State ownership, sovereign wealth fund and their effects on firm performance: Empirical evidence from Vietnam[☆]

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ABSTRACT

This study investigates the effects of state ownership on firm performance using data on listed firms in Vietnam. We find that state ownership of listed firms is positively related to firm performance. In addition, we find that the effects of state ownership vary depending on the type of state ownership. Firms perform best when controlled by a state owner in the form of a sovereign wealth fund. We also find that the relationship between state ownership and firm performance is nonlinear. Overall, the study contributes significantly to the growing body of evidence on the effects of state ownership, the impact of the type of state owner, and the role of controlling shareholders in corporate governance frameworks.

1. Introduction

The purpose of this paper is to examine the effects of various types of state ownership on the performance of Vietnamese firms, with particular emphasis on the role of sovereign wealth funds (SWFs). The principal motivation for the analysis is the ongoing debate on the role of state ownership of firms, with many studies documenting its effect on firm performance (Boardman and Vining, 1989; Dewenter and Malatesta, 2001; Estrin et al., 2009; Frydman et al., 1999; Gylfason et al., 2001; Megginson and Netter, 2001; Sappington and Stiglitz, 1987).

Many empirical studies examine the effect of privatization on performance. In particular, the privatization of state-owned enterprises in Central and Eastern Europe (CEE) and in Russia and other Commonwealth of Independent States countries has attracted

considerable attention.[1] Studies examining the effect of privatization in CEE conclude that privatized firms perform better than comparable state-owned enterprises (SOEs) (Claessens and Djankov, 1999b; Dyck, 1997; Frydman et al., 2000; Weiss and Nikitin, 1998).

More recently, another type of government ownership, namely SWFs, has attracted both academic and media attention (Bortolotti et al., 2009; Chhaochharia and Laeven, 2009; Dewenter et al., 2010; Knill et al., 2009; Kotter and Lel, 2008; Liao and Karolyi, 2009). These studies suggest that government ownership in the form of a SWF contributes to improvements in firm value. Some might argue that these studies on SWFs contradict those on privatization in CEE countries, which report negative effects of government ownership. However, it is difficult to compare the results for CEE countries with those on SWFs because of the many differences in terms of institutional frameworks and government policies.

In an attempt to fill this gap in the literature, we examine the effect of various types of government ownership on the performance of listed firms in Vietnam. Vietnam is an ideal context for addressing this particular research question because we can observe several different types of government ownership in the one country, including privatized firms in which the state continues to hold a significant share, and firms invested in by the Vietnamese SWF, the State Capital Investment Corporation (SCIC). For our analysis, we employ financial and ownership data for nonfinancial firms listed on the Vietnamese market from 2006 to 2010.

In this study, we find that state-controlled firms outperform firms that are not state controlled. This result is especially striking in that we find that all types of state firms—including those strongly controlled by bureaucratic systems—outperform privately owned firms.[2] There are some reasons why state ownership could generate positive effects on firm performance and value, especially in countries with a weak regulatory system, such as Vietnam. To start with, private firms receive less favorable business advantages (in terms of obtaining licenses, credit access, land access, market access, allocation of national resources, and monopoly privileges) than do state firms (IFC, 2012; Katariina and Kokko, 2007). Furthermore, information asymmetry about changes in government policy and regulation may exist between state-owned and fully private firms, as state-owned firms will have better access to this information. Thus, the state owners have the capacity to influence government policies or to use insider information on potential policy changes to benefit the firms in which they have invested. Last but not least, state firms may outperform private firms in terms of establishing the political ties to acquire private benefits from their connections.[3] The state firms may also have political incentives to encourage their employees to achieve better performance and higher productivity.[4]

Another point of novelty in our analysis is that we classify government ownership into three types.[5] First, we identify SCIC-linked companies (SLCs), in which the SCIC, Vietnam's SWF, has ownership. As shown in succeeding sections, we consider that the SCIC monitors these particular firms with the aim of maximizing firm value, rather than as a means of achieving any particular political objective. The second type of government ownership comprises state-owned firms in which a privatized state-owned enterprise holds ownership (SOEPs), and the third type comprises state-owned firms owned by large state economic groups (EGs) and general corporations (GCs) (hereafter, SOEGs). We also identify nonstate (private) firms without state ownership listed on the Vietnamese stock market, referred to as "OTHERs."

In our analysis, we find that the type of state owner matters.[6] In particular, firms owned by the SCIC, Vietnam's own SWF fund, perform better than SOEGs, in which the influence of government is major.[7] Our results are consistent with those of previous studies (Ang and Ding, 2006; Bortolotti et al., 2009; Chhaochharia and Laeven, 2009; Dewenter et al., 2010; Feng et al., 2004; Knill et al., 2009; Kotter and Lel, 2008; Liao and Karolyi, 2009). There are several reasons for the better performance of SCIC-related firms, as described in detail in Section 2. Often, the SCIC influences its target companies through better monitoring and network transactions. For example, the SCIC appoints its representatives as directors or officers of target firms. It is often the case that target firms are invested by other firms which is closely connected to SCIC. These activities by the SCIC are very similar to those of other SWFs, as described in Dewenter and Malatesta (2001).

A number of studies reveal that there is an inverted-U-shaped relationship between insider equity ownership (ownership concentration) and firm value (Bhabra, 2007; McConnell and Servaes, 1990; Morck et al., 1988; Shleifer and Vishny, 1986, 1997; Stulz, 1988). For example, Dewenter et al. (2010) identify an inverted-U-shaped function between investment by a SWF and firm value.

In our study, we find evidence of an inverted-U-shaped relationship between state ownership and firm performance in Vietnam. In particular, we find that an inverted-U-shaped relationship exists for all types of state owners when measuring ROA, but, when measuring Tobin's Q, the relationship only holds for SLCs and SOEPs. We find that state ownership can generate the most effective impact on firm performance when the state owns 30–55% of the firm, with variation within this range depending on the type of state owner (about 30–35% in SLCs, 40–45% in SOEPs and 50–55% in SOEGs). These figures are in line with the optimal levels of large ownership identified in previous studies, including 35% in McConnell and Servaes (1990) and Hess et al. (2010) and 30–50% in Wei

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[1] Megginson and Netter (2001), Djankov and Murrell (2002), and Estrin et al. (2009) provide excellent surveys of these empirical studies.

