

State control and long-term stock performance of Chinese IPOs

Abstract

Privatization of state-owned enterprises (SOEs) accounts for a significant portion of Chinese IPOs. The state has an incentive to make well-performing companies go public to enhance developments of the economy and stock markets. We investigate whether the unique characteristics affect the long-term stock performance of IPOs. Our analyses on A-share initial public offerings in China during the 2000-2004 period show that SOEs experience smaller underperformance than other countries' IPO firms do. Our regression analyses show evidence that SOEs have significantly better long-term performance after controlling for the effect of managerial ownership, large shareholder's ownership, and the reliance on bank debt. We argue that the state has certification effects in Chinese IPOs.

JEL Classification: G32; G34; G38

Keywords: IPO; Long-term underperformance; State control; China

1. Introduction

Numerous studies show evidence that stocks of firms that go public experience long-term underperformance. Ritter (1991) finds that US firms significantly underperform a set of comparable firms during three years following their IPOs. This result has inspired many researchers on investigating long-term underperformance of IPO stocks. Loughran and Ritter (1995) report whether an IPO or a seasoned equity offering (SOE) underperforms non-issuing firms for five years after the offering date. Gompers (2003) shows NASDAQ IPOs also display underperformance for five years after listing from 1935-1972. The underperformance phenomenon of IPOs has been confirmed in other developed markets, such as the UK (Levis, 1993) and Japan (Cai and Wei, 1997).

Researchers recently pay much attention to Chinese IPOs that have some unique characteristics (Chan et al., 2004; Huang and Song, 2005; Muk and Hui, 1999; Yu and TSE, 2006; Wang, 2005). In China, privatization of state-owned companies account for a significant portion of IPOs and the state has an incentive to make well-performing firms go public for the sake of enhancing economic growth and stock market developments. However, a limited number of studies address long-term stock underperformance of Chinese IPOs. Gu (2000) studies five-year returns on 68 companies in 1994 and finds that the returns are generally negative. Chan et al. (2004) document that A-share IPOs slightly underperform benchmark returns; in China stock underperformance during the post-IPO period is less severe.

This paper is principally intended to investigate how the involvement of state affects long-term stock performance of Chinese IPOs. Given that Chinese IPO companies suffer less from long-term stock underperformance than other countries' IPOs do, this analysis allows us to find some key factors associated with long-term stock underperformance found in other countries. Using a sample of 447 IPOs that went public on the Shanghai Stock

Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE) during 2000-2004, we find that state-owned enterprises (SOEs) underperform the size- and/or book/market (B/M)-matched peers. However, the mean wealth relative is higher than those reported for US and other countries (Cai and Wei, 1997; Ritter and Loughran, 1995). Especially, the wealth relative of SOEs ranges 0.89 to 0.95 which is much higher than those of other countries. In contrast, the wealth relative of non-SOEs ranges from 0.66 to 0.69 which is similar or lower than those of US and Japanese IPO firms. Our regression analyses show that SOEs have significantly better long-term performance than non-SOEs do after controlling for the effect of managerial ownership, large shareholder's ownership, and bank debt reliance. Those results suggest that in China, involvements of the state mitigate long-term stock underperformance of IPO firms. We argue that the state has a certification effect, which is found for venture capitalists and prestigious underwriters in US IPOs (Brav and Gompers, 1997; Carter et al., 1998; Jain and Kini, 1999).

Our study makes some important contributions to the literature. Our main result provides additional evidence that information asymmetry is a main factor that causes long-term stock underperformance of IPO companies. Our finding shows severe contrast to previous corporate governance studies that state-ownership has a negative impact on firm performance (Gunasekarage et al., 2007; Sun and Tong, 2003; Xu and Wang, 1999). We interpret that involvements of the state is important for IPO companies that are subject to severe information asymmetry. The result is also inconsistent with the finding that SOEs that go public experience poor long-term operating performance (Fan et al., 2007; Sun and Tong, 2003; Qin et al., 2000; Xu and Wang, 1999). It is likely that operating performance does not fully capture the value of decreased information asymmetry (Jain and Kini, 1994).

The remainder of this paper is organized as follows. Section 2 presents background information. Section 3 explains methodology. Section 4 shows sample selection procedures

and data. Section 5 presents empirical results. Finally, Section 6 is a brief summary of the paper.

2. Background information

In China, a series of economic reforms have been conducted during the past 20 years, which enhanced China's transition from a central-planned economy towards a market-oriented economy. As a key aspect of economic reform, Chinese government established the Shanghai Stock Exchange in 1990 to help the privatization of SOEs, followed by the Shenzhen Stock Exchange in 1991. SOEs are allowed to get privatized by issuing moderate number of new shares to individual investors.

The privatization of SOEs is an important step in the Chinese economic reform. SOEs need to be reorganized as a corporation via selling shares to its employees, other SOEs and legal entities at a price around the book value of equity. Then, SOEs that meet the listing requirements need to apply for approval of listing from China Securities Regulatory Commission (CSRC). Upon the approval, companies sell about one-third of shares to public at the time of IPO (Wang, 2005). Only A-shares (those traded only by Chinese citizens of PRC on the SHSE and the SZSE) and B-shares (those purchased only by foreign investors in the two stock exchanges) are issued at the IPO. The majority of outstanding shares are still owned by the state after IPOs (Hovey and Naughton, 2007).

