms with high state ownership, *ceteris paribus*;
- after February 2001, when domestic investors are allowed to trade in *B*-share market, the relative undervaluation for firms with high state ownership was reinforced; and
- the event has triggered different net buying activity among new investors for firms with high and low state ownership.

If we can interpret the relative valuations of *A*- and *B*-shares as reflecting their perceived political risk, then those new investors who entered the *B*-share market were as wary of political risk as the original foreign investors, who, compared to existing *A*-share investors, had already priced a substantial political risk premium. We believe that this regulatory event inspired new domestic resident participants who had a very different outlook than existing domestic residents participating in the *A*-share market and who had a more similar outlook to those of foreign investors. But other explanations are possible. We will discuss some possible alternative explanations and provide either direct or circumstantial evidence that leads to our rejection of those alternatives in favor of our interpretation of the events.

4.1 Anticipation of state share selling?

On June 14, 2001, the Chinese State Council announced a series of long-awaited rules on how it plans to fund a long-term social welfare shortfall by allowing state-owned shares to be sold on the stock market. State-owned shares to this point in time belonged to a special category of equity that could not be traded on the market. Appendix 2, Table AII details a series of key events related to these rule announcements. If local investors were anticipating these new policy rules back in February, it is possible that domestic investors entering the *B*-share market following February 19 would have pursued disproportionately the shares of firms with lower state ownership stakes not because of political risk aversion but because of the potential dampening supply effect on share prices. Local investors may have speculated that prices of these high state ownership firms would drop once the market is flooded by the state shares that had been locked up and untradeable to that point.

If this alternative hypothesis were true, we would also observe a significantly negative reaction of share prices for those firms with relatively higher state ownership

stakes on June 14, 2001 when this suspicion would have been confirmed. To evaluate this alternative explanation, we perform a supplementary test by estimating the SUR model of equation (3) again, but with event dates defined to be June 14, 2001 to June 20, 2001. We find no statistically significant differences in the risk-adjusted returns across the quantile portfolios grouped by state ownership[10]. This is consistent with Chen and Zhou (2005) who study this policy change and who also find no evidence that the prices of those stocks with heavy state share holdings declined more than those with no state shares.

October 22, 2001 is another date that we can use to test this alternative hypothesis. On that day, the CSRC announced the suspension of the sale of shares in state-owned companies used to fund a national social security in the hope that this would steady its weakening stock market. See Appendix 2, Table AII for details. We again estimate the SUR model of equation (3) with event dates now defined to be October 22-27, 2001. If local investors avoided shares of high state ownership firms in February due to worries of future state share selling, we would expect a positive share price reaction in October among shares of those high state ownership firms when the state share selling program was suspended. However, our test reports no difference in the share price reactions across quintile portfolios grouped by state ownership.

Finally, a third way to test this hypothesis is to see whether the new investors have some foresight over the possible reduction in state ownership. We compare the 2002 state ownership levels with those for 2001 for *B*-share firms and find that many firms experienced some reduction in their state ownership. We use the change in the *B*-share discount during the February 1, 2001 event as an explanatory variable for the next year's change in state ownership. We test whether a greater decline of the *B*-share discount during February predicts less state ownership reduction in the future. Our test shows no such relationship. Thus, we conclude that the evidence does not seem to support this alternative hypothesis about price pressure from selling state share holdings.

4.2 *New group of foreign investors?*

We do not know the identity of *B*-share investors. Though the policy change allowed Chinese residents to hold *B*-shares, it could still be that the investors in the *B*-share market were comprised of a new group of foreign investors who entered the *B*-share market after February 2001 because they perceived a policy shift in China's market development through the signal of the integration of the *A*- and *B*-share markets.