[2] Our results are not inconsistent with those in Truong et al. (2006) and World Bank (2012) given the large differences in the samples used in these respective analyses.

[3] Faccio (2006) indicates that the relationship between political patronage and firm performance exists.

[4] There are cases where the chairperson or CEO of listed state firms is promoted into a higher position in the political system in Vietnam. For instance, the chairperson and CEO of Dien Quang Lamp Joint Stock Company has been Deputy Minister of Industry and Trade since 2011.

[5] Section 2 provides information on the firm groups and types of state owners.

[6] Wang (2003) and Chen et al. (2009) examine the effects of different forms of state ownership on firm performance in China.

[7] We specify a state controlling shareholder dummy and state ownership ratios as independent variables. We define the state controlling shareholder dummy as a variable taking a value of one when the state holds at least 25% of a firm's shares and is the largest shareholder. We set the threshold at 25% based on the financial regulations prevailing in the Vietnamese equity market.

(2007).

To confirm the robustness of our results, we conduct a large number of supplementary tests. First, we employ instrumental variable regressions and Heckman regressions to address the question of endogeneity. Then, we use alternative definitions of the foreign ownership cutoff and explore the interaction between foreign ownership and government ownership to determine if the effect of foreign ownership varies by government ownership, particularly for SLCs.

The remainder of the paper is structured as follows. Section 2 discusses several important features of controlling shareholders and state owners in Vietnam. Section 3 describes our data collection and research methodology. Sections 4, 5, and 6 analyze the empirical results obtained on the effects of state ownership and the type of state owner on firm performance and value. Section 7 provides additional tests of robustness. Section 8 concludes the study.

2. Types of state owners among listed firms in Vietnam

Currently, many different types of state entities control state-owned businesses in Vietnam. As discussed earlier, we classify firms with state ownership into three types: (1) SLCs—firms with state ownership under the control of the SCIC, (2) SOEGs—firms with state ownership controlled by an EG or GC, and (3) SOEPs—firms with state ownership controlled by partially privatized SOEs. We provide details on each firm group and the associated state owner below.

SLCs are state firms controlled by the SCIC. The SCIC, which has a business model comparable to that of Temasek, a Singaporean SWF, is a wholly state-owned entity that operates in the form of a financial holding institution. As an investor, the SCIC conducts a range of activities, including the purchase of shares and bonds newly issued by the SLCs, investing in infrastructure projects, and setting up joint ventures with domestic (e.g., Bao Viet Insurance Holding) and foreign (e.g., Oman State General Reserve Fund) partners. During the period 2006–2010, the SCIC invested approximately VND 6000 billion (equivalent to USD 300 million at an exchange rate of USD 1 = VND 20,000) in several different forms. For example, VND 2700 billion was used to purchase new share issues in high-growth and potentially high-growth SLCs (including Binh Minh Plastic Co., Tien Phong Plastic Co., Vinamilk Co., and Hau Giang Pharmaceutical Co.) as a way of increasing or maintaining SCIC (state) ownership and strengthening controlling shareholder rights. Generally, the historical financial performance of SCIC shows that earnings from its main business activities increased gradually for all six years investigated.

There are several possible reasons why firms owned by the SCIC perform better. In line with the prior study of the influencing behaviors of SWFs (Dewenter and Malatesta, 2001), we observe several ways in which the SCIC influences the firms in which it invests (the SLCs) using publicly available information in Vietnam. First, the SCIC exercises its shareholding rights in SLCs by strengthening the monitoring of firms. Depending on the level of ownership, the SCIC introduces and appoints its representatives as directors, board members, or members of the supervisory board of target firms, which can be observed in the case of Vinamilk Co., Hau Giang Pharmaceutical Co., Vietnam National Reinsurance Co., FPT Technology Co., Vinaconex Construction Co., Domesco Co., Military Joint Stock Bank, and others.[8] In addition, as an active state shareholder, with the vital technical assistance of the IFC, the SCIC attempts to enhance the corporate governance practice of the firms in which it invests.

Second, firms in which the SCIC invests are likely to have better business contacts with other SCIC-related companies. Once a year, SCIC organize a national general meeting of representatives in its invested firms. SCIC could utilize its wide networking with overseas financial institutions to invite foreign strategic partners to invest for SCIC invested firms. For instance, SCIC has agreed to select Abbott Laboratories (Chile) as strategic partner in Domesco Co. by divesting a certain proportion of SCIC ownership in the company, which is expected to support Domesco Co. in enhancing production and operations as well as finance condition and quality of human resources.

As a bridge connecting firms in its portfolio, SCIC plays important role in accelerating business matching activities among its invested firms for mutual value-added benefits of these firms. For instance, Vinamilk Co. and Hau Giang Pharmaceutical Co. has signed agreements to tightly cooperate in R&D in health care products, market access, distribution channel sharing. In other words, compared with other types of state-controlled firms, SLCs under the active control and strict monitoring of the SCIC are more likely to pursue shareholder value maximization and other financially oriented targets, enjoy greater autonomy, experience greater independence from "bureaucratic" government agencies, and be relatively free from the demands of socially oriented projects.

The second group of firms comprises SOEGs, which are state firms controlled by an EG or GC. All EGs and GCs are 100% state owned and unlisted, and they often dominate or hold monopoly positions in key industries, including energy (oil, gas, coal), public utilities, telecommunications, materials, and heavy industry (especially shipbuilding).[9] Generally, EGs and GCs maintain controlling shares in their listed subsidiary or member companies. Given their close connection with the central government and their relative importance in the economy, we consider that political influence affects EGs and GCs, and, therefore, that they would be under greater pressure to pursue socially oriented projects if requested (World Bank, 2012). Recently, a flagship of the EGs and GCs, the Vietnamese Shipbuilding Group (Vinashin), and its members experienced severe financial distress (World Bank, 2012). Not willing to let Vinashin

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[8] In many cases, the SCIC representatives, who are normally top managers of the SCIC, are appointed as chairperson or deputy chairperson of the board of directors in the target firms, allowing SCIC to impose significant influence on the decision-making process or business strategy of the target firms.

