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Shareholding structure and corporate performance of partially privatized firms: Evidence from listed Chinese companies

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Abstract

Equity ownership in a listed Chinese firm can have as many as five different classes: state-owned shares, legal-person (LP) shares, tradable A-shares, employee shares, and shares only available to foreign investors, a phenomenon that is unique to the Chinese equity market. In this paper, we investigate whether and how the corporate performance of listed Chinese firms is affected by their shareholding structure. The sample consists of all firms listed in the Shanghai Stock Exchange (SHSE) from 1991 to 1996. It is found that firm performance is positively related to the proportion of LP shares but negatively related to the proportion of shares owned by the state. Additional analyses indicate that firm performance increases with the degree of relative dominance of LP shares over state shares. Moreover, for the subsample of firms that do not have both state and LP shares, the return on equity (ROE) of firms with LP shares but no state shares is higher than that of firms with state shares but no LP shares by 3.84%, and this difference is statistically significant. On the other hand, there is little evidence in support of a positive correlation between corporate performance and the proportion of tradable shares owned by either domestic or foreign investors. These findings suggest that the ownership structure composition and relative dominance by various classes of shareholders can affect the performance of

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state-owned enterprise (SOE)-transformed and listed firms.

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1. Introduction

After economic reform of nearly two decades that has ushered in sustained double-digit growth unprecedented in Chinese history, the restructuring of state-owned enterprises (SOEs) has become the key to the success of the Chinese economy in the next decade. In contrast to the radical ownership privatization approach widely adopted in Russia and Eastern Europe (Boycko et al., 1994), China's reform of SOEs started with the market approach. This market-oriented approach posits that if competitive markets are created for products and factors of production, SOEs can be successfully transformed from loss-making cost centers into profitable, return-oriented investment centers without radical changes in ownership structure.

While this approach has contributed significantly to the growth of the overall Chinese economy, it has largely failed in enhancing the performance of SOEs, as evidenced by the increasing percentage of SOEs that are operating in the red. Consequently, systematic ownership reform has become the dominant theme behind the two-pronged new initiatives for SOE restructuring. While unprofitable small- and medium-sized SOEs are privatized or merged, large SOEs are converted into shareholding companies with limited liabilities, and a selected few are listed on China's two stock exchanges. Behind these recent strategic moves is the belief that transformed-SOEs can be protected from government interference in their daily operations, clarify their property rights, help them raise new capital, and make the management more accountable for the consequences of its decisions. Improved corporate performance will ensue and the state can benefit through its shareholding in these SOE-transformed companies.

However, the performance of SOEs cannot necessarily be improved by setting up shareholding companies alone. First, severe agency problems arising from the separation of ownership and control continue to exist in these SOE-transformed companies if the state remains the controlling shareholder. As the state and its representatives have inadequate resources and expertise in monitoring and disciplining the management, the conflict of interests between the state and the management persists. In fact, the management enjoys more autonomy after corporatization and effectively controls shares owned by the state.[1] Second, it is

[1] Similar corporate governance problems after privatization in Russia are discussed in Boycko et al. (1995).

not always clear that the objective function of the state and its representatives is to maximize shareholder value. For example, the state may want to keep redundant workers on the payroll of the SOEs and SOE-transformed companies to preserve social stability, even though such a policy renders them less profitable. Third, it is well known that diffused shareholders are not adequately motivated to monitor management decisions closely because of the free-rider phenomenon. Therefore, the performance of SOE-transformed firms may be affected by their ownership structure.

This paper investigates whether and how the performance of listed Chinese companies is affected by their ownership structure. More specifically, we empirically study whether firm performance is a function of the proportions of shares held by the state and legal persons (or institutional/corporate investors). Currently, the equity of listed Chinese companies is represented by five classes of shares, i.e., state shares, legal-person (LP) shares, tradable A-shares, employee shares, and shares only available to foreign investors. Although different classes of shares have the same claim and voting power, their holders differ in their motivation, expertise and ability in monitoring and controlling the management. The performances of listed firms can potentially be influenced by their corporate ownership structure, or the relative proportions of shares held by different classes of owners.[2] We hypothesize that firm performance increases in the proportion of LP shares and decreases in the proportion of state shares. We also empirically examine the relation between firm performance and proportions of tradable shares held by both domestic and overseas investors.

Our empirical analysis focuses on firms listed on the Shanghai Stock Exchange (SHSE) from 1991 to 1996. Empirical results are consistent with our hypothesis. First, results based on 774 firm-years indicate that firm performance, measured by the accounting rate of return on equity (ROE), decreases in the proportion of state shares but increases in the proportion of LP shares after controlling for size, leverage, industry, and the macroeconomic environment. Second, we find that, for the subsample of firms without simultaneous state and LP ownership, the average ROE for the firms with LP shares (but no state shares) is higher than that of firms with state shares (but no LP shares) by 3.84% after controlling for the effects of other variables. We find little evidence that firm performance is positively associated with the proportion of tradable shares held by individual domestic or overseas investors. These findings indicate that diffused ownership by individual investors is not as effective as LP block ownership in improving the performance of listed Chinese companies. Third, sensitivity analyses indicate our results are robust when alternative measures of firm performance are used. Finally, our results remain qualitatively the same when a fixed effect model designed to address possible endogenous nature of ownership is used.

[2] For evidence from other transitional economies, see, e.g., Claessens (1996).

The rest of this paper is organized as follows. The next section provides some institutional background of SOE reform and the development of the stock market in China. Section 3 elaborates on the research question and develops hypotheses. Section 4 describes the sample. Empirical results are presented in Section 5. Section 6 concludes this paper.

2. Institutional background

2.1. The reform of Chinese SOEs

In China, SOEs are firms legally owned by the state and administered either by various industrial ministries in the central government or by local (provincial or municipal) governments. Before the enterprise reform in the early 1980s, all production and distribution decisions were centrally planned and the SOEs were merely operated as cost centers. In the absence of market competition, the operations of most SOEs were inefficient. The reform of SOEs has started with the market approach (Rawski, 1994). It was based on the belief that if markets for products and factors of production were established and became competitive, SOEs could be transformed into modern, profit-seeking enterprises without much ownership reform.[3] While this approach was rather successful in fostering the economic growth of the private and collective sectors, it has largely failed in improving the overall performance of the SOEs. From 1978 to 1995, the ratio between total loss by unprofitable industrial SOEs and total profit by profitable industrial SOEs rose from 8.27% to 78.16% (see Table 1). The industrial SOEs as a whole reported a net loss in 1996, despite the fact that China had experienced an unprecedented growth in the same period.