The Chinese stock market was immature at the point of its establishment and lacked legal system and supervisory mechanisms. China has introduced an alternative governance system, which relies on regulatory decentralization, to develop the market. In that system, stock issuance was subject to administrative approval by the supervisory authority. In most cases, local governments take responsibility for screening and selecting SOEs to go public.

Under the Issuance Quota System in which CSRC impose the maximum number of shares that can be issued for each year to local governments, local government officials tend to choose well-performing SOEs to go public (Du and Xu, 2009). That is because they desire those companies to spur local economic developments which improve their career path (Li and Zhou, 2005; Maskin et al., 2000). At the same time, the Issuance Quota System reward local governments by allocating more stock issuance quotas if the listed companies which are recommended by the local government show better performance during the post-IPO periods. The Chinese system reduces information asymmetry about IPO firms. Indeed, Du and Xu (2006) show evidence that the quota system improves corporate information disclosure quality in China.

3. Methodology

In order to compare with US and other countries' evidence (Cai and Wei, 1997; Gompers, 2003; Levis, 1993; Loughran and Ritter, 1995; Ritter, 1991), we use the buy-and-hold return (BHR) as a long-term performance measure. Loughran and Ritter (2000) report that BHRs capture around 80-90% of the true abnormal returns, which is much higher than the explanation powers of other measures. BHRs that more accurately measure investor experience are the generic choice of naïve investors (Barber and Lyon, 1997; Brav, 2000); BHRs will serve as an appropriate performance indicator in the Chinese stock market where over 90% investors are individuals. Following Chan et al. (2004), we compute 12 month, 24 month, and 36 month BHRs after the IPO by using the following computation (hereafter denoted by BHR_{12} , BHR_{24} , and BHR_{36} , respectively). See Table 1 for definitions of variables.

$$BHR_{it} = \prod_{t=1}^T (1 + R_{it}) - 1,$$

$$T \in (12, 24, 36),$$

where $R_{i,t}$ is the monthly stock return of firm i in month t . We define month 1 as the month after the firm's IPO. We compute R_{it} as

$$R_{it} = (P_{it} - P_{it-1} + D_t) / P_{it-1},$$

where P_{it} is the closing price of firm i stock at the last day of month t . D_{it} is the dividend payment of firm i in month t .

[Insert Table 1 around here]

We choose as a matched firm the non-IPO company (firms that go public before December 1997) that is closest to the IPO firm in Fama and French (1993) three factors; the matched firm's BHR is used as a benchmark return. Specifically, we adopt three matching methods: size-matching, book-to-market (B/M)-matching, and the size and B/M-matching (Chan et al., 2004; Ritter, 1991). Barber and Lyon (1997) document that matching by size and B/M ratio yields well-specified test statistics in virtually all sampling situations. In the size-matching procedure, a non-IPO firm that has market value of tradable shares at the end of 1999, which is closest to the IPO firm's market value at the initial trading day, is adopted as a matched firm. Similarly in the B/M-matching, we choose as a matched firm the non-IPO firm that has B/M ratio (book value of equity multiplied by the ratio of tradable shares to total shares divided by the market value of tradable shares) at the end of 1999, which is closest to the IPO firm's first trading day's B/M ratio. In the size-and-B/M

matching, we divide sample firms into 5 groups based on the B/M ratio. We select as a matched company the non-IPO firm in the same B/M group that is closest in market value to the IPO firm.

As with many previous studies (Chan et al., 2004; Ritter, 1991; Spiess and Affleck-Graves, 1995), we adopt wealth relatives to examine whether Chinese IPO stocks experience long-term underperformance,

$$WR = \frac{1 + \text{average } t\text{-period total return on IPOs}}{1 + \text{average } t\text{-period total return on matching firms}},$$

where wealth relative lower than one means that the IPO firm underperforms the matched company. We also use adjusted BHR (IPO firm's BHR less matched firm's BHR; hereafter denoted by AD-BHR) as an additional long-term stock performance variable.

4. Sample selection and data

We analyze Chinese A-share IPOs that went public on the SHSE and SZSE over the 2000-2004 period. We exclude financial companies because of their different accounting statement formats. As a result of those procedures, our sample consists of 447 companies, of which 357 firms listed in the SHSE and 90 firms from the SZSE. Chinese IPOs were sometimes suspended by the CSRC during the period of September 2004 to June 2006.¹ Given that we need three year data after IPO, we have to end the sample period in 2004. We obtain financial data from Osiris database as well as stock price and dividend data; buy-and-hold returns are computed by merging the monthly stock price data with the

¹ Specifically, Chinese IPOs were suspended during September 10, 2004 to February 3, 2005 and June 7, 2005 to June 6, 2006.

dividend data. Corporate ownership structure data are collected from the China Center for Economic Research Database (CCER).

[Insert Table 2 around here]

Panel A of Table 2 shows the distribution of our sample by calendar year. During these five years, IPO markets are more active in 2000 and 2004. Most (approximately 80%) of our sample firms went public on SHSE. Panel B presents the industry distribution of our sample firms. Manufacturing firms account for a substantial part of the sample companies.