[9] As discussed in UNDP (2007), the Coal State General Corporation and its members (including several SOEGs) account for 95% of the market share. Of the 200 largest Vietnamese firms in terms of assets, 120 are members of EGs and GCs. Many of these firms are listed and thus can be classified as SOEGs.

fail, the Vietnamese government created a bailout plan for the giant EG.

The third group of firms comprises SOEPs, which are state firms controlled by a privatized SOE. These privatized SOEs are generally smaller and usually engaged in less important industries. In most cases, the state maintains at least 50% ownership of privatized SOEs. Similarly to EGs and GCs, the privatized SOEs are unlisted and usually include a number of listed subsidiaries or joint ventures in their portfolios. We consider the SOEPs to be less subject to political influence than SOEGs because their owners, the privatized SOEs, generally have fewer connections with the central government. Therefore, when compared with SOEGs, we expect CEO appointments to SOEPs to depend more on qualifications and competence than on political connections.

Another group that controls a large number of nonstate (private) firms listed on the Vietnamese stock market is referred to as "OTHERs" in this paper. It includes: (i) founder-CEO firms, which are firms incorporated by founding families or individuals who are generally well-known domestic entrepreneurs in the post economic reform period in Vietnam that began in 1986. (ii) ex-foreign direct investment (FDI) enterprises, typically controlled by a foreign CEO, and (iii) ex-SOEs, controlled by domestic individuals or nonstate institutions, that currently have no government ownership as they were sold to outside investors (including managers and employees) before the SOE was listed.

3. Data

3.1. Data collection and sample definition

In the analysis, we employ financial and ownership data for nonfinancial listed firms in Vietnam. The listed firms are from the Ho Chi Minh and Hanoi Stock Exchanges. The database, covering the period from 2006 to 2010, draws on various sources. Financial accounting data (ROA, sales to assets, solvency, assets, sales, etc.) and the Global Industry Classification Standard (GICS) industry classification are from the OSIRIS database. Ownership data on the identity of controlling shareholders and data on the control variables (listing location, year of listing, firm age, etc.) are from reputable financial information service companies in Vietnam, including Golden Bridge Vietnam Securities Joint Stock Company and BIDV Securities Company. Using information derived from a company profile/ownership structure/large shareholder search on the webpages of these information providers, we track the identities of the state owners of each state-controlled firm. For some listed firms in some years, there is insufficient information using this method to find the details of the state owners; in these cases, we use the annual reports of these firms to confirm the identity of the state owners. To identify ownership structure, we draw on lists of the country's richest families and individuals annually compiled by VnExpress. The data on the percentages of state and foreign ownership, stock prices, and outstanding shares for listed firms are taken from (i) daily stock exchange bulletins (year-end versions as at Dec. 31) issued by the Ho Chi Minh and Hanoi Stock Exchanges, and (ii) market summary reports by the Saigon Securities Company. In addition, we rely on firms' annual reports to obtain data on each firm's geographic location and whether the firm's CEO studied abroad.

After checking whether the listed firms were active during the period 2006–2010, we found a single case of delisting, for Bong Bach Tuyet Co.[10]; we therefore excluded this firm from our database. By checking the identity of the state owner for each state-controlled firm across the years and by comparing the identity of the state owners in the first year (2006) and last year (2010), we discovered that no firms experienced a change in the identity of their state owner during our sample period. In other words, there were no transfers of state ownership among the three separate corporate state owners (the SCIC, the EGs and GCs, and the privatized SOEs) during the period 2006–2010.

Through this sampling procedure, we obtained a database comprising 407 listed firms with 1236 firm-year observations, with 288 listed firms categorized as SLCs, SOEPs, or SOEGs. Of these 288 firms, 227 have government ownership levels of > 25%. The remaining 119 listed firms, which have no government ownership, are OTHERs. On average, the firms collected in the database account for about 98% of total nonfinancial market capitalization over the sample period. All nonfinancial firms included in the most relevant Vietnamese equity market indexes for government (VN Index) and private financial institution (CBV Index, SSI 30 Index, DC VN30 Index) are included in the database. Table 1 provides the definitions of the dependent and independent variables.

As discussed, we define a controlling shareholder as one that owns at least 25% of shares and is the largest shareholder. We base this cutoff on the definition given in Vietnam's 2005 Enterprise Law. La Porta et al. (1999) suggest that, in many countries, controlling shareholders have voting rights that exceed their cash flow rights because of pyramid-ownership structures and participation in management. In the Vietnamese market, many listed firms have subsidiaries or affiliates, but most are in the form of single-member or two-member limited liability companies or unlisted joint stock companies. On this basis, we argue that the issue of pyramid-ownership structures is only a minor concern among the listed firms in our sample. In addition, although cross-shareholding is common in the banking sector, it is relatively uncommon among nonfinancial firms, as in our sample. Therefore, we consider that there are no significant differences in cash flow and control rights among our firms. We find that firm ownership structure in Vietnam is relatively concentrated, based on observation of the current ownership data of listed firms collected and published by Golden Bridge Vietnam Securities Joint Stock Company and the unique private dataset on Vietnamese listed firms provided by the Vietnam Development Strategy Institute and the Ministry of Planning and Investment.[11] The largest shareholder often has an ownership level significantly higher than that of the second-largest shareholder. This means that the controlling shareholder with at least a 25% stake

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[10] Two additional cases of delisting (Full Power and Vitaly) took place in 2011; these firms are included in our 2006–2010 sample.

[11] We are grateful to this agency for assisting us to collect data from firms' annual reports (2016–2020), including data on each firm's geographic location and whether their CEO studied abroad.

Table 1
Variable definitions.