Such poor performance by SOEs is frequently attributed to their ownership structure, which gives rise to severe agency problems (see Gao, 1996). While managers now enjoy more autonomy in decision making, the state has not been able to establish effective monitoring, control, and incentive systems to encourage managers to act in the state's best interests. This has led to a deteriorating performance in the state sector. Consequently, new initiatives – including ownership reform – have been introduced to improve the performance of the SOEs.

2.2. The development of the Chinese Stock Market

The origin of the stock market in post-1949 mainland China can be traced to August 1984, when Shanghai Municipal Government approved the first provincial-level regulation on securities. The first stock was subsequently issued

[3] For details on China's economic reform, see Gao (1996).

Table 1
Total loss and profit by China's industrial SOEs, 1978–1996[a]

Year	Total loss	Total profit	Total loss as percentage of total profit
1978	4.21	50.88	8.27
1979	3.64	56.28	6.46
1980	3.43	58.54	5.86
1981	4.60	57.97	7.93
1982	4.76	59.77	7.96
1983	3.21	64.09	5.01
1984	2.66	70.62	3.77
1985	3.24	73.82	4.39
1986	5.45	68.99	7.90
1987	6.10	78.70	7.76
1988	8.19	89.19	9.19
1989	18.02	74.30	24.25
1990	34.88	38.81	89.86
1991	36.70	40.22	91.25
1992	36.93	53.51	69.01
1993	45.26	81.73	55.39
1994	48.26	82.90	58.21
1995	54.06	69.17	78.16
1996	79.07	41.26	191.64

Source: China Statistical Yearbook, 1993, 1994, 1995, 1996 and 1997.
[a] In billion yuan. US$1 is about 8.3 yuan.

by a household electronics company in November of the same year and became tradable in August 1986 on the OTC market run by the Industrial and Commercial Bank of China (Ellman, 1988). In the following years, more SOEs were "incorporated" through selling shares to their employees and other stock companies and SOEs. However, the stockholding system did not become a significant vehicle for ownership reform of SOEs until the establishment of the SHSE in 1990. The Chinese Security Regulatory Commission (CSRC) was set up in the following year as the Chinese equivalent of the Securities and Exchange Commission in the United States to monitor and regulate the stock market. Since then, the Chinese stock market has grown rapidly. As of the end of 1996, 331 stocks were listed on the SHSE with a total market capitalization of 555 billion yuan[4] (see Table 2).

2.3. Ownership structure of listed Chinese companies

Because the stockholding system is a rather recent development in China, the ownership structure of listed Chinese companies has some unique features not

[4] US$1 is approximately 8.3 yuan.

Table 2
Market capitalization and number of securities listed on the Shanghai Stock Exchange[a]

Year	1991	1992	1993	1994	1995	1996
Number of listings						
A Share	7	29	101	169	184	288
B Share	–	8	22	34	36	43
Market capitalization (in billion yuan)[b]						
A Share	2.92	67.9	206.8	248.1	243.4	535.9
B Share	–	3.6	12	11.6	9.2	19.1

Source: Shanghai Securities Daily.

[a]As of the end of each year. A listed company may have A-share only, B-share only, or both A-share and B-share at the same time.

[b]US$1 is about 8.3 yuan.

found in stock markets of more developed economies. Shares are classified as A-shares designated for domestic investors and B-, H- and N-shares designated for overseas investors. A-shares are further divided into state shares, LP shares, tradable A-shares, and employee shares. State shares are those owned by the state, i.e., the central government and local governments. Legal-person shares are those held by domestic legal entities and institutions such as other stock companies, state-private mixed enterprises, and nonbank financial institutions.[5] Both state shares and LP shares are not tradable on the stock exchanges, but the latter can be sold to other legal persons. Tradable A-shares, which can only be held by Chinese citizens and institutions, are the only class of share that can be traded among domestic investors. Panel A of Exhibit 1 shows the ownership structure of the FAW Jinbei Automotive, a typical SOE-transformed listed company, at the end of 1996. Panel B of Exhibit 1 reports Jinbei's two largest LP shareholders.

B-, H- and N-shares are those that can only be held and traded by foreign investors. The market for B-shares is separated from the A-share market. They are denominated in US dollars on the SHSE and in Hong Kong dollars on the Shenzhen Stock Exchange. H- and N-shares are similar to B-share in nature, except that they are listed and traded on the Hong Kong Stock Exchange and the New York Stock Exchange, respectively.

Employee shares are a unique feature of the Chinese stockholding system and different from an employee stock ownership plan in the United States. They represent accumulated profits retained by the pre-initial-public-offering entity under the Contract Responsibility System and are collectively owned by the

[5] While legal-person shares can only be held by domestic institutions, tradable A-shares can be held by both domestic institutional and individual investors.

Table 3
Ownership structure of firms listed on the Shanghai Stock Exchange[a]

	Mean	Std. Dev.	Percentiles				
			1%	25%	50%	75%	99%
STATE	29.3	27.0	0	0	28.6	53.1	83.8
LP	32.6	28.2	0	5.9	26.2	61.6	88.3
ASHARE	28.2	16.8	0	19.1	25.7	35.0	100.0
FOREIGN	6.6	14.4	0	0	0	0	57.1
OTHER	3.3	6.2	0	0	0	3.6	27.6

Variable definitions: STATE = the proportion of shares held by the state; LP = the proportion of shares held by legal persons; ASHARE = the proportion of tradable A-shares; FOREIGN = the proportion of shares available only to foreign investors; OTHER = the proportion of other shares.
All variables are reported in percentage.