[Insert Table 3 around here]

Panel A of Table 3 shows long-term stock performance for the entire sample. The sample firms experience negative buy-and-hold returns during the 12, 24, and 36 months after their IPOs, probably because China experienced bear markets during the analytical period; the Shanghai Composite Index declined from 2245.44 in June 2001 to 998.23 in June 2006. Consistent with previous studies, most of presented wealth relatives are lower than one, suggesting that Chinese IPO firms experience long-term underperformance. However, it would be noteworthy that the wealth relatives for the 12 and 24 month investment periods are over 0.9. In the 36 month investment period, the wealth relatives decline to 0.82 to 0.84. However, those figures are still higher than those of US and other countries studies (Cai and Wei, 1997; Ritter and Loughran, 1995). Loughran and Ritter (1995) report that the mean wealth relative of 4,753 US IPOs is 0.80 for 3-year investment period. Cai and Wei (1997) find that the 3-year wealth relative of Japanese IPOs ranges from 0.67 to 0.77 when the

matched peers are selected by size, B/M and both size and B/M. Consistent with Chan et al's (2004) finding, Chinese IPO firms suffer less from long-term stock underperformance than other countries' IPO firms do.

As mentioned, many SOEs go public in China. State-control potentially affects long-term stock performance of IPO firms in various ways. The state involves the selection of companies to go public and the involvement potentially affects the long-term stock performance. CSRC (2008) points out that the Chinese government tends to make well-performing state-owned companies go public for the purpose of stock market developments. This government incentive will mitigate information asymmetry about state-owned IPO firms and contribute to better long-term performance in Chinese IPOs. This idea means that the involvement of state plays a role which venture capitalists and reputable underwriters has in US IPOs (Brav and Gompers, 1997; Carter et al., 1998; Jain and Kini, 1999).

There are alternative explanations why SOEs that go public have better long-term performance. In general, IPOs are usually accompanied by substantial reductions in managerial ownership; the reduction in managerial ownership engenders severe agency costs. Differently from IPO firms in other countries, managers of Chinese SOEs have no shares before the IPO and the idea of increased agency conflicts does not hold true for those companies. Instead, SOEs have concentrated ownership structures even after IPOs because the state holds substantial portions of shares. In addition, it is likely that state-owned banks preferentially provide loans to SOEs. Given that SOEs are the most important driver for Chinese economic developments, the central and local governments have an incentive to preferentially allocate funds to SOEs. Since most of major banks in China are also controlled by the central or local governments, governments are prone to support the development of SOEs by providing loans through government-owned banks. Indeed, SOEs

receive bank loans more easily than non-SOEs due to the government support and guaranty (Tian, 2001; Wang, 2005). The preferential access to external capital may mitigate underinvestment problems, which have a substantial negative impact on the value of firms with rich growth opportunities.

In contrast, many previous studies suggest that state-ownership has a negative impact on firm value (Gunasekarage et al., 2007; Qi et al., 2000; Sun and Tong, 2003; Xu and Wang, 1999; Zhang et al., 2001). Similarly, Chinese IPO literature shows evidence that state-ownership is negatively associated with the long-term operating performance during a few years after the IPO (Fan et al., 2007; Sun and Tong, 2003; Qin et al., 2000; Xu and Wang, 1999). Those facts suggest that it is an empirical question how state-control affects long-term performance of Chinese IPO stocks.

By using CCER database, we identify 326 firms (73% of sample firms) as being controlled by central and local governments, the state agencies (State Assets Management Bureau; SAMB) and other state owned enterprises and institutions; the figures are consistent with the notion that privatization of SOEs account for a significant portion of IPOs in China. We also collect ownership structure variables of sample companies: the percentage ownership by the manager and directors (hereafter denoted by MANAGEROWN); the percentage ownership by the largest shareholder (hereafter denoted by TOPONE). Firms' reliance on bank debt is measured by the ratio of bank debt to total debt (BANKL).

[Insert Table 4 around here]

Table 4 presents descriptive statistics. The median MANAGEROWN is zero. Differently from IPOs in other countries, this figure suggests that managerial ownership of Chinese companies that go public is extremely low. In contrast, the median TOPONE is 46.6%, which suggests that ownership structure is highly concentrated in Chinese IPO companies. At least half of our sample firms issue no bank debt (the median BANKL is zero). This fact suggests difficulties for young IPO companies to borrow much bank debt.

[Insert Table 5 around here]

Table 5 indicates financial characteristics separately for SOEs and non-SOEs. It clearly shows that SOEs have significantly lower managerial ownership levels, higher ownership concentration, and rely more on bank debt than non-SOEs. We need pay attention to those financial characteristics when investigate the effect of state-control on long-term stock performance.

5. Empirical results

4.1 Univariate analyses

Panel A of Table 6 shows long-term performance measures separately for SOEs and non-SOEs. It shows that SOEs have higher wealth relatives than non-SOEs do. For the 12 month investment horizon, SOEs' mean wealth relatives are approximately 1.0, while those of non-SOEs are 0.90, 0.99 and 0.93. Those figures suggest that SOEs do not underperform matched firms. Consistent with the wealth relative results, the SOEs' adjusted buy-and-hold returns (AD-BHRs) are positive and significantly higher than those of non-SOEs. Although both groups' wealth relatives become low when adopting longer investment horizons (24

and 36 month), SOEs still have higher wealth relatives than non-SOEs do; for 36 month investment period, the wealth relatives of SOEs range from 0.89 to 0.91 whereas those of non-SOEs range from 0.67 to 0.69. Adjusted buy-and-hold returns are significantly higher for SOEs than for non-SOEs. It would be noteworthy that the wealth relatives of non-SOEs are similar or much lower than those in previous studies for other countries (Loughran and Ritter, 1995; Cai and Wei, 1997). The evidence of non-SOEs experiencing significant underperformance does not provide a support for the idea that small long-term underperformance in Chinese IPO companies (Chan et al., 2004) is attributable to the Chinese tremendous economic growth. Rather it comes from SOEs' small underperformance.