Variable	Definition
Firm groups	
SLCs	Firms with government ownership under control of the State Capital Investment Corporation (SCIC)
SOEPs	Firms with government ownership controlled by partially privatized state-owned enterprises (SOEs)
SOEGs	Firms with government ownership controlled by state economic groups (EGs) or general corporations (GCs)
OTHERs	Firms without government ownership
State owners and controlling shareholders	
SLCs dummy	Equals one if at least 25% of government ownership is controlled by the SCIC, otherwise zero
SOEPs dummy	Equals one if at least 25% of government ownership is controlled by a privatized SOE, otherwise zero
SOEGs dummy	Equals one if at least 25% of government ownership is controlled by an EG or GC, otherwise zero
State-controlled dummy	Equals one if the firm has government ownership of at least 25%, otherwise zero
State dummy	Equals one if the firm has any government ownership, otherwise zero
Private firm and state firm	Firm has no government ownership (nonstate firm) and firm has government ownership, respectively
Ownership ratios	
SLCs ratio (%)	Percentage of government ownership in firms controlled by the SCIC
SOEPs ratio (%)	Percentage of government ownership in firms controlled by a privatized SOE
SOEGs ratio (%)	Percentage of government ownership in firms controlled by an EG or GC
Performance ratios	
Tobin's Q	Firm market capitalization divided by total assets
ROA	Net income to total assets
Sales to assets	Total sales to total assets
Ad_ratios	Industry-adjusted ratio = firm ratio − industry median ratio. As an example of an industry-adjusted ratio, if the ROA of the firm is 10% and the median ROA of the firm's industry is 8%, the industry-adjusted ROA is 2% (=10%–8%)
Other independent variables	
Government ownership (gown)	Percentage of state ownership (including SLCs, SOEPs, and SOEGs)
Foreign ownership (fown)	Percentage of collective foreign ownership
Foreign dummy	Equals one if foreign ownership is at least 10%, otherwise zero
Log (assets)	Log value of firm total assets
Solvency	Total equities to total assets
Firm age	Years since incorporation
Study abroad dummy	Equals one if the firm's CEO studied in a foreign country, otherwise zero
Firm geographic location dummy	Equals one if the firm is located in the Red River Delta provinces (including in Hanoi), otherwise zero
Strategic industry dummy	Equals one if the industry is strategic (energy, materials, or utilities), zero otherwise
Industry dummy	Industry classification based on Global Industry Classification Standard (GICS)
Year dummies	Dummy variables that are set to one if the years are before 2008 and after 2008

in the firm has sufficient voting rights to exercise significant controlling power.[12] Therefore, we consider an owner with at least 25% ownership to be a significant controlling shareholder.

Furthermore, foreigners can own up to 49% only of shares in listed nonfinancial firms in Vietnam. Therefore, a 10% foreign participation rate may be an appropriate level at which to recognize potentially significant foreign influence. Accordingly, we specify a 10% cutoff to control for the effects of foreign investors.

Table 2 presents the industry classifications of firms according to the type of controlling shareholder. As shown, SOEGs dominate the energy industry (with 47 firm-year observations accounting for 80% of all firm-years in this industry), utilities (41 and 91%), materials (86 and 34%), and real estate (22 and 42%) industries. Compared with the other types of controlling shareholders, SLCs operate most in two industries, pharmaceuticals (10 firm-year observations and 63% of all firm-years in the industry) and food and beverages (33 and 20%). SOEPs are more evident in consumer durables and apparel (22 and 54%), followed by capital goods (105 and 28%), and materials (68 and 27%). Finally, OTHERs tend to control more firms in real estate (23 and 43%) and software (9 and 100%): the industries in Vietnam with the highest growth potential. In general, the distribution of industries across each firm group is unequal, which may support the argument that, after privatization and before listing, residual state ownership in former privatized SOEs may be assigned to certain state controlling shareholders based on their industry. In addition, compared with SOEPs and SLCs, there are more SOEGs operating in industries characterized by natural monopolies.

3.2. Descriptive statistics

Table 3 provides descriptive statistics for the main variables for all 1262 firm-year observations from 2006 to 2010. The mean and median ROA (measured by net income to total assets) are 7.47% and 6.28%, respectively, and the mean and median for Tobin's Q (measured by firm market capitalization divided by total assets) are 0.81 and 0.53, respectively. The average government ownership

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[12] La Porta et al. (1999) and Claessens et al. (2000) conclude that, at least in East Asia, the second-largest shareholder may not effectively monitor the largest shareholder.

Table 2
Industry classification by type of controlling shareholder.

Industry	GICS code	SLCs	SOEPs	SOEGs	OTHERs	Total
Energy	1010	0	5	47	7	59
Materials	1510	21	68	86	78	253
Capital goods	2010	32	105	175	64	376
Commercial services and supplies	2020	3	0	19	6	28
Transportation	2030	4	21	30	18	73
Automobiles and components	2510	4	0	7	0	11
Consumer durables and apparel	2520	4	22	0	15	41
Consumer services	2530	3	10	12	7	32
Media	2540	5	2	30	0	37
Retailing	2550	6	4	14	0	24
Food, beverages, and tobacco	3020	33	34	33	68	168
Household and personal products	3030	0	0	1	0	1
Pharmaceuticals, biotechnology	3520	10	0	6	0	16
Real estate	4040	4	4	22	23	53
Software and services	4510	0	0	0	9	9
Technology hardware, equipment	4520	5	4	15	11	35
Semiconductors and equipment	5010	0	0	1	0	1
Utilities	5510	4	0	41	0	45
Total		138	279	539	306	1262

This table presents the distribution of listed firms by industry and type of controlling shareholder. Industries without firms are not reported. Table 1 provides definitions of the firm groups in the column headings.

Table 3
Descriptive statistics for the full firm-year sample, 2006–2010.