[a] Based on 289 firms, as of the end of 1996.

employees of the company.[6] They are not tradable at the time of listing and are managed by either an investment management committee or a staff union.[7] Because most listed firms do not have employee shares and they typically account for a very small fraction of total shares outstanding when they exist, we exclude employee shares from our empirical analysis in this paper. In general, the management owns none or very little shares.

At present, a typical listed Chinese firm has a mixed ownership structure. The state, legal persons and domestic individual investors are the dominant groups of stockholders, each accounting for about 30% of total shares outstanding. Many listed firms do not have employee and foreign shares, and even if they do, these shares on average consist of less than 10% of total shares outstanding when combined (see Table 3).

3. Literature review and hypotheses

3.1. Ownership structure and corporate performance

There exists a substantial literature on whether and how ownership structure affects corporate performance. On the theoretical side, when the ownership in a firm is diffused, shareholders are not motivated to monitor management decisions closely because the ensuing benefit is too small to cover the monitoring costs.

[6] Under the Contract Responsibility System, a firm was given more autonomy to run its business and it could retain a portion of its profits to improve staff compensation or invest for future development.

[7] However, employee shares can be converted into tradable A-shares after a certain period of time after listing and upon approval by the CSRC.

Shleifer and Vishny (1986) show that some degree of ownership concentration enhances firm performance because large block shareholders, in a position to harvest a substantial portion of the gains from improvement in firm performance or a takeover, have some incentives and resources to monitor management decisions.

At present, empirical research in this area has mostly been limited to studies based on data from developed economies. Holderness and Sheehan (1988) find that for a sample of 114 NYSE and American Stock Exchange firms controlled by a majority shareholder with more than 50% of the common stock, both Tobin's *Q* and accounting profits are significantly lower for firms with individual majority owners than for firms with corporate majority owners. Boardman and Vining (1989) compare the performance of SOEs, mixed enterprises, and private corporations among the 500 largest non-US industrial firms, and find that mixed enterprises and SOEs perform substantially worse than similar private enterprises. On the other hand, McConnell and Servaes (1990) report that Tobin's *Q* is positively correlated with ownership by institutional investors for their sample of more than 1000 firms. Taken together, these empirical studies suggest that block holding by institutional investors is positively correlated with corporate performance, provided that such block holders are not the state[8].

Up to the present time, empirical studies that examine the effectiveness of ownership structure reform in improving the economic performance of SOEs in China have been very limited, with the exception of Wu et al. (1996). However, their results are difficult to generalise because their sample consisted of only 80 firms in a single year, and they failed to control for potential confounding effects, such as firm size, capital structure and industries.

3.2. Hypotheses

The majority shareholder of a typical listed Chinese firm is either the state or legal persons. Most state-controlled listed firms are transformed from SOEs previously solely owned by the state. After the initial public offering (IPO), shareholder rights of the state are represented by either local offices of the Bureau of State Assets Management (BSAM) of the central government or finance bureaus of local governments, depending on the pre-IPO ownership of the SOEs.

Such a monitoring and control system, however, has inherited most of the agency problems that existed before the listing of SOEs. First, local BSAM and finance bureau officials are not adequately motivated to closely monitor management performance and decisions because their well being is not tied to the performance of state-controlled listed firms.

[8] Craswell et al. (1997) report that there is no evidence to support institutional ownership as an important determinant of Australian corporate performance.

Second, most local BSAM offices and finance bureaus are understaffed, and the existing staff has limited expertise in modern finance and investment theories and practices. Consequently, it is difficult for them to comprehend and evaluate whether management decisions increase or decrease the value of state holdings. Third, while in theory local BSAM and finance bureau officials have the power to appoint board members and disapprove financing and investment proposals by the management, in reality all major decisions have to be made jointly with local party organizations, for which corporate profitability may not be the top priority. In fact, when SOEs are incorporated and listed, most members of previous management are retained for parallel positions in the listed companies. In sum, because going public has not improved the effectiveness of the state as an equity owner in monitoring and controlling the management, we expect that the proportion of shares held by the state (STATE) and corporate performance to be negatively correlated.

In contrast, firms controlled by legal persons are more similar to listed firms in more developed economies in the way they are formed, governed, and managed. Although founding legal persons also have to obtain the approval and a quota for going public from the state, they can nominate board members, who in turn appoint corporate officials independently. Consequently, board members are elected from different institutions, have diverse professional backgrounds, and could act to promote the best interest of the legal persons they represent. Compared with their counterparts in state-controlled firms, representatives of legal persons are more motivated to monitor and control actions taken by managers. Because of the size of their holdings, they have the incentive to do so even though other shareholders benefit at the same time. These representatives are also better equipped with authority and expertise. They can access insider information, directly question and confront top officers on operations of the firm, and vote to call for emergency shareholder meetings.[9] To summarise, because block holdings by legal persons improve the corporate governance process, we predict that the proportion of LP shares and corporate performance are positively correlated.

Under current state regulation, at least 25% of shares to be outstanding must be sold to the general public.[10] Most of these individual shareholders are small investors holding less than half a percent of total shares outstanding. Compared with average holdings by the state and legal persons at about 30% each, the

[9] We recognize that under certain circumstances, legal-person holdings may adversely affect the performance of listed companies. For example, legal persons may use their influence to encourage transfer pricing practices that shift profits from listed companies to themselves. Nevertheless, we expect such adverse effects to be secondary when compared with the performance-enhancing effects of legal-person holdings. We thank Jay Ritter for pointing this out to us.

[10] According to Article 152 of Chinese Company Law, companies are currently exempt from this 25% requirement if the total par value of their stocks is above 400 million yuan. Also exempt are companies listed before the enactment of this regulation.

proportion of shares held by any particular individual investor or investor group is negligible. Consequently, there is a doubt that any individual investors are motivated or able to actively participate in the corporate governance process. Furthermore, most individual Chinese investors hold stocks for short-term speculative gains instead of long-term investment, as evidenced by average turnover ratios of more than 200% per year.[11] Because only about 30% of total shares outstanding are tradable, the effective turnover ratios are even higher. Such a short investment horizon makes individual investors unwilling and/or unable to monitor and act on management decisions, a classical setting for the free rider problem studied in Grossman and Hart (1980). Consequently, simple partial privatization of SOEs by selling shares to diverse individual investors may not necessarily improve corporate governance. Because the relation between the proportion of tradable A-shares (ASHARE) and firm performance is not clear cut, we empirically examine this issue but make no directional prediction.