[Insert Table 6 around here]

We also divide our sample firms equally into some groups based on MANAGEROWN and TOPONE and compare long-term performance measures, to test the idea that the unique corporate governance structure contributes to small underperformance of SOE IPO firms. For MANAGEROWN for which many observations take a value of zero, we make a group that consists of firms that take a value of zero and then divided remaining firms equally into two groups (Panel B). Panel B of Table 6 shows that the wealth relative monotonically decreases with MANAGEROWN. In the 36 month investment period, Group 1 (firms for which managerial ownership takes a value of zero) has significantly higher AD-BHR than the highest MANAGEROWN group (Group 3) does. This result is consistent with the idea that in SOEs, managerial ownership is so low before IPOs that IPOs do not substantially increase agency conflicts. For TOPONE, we divide the sample

firms equally into four groups (Panel C). Panel C does not present a monotonically positive relation between TOPONE and long-term stock performance, but the highest TOPONE group significantly outperforms the lowest group.

4.2 Regression results

For the sake of examining whether state-control positively affects long-term stock performance after controlling for various factors, we conduct regression analyses that adopt AD-BHRs as a dependent variable. The key independent variable is the dummy variable that takes a value of one for SOEs and zero for non-SOEs (D_SOE). We also include ownership structure variables (MANAGEROWN and TOPONE), BANKL, and other control variables (firm age, leverage, firm size, and stock exchange dummy) in this analysis. Previous studies show evidence that firm age is positively related to long-term operating performance (Jegadeesh et al., 1993; Hensler et al., 1997; Ritter, 1991). We follow them and investigate the relation between firm age (AGE) and long-term stock price performance. Leverage is defined as the ratio of total liabilities divided by total assets (LEVERAGE). Firm size (LNASSET) is measured by the natural logarithm of total assets of firms. Finally, we include a dummy variable that takes a value of one for firms that go public on Shanghai Stock Exchange, and zero for those on Shenzhen Stock Exchange (STOCKEX). In each regression, we delete observations for which the dependent variable takes a value greater (lower) than its 99% (1%) percentile level to delete abnormal values. As mentioned, state-control is significantly associated with some independent variables (Table 6). Table 7 shows no serious correlations among other variables.

[Insert Table 7 around here]

[Insert Table 8 around here]

Table 8 presents regression results. In this analysis, we do not adopt ownership structure variables (MANAGEROWN; TOPONE) and BANKL to simply examine whether SOEs experience better long-term stock performance. Table 8 shows that D_SOE has positive coefficients in all specifications; most of the coefficients in the regression of AD-BHR₂₄ and AD-BHR₃₆ are statistically significant. The estimated coefficient in model 1 of Panel C suggests that SOEs have about 17% higher adjusted buy-and-hold returns after controlling for firm age, size, leverage, and the difference in stock exchange. Given that the mean AD-BHR₃₆ is about -17%, this effect is economically large. The result serves as evidence that SOE firms that go public experience small underperformance. Regarding control variables, Table 8 suggests that large firms tend to have better long-term stock performance. In most specifications, LEVERAGE, AGE, and STOCKEX have not significant coefficients.

We conduct regression analyses that include MANAGEROWN, TOPONE, and BANKL to accurately analyze why Chinese SOEs have better long-term performance. In Panel B of Table 9 (regression of AD-BHR₂₄), D_SOE still has a positive and significant coefficient in all models. Similarly in Panel C (regression of AD-BHR₃₆), Model 2 (B/M-matching) engenders positive and significant coefficient on D_SOE. Those results suggest that SOE firms that go public show better long-term performance after controlling for the effect of ownership structure and reliance on bank loans. We interpret that the state has an incentive to make prospective firms go public and thus mitigates information asymmetry about IPO firms' type; the state has certification effects in Chinese IPOs like venture capitalists and

reputable underwriters in US (Brav and Gompers, 1997; Carter et al., 1998; Jain and Kini, 1999).

[Insert Table 9 around here]

In the AD-BHR₂₄ regression (Panel B), MANAGEROWN has a positive and significant coefficient in models 1 and 2. However, it becomes not significant in the AD-BHR₃₆ regression (Panel C). We also conduct regression analyses that include the interaction term between MANAGEROWN and D_SOE and find the interaction term having not significant coefficients (results are not reported). Those results are not consistent with the view that SOEs do not experience severe underperformance because managerial ownership is extremely low even before IPOs. When we use the size-B/M matching procedure (model 3), TOPONE has a positive and significant coefficient in all models. This result provides weak evidence that concentrated ownership structure mitigates long-term stock underperformance. In regressions of shorter investment periods (Panels A and B), model 1 engenders a positive and significant coefficient on BANKL. In the regression of AD-BHR₃₆ (Panel C), however, the BANKL coefficients are not significant at the 5% level. Our results do not provide a strong support for the view that the preferential access to bank loans is a reason for the better long-term performance of SOEs.