Variable	N	Min.	p5	p95	Max.	Mean	Median	SD
Tobin's Q	1236	0.05	0.16	2.50	5.32	0.81	0.53	0.79
Industry-adjusted Tobin's Q	1236	−1.98	−0.72	1.54	4.37	0.00	−0.22	0.75
ROA (%)	1262	−83.02	0.12	21.29	54.84	7.47	6.28	8.47
Industry-adjusted ROA	1262	−88.99	−8.89	13.17	45.27	0.00	−0.80	8.16
Sales to assets (%)	1262	0.02	0.20	3.05	11.64	1.25	0.99	1.13
Industry-adjusted sales/assets	1262	−1.98	−0.95	1.51	10.42	0.00	−0.20	1.05
Assets (VND billions)	1262	0	32	3900	26,000	947	350	1942
Industry-adjusted assets	1262	−2410	−1550	2708	23,450	4	−415	1865
Solvency (equities/assets)	1262	0.00	15.69	87.80	99.40	49.24	47.08	22.31
Foreign ownership	1259	0.00	0.00	0.43	0.49	0.10	0.04	0.13
Government ownership	1259	0.00	0.00	0.60	0.85	0.30	0.30	0.23
Years since incorporation	1217	2.00	6.00	50.00	65.00	22.21	18.00	13.54

This table provides descriptive statistics for the main variables. Values for year of listing of 0, 5, or 10 indicate whether the firm was listed in 2000, 2005, or 2010, respectively. Table 1 provides definitions of the variables. p5 and p95 are the 5th and 95th percentiles, respectively.

Table 4a
Percentage ownership for state controlling shareholders.

	N	Mean	Min.	p25	p50	p75	p95	Max.	SD
Government ownership (%)	953	38.98	1.34	23.74	45.00	51.00	64.00	85.00	18.33
SLCs ratio (%)	138	35.15	4.80	23.74	37.18	51.00	60.00	67.70	15.63
SOEPs ratio (%)	279	27.63	1.34	11.96	25.00	50.00	54.00	74.25	17.67
SOEGs ratio (%)	536	45.98	8.00	38.86	51.00	52.00	68.52	85.00	15.85

This table details descriptive statistics for government ownership and shares of ownership for state controlling owners by type. SLCs (%), SOEPs (%), and SOEGs (%) indicate percentages of ownership held by the SCIC, SOEPs, and SOEGs, respectively. p25, p50, p75, and p95 are the 25th, 50th (median), 75th, and 95th percentiles, respectively. The first line (Government ownership) only includes firms for which government ownership is larger than zero.

is 30%, which reflects the fact that the state can be an absolute controlling owner in listed firms.

Table 4a provides basic statistics on government ownership and the ownership ratios of the state controlling shareholders. Among those firms with government ownership, average government ownership is about 39%, with 75% of these firms having > 24% government ownership. In addition, as a rule, SLCs, SOEPs, and SOEGs have similar mean state ownership, within the range

Table 4b

Distribution of government ownership by type of state owner.

	Year	N	Min.	p25	p50	p75	p95	Max.
SLCs								
Government ownership (%)	2006	38	7	25	39	51	61	68
	2010	38	5	25	38	51	61	68
SOEPs								
Government ownership (%)	2006	84	4	14	28	51	55	74
	2010	84	4	13	25	51	54	74
SOEGs								
Government ownership (%)	2006	163	8	40	51	54	74	85
	2010	165	8	39	51	51	69	80

This table shows the distribution of government ownership for different types of state ownership in 2006 and 2010. p25, p50, p75, and p95 are the 25th, 50th (median), 75th, and 95th percentiles, respectively.

Table 4c

Percentage distribution of foreign ownership.

	N	Mean	Min.	p25	p50	p75	p95	Max.	SD
Foreign ownership (%)	1259	9.90	0.00	0.70	3.50	13.90	43.20	49.00	13.36

Table 4d

Correlation between foreign ownership and government ownership.

	Foreign ownership	Government ownership	SLCs (%)	SOEPs (%)	SOEGs (%)
Foreign ownership	1	−0.24***	0.06**	−0.06**	−0.22***

The symbols *** and ** indicate significance at the 1% and 5% levels, respectively.

Table 4e

Number of firm-year observations with government ownership, 2006–2010.

	Group 1 (≥25%)	Group 2 (>0%)
SLCs number	100	138
SOEPs number	141	279
SOEGs number	472	536

SLCs, SOEPs, and SOEGs numbers are firm-year observations for SLCs, SOEPs, and SOEGs, respectively. Group 1 comprises firms with at least 25% government ownership. Group 2 includes all firms regardless of their level of government ownership.

25–45%.[13] This suggests that state controlling owners can exercise absolute power in state-controlled firms in nearly all firm-related decisions. The mean and maximum values of state ownership across the three types of state-owned firms indicate that SOEGs generally have higher levels of state ownership than do either SLCs or SOEPs. This supports the argument that SOEGs may be subject to greater political influence than either SLCs or SOEPs.

It is important to note that no state-owned firms in the sample have government ownership simultaneously held by SLCs, SOEPs, and SOEGs. Table 4b indicates the distribution of government ownership for the different types of state owners in 2006 and 2010. From Table 4b, we can see that there are no significant changes in government ownership across the various state owner categories during our sample period. In addition, Table 4c indicates the distribution of foreign ownership. We find that the median foreign ownership is 3.5%, with 75% of the listed firms in the sample having foreign ownership of < 14%. This suggests that foreign investors are generally minority shareholders in most of the firms listed on Vietnamese stock exchanges. From Table 4d, we identify a significant and positive relationship between foreign ownership and ownership by SLCs, and a significant negative relationship between government ownership and ownership by SOEPs and SOEGs. Finally, Table 4e lists the number of firm-year observations with government ownership in 2006–2010.

[13] Using a sample of Chinese listed firms from 1999 to 2004, Chen et al. (2009) find that the mean state ownership in state-controlled firms ranged between 41.3% and 49.6%, depending on the type of owner.

4. Effects of state ownership on firm performance

In this section, we classify the sample into state and nonstate (private) firms to investigate the effects of state controlling ownership on firm performance and value. We use *t*-tests and Wilcoxon rank-sum tests to test for equality in mean and median performance ratios across the two firm groups. We focus particularly on comparing two performance ratios, Tobin's Q (a proxy for firm value)[14] and ROA. In addition, we compare a number of other firm ratios and measures, including sales to assets, solvency, assets, and foreign ownership. We expect to identify the potential effects of state ownership by comparing the results obtained from univariate tests.