Anecdotal and indirect empirical evidence suggests that it is unlikely to be so. First, we obtain monthly US transactions with foreigners in long-term domestic and foreign securities from Treasury International Capital (www.treas.gov/tic). Specifically, with respect to Chinese stocks during the three months before and after February 2001, we compute the monthly difference between the gross sales by foreigners to US residents and gross purchases by foreigners from US residents to determine the net purchases by US residents. During the three months before February 2001, US residents were net buyers of \$33 million of Chinese stocks, but were net sellers of \$35 million in the three months following. This activity is not particularly noteworthy as it comprises only a small fraction (less than 1 percent) of the stock of holdings of US investors in the Chinese market and, even more importantly, they were exiting the market more than entering[11].

Second, according to a news report from the *Securities Daily* (2001) New Agency on August 17, 2001, the proportion of domestic investors in the *B*-share market was 90.23 percent after February 19, 2001. It is evident from this fact that foreign investors likely did not contribute much to the volatility of *B*-share market prices after liberalization. Finally, another news report from HuaTai Securities (2001) News Agency on August 28, 2001 reported that foreign shareholders have greatly reduced their shareholdings after February 19, especially foreign institutional shareholders. Jiangling Motors, China International Marine, and Guangdong Provincial Expressway Development Company were specifically mentioned to have experienced large foreign ownership reductions, amounting to more than 5 percent of the total shares within several weeks around February 19. The foreign ownership of Shanghai Posts and Telecom Equipment declined to 0.39 percent from an original 6.27 percent during 2001; that of Jinzhou Port declined from 3.68 to 0.39 percent; and that of Hangzhou STM Turbine declined from 23.51 to 2.71 percent. According to this report, more than 90 percent of foreign shareholders have reduced their ownership in Chinese *B*-shares, with the average reduction being 40 percent of their original shareholding.

4.3 Some evidence on new local investors

There exists some anecdotal evidence to support our conjecture that it is indeed new domestic investors who entered the *B*-share market upon the market's liberalization. This possibility would have important economic consequences if the new domestic investors had different expectations about future growth rates, returns, or future dividends than existing domestic investors prevalent in the *A*-share market, particularly with regard to companies with large state holdings. First, according to a report, entitled "Regulations governing Chinese nationals who enter the domestic *B*-share stock market" and issued on February 26, 2001 by the CSRC and the State Administration of Foreign Exchange (SAFE), Chinese nationals engaged in *B*-share trading were only allowed to use spot exchange deposits and foreign currency cash deposits which had been deposited in domestic commercial banks before February 19[12]. This restriction was subsequently lifted on June 1, 2001 when Chinese nationals were allowed to trade *B*-shares with spot exchange deposits and foreign currency cash deposits opened after February 19, as well as foreign exchange funds transferred from overseas[12]. We infer from this fact is that only a special clientele of domestic Chinese investors would have been able to access the *B*-shares at the time of the CSRC's announcement.

Second, what accompanied the foreign ownership decline in *B*-shares was an increase in the number of individual investors. The average number of individual shareholders in the *B*-share market had more than doubled since the end of 2000 (CEIC China Premium database)[13]. HuaTai Securities reported specific examples: the number of individual investors for Hangzhou STM Turbine increased 900 percent, from 1,198 to 12,306 over this period; the number for Shandong Airlines increased almost 600 percent from 3,379 to 22,622. The same report also shows that the average number of shares held by each individual dropped. For example, the average number of individual shares for Kama *B* shares dropped from 37,000 to 7,000 between 2000 and 2001 (HuaTai Securities, 2001).

Third, foreign currency deposits of Chinese residents increased significantly before February 2001 and decreased in the immediate aftermath of the liberalization event[14].

In the first quarter of 2001, foreign deposits for domestic residents only increased by \$680 million, which was \$3.45 billion less than the increase in same quarter of 2000. According to a news report by Guosen Securities Net (2001), most of the foreign deposits were transferred to the *B*-share market during February 2001. What we surmise from this fact is that there was at least partial anticipation of the policy change to come in 2001 at least among some clientele of domestic investors.