Overall, our results are most consistent with the view that involvements of the state mitigate long-term stock underperformance by mitigating information asymmetry; the better long-term performance of SOEs do not mainly come from their unique ownership structure or reliance on bank debt. Our results show sharp contrast to evidence that Chinese SOEs experience poor long-term operating performance. It is likely that operating

performance does not accurately capture the value of decreased information asymmetry (Jain and Kini, 1994). Similarly, our evidence is inconsistent with the finding for the average Chinese company (Gunasekarage et al., 2007; Sun and Tong, 2003; Xu and Wang, 1999; Zhang et al., 2001). We argue that involvements of state are especially important for IPO companies which are subject to severe information asymmetry.

6. Conclusions

Previous studies show evidence that in many countries stocks of firms that go public underperform their matched peers during a few years after the IPO (Cai and Wei, 1997; Gompers, 2003; Levis, 1993; Loughran and Ritter, 1995; Ritter, 1991). In contrast, Chan et al. (2004) document that Chinese IPO companies only slightly underperform their matched peers. In China, privatizations of SOEs account for a significant portion of IPOs. The state has an incentive to make well-performing companies go public to enhance developments of the economy and stock markets. This paper investigates how the unique characteristics of Chinese IPOs affect the long-term stock performance by using 447 A-share IPOs between 2000 and 2004.

We find that SOEs' wealth relatives are much higher than those found in other countries, whereas non-SOEs' wealth relatives are similar or much smaller than those found in other countries. Specifically, 3-year investment wealth relatives range from 0.89 to 0.91 for SOEs, while range from 0.66 to 0.69 for non-SOEs. Regression analyses indicate that SOEs have better long-term stock performance after controlling for the effect of managerial ownership, largest shareholder's ownership, and the reliance on bank loans. We argue that the Chinese state has a similar role to that of venture-capitalists and prestigious underwriters in US IPOs (Brav and Gompers, 1997; Carter et al., 1998; Jain and Kini, 1999).

Our analyses make some important contributions to the literature. The main results suggest that information asymmetry about the IPO firms' quality is an important source of long-term stock underperformance. In contrast, previous studies suggest that Chinese SOEs have poor long-term operating performance (Fan et al., 2007; Sun and Tong, 2003; Xu and Wang, 1999). We argue that operating performance does not fully reflect the value created by decreased information asymmetry. Our result also shows sharp contrast to the finding that state-ownership in China has a negative impact on firm value (Gunasekarage et al., 2007; Sun and Tong, 2003; Xu and Wang, 1999; Zhang et al., 2001). Our evidence suggests that the certification effect occupies a significant part of the value of IPO companies which are subject to severe information asymmetry.

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Table 1
Definition of variables

Variables	Definition
BHR _{<i>t</i>}	Buy-and-hold return during <i>t</i> month after IPO. <i>t</i> takes 12, 24, and 36.
Wealth Relative	One plus buy-and-hold return for the IPO firm divided by one plus buy-and-hold return for the matched firm.
AD-BHR _{<i>t</i>}	Adjusted buy-and-hold return (buy-and-hold return for the IPO firm less buy-and-hold return for the matched firm) during <i>t</i> month after IPO.
D_SOE	A dummy variable that takes a value of one for firms controlled by the state and zero fo
SIZE	Market value of tradeable shares
B/M ratio	The book value equity multiplied by the ratio of tradable shares to total shares and then divided by the value of tradable shares.
BANKL	The fraction of bank loans to total liabilities.
MANAGEROWN	The percentage ownership by top managers.
TOPONE	The percentage ownership by the largest shareholder.
LEVERAGE	Totoal liabilities divided by total assets.
AGE	Age of the firm at the point of IPO
LNASSET	Natural Logarithm of total assets
STOCKEX	A dummy variable that takes a value of one for firms listed on Shanghai Securities Exchange, and zero for those listed on Shenzen stock Exchange.

Table 2
Summary statistics

This table shows sample distribution by IPO year (Panel A) and industry (Panel B). Our sample consists of 447 firms that go public on Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) during 2001 to 2004.

Panel A : Distribution by IPO year

IPO year	Number of IPOs			Total	(%)
	SHSE	SZSE			
2000	86	49	✓	135	30.2
2001	77	1	✓	78	17.5
2002	68	1	✓	69	15.4
2003	65	0	✓	65	14.5
2004	61	39	✓	100	22.4
Total	357	90	✓	447	100

Panel B: Distribution of companies by industry

Industry	Number of IPOs			Total	(%)
	SHSE	SZSE			
Agriculture, fishing and, and stockraising	16	2		18	4.1
Mining	11	2		13	2.9
Manufacturing	225	68		293	65.5
Electricity, gas, and water	18	4		22	4.9
Construction	11	0		11	2.5
Transportation and warehousing	23	3		26	5.8
IT	23	4		27	6.0
Wholesale and retail	14	4		18	4.1
Real estate	7	0		7	1.6
Social service	6	3		9	2.0
Media	1	0		1	0.2
Comprehensive	2	0		2	0.4
Total	357	90		447	100

Table 3
Long-term stock performance of the entire sample

This table presents the long-term performance of IPOs in China after listing. The summations are 447 observations. Our sample consists of 447 firms that go public on Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) during 2001 to 2004. Matched firms are selected from those that go public before December 1997 in three ways: size-matching, B/M-matching, and size-and-B/M matching. In size matching, each sample firm is matched with a firm that has the closest market value of tradeable shares at the end of 1999 to the sample firm's initial day's market value. In the B/M-matching, the firm is selected as matching firm that has closest B/M ratio at the end of 1999 to the IPO firm's initial day's B/M ratio. In the size-and-B/M matching, we choose as matched firm the company that has the smallest absolute percentage difference in size and B/M from the IPO firm. See Table 1 for definitions of variables.