B-, H- and N-shares are denominated in foreign currencies and reserved exclusively for foreign investors, most of whom are passive investors. Because most listed companies do not have these classes of shares, we focus on the effects of STATE, LP and ASHARE on corporate performance in this study. The proportion of foreign investor shares (FOREIGN) is included in the empirical analysis as a control variable, but we make no ex ante prediction on its effect on corporate performance.

4. Sample and descriptive statistics

The sample for this study consists of all firms listed on the SHSE from 1991 to 1996, subject to data availability. We limit our sample to listed firms because firm-level data on the ownership structure and firm performance are not publicly available for nonlisted SOEs while the same data for listed firms can be collected from their published financial statements. Data on both corporate performance and ownership structure is collected from annual reports or publications by the SHSE, CSRC, and other institutions, supplemented by interviews with SHSE officials. Table 3 reports the ownership structure of listed SHSE firms as of the end of 1996. On average, the state, legal persons and individual investors of tradable A-shares each account for about one third of total shares outstanding, respectively. The combined average of the proportion of FOREIGN and the proportion of other shares (OTHER) is less than 10%. Both their medians are zero, indicating that the majority of firms do not have these two classes of shares outstanding.

Panel A of Table 4 describes ownership structure of sample firms as of the end of 1996 by industry. Currently, firms listed on the SHSE are classified into five

[11] See Shanghai Stock Exchange Annual Report, 1996.

industries, i.e., manufacturing, retailing, utilities, real estate, and conglomerates. The proportion of state ownership is the highest in the utility industry (38.6%) and the lowest in the real estate industry (22.5%), while the proportion of LP ownership is just the opposite. This reflects the government policy of actively promoting investment in infrastructure projects, and the relative short history of the real estate industry in China. Firms in the retail industry have issued the most shares to domestic investors (36.9%) while those in the real estate industry have issued the least (23.8%). The averages of FOREIGN and OTHER are less than 10% for all the five industries.

Panel B of Table 4 presents the ownership structure for the same sample by firm size. Firms are sorted into five quintiles according to the ascending order of their total assets at the end of 1996. Not surprisingly, state ownership generally increases with firm size, from 22.8% for the first quintile to 37.5% for the fifth quintile, except for the fourth quintile. This is consistent with the fact that most large listed companies are transformed from former SOEs. The percentage of shares held by LP investors exhibits the opposite trend, decreasing from 40.3% for the first quintile to 27.1% for the fifth quintile, with the exception of the fourth quintile. The percentage of tradable A-shares decreases monotonically from the first quintile (34.4%) to the fifth quintile (18.8%). The percentage of shares available only to foreign investors increases monotonically from 0% for the first quintile to 15.0% for the fifth quintile because only large companies are selected for overseas listing. The proportion of other shares shows no obvious trend and is less than 5% for all five quintiles.

Table 5 provides descriptive statistics for the 774 observations that are pooled both intertemporally and cross-sectionally. The averages of net income, sales and

Table 4
Ownership structure of firms listed on the SHSE by industry and firm size[a]

	N	STATE	LP	ASHARE	FOREIGN	OTHER
Panel A: Ownership structure of firms listed on the SHSE by industry						
Manufacturing	161	31.1% (28.3)	31.9% (29.6)	26.0% (16.4)	8.7% (15.8)	2.3% (4.4)
Retailing	45	31.8% (19.2)	25.7% (18.6)	36.9% (14.3)	2.3% (9.1)	4.0% (6.1)
Utility	9	38.6% (29.1)	21.2% (27.8)	26.1% (29.0)	9.3% (13.9)	4.8% (5.2)
Real estate	22	22.5% (28.3)	41.7% (27.6)	23.8% (12.0)	8.4% (19.1)	3.6% (5.4)
Conglomerate	52	22.9% (26.9)	38.8% (29.7)	30.5% (17.2)	2.4% (9.6)	5.4% (10.0)
Panel B: Ownership structure of firms listed on the SHSE by total assets						
Quintile 1 (low)	57	22.8% (25.7)	40.3% (28.5)	34.4% (14.6)	0% (N.A.)	2.4% (4.6)
Quintile 2	58	25.5% (26.7)	35.8% (26.4)	32.7% (16.0)	1.9% (8.7)	4.1% (5.4)
Quintile 3	58	32.0% (26.5)	28.7% (26.5)	29.9% (16.7)	5.2% (14.5)	3.9% (8.5)
Quintile 4	58	28.6% (26.9)	31.2% (29.8)	25.5% (17.4)	10.3% (18.5)	4.5% (7.3)
Quintile 5 (high)	58	37.5% (27.6)	27.1% (28.8)	18.8% (14.6)	15.0% (16.4)	1.6% (3.5)

Refer to Table 3 for variable definitions.

[a]Cross-firm averages with standard deviations in parentheses, as of the end of 1996.

Table 5
Descriptive statistics for 774 firm–year observations, 1991–1996[a]

	Mean	Std. dev.	Percentiles				
			1%	25%	50%	75%	99%
Net income	68,135	158,516	−49,300	14,670	30,261	65,130	851,660
Sales	687,401	1,238,576	13,380	148,158	300,195	712,143	6,780,410
Total assets	1,189,792	2,127,805	61,476	335,740	537,275	1,129,640	14,326,970
Total liability	565,700	1,010,745	8514	118,634	225,982	536,268	5,999,460
Owners' equity[b]	597,902	1,159,208	39,356	176,539	295,200	585,656	8,252,520
DER	0.972	0.839	0.102	0.460	0.723	1.201	4.762
ROE	0.118	0.094	−0.187	0.078	0.115	0.158	0.456
ROA	0.066	0.049	−0.058	0.040	0.064	0.089	0.226

Variable definitions: DER = debt-to-equity ratio, based on book values; ROE = return on equity; ROA = return on assets.