5. Conclusions

Explaining China's *B*-share discount puzzle has been a significant challenge. Numerous explanations have been put forward, including ones based on differential liquidity of the two classes of shares, differential risks, differential demand and asymmetric information effects among local and foreign investors. Our contribution – which we boldly declare a “resolution” of the puzzle in our title – arises from analyzing a natural experiment that took place in February 2001 in which the CSRC allowed local Chinese investors to trade *B*-shares which were previously restricted to foreign investors. This policy change represented an important event in China's capital markets as the *B*-share discounts that had been averaging over 80 percent across almost 80 different stocks declined dramatically to 40 percent on average within months.

We specifically exploit the information in the cross-sectional dispersion of the discount declines across the stocks. Our simple model can explain 60 percent of the cross-sectional variation of the discount changes. The most important explanatory factor is the political risk factor, which we proxy with the fraction of shares owned by the state. That is, immediately after the opening of the *B*-share market, Chinese investors concentrated their efforts in bidding up the *B*-share prices of low state ownership firms. Just as importantly, we find that other attributes of the stocks such as the relative liquidity of their *B*-shares or the relative number of *B*-shares outstanding as well as several risk measures (volatility ratios, local and world market betas) are statistically unimportant in explaining the discount changes that took place.

We interpret our finding as evidence consistent with the recent findings that political risks affect stock valuations. Specifically, differences in perceived political risk can result in difference in security valuation. For researchers, our findings on the importance of political risk offer reassurance of the basic notions of equilibrium international asset pricing models relating conditional expectations of asset returns to expected factor risk premiums and assets' exposures to those risk factors. For companies, regulators and decision makers in developing countries, foreign investors are drawn to stocks only selectively in countries with less transparent reporting and accounting systems and with weak governance systems that inadequately protect their interests as minority shareholders. Often, they pay high premiums when their general demand for international investment is high, as in the case of most markets around the world for unrestricted over restricted classes of the same shares (Bailey *et al.*, 1999). Sometimes, as was the case in China before February 2001, they will allow large discounts to arise and persist, in spite of potentially great demand, simply because of needed legal or political reforms.

The unique February 2001 event allows us to compare the domestic investors' valuation of political risk with those of the foreigners. This is the first study to document the shift of perceived political risk and its valuation due to different groups

of investors during the event. While foreign investors may have underpriced stocks with high state ownership, domestic investors who gained access to the shares previously restricted for trading by foreigners, maybe influenced by foreign investors, turned out to dislike political risks even more, as shown by the case in China after February 2001. The opening of the *B*-share market to local Chinese investors was a positive development, but an incomplete one. This is why we must offer a caution on our bold title acknowledging only a “partial” resolution of the puzzle. A full integration of these two markets is ultimately what is desirable for local and global investors alike; it has still not happened despite a number of false starts and rumors even through 2008[15].