Investment period (month)	Sample firms' BHR	Size-matching				B/M-matching				Size-and-B/M-matched				N
		Matched firms' BHR	Wealth relative	AD-BHR	t-statistics	Matched firms' BHR	Wealth relative	AD-BHR	t-statistics	Matched firms' BHR	Wealth relative	AD-BHR	t-statistics	
12	-0.204	-0.190	0.983	-0.014	-0.87	-0.208	1.005	0.004	0.30	-0.200	0.994	-0.005	-0.31	447
24	-0.345	-0.295	0.930	-0.050	-2.41 ***	-0.287	0.919	-0.058	-2.72 ***	-0.296	0.931	-0.049	-2.22 **	447
36	-0.204	-0.028	0.820	-0.175	-4.03 ***	-0.047	0.836	-0.16	-3.54 ***	-0.024	0.816	-0.180	-3.53 ***	447

Table 4
Descriptive Statistics

This table indicates descriptive statistics for dummy variables (Panel A) and non-dummy variables (Panel B). Sample firms consist of 447 firms that go public on Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) during 2001 to 2004. See Table 1 for definitions of variables.

<i>Panel A: Dummy variables</i>						
	The number and percentage of observations that take a value of one		The number and percentage of observations that take a value of zero		<i>N</i>	
D_SOE	326	72.93%	121	27.07%	447	
STOCKEX	357	79.87%	90	20.13%	447	

<i>Panel B: Non-dummy variables</i>						
	Mean	Standard deviation	Minimum	Median	Maximum	<i>N</i>
BANKL	0.087	0.145	0.000	0.000	0.854	447
MANAGEROWN	0.043	0.133	0.000	0.000	0.748	446
TOPONE	0.464	0.177	0.037	0.466	0.998	447
AGE	3.403	2.662	0.000	3.000	12.000	447
LNASSET	18.953	3.862	10.350	20.478	26.609	436
LEVERAGE	0.335	0.150	0.000	0.328	0.822	447
ROA	0.560	0.414	0.033	0.455	4.430	436

Table 5
Financial characteristics of SOEs and non-SOEs

This table presents the bank debt and ownership structure variables separately for SOEs and non-SOEs. T-statistics are for the null hypothesis that the mean is identical between SOEs and non-SOEs. See Table 1 for definitions of variables.

	SOEs	Non-SOEs	t-value	<i>N</i>
MANAGEROWN	0.004	0.148	11.56 ***	446
TOPONE	0.496	0.375	-6.74 ***	447
BANKL	0.095	0.064	-2.01 **	447

***: Significant at the 1% level

**: Significant at the 5% level

*: Significant at the 10% level

Table 6**Univariate analysis results**

This table presents adjusted BHR (Ad-BHR) and wealth relatives for subsamples. Sample firms consist of 447 firms that go public on Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) during 2001 to 2004. In Panel A, we report those variables separately for SOEs and non-SOEs. In Panel B, we make a group (Group 1) which consists of companies that take a value of zero for MANAGEROWN, and then divide remaining firms equally into two groups based on MANAGEROWN (Group 3 is the highest MANAGEROWN group). In Panel C, we divide the sample firms equally into four groups based on TOPONE. the difference of adjusted-BHRs between some independent variables for 3 years (Group 3 is the highest TOPONE group). Matched firms are selected by three procedures. In the size-matching, the non-IPO firm that is closest in the market value of tradable shares to the IPO firm is selected as a matched company. In the B/M matching, the non-IPO firm that is closest in book-to-market ratio to the IPO firm is selected as a matched company. In size and B/M-matching, the non-IPO firm in the same B/M group that is closest in the market value of tradable shares to the IPO firm is selected as a matched company. t-statistics are for the null hypothesis that AD-BHR is identical between the highest and lowest groups (or SOEs and non-SOEs in Panel A). See Table 1 for definitions of variables.