[a] In thousands of yuan, as of the end of each year. US$1 is about 8.3 yuan.

[b] Minority interests is not included, which explains why the mean of total assets is greater than the sum of the means of total liability and owners' equity.

total assets are 68.1 million, 687.4 million and 1189.8 million yuan, respectively. Their respective medians are all smaller, indicating that their distributions are skewed to the right. The average of total liabilities is 565.7 million yuan. Further analysis indicates that long-term liabilities account for only slightly more than 20% of the total liabilities (not reported in tables). Currently, China does not have a well-functioning market for corporate bonds, and most banks prefer to make short-term loans and roll them over at maturity if needed. The average debt-to-equity ratio (DER) is 0.972, where both debt and equity are based on book values and both short-term and long-term debts are included. Finally, the average ROE (ROA) for the sample firms is 11.3 (6.2)%.

5. Empirical results

5.1. Effects of state and LP ownership on firm performance

In this paper, we measure corporate performance mainly by the ROE, defined as net income divided by the average of owners' equity during the year. The same measure is used in similar contexts in Grant (1987), Lee and Cooperman (1989), and Megginson et al. (1994). We also use the ROA and market-to-book ratio (MBR) as an alternative measure of firm performance and all results are qualitatively the same. Average value of the beginning and the end of the year are used for STATE, LP, ASHARE, FOREIGN, DER, and LSIZE in all regressions.

To examine the relation between the proportion of state shares and firm performance, we estimate the following regression by pooling observations both cross-sectionally and intertemporally:

$$\begin{aligned}\mathrm{ROE} = {} & \alpha + \beta_1 \mathrm{STATE} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} \\ & + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e, \end{aligned} \tag{1}$$

where e is an error term with a mean of zero, and subscripts for firms and years are suppressed for simplicity. DYR_j is a dummy variable that equals one for year j, and zero otherwise, included to control for changes in macroeconomic environment over time. DIND_k is a dummy variable included to control for industry effect on firm performance. LSIZE is the logarithm of average total assets. All other variables are in percentage and as previously defined. ASHARE and FOREIGN are included for controlling for the effects of tradable A-shares and foreign shares. LSIZE and DER are included to control the effects of size and capital structure. Note that LP is excluded from the regression to avoid introducing multicollinearity into the regression because the sum of STATE, LP, ASHARE, and FOREIGN is either one or very close to one.

Regression results are presented in Panel A of Table 6. Regression coefficients for year and industry dummies are not reported since they are only included as control variables. The coefficient for LSIZE (γ_1) is significantly positive at conventional levels ($t = 2.60$) and indicates that, ceteris paribus, larger firms perform better than smaller firms. This might be a result of China's national economic policy that favours large SOEs. The coefficient for DER (γ_2) is -0.886 and significantly negative at the 10% level ($p = 0.056$, two-tailed). The negative coefficient may reflect the fact that firms with higher DER had heavier interest burdens and their profitability were eroded by the higher interest expenses. Alternatively, it can be interpreted as being consistent with the pecking order effect discussed in Myers (1983). The coefficient on ASHARE is -0.027 and not significant at conventional levels ($t = -1.16$), indicating that diffused ownership by domestic investors does not improve firm performance. The coefficient on FOREIGN is significantly negative at the 0.05 level ($t = -2.16$, two-tailed) and suggests that ROE is lower, rather than higher, for firms with higher percentage ownership by foreign investors. The coefficient on STATE is significantly negative ($t = -2.75$), indicating that the ROE is lower for firms with greater state ownership.

To examine the relation between the proportion of LP shares and firm performance, we replace STATE with LP in Eq. (1) and estimate the following regression:

$$\mathrm{ROE} = \alpha + \beta_1 \mathrm{LP} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e. \quad (2)$$

Empirical results are reported in Panel B of Table 6. Coefficients for control variables are essentially the same as reported in Panel A of Table 6, except for the coefficient on FOREIGN, which is still negative but no longer significant at conventional levels. The coefficient on LP is significantly positive ($t = 2.52$). This is consistent with our prediction that greater ownership by legal persons improves the effectiveness of corporate governance and therefore contributes to better firm performance.

5.2. Firm performance and relative dominance by state and LP ownership

If greater ownership by legal persons reduces agency problems through more effective corporate governance while greater ownership by the state causes more severe conflict of interests between the management and the owners, then, ceteris paribus, firms dominated by legal persons should perform better than firms

Table 6
Ownership structure and firm performance (ROE)
Panel A reports results from the following regression, which examines the relation between the proportion of shares held by the state and firm performance, based on 774 firm-year observations from 1991 to 1996. Firm performance is measured by the ROE:

$$\mathrm{ROE} = \alpha + \beta_1 \mathrm{STATE} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e.$$

Panel B reports results from the following regression, which examines the relation between the proportion of legal person shares and firm performance as measured by the ROE based on 774 firm-year observations from 1991 to 1996:

$$\mathrm{ROE} = \alpha + \beta_1 \mathrm{LP} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j DYR_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e.$$

Variable definitions: ROE = return on equity; STATE = the proportion of shares held by the state; LP = the proportion of shares held by legal persons; ASHARE = the proportion of tradable A-shares; FOREIGN = the proportion of shares available only to foreign investors; DER = debt-to-equity ratio, based on book values; LSIZE = the logarithm of average total assets; DYR_j = a dummy variable that equals one for year j, and zero otherwise; DIND_k = a dummy variable that equals one for industry k, and zero otherwise.