Notes

1. Some important studies in this literature include Hietala (1989), Bailey and Jagtiani (1994), Stulz and Wasserfallen (1995), Domowitz *et al.* (1997), and Bailey *et al.* (1999).
2. See Fisman (2001) and Leuz and Oberholzer-Gee (2006) for studies on the beneficial effects of political connections in Indonesia, Johnson and Mitton (2003), for Malaysia, and Ferguson and Voth (2008), for Germany.
3. Chan *et al.* (2008) and Ahlgren *et al.* (2003) focus on differences in the effects of asymmetric information between the local *A*- and foreign *B*-share markets. Chan *et al.* specifically measures the adverse selection component of the bid-ask spread in the two markets and how they change around February 2001. Sun *et al.* (2004) and Lee *et al.* (2007) focus on information flow and the level of market integration between *A*- and *B*-share markets.
4. We will associate the level of state share ownership with political risk throughout this paper, although we acknowledge that this association is debatable. In support of our assumption, Perotti and van Oijen (2001) present cross-country evidence that progress in privatization of state share ownership is indeed correlated with improvements in perceived political risk. In the context of China, in particular, Tian (2001), Xu *et al.* (2005) and Stouraitis *et al.* (2008) show how state share ownership is positively correlated with related party transactions, such as politically connected director appointments and misappropriation of state funds, lower labor productivity and poor governance. Of course, as do Fernald and Rogers (2002), we could interpret that the stronger political connections may ensure better access to finance that translates into better growth prospects and minimized downside risk from bankruptcy, all attributes deserving of a lower premium.
5. Article 2 of the Securities Law of China stated that “this Law is applicable to the issuing and trading in China of shares, corporate bonds and such other securities as are lawfully recognized by the State Council.”
6. Appendix 1, Table AI details the chronology of major events and announcements about the *B*-share market during the first half of 2001.
7. Some analysts described the period as one of “*B*-share frenzy” (see the analyst report by Yan Dingdong of Shenyin and Wanguo Securities, AFX Asia, February 28, 2001).
8. There has been strong empirical support for this hypothesis in other markets (e.g. Bailey and Jagtiani, 1994 in Thailand, Bailey *et al.*, 1999 in Mexico).
9. Interestingly, for very similar tests, Sun and Tong (2000) and Chen *et al.* (2001) find a positive relationship between the *B*-share discount and the relative number of *B*-shares to total shares outstanding. Sun and Tong (2000) regard the relative number of *B*-shares outstanding as being determined by the supply and since more *B* shares outstanding puts downward pressure on *B*-share prices thus increasing the *B*-share discount, they confirm the differential demand hypothesis. Chen *et al.* (2001), on the other hand, interpret more *B*-shares

outstanding as evidence of larger foreign demand which should result in a small *B*-share discount and reject the hypothesis.

10. These supplementary results are available upon request.
11. US residents held a stock of \$2.33 billion of Chinese stocks as of the end of 2001, according to the Report on US Holdings of Foreign Securities, as prepared by the Office of the Under Secretary, International Affairs, Department of the Treasury (www.treas.gov/tic/shc2001r.pdf, May 2003).
12. www.novexcnc.com/chin_nation_trade_b_share.html
13. The CEIC Data Company Limited (CEIC) supplies real-time Asian economic data to analysts and economists at over 800 institutional clients around the world. CEIC Data Company Ltd was established in 1992 and acquired by ISI Emerging Markets in 2005. See www.ceicdata.com
14. See speech by People Bank of China Deputy Governor, Dr Gui Shiquing, "Management of capital flows in corporate sector; current situation and outlook in China" (October 11, 2002, www.pbc.gov.cn).
15. In November 2006, the *B*-share market surged by 73 percent from the beginning of the year partly on the rumor that the *B*-share market would close and all *B*-shares would be converted into higher priced *A*-shares. See Finance Asia (2006). In 2008, some companies with outstanding *B*-shares were permitted by the CSRC to institute a share buy-back program; see, for example, Livzon Pharmaceutical Group in June 2008, which bought back HK\$160 million worth of *B*-shares.