	Wealth relative ₁₂	AD-BHR ₁₂	Wealth relative ₂₄	AD-BHR ₂₄	Wealth relative ₃₆	AD-BHR ₃₆			
<i>Panel A: State-control and non-ste-control firms</i>									
<u>Size matching</u>									
SOEs (N=326)	1.013	0.010	1.001	0.001	0.910	-0.075			
Non-SOEs (N=121)	0.902	-0.079	0.763	-0.185	0.669	-0.445			
Difference (SOEs versus non-SOEs)	0.111	0.089	0.238	0.186	0.241	0.370			
t-statistics		-2.51	***	-4.09	***	-3.83	***		
<u>B/M matching</u>									
SOEs (N=326)	1.010	0.008	0.967	-0.023	0.948	-0.041			
Non-SOEs (N=121)	0.992	-0.006	0.799	-0.150	0.658	-0.466			
Difference (SOEs versus non-SOEs)	0.018	0.014	0.168	0.127	0.290	0.424			
t-statistics		-0.45		-2.66	***	-4.35	***		
<u>Size-and-B/M matching</u>									
SOEs (N=326)	1.016	0.013	0.987	-0.009	0.887	-0.097			
Non-SOEs (N=121)	0.934	-0.051	0.794	-0.155	0.689	-0.405			
Difference (SOEs versus non-SOEs)	0.082	0.064	0.193	0.146	0.198	0.308			
t-statistics		-1.91	**	-2.99	***	-2.70	**		
<i>Panel B: MANAGEROWN</i>									
<u>Size matching</u>									
Group 1 (N=286)	0.992	-0.007	0.962	-0.027	0.929	-0.059			
Group 2 (N=69)	0.970	-0.025	0.960	-0.027	0.776	-0.185			
Group 3 (N=92)	0.964	-0.028	0.820	-0.138	0.648	-0.529			
Difference (Group 1 versus Group 3)	0.028	0.021	0.142	0.112	0.281	0.469			
t-statistics		0.50		2.05	**	4.07	***		
<u>B/M matching</u>									
Group 1 (N=286)	1.107	0.014	0.940	-0.043	0.931	-0.057			
Group 2 (N=69)	0.980	-0.016	0.915	-0.060	0.798	0.162			
Group 3 (N=92)	0.985	-0.011	0.860	-0.103	0.678	-0.462			
Difference (Group 1 versus Group 3)	0.122	0.025	0.08	0.060	0.253	0.405			
t-statistics		0.71		1.07		3.50	***		
<u>Size-and-B/M matching</u>									
Group 1 (N=286)	1.015	0.012	0.98	-0.013	0.904	-0.083			
Group 2 (N=69)	0.986	-0.011	0.963	-0.025	0.754	-0.208			
Group 3 (N=92)	0.936	-0.050	0.782	-0.176	0.678	-0.462			
Difference (Group 1 versus Group 3)	0.079	0.062	0.198	0.162	0.226	0.379			
t-statistics		1.69	**	2.84	***	2.87	***		
<i>Panel C: TOPONE</i>									
<u>Size matching</u>									
Group 1 (N=121)	0.941	-0.046	0.879	-0.083	0.757	-0.262			
Group 2 (N=119)	0.942	-0.048	0.839	-0.124	0.714	-0.350			
Group 3 (N=107)	1.054	0.041	1.067	0.044	1.021	0.016			
Group 4 (N=100)	1.008	0.007	0.970	-0.021	0.911	-0.068			
Difference (Group 1 versus Group 4)	-0.067	-0.053	-0.091	-0.063	-0.154	-0.195			
t-statistics		-1.07		-1.27		-1.88	**		
<u>B/M matching</u>									
Group 1 (N=121)	1.015	0.011	0.903	-0.065	0.796	-0.210			
Group 2 (N=119)	0.974	-0.021	0.836	-0.126	0.703	-0.368			
Group 3 (N=107)	1.013	0.010	1.052	0.034	1.005	0.004			
Group 4 (N=100)	1.023	0.019	0.913	-0.064	0.982	-0.013			
Difference (Group 1 versus Group 4)	-0.008	-0.009	-0.01	-0.001	-0.186	-0.197			
t-statistics		-0.22		-0.01		-2.25	**		
<u>Size-and-B/M matching</u>									
Group 1 (N=121)	0.926	-0.059	0.835	-0.120	0.658	-0.425			
Group 2 (N=119)	0.961	-0.032	0.849	-0.114	0.759	-0.276			
Group 3 (N=107)	1.010	0.008	1.065	0.043	1.100	0.072			
Group 4 (N=100)	1.101	0.080	1.029	0.019	0.946	-0.039			
Difference (Group 1 versus Group 4)	-0.175	-0.138	-0.194	-0.139	-0.288	-0.385			
t-statistics		-3.29	***	-2.74	***	-2.83	***		

***: Significant at the 1% level

**: Significant at the 5% level

*: Significant at the 10% level

Table 7
Correlation Matrix

This table indicates correlation matrix among independent variables.

	BANKL	MANAGEROWN	TOPONE	AGE	STOCKEX	LNASSET	LEVERAGE
BANKL	1.000						
MANAGEROWN	-0.057	1.000					
TOPONE	-0.001	-0.292	1.000				
AGE	0.041	0.076	-0.305	1.000			
STOCKEX	0.112	-0.113	-0.009	0.102	1.000		
LNASSET	0.025	-0.303	0.268	0.205	0.289	1.000	
LEVERAGE	0.210	0.010	0.032	0.163	0.068	-0.020	1.000

Table 8
Cross-sectional regression results

This table shows regression results of AD-BHR, which is computed by IPO firm's BHR minus matched firm's BHR. The entire sample consist of 447 firms that go public on Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) during 2001 to 2004. Matched firms are selected by three procedures. In the size-matching, the non-IPO firm that is closest in the market value of tradable shares to the IPO firm is selected as a matched company. In the B/M matching, the non-IPO firm that is closest in book-to-market ratio to the IPO firm is selected as a matched company. In size and B/M-matching, the non-IPO firm in the same B/M group that is closest in the market value of tradable shares to the IPO firm is selected as a matched company. In each regression, we delete observations for which the dependent variable takes a value greater (lower) than its 99% (1%) percentile value. See Table 1 for definitions of variables.