	Estimate	Standard error	t Statistic
Panel A			
Intercept	−2.100	6.354	−0.331
STATE (β_1)	−0.037	0.013	−2.743***
ASHARE (β_2)	−0.027	0.023	−1.163
FOREIGN (β_3)	−0.062	0.029	−2.155**
LSIZE (γ_1)	1.091	0.419	2.604***
DER (γ_2)	−0.886	0.463	−1.914*
Adjusted R^2	0.103	–	–
F statistic	−7.334	–	–
Panel B			
Intercept	−5.401	6.518	−0.829
LP (β_1)	0.033	0.013	2.520**
ASHARE (β_2)	0.007	0.024	0.294
FOREIGN (β_3)	−0.030	0.031	−0.963
LSIZE (γ_1)	1.083	0.419	2.583***
DER (γ_2)	−0.921	0.462	−1.994**
Adjusted R^2	0.101	–	–
F statistic	7.240	–	–

* Significant at a level of 0.10, two-tailed.
** Significant at a level of 0.05, two-tailed.
*** Significant at a level of 0.01, two-tailed.

dominated by the state. We run the following regression to empirically test this proposition:

$$\mathrm{ROE} = \alpha + \beta_1(\mathrm{LP} - \mathrm{STATE}) + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e. \quad (3)$$

In regression (3), we use the difference between LP and STATE as a continuous variable to measure the relative dominance by legal persons and the state. A firm is said to be more LP dominated if the difference is greater, and more state-dominated if otherwise. All other variables are as previously defined.

Empirical results are shown in Table 7. Ordinary t statistics are presented because diagnostic tests suggest no heteroskedasticity-related misspecification. Largely consistent with results reported in Table 6, the ROE is significantly positively associated with LSIZE ($t = 2.60$) and significantly negatively associated with DER ($t = -1.95$). The coefficients on FOREIGN and ASHARE are negative but not significant at conventional levels. The coefficient on the difference

Table 7
Firm performance and the relative dominance of state and legal-person shares
This table reports results from the following regression, which examines the effect of relative dominance of state and legal-person shares on firm performance measured by the ROE. The sample consists of 774 firm-year observations from 1991 to 1996.

$$\mathrm{ROE} = \alpha + \beta_1(\mathrm{LP} - \mathrm{STATE}) + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e.$$

Variable definitions: ROE = return on equity; LP-STATE = the difference between the proportions of legal-person and state shares; ASHARE = the proportion of tradable A-shares; FOREIGN = the proportion of shares available only to foreign investors; DER = debt-to-equity ratio, based on book values; LSIZE = the logarithm of average total assets; DYR_j = a dummy variable that equals one for year j, and zero otherwise; DIND_k = a dummy variable that equals one for industry k, and zero otherwise.

	Estimate	Standard error	t Statistic
Intercept	−3.840	6.403	−0.600
LP-STATE(β_1)	0.018	0.007	2.637***
ASHARE (β_2)	−0.009	0.023	−0.405
FOREIGN (β_3)	−0.045	0.029	−1.543
LSIZE (γ_1)	1.087	0.419	2.595***
DER (γ_2)	−0.903	0.463	−1.953*
Adjusted R^2	0.102	–	–
F statistic	7.288	–	–

* Significant at a level of 0.10, two-tailed.
*** Significant at a level of 0.01, two-tailed.

between LP and STATE is 0.018 and significantly positive at the 0.01 level (two-sided). This means that the ROE rises as LP increases relative to STATE, and supports our hypothesis that relative dominance by legal persons over the state improves firm performance.

In regression (3), the degree of relative dominance by legal persons and the state is measured by a continuous variable. We further investigate this issue by focusing on the subsample of 299 firm-years that do not have simultaneous LP and state ownership. For this subsample, 227 observations have LP shares but no state shares, while the remainder have state shares but not legal person shares. We estimate the following regression using this subsample:

$$\mathrm{ROE} = \alpha + \beta_1 \mathrm{DLS} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e. \quad (4)$$

In regression (4), DLS is a dummy variable that equals one if a firm has LP but no state shares, and zero otherwise. All other variables are as previously defined.

Empirical results are presented in Table 8. Heteroskedasticity-consistent *t* statistics are reported. Empirical results for ASHARE, FOREIGN, LSIZE and DER are similar to those reported in Table 6 and Table 7. The coefficient for DLS is 3.84 and significantly positive with a p value of 0.003 (two-tailed). Therefore, on average, ceteris paribus, the ROE of firms with LP but no state ownership is higher than that of firms with state but no LP ownership by 3.84%. This evidence supports our hypothesis that firm performance is positively associated with the degree of relative dominance of LP shares over state shares because LP ownership enhances corporate governance. Our findings are consistent with Boubakri and Cosset (1998) who found that the difference in the increases of profitability and operating efficiency are significantly larger for control privatization than for revenue privatization.

5.3. Sensitivity analysis

We perform the following analysis to examine whether our results are sensitive to alternative specifications. First, we reestimate regressions (1), (2), (3) and (4) after excluding observations in the year of IPO. Firms typically do not operate as listed shareholding companies for the full year during the fiscal year when they are first publicly listed, and therefore their financial statement data may not adequately reflect their operating results and financial positions in the year of the IPO. Empirical results for regression (1) based on the non-IPO subsample of 496 firm years are reported in Panel A of Table 9 and remain consistent with our hypothesis. The coefficients for control variables are essentially the same as those for the full sample presented in Panel A of Table 6. The coefficient for state shares

Table 8
Firm performance and the relative dominance of state and legal-person shares — reduced sample
This table reports results from the following regression, which examines the effect of relative dominance of state and legal-person shares on firm performance as measured by the ROE. The sample consists of 299 firm-year observations, from 1991 to 1996, that do not have simultaneous legal-person and state ownership.

$$\mathrm{ROE} = \alpha + \beta_1 \mathrm{DLS} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e$$

Variable definitions: ROE = return on equity; DLS = a dummy variable that equals one if a firm has legal-person shares but no state shares, and zero otherwise; FOREIGN = the proportion of shares available only to foreign investors; DER = debt-to-equity ratio, based on book values; LSIZE = the logarithm of average total assets; DYR_j = a dummy variable that equals one for year j, and zero otherwise; DIND_k = a dummy variable that equals one for industry k, and zero otherwise.

	Estimate	Standard Error	T statistic
Intercept	−23.456	9.570	−2.451**
DLS (β_1)	3.840	1.277	3.008***
ASHARE (β_2)	−0.008	0.021	−0.366
FOREIGN (β_3)	−0.094	0.050	−1.870*
LSIZE (γ_1)	2.809	0.804	3.493***
DER (γ_2)	−1.200	0.927	−1.295
Adjusted R^2	0.123	–	–
F statistic	3.977	–	–

* Significant at a level of 0.10, two-tailed.
** Significant at a level of 0.05, two-tailed.
*** Significant at a level of 0.01, two-tailed.

is −0.047, significantly negative ($t = -2.69$). The adjusted R^2 increases to 0.167, from 0.103 for the full sample. Empirical results for regressions (2), (3) and (4) for the non-IPO sample are also generally stronger than those reported in Tables 6–8 for the full sample.