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Appendix 1

Date	Events	Source
April 17, 2000	Tu Guangshao, the President of SHSE, said that B-share market will move earlier in the direction of internationalization	China Securities News Agency
June 16, 2000	Dai Xianglong, the Governor of People's Bank of China, said that the difficulty in B-share market would be solved gradually with China's progress in the liberalization under capital account	China Securities News Agency
February 19, 2001	CSRC announced that domestic investors can open trading accounts for B-share, previously reserved for overseas investors since its debut ten years ago SSE suspended afternoon trading in B-share on February 19, 2001, and later suspended the B-share trading from February 20-23, 2001	CSRC SSE
February 20, 2001	SZSE implemented "Rules to open trading account for B-share transaction" SZSE suspended B-share trading from February 20-23, 2001	SZSE SZSE [2001-39]
	Domestic residents' deposits in foreign currencies at Chinese banks increased to US\$74.93 billion in January, up 31.9 percent over a year ago, according to statistics of the People's Bank of China	<i>People's Daily News, China Daily News</i>
	A spokesman from CSRC linked the widening range of B-share investors as a response to changes in the capital movement of foreign currencies in China. This spokesman also said that the approval from the State Council was received at 11:00 a.m. on February 19, 2001. He regarded the move as "an important step toward the merger of the A and B-share market." But the final merger of the A and B-share market would still take time and would depend on the convertibility of yuan under the capital account, he said. At that time, the yuan was only convertible under the current account	<i>Financial Times (London), South China Morning Post, AFX News</i>
February 21, 2001	China took an important step towards building a unified stock market yesterday, easing restrictions on local investors buying shares officially reserved for foreigners	CSRC
February 22, 2001	The CSRC and the SAFE jointly released new regulations governing individual investments made in the B-share market by Chinese nationals	
February 23, 2001	SSE issued "Notice concerning the opening of B-share account for domestic investors" SZSE issued "Notice concerning the opening of B-share account for domestic investors"	SSE SZSE [2001-50]
	SSE announced to extended that suspension through Tuesday, February 27	SSE (continued)

Resolution of the Chinese discount puzzle

Table AI.
Chronology of regulatory change in B-shares, February 2001

Table AI.

Date	Events	Source
February 27, 2001	<p>Brokers in China have been inundated with so many applications to open trading accounts that securities regulators have extended the trading suspension imposed on B shares for two more days, the Zhongguo Zhengquan Bao (China Securities) reported today.</p> <p>Under the rules, issued by the stock market watchdog the CSRC and the SAFE, investors need only bring an identity card and US\$1,000 and start immediately in a market previously aimed at foreigners. However, stock must be bought with funds in foreign currency accounts at a domestic bank, and those accounts need to have been in place before February 19. Those who did not make the cut-off date will have to wait until June 1. Initially, investors will also not be able to switch banks or shift funds from their city of residence. However, the official media has stressed the temporary nature of these provisions.</p>	<i>ChinaOnline</i>
February 28, 2001	<p>Anthony Neoh, Chief Adviser to CSRC, recently said that before the yuan is fully and completely convertible, it would be premature to talk about the merger of the A- and B-share markets.</p> <p>B-shares began to trade on both SSE and SZSE. The prices of B shares hit the 10 percent price limits on several of the subsequent trading days.</p>	<i>South China Morning Post</i>
March 5, 2001	<p>Chinese residents who start trading hard-currency B shares will still have to undergo tight foreign exchange controls. According to a joint announcement by the CSRC and the SAFE, domestic residents will be able to set up B-share accounts. But until June 1, they may only use foreign exchange savings deposited before February 19, the circular said. Those who had not yet opened a foreign currency savings account at a domestic bank will have to wait for another three months to dip into the hard-currency market. Insiders said the rules are aimed at preventing illegally acquired foreign currency flooding into the B-share market when it resumes trading next Monday. Concerns over the past few days of illegal foreign exchange trading and speculation in the bourses have led regulators to issue detailed regulations. "The new rules are essential to ensure stability of the B-share bourses after they reopen next week and keep order in the foreign exchange market," a CSRC spokesman said. "The foreign exchange control will be a great help to curb the inflow of black market foreign money and its impact on the yuan exchange rate," he said. Many analysts have feared the low price of B shares would lure people to sell A shares for foreign currency to trade B shares. Under the tight foreign exchange scheme, it is likely some people will turn to the underground market to illegally exchange money. "Only legally acquired foreign currency can be used to trade B shares and all investors should abide by the regulations," the CSRC spokesman said. The CSRC and SAFE joint announcement also stipulated that Chinese residents would be barred from withdrawing hard currency from B share fund accounts or sending money out of the country. Shifting hard currency at home would also be limited within the same city and bank. In spite of the restrictions, investors have been fidgeting over the past few days</p>	<p><i>ChinaOnline</i></p> <p>Datastream International</p> <p><i>Financial Times</i></p> <p><i>Information, Asia Info Daily, China News</i></p>