	Model 1: Size-matching		Model 2: B/M-matching		Model 3: Size and B/M-matching	
	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
<i>Panel A: Regression of AD-BHR₁₂</i>						
D_SOE	0.021	0.68	0.010	0.32	0.030	1.03
LEVERAGE	0.087	0.84	-0.164	-1.79 *	-0.075	-0.73
AGE	-0.005	-0.92	-0.006	-1.13	-0.002	-0.35
LNASSET	0.008	2.24 **	0.003	0.91	0.007	1.94 *
STOCKEX	0.016	0.46	0.007	0.19	0.012	0.29
Constant	-0.192	-2.67 ***	0.010	0.13	-0.139	-1.71 *
Adjusted R ²	0.024		0.019		0.021	
N	426		426		428	
<i>Panel B: Regression of AD-BHR₂₄</i>						
D_SOE	0.115	2.73 ***	0.073	2.15 **	0.080	1.94 *
LEVERAGE	-0.093	-0.73	-0.160	-1.28	-0.097	-0.74
AGE	0.002	0.27	0.007	1.06	-0.002	-0.34
LNASSET	0.014	2.47 **	0.006	1.20	0.014	2.50 **
STOCKEX	0.030	0.59	0.057	1.35	0.038	0.81
Constant	-0.400	-3.22 ***	-0.234	-2.05 **	-0.355	-2.80 ***
Adjusted R ²	0.058		0.031		0.054	
N	427		426		428	
<i>Panel C: Regression of AD-BHR₃₆</i>						
D_SOE	0.174	2.14 **	0.214	2.67 ***	0.104	1.08
LEVERAGE	-0.215	-0.95	-0.493	-2.21 **	-0.443	-1.68 *
AGE	-0.008	-0.79	0.016	1.37	-0.016	-1.05
LNASSET	0.064	4.56 ***	0.059	3.91 ***	0.059	3.49 ***
STOCKEX	0.100	1.05	0.098	1.18	0.168	1.69 *
Constant	-1.482	-4.41 ***	-1.384	-4.89 ***	-1.289	-3.56 ***
Adjusted R ²	0.176		0.174		0.132	
N	426		428		427	

***: Significant at the 1% level

**: Significant at the 5% level

*: Significant at the 10% level

Table 9
Cross-sectional regression results

This table shows regression results of AD-BHR, which is computed by IPO firm's BHR minus matched firm's BHR. The entire sample consist of 447 firms that go public on Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) during 2001 to 2004. Matched firms are selected by three procedures. In the size-matching, the non-IPO firm that is closest in the market value of tradable shares to the IPO firm is selected as a matched company. In the B/M matching, the non-IPO firm that is closest in book-to-market ratio to the IPO firm is selected as a matched company. In size and B/M-matching, the non-IPO firm in the same B/M group that is closest in the market value of tradable shares to the IPO firm is selected as a matched company. In each regression, we delete observations for which the dependent variable takes a value greater (lower) than its 99% (1%) percentile value. See Table 1 for definitions of variables.

	Model 1: Size-matching		Model 2: B/M-matching		Model 3: Size and B/M-matching	
	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
<i>Panel A: Regression of AD-BHR₁₂</i>						
D_SOE	0.022	0.68	0.035	1.07	0.020	0.68
MANAGEROWN	0.100	0.59	0.271	2.10 **	0.099	0.72
TOPONE	0.113	1.48	0.101	1.09	0.255	2.97 ***
LEVERAGE	0.029	0.26	-0.192	-1.99 **	-0.134	-1.28
BANKL	0.225	2.43 **	0.045	0.46	0.160	1.67 *
AGE	-0.003	-0.59	-0.004	-0.75	0.002	0.40
LNASSET	0.007	2.03 **	0.004	1.01	0.006	1.48
STOCKEX	0.011	0.31	0.015	0.41	0.010	0.25
Constant	-0.244	-2.80 ***	-0.083	-0.86	-0.230	-2.41 **
Adjusted R ²	0.043		0.033		0.050	
N	425		425		427	
<i>Panel B: Regression of AD-BHR₂₄</i>						
D_SOE	0.119	2.56 **	0.112	3.13 ***	0.098	2.14 **
MANAGEROWN	0.094	0.51	0.369	2.62 ***	0.311	1.89 *
TOPONE	-0.003	-0.02	0.125	1.23	0.208	2.12 **
LEVERAGE	-0.179	-1.38	-0.187	-1.47	-0.163	-1.24
BANKL	0.411	3.44 ***	-0.025	-0.21	0.209	1.71 *
AGE	0.002	0.30	0.010	1.34	0.002	0.24
LNASSET	0.015	2.61 ***	0.007	1.36	0.014	2.42 **
STOCKEX	0.020	0.39	0.069	1.68 *	0.043	0.91
Constant	-0.421	-2.96 ***	-0.362	-2.98 ***	-0.493	-3.69 ***
Adjusted R ²	0.083		0.048		0.075	
N	426		425		427	
<i>Panel C: Regression of AD-BHR₃₆</i>						
D_SOE	0.162	1.95 *	0.246	2.97 ***	0.106	0.98
MANAGEROWN	-0.048	-0.10	0.355	1.39	0.344	0.68
TOPONE	-0.061	-0.30	0.172	1.04	0.503	2.65 ***
LEVERAGE	-0.287	-1.25	-0.520	-2.26 **	-0.534	-1.94 *
BANKL	0.412	1.87 *	-0.060	-0.28	0.163	0.75
AGE	-0.009	-0.93	0.020	1.53	-0.008	-0.52
LNASSET	0.064	4.51 ***	0.060	3.86 ***	0.056	3.30 ***
STOCKEX	0.085	0.92	0.112	1.35	0.180	1.85 *
Constant	-1.446	-4.33 ***	-1.524	-5.01 ***	-1.505	-4.15 ***
Adjusted R ²	0.183		0.178		0.144	
N	425		427		426	

***: Significant at the 1% level

**: Significant at the 5% level

*: Significant at the 10% level