Second, we replace the ROE with the ROA as our performance measure and rerun the regressions. Empirical results for regression (1) are reported in Panel B of Table 9. Because a diagnostic test indicates that the variance of the error term is not constant, heteroskedasticity-consistent t statistics are reported. The adjusted R^2 is 0.201, much higher than the adjusted R^2 of 0.103 when the ROE is used to measure firm performance. More importantly, the coefficient for state shares is −0.025 and significantly negative ($t = -3.35$), supporting our hypothesis that firm performance is negatively correlated with state ownership. Results for regressions (2), (3) and (4) are also consistent with and generally stronger than those reported in Tables 6–8 where the ROE is used as the measure of firm performance.

Third, we replace the accounting-based performance measure of ROA or ROE with a market-based measure, MBR. We rerun the regression Eqs. (1)–(3) but

Table 9
Ownership structure and firm performance: sensitivity analysis
Panel A reports results from the following regression, which examines the relation between the proportion of state shares and firm performance as measured by the ROE based on 496 firm-year non-IPO observations from 1991 to 1996.

$$\mathrm{ROE} = \alpha + \beta_1 \mathrm{STATE} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e$$

Panel B reports results from the following regression, which examines the relation between the proportion of state shares and firm performance based on 774 observations from 1991 to 1996. Firm performance is measured by the ROA rather than the ROE.

$$\mathrm{ROA} = \alpha + \beta_1 \mathrm{STATE} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e$$

Variable definitions: ROE = return on equity; ROA = return on asset; STATE = the proportion of shares held by the state; ASHARE = the proportion of tradable A-shares; FOREIGN = the proportion of shares available only to foreign investors; DER = debt-to-equity ratio, based on book values; LSIZE = the logarithm of average total assets; DYR_j = a dummy variable that equals one for year j, and zero otherwise; DIND_k = a dummy variable that equals one for industry k, and zero otherwise.

	Estimate	Standard Error	t Statistic
Panel A			
Intercept	−10.992	6.827	−1.610
STATE (β_1)	−0.047	0.018	−2.690***
ASHARE (β_2)	−0.012	0.027	−0.441
FOREIGN (β_3)	−0.045	0.036	−1.252
LSIZE (γ_1)	1.575	0.495	3.179***
DER (γ_2)	−1.546	0.566	−2.732***
Adjusted R^2	0.167	–	–
F statistic	8.656	–	–
Panel B			
Intercept	5.283	2.963	1.783*
STATE (β_1)	−0.025	0.008	−3.354***
ASHARE (β_2)	−0.015	0.010	−1.474
FOREIGN (β_3)	−0.035	0.013	−2.721***
LSIZE (γ_1)	0.269	0.215	1.247
DER (γ_2)	−2.008	0.220	−9.110***
Adjusted R^2	0.201		
F statistic	14.895		

* Significant at a level of 0.10, two-tailed.
*** Significant at a level of 0.01, two-tailed.

replace the dependent variable ROE with MBR. The results are reported in Table 10. The regression coefficient is significantly negative for STATE variable at the

Table 10
Ownership structure and firm performance (MBR)
Panel A reports results from the following regression, which examines the relation between the proportion of state shares and firm based on 646 observations from 1993 to 1996. Firm performance is measured by the MBR, rather than the accounting-based measures of the ROE or ORA:

$$\mathrm{MBR} = \alpha + \beta_1 \mathrm{STATE} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e.$$

Panel B reports results from the following regression, which examines the relation between the proportion of legal-person shares and firm performance based on 647 observations from 1993 to 1996. Firm performance is measured by MBR:

$$\mathrm{MBR} = \alpha + \beta_1 \mathrm{LP} + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e.$$

Panel C reports results from the following regression, which examines the effect of relative dominance of state and legal-person shares on firm performance measured by MBR. The sample consists of 647 firm-year observations from 1993 to 1996.

$$\mathrm{MBR} = \alpha + \beta_1 (\mathrm{LP} - \mathrm{STATE}) + \beta_2 \mathrm{ASHARE} + \beta_3 \mathrm{FOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=92}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e$$

Variable definitions: MBR = market to book ratio of equity; LP = the proportion of shares held by legal persons; ASHARE = the proportion of tradable A-shares; FOREIGN = the proportion of shares available only to foreign investors; LP-STATE = the difference between the proportions of legal-person and state shares; DER = debt-to-equity ratio, based on book values; LSIZE = the logarithm of average total assets; DYR_j = a dummy variable that equals one for year j, and zero otherwise; DIND_k = a dummy variable that equals one for industry k, and zero otherwise.

	Estimate	Standard error	t Statistic
Panel A			
Intercept	14.082	0.906	15.533***
STATE (β_1)	−0.007	0.002	−3.344***
ASHARE (β_2)	−0.029	0.004	−7.619***
FOREIGN (β_3)	−0.007	0.005	−1.377
LSIZE (γ_1)	−0.630	0.067	−9.423***
DER (γ_2)	0.420	0.073	5.773***
Adjusted R^2	0.483		
F statistic	51.345		
Panel B			
Intercept	13.427	0.943	14.238***
LP (β_1)	0.007	0.002	3.202***
ASHARE (β_2)	−0.022	0.004	−5.578***

Table 10 (*continued*)

	Estimate	Standard error	*t* Statistic
Panel B			
FOREIGN (β_3)	0.000	0.005	0.012
LSIZE (γ_1)	−0.631	0.067	−9.428***
DER (γ_2)	0.415	0.073	5.710***
Adjusted R^2	0.483		
F statistic	51.19		
Panel C			
Intercept	13.743	0.919	14.949
LP-STATE(β_1)	0.004	0.001	3.282***
ASHARE (β_2)	−0.025	0.004	−6.804***
FOREIGN (β_3)	−0.003	0.005	−0.656***
LSIZE (γ_1)	−0.630	0.067	−9.423***
DER (γ_2)	0.418	0.073	5.744***
Adjusted R^2	0.483	–	–
F statistic	51.28	–	–

*** Significant at a level of 0.01, two-tailed.

1% level. From Panel A of Table 10, it can be seen that the coefficients for ASHARE and FOREIGN remain negative as in Table 6 when ROE is used as the performance measure. The adjusted R^2 is now 0.483, higher than that when accounting-based measures are used. The evidence in Panels B and C also provides stronger support to the conclusion reached when ROE was used as the performance measure. In general, the R^2 have increased to more than 40% from around 10% when we switch to MBR from ROE as the performance measure.