(continued)

Date	Events	Source
March 6, 2001	<p>Early bank numbers reveal that only a small amount of overall savings deposits have been transferred to B-share trading accounts. According to preliminary statistics from the Industrial and Commercial Bank of China (ICBC) Shanghai Branch, US\$110 million in foreign exchange funds have been transferred from the ICBC to B-share trading accounts in Shanghai and Shenzhen since February 26. This accounts for 4.78 percent of residents' total of US\$2.3 billion savings deposits in the ICBC, reported the March 3 Wenhui Bao (Wenhui Daily NT). Additionally, a large number of B-share investors have not invested all of their foreign exchange funds in the B-share market. Taking ICBC Shanghai Branch as an example, some 95 percent of the US\$2.3 billion individual savings deposits are in fixed-term deposits. Obviously, most individual foreign exchange funds in Shanghai remain in banks instead of being invested in the stock market, the article said.</p> <p>Chinese Premier Zhu Rongji said Thursday that it would take a long time for the A and B shares markets to merge. Zhu made the remarks at a press conference held here at the end of the Fourth Session of the Ninth National People's Congress. Zhu said that the CSRC did not mention the merger of A share and B share markets. "I had not ruled out the possibility, but I think that will take a long time." He noted that the opening of the B share market to Chinese citizens is part of the reform of the stock market, aimed to open up more channels of investments for domestic investors who have nearly US\$80 billion equivalent of foreign currencies in hand. "It also aims at attracting more foreign investment to the B share market," said Zhu.</p>	<p><i>Financial Times Information</i></p> <p><i>Asia Info Daily, China News</i></p>
March 21, 2001	<p>Local investors are lining up to open 500,000 new B-share accounts following the February 19 announcement.</p>	<p><i>ChinaOnline</i></p>
April 27, 2001	<p>China will promote the simultaneous development of both A- and B-share markets until the yuan becomes convertible on the capital account, CSRC Chairman Zhou Xiaochuan said, according to the <i>China Securities</i> newspaper. According to the report, Zhou said the B-share markets will disappear once the yuan becomes convertible on the capital account, but the country will develop both markets until that time.</p>	<p><i>AFX News</i></p>

Table AI.

Date	Events	Source
April 26, 2001	China's Finance Minister, Xiang Huaicheng, spoke at a forum in Beijing that it is appropriate for China to reduce its ownership of listed companies in order to help fund social security needs	<i>China Press</i>
June 14, 2001	The Chinese State Council announced a series of long-awaited rules on how it plans to fund a chronic social welfare shortfall by allowing state-owned shares to be sold on the stock market. State-owned shares have hitherto belonged to a special category of equity that could not be traded on the market. The new rules permit their sale and stipulate that 10 percent of state companies' IPO should consist of state-owned shares and that the proceeds from their sale should go into a national social security fund. The new rules also applied to companies planning to list abroad and existing overseas listed companies	<i>Dow Jones, Reuters</i>
July 24, 2001	The first flotation of so-called state shares is announced. They are priced much higher than expected. Four Chinese companies planning A-share listings announced they would sell state shares equivalent to 10 percent of their IPO proceeds and the state shares will be priced at the same levels as their IPO shares	<i>Reuters</i>
October 22, 2001	The CSRC announced the suspension of the sale of shares in state-owned companies used to support the national social security fund and hoped that this will steady its weakening stock market	<i>Financial Times</i>
December 18, 2001	China's multi-billion-dollar Social Security Fund will be allowed to invest in shares as a way to increase liquidity in stock markets. Fund Chairman, Liu Zhongli, said that it would be able to place 40 percent of its 61 billion Yuan (about HK\$57.16 billion) in the country's stock markets	<i>South China Morning Post</i>

Table AII.
Chronology of regulatory change in trading state shares, June 2001

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