Panel A in Table 5 provides a detailed comparison of state firms, defined as listed firms with government ownership at any level, and private firms, defined as listed firms with no government ownership. The state-controlled firms in Panel B only include those with government ownership of at least 25%. Both panels show that state ownership is associated with better firm performance in terms of ROA. According to Panel B, the mean and median ROA for state-controlled firms, 8.55% and 6.75%, respectively, are significantly different (at the 1% level) from nonstate firms, which have a mean of 5.78% and a median of 5.67%. In addition, the mean (1.28) and median (1.03) of the sales to assets ratio of state-controlled firms are significantly higher than the mean and median of nonstate firms, which are 1.08 and 0.95, respectively. These findings suggest that state-controlled firms perform better in terms of ROA.[15]

5. Effects of state ownership by different types of state owners

5.1. Univariate tests

The main purpose of this section is to examine the effects of state ownership on firm performance according to the type of state owner. As mentioned, SLCs, SOEPs, and SOEGs are the three types of state owners considered in this paper using *t*-tests and Wilcoxon rank-sum tests. We consider state-controlled firms with > 25% government ownership because, at this level of ownership, the state owners will definitely have sufficient power to influence all firm-related decisions.

Panel A in Table 6 summarizes the performance ratios for the three different types of state shareholders. The results reveal that firm performance varies significantly across the different firm groups. In terms of the mean and median ROA, SLCs display the highest values (11.04% and 10.63%, respectively), following by SOEPs (9.09% and 6.82%, respectively) and SOEGs (7.86% and 6.35%, respectively). In terms of Tobin's Q, the results appear consistent, with SLCs having the highest values of 1.15 (mean) and 0.77 (median) and SOEGs displaying the lowest values for this same variable. Panel B in Table 6 tests for the significance of these differences across the firm groups. For the most part, SLCs have significantly higher values for these variables than both the other firm groups (SOEPs and SOEGs) at the 1% level.

An examination of the other comparison indicators shows that foreign ownership is generally higher in SLCs. SLCs appear to have significantly higher solvency ratios than the other groups. There is no significant difference in solvency between SOEPs and SOEGs. This supports the argument that SOEPs and SOEGs use more debt financing because of a close relationship with state-owned commercial banks (through the support of EGs, GCs, and privatized SOEs), which facilitates access to more favorable borrowing terms and conditions.[16] Foreign ownership is significantly larger in SLCs than in SOEPs and SOEGs, which leads to the argument that foreign investors prefer firms controlled by a state owner (in the Vietnamese context, the SCIC), which can more actively implement and more effectively monitor firm initiatives. Furthermore, the comparison indicators show that, compared with SLCs, more SOEGs and SOEPs are located in northern Vietnam, especially in the Red River Delta provinces, which are considered to be the political center of the country.

In sum,[17] using the results in Table 6, we can see that SLCs perform best, followed by SOEPs, with SOEGs generally having the poorest performance. These findings provide empirical evidence to support the argument that having different types of state owners leads to dissimilar levels of firm performance.

5.2. Multivariate tests

To support the results of the univariate tests, we use ordinary least squares (OLS) regressions without an intercept and with robust standard errors clustered at the firm level to examine the effects of state ownership, as well as the effects of the different types of state owners on firm performance. The two regression models are as follows:

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[14] The use of Tobin's Q to reflect firm value is widely adopted in the literature (McConnell and Servaes, 1990; Ang and Ding, 2006). See Chung and Pruitt (1994) for details regarding the estimation of Tobin's Q.

[15] The listed firms in our sample are unequally distributed across industries, as shown in Table 2. Most notably, state firms are more common in heavy and heavily-regulated industries (energy, materials, and utilities). There are also differences in growth by industry. In addition, government regulations concerning setup and operations vary by industry, with petroleum and gas being particularly heavily regulated.

[16] Domestic media outlets, including VnEconomy, the Vietnam Investment Review, and VietNamNet, have reported several instances of bad loans from state-owned commercial banks to SOEs (including SOEGs and SOEPs).

[17] We repeated the tests using samples of all state firms (for all levels of government ownership) instead of controlling for only state-controlled firms with > 25% state ownership, that is, we include all SLCs, SOEPs, and SOEGs that have government ownership in the statistical comparisons. The results are similar to those in Panel B in Table 6 and confirm the arguments in this section.

Table 5

State ownership versus private ownership.

Panel A: State firms (> 0% government ownership) vs. private firms

Variables	State firms			Private firms			State firms vs. private firms	
	N	Mean	Median	N	Mean	Median	t-Statistic	Rank-sum test statistic
Tobin's Q	932	0.82	0.53	303	0.80	0.55	0.28	−1.31
ROA	956	8.01	6.67	305	5.78	5.67	4.03***	3.62***
Sales to assets	956	1.31	1.01	305	1.08	0.95	3.07***	2.58***
Solvency	956	48.92	47.02	305	50.21	47.13	−0.88	−0.94
Assets (VND billions)	956	847	310	305	1260	500	−3.26***	−4.83***
Sales (VND billions)	956	820	290	305	870	430	−0.42	−3.00***
Government ownership	954	0.39	0.45	305	0.00	0.00	37.14***	26.53***
Foreign ownership	953	0.09	0.03	304	0.13	0.06	−3.99***	−3.25***
Firm geographic location	789	0.29	0.00	256	0.26	0.00	1.06	1.07
Study abroad dummy	743	0.08	1.00	220	0.19	1.00	−4.75***	−4.70***
Years since incorporation (age)	921	24.56	21.00	295	14.75	12.00	11.40***	11.20***