Fourth, we reestimate the three regressions using STATE, LP, ASHARE, FOREIGN, DER and LSIZE values at the end of the year, instead of their averages at the beginning and end of the year. The tenor of our results remains unchanged. In short, our empirical results are robust under these alternative sample and variable specifications.

5.4. The endogeneity issue of the ownership structure

Even though our results provide strong evidence that firm performance is positively related to the proportion of LP shares and negatively related to the proportion of state ownership, one could argue that legal persons only invested in SOE-transformed firms that are well managed and profitable. On the other hand, the state may have a tendency to retain large ownership stake in firms with poor performance. That is, the causal direction is rather from firm performance to ownership structure. We address this concern by investigating how incremental

changes in the proportion of ownership by each class of shareholders affect the firm performance. Specifically the following regression is estimated:

$$\mathrm{DROE} = \alpha + \beta_1 \mathrm{DSTATE} + \beta_2 \mathrm{DASHARE} + \beta_3 \mathrm{DFOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=93}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e, \quad (5)$$

where DROE, DSTATE, DASHARE and DFOREIGN represent annual changes in ROE, STATE, ASHARE and FOREIGN, respectively. All other variables are as previously defined. It should be noted that both state and LP shares cannot be traded on the stock exchange and but they can be transferred among state and LP owners. We only have 234 firm-year with changes in either state or LP shareholding.

Regression results are presented in Table 11 and, in general, they are consistent with those reported in Table 6. It can be seen that coefficient for DSTATE is significantly negative at the 5% level, indicating that increased state ownership over time has a negative while increased LP ownership has a positive impact on the firm performance.

Table 11
Changes in ownership structure and firm performance
This table reports results from the following regression, which examines the relation between changes in the proportion of state shares and changes in firm performance based on 234 observations from 1992 to 1996.

$$\mathrm{DROE} = \alpha + \beta_1 \mathrm{DSTATE} + \beta_2 \mathrm{DASHARE} + \beta_3 \mathrm{DFOREIGN} + \gamma_1 \mathrm{LSIZE} + \gamma_2 \mathrm{DER} + \sum_{j=93}^{96} \delta_j \mathrm{DYR}_j + \sum_{k=1}^{4} \lambda_k \mathrm{DIND}_k + e,$$

Variable definitions: DROE = changes in return on equity; DSTATE = changes in the proportion of shares held by the state from the previous year; DASHARE = changes in the proportion of tradable A-shares from the previous year; DFOREIGN = changes in the proportion of shares available only to foreign investors from the previous year; DER = debt-to-equity ratio, based on book values; LSIZE = the logarithm of average total assets; DYR_j = a dummy variable that equals one for year j, and zero otherwise; DIND_k = a dummy variable that equals one for industry k, and zero otherwise.

	Estimate	Standard error	t Statistic
Intercept	5.5740	6.075	0.945
DSTATE (β_1)	−0.103	0.051	−2.032**
DASHARE (β_2)	−0.138	0.114	−1.210
DFOREIGN (β_3)	−0.049	0.128	0.381
LSIZE (γ_1)	−0.638	0.448	−1.422
DER (γ_2)	−1.057	0.855	−1.236
Adjusted R^2	0.150		
F statistic	4.183		

** Significant at a level of 0.05, two-tailed.

6. Conclusion

Using a sample consisting of all firms listed on the SHSE between 1991 and 1996, we find that the ROE decreases in the proportion of state shares and increases in the proportion of LP shares. Firm performance improves as the relative dominance of LP shares over state shares increases. For the subsample of firms that do not have both state and LP shares, the ROE of firms with LP but no state shares is higher than that of firms with state but no LP shares by 3.84%, and this difference is statistically significant. Our evidence on the relation between firm performance and tradable shares indicates that diffused ownership by individual domestic and foreign investors does not improve firm performance. Sensitivity analysis indicates that these results are robust under several alternative specifications. These findings indicate that the ownership structure composition and relative dominance by either the state or LP shareholdings can affect the performance of SOE-transformed, listed firms.

Appendix A. Exhibit 1

A.1. Ownership structure and large legal-person (LP) shareholders of FAW Jinbei Automotive, end of 1996

FAW Jinbei Automotive, which manufactures light trucks, pick-ups, and auto parts, is a typical SOE-transformed listed company. It was formed in 1988 when Shenyang Automotive Industrial, an SOE, was restructured into a joint stock company. Subsequently, it went public through an initial public offering (IPO) on the Shanghai Stock Exchange (SHSE) on July 24, 1992. On February 8, 1995, the First Automotive Work Group (FAW), one of the three largest Chinese auto makers, acquired 51% of Jinbei's shares and became the largest LP shareholder.

	Number of shares	Percentage of total shares
Panel A: Jinbei's ownership structure at the end of 1996		
Tradable shares		
A	280,000,000	28.8
B	0	0.0
H	0	0.0
Subtotal	280,000,000	28.8
Nontradable shares		
State	73,760,300	7.6
Legal person	618,051,000	63.6
Other	0	0.0
Subtotal	691,811,000	71.2
Total	971,811,000	100.0

	Number of shares	Percentage of total shares
Panel B: Jinbei's legal-person shareholders at the end of 1996		
China First Automotive Work Group	495,623,800	51.00
Shenyang Auto Investment	122,427,200	12.60

Source: 1996 Annual Report to Shareholders, FAW Jinbei Automotive.

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