Panel B: State-controlled firms (≥ 25% government ownership) vs. private firms

Variables	State-controlled firms			Private firms			State-controlled firms vs. private firms	
	N	Mean	Median	N	Mean	Median	t-Statistic	Rank-sum test statistic
Tobin's Q	699	0.80	0.50	303	0.80	0.55	0.04	−1.63
ROA	713	8.55	6.75	305	5.78	5.67	4.91***	4.02***
Sales to assets	713	1.28	1.03	305	1.08	0.95	2.93***	2.90***
Solvency	713	48.30	45.68	305	50.21	47.13	−1.24	−1.49
Assets (VND billions)	713	870	300	305	1260	500	−2.80***	−4.92***
Sales (VND billions)	713	777	270	305	870	430	−0.90	−3.30***
Government ownership	710	0.48	0.51	305	0.00	0.00	69.60***	25.76***
Foreign ownership	711	0.08	0.02	304	0.13	0.06	−5.81***	−4.77***
Firm geographic location	583	0.31	0.00	256	0.26	0.00	1.57*	1.56
Study abroad dummy	532	0.07	1.00	220	0.19	1.00	−5.24***	−5.15***
Years since incorporation (age)	683	24.40	21.00	295	14.75	12.00	10.65***	9.88***

This table presents the results of a statistical comparison of state and private firm ownership. In Panel A, a state firm is a listed firm with any level of government ownership. In Panel B, a state-controlled firm is a listed firm with government ownership of at least 25%. A private firm grouped under OTHERs is a listed firm with no government ownership. The symbols *** and ** indicate significance at the 1% and 5% levels, respectively. We obtain similar results using unadjusted indicators.

$$Firm\ performance_{jt} = \beta_1 State\ (State-controlled)\ dummy_{jt} + \beta_2 OTHERs_{jt} + \beta_3 Firm's\ characteristic\ variables_{jt} + \beta_4 Year\ dummies_{jt} + \beta_5 Industry\ dummies_{jt} + \varepsilon_1,$$

(1)

and

$$Firm\ performance_{jt} = \gamma_1 SLCs_{jt} + \gamma_2 SOEPs_{jt} + \gamma_3 SOEGs_{jt} + \gamma_4 OTHERs_{jt} + \gamma_5 Firm's\ characteristic\ variables_{jt} + \gamma_6 Year\ dummies_{jt} + \gamma_7 Industry\ dummies_{jt} + \varepsilon_2,$$

(2)

where, for firm j and year t, $\varepsilon_{1,\ 2}$ are the error terms of the two models. In specification (1), *State* (*State-controlled*) *dummy* is a dummy variable which takes a value of one if a firm has > 0% (≥ 25%) government ownership; otherwise, it takes a value of zero. In specification (2), we set the values of the state owner dummies (*SLCs*, *SOEPs*, and *SOEGs*) to one for firms with > 25% government ownership; otherwise they take a value of zero. The dependent variables in the model are ROA and Tobin's Q, used as proxies for firm performance and value, respectively. We excluded a constant term so that we could compare the effect of SOEs with those of OTHERS, a dummy variable representing firms without government ownership. We include industry fixed effect to control unobserved heterogeneity, following Gormley and Matsa (2013). To examine the differences in the effects of a given controlling shareholder dummy on firm performance and value, we use a Wald test to compare the equality of the estimated coefficients for the owner dummies.

Table 7 displays the regression results for the relationship between state ownership and firm performance. The results from Model 1 (M1) and Model 2 (M2) indicate that the state dummy variable is significant and positively related to firm performance (ROA) and firm value (Tobin's Q) at the 1% level. In addition, the results of Wald tests (except for M2) show that the magnitudes of the state dummy coefficients in all models are significantly larger than that of the OTHERs.

Thus, the results are consistent with those of the univariate tests shown in Panel A in Table 5, which also reveals that state firms outperform private firms. As before, we use an alternative definition for state firms by setting the state-controlled dummies to indicate government ownership of at least 25% and repeat the regressions. These new results, shown in Model 3 (M3) and Model 4 (M4) in Table 7, remain strongly significant, again supporting the results of the earlier tests that control for state firms with any level

Table 6

Comparison of performance by type of state controlling shareholder.

Panel A

Variables	SLCs			SOEPs			SOEGs		
	N	Mean	Median	N	Mean	Median	N	Mean	Median
Tobin's Q	96	1.15	0.77	139	0.75	0.55	464	0.75	0.47
ROA	100	11.04	10.63	141	9.09	6.82	472	7.86	6.35
Sales to assets	100	1.41	1.36	141	1.12	1.00	472	1.30	1.00
Solvency	100	58.18	62.04	141	46.14	44.39	472	46.85	43.55
Assets	100	874	460	141	401	150	472	1010	345
Foreign ownership	99	0.13	0.04	141	0.07	0.03	471	0.07	0.02
Firm geographic location	80	0.18	0.00	103	0.36	0.00	400	0.33	0.00
Study abroad dummy	68	0.08	0.00	100	0.09	0.00	364	0.05	0.00

Panel B

	SLCs vs. SOEPs		SLCs vs. SOEGs		SOEPs vs. SOEGs	
	t-Statistic	Rank-sum test statistic	t-Statistic	Rank-sum test statistic	t-Statistic	Rank-sum test statistic
Tobin's Q	3.65***	3.26***	4.18***	4.43***	−0.09	0.75
ROA	1.60*	2.46**	3.88***	3.86**	1.59*	0.87
Sales to assets	2.75***	3.69***	0.91	2.97***	−1.66*	−0.93
Solvency	4.00***	3.71***	4.50***	4.27***	−0.32	−0.23
Assets	2.91***	4.01***	−0.61	0.27**	−3.37***	−5.48***
Foreign ownership	3.23***	2.06**	4.91***	3.36***	0.53	0.84
Firm geographic location	−2.93***	−2.87***	−2.76***	−2.74***	0.74	0.74
Study abroad dummy	−0.37	−0.37	−0.18	−0.18	1.53*	1.53

Panel A presents basic statistics for the three types of state owners.
Panel B provides the results of t-tests and Wilcoxon rank-sum tests of differences in performance for the three types of state owners. All variables are as previously defined. The ratios of government ownership are at least 25% for SLCs, SOEPs, and SOEGs. The symbols *** and ** indicate significance at the 1% and 5% levels, respectively. We obtain similar results using unadjusted indicators and when including all state-owned firms, regardless of their level of government ownership.

Table 7

Cluster-robust regression, without a constant term, estimating relationships between state firms and performance as well as value.

	M1	M2	M3	M4
	ROA	Tobin's Q	ROA	Tobin's Q
State dummy	19.58***	1.130***		
	(5.874)	(0.419)		
State-controlled dummy ($\geq 25\%$)			3.170***	0.121*
			(0.846)	(0.065)
OTHERs dummy	16.61***	1.054**	−0.953	−0.004
	(6.016)	(0.423)	(0.967)	(0.071)
Foreign dummy ($\geq 10\%$)	2.514***	0.311***	2.191***	0.279***
	(0.938)	(0.076)	(0.837)	(0.072)
Log (assets)	−0.672**	−0.0402*	0.047	0.005
	(0.291)	(0.021)	(0.081)	(0.007)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	1262	1236	1262	1236
Adjusted R^2	0.488	0.724	0.485	0.721
Wald tests	Testing differences in magnitudes of coefficients between state firms and other firms			
Ho: State = OTHER = 0	14.05***	4.49**		
Ho: State = OTHER	13.86**	1.66		
Ho: State-controlled = OTHER = 0			14.48***	2.61*
Ho: State-controlled = OTHER			24.12***	3.76*

The state dummy equals one if the firm has government ownership and is zero otherwise. The state-controlled dummy equals one if the firm has government ownership of at least 25% and is zero otherwise. Table 1 provides definitions of the remaining variables. The figures in parentheses are robust standard errors. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 8

Cluster-robust regression, without a constant term, estimating relationships between type of state owner and firm performance as well as value.

	M1	M2	M3	M4
	ROA	Tobin's Q	ROA	Tobin's Q
SLCs dummy	22.53***	1.305***		
	(5.722)	(0.406)		
SOEPs dummy	19.89***	1.167***		
	(5.854)	(0.410)		
SOEGs dummy	21.19***	1.166***		
	(5.674)	(0.416)		
SLCs dummy (≥25%)			4.827***	0.309**
			(1.558)	(0.121)
SOEPs dummy (≥25%)			3.356**	0.105
			(1.472)	(0.077)
SOEGs dummy (≥25%)			2.731***	0.086
			(0.875)	(0.074)
OTHERs dummy	18.04***	1.112***	−0.957	−0.004
	(5.844)	(0.413)	(0.966)	(0.071)
Foreign dummy (≥10%)	2.643***	0.308***	2.155***	0.277***
	(0.922)	(0.078)	(0.830)	(0.072)
Log (assets)	−0.761***	−0.0425**	0.059	0.006
	(0.279)	(0.021)	(0.083)	(0.008)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	1262	1236	1262	1236
Adjusted R^2	0.491	0.725	0.487	0.723
Ho: SLCs = SOEPs = SOEGs = OTHER = 0	9.60***	1.13		
Ho: SLCs = SOEPs = SOEGs = OTHER	6.00***	3.30**		
Ho: SLCs = SOEPs	3.58*	1.71		
Ho: SLCs = SOEGs	1.25	1.88		
Ho: SOEPs = SOEGs	1.71	0.00		
Ho: SLCs_25 = SOEPs_25 = SOEGs_25 = OTHER_25 = 0			7.61***	2.40*
Ho: SLCs_25 = SOEPs_25 = SOEGs_25 = OTHER_25			8.41***	2.21*
Ho: SLCs_25 = SOEPs_25			0.57	2.64*
Ho: SLCs_25 = SOEGs_25			1.96	3.49*
Ho: SOEPs_25 = SOEGs_25			0.19	0.05

The SLCs (≥25%), SOEPs (≥25%), or SOEGs (≥25%) firm dummy equals one if the state firm has a government ownership level of at least 25% and is zero otherwise. The SLCs, SOEPs, or SOEGs firm dummy equals one if the state firm has any level of government ownership and is zero otherwise. Table 1 provides definitions of the remaining variables. Figures in parentheses are robust standard errors. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

of government ownership.

Table 8 provides the regression results for the association between the different types of state owners and firm performance. The most important results in Table 8 are that SLCs and SOEPs perform better than SOEGs, and that SLCs have the highest firm values under some model specifications. The regression results of M1 and M2, which have state owner dummies for any level of government ownership, indicate that there are positive and significant relationships between all three types of state owners (SLCs, SOEPs, and SOEGs) and performance (ROA) as well as value (Tobin's Q). The estimated coefficients for the dummy variables relating to the three types of state owners are all strongly positive and statistically significant at the 1% level.

For the robustness check, we again set the state owner dummies to one for at least 25% government ownership and repeated the regressions. The regression results remain strongly significant in M3 (and less significant in M4) and consistent with the results of the earlier tests where we controlled for state owner dummies for any level of government ownership. Finally, and more importantly, the magnitudes of the estimated coefficients for all the state owner dummies are larger than the estimated coefficients for the OTHERs dummies. Again, this signifies the poorer performance of private (nonstate) firms relative to all types of state firms.

Overall, the results in Tables 7 and 8 confirm the findings of the univariate tests, especially that state-controlled firms outperform private (nonstate) firms. Our findings also support the argument that the SCIC, as the state owner of SLCs and operating in the form of a SWF, can improve firm value through its monitoring role and by actively exercising a positive influence on the firms owned.[18]

6. Nonlinear relationship between state controlling ownership and firm performance

In this section, we test whether a nonlinear relationship exists between state ownership and firm performance and whether this relationship varies depending on the type of state owner. To do this, we use an OLS regression without an intercept and with robust

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[18] We argue that the market may consider that SLCs under the control of the SCIC have better prospects than do firms controlled by state bureaucracies. This leads to better (market-based) performance for SLCs, as measured by Tobin's Q.

standard errors clustered at the firm level. We specify several new regression models by including the percentage of state ownership and its square as independent variables.

The new cluster-robust regression model is as follows:

$$Firm\ performance_{jt}$$
$$= \alpha_1 SLCs\ ratio\,(\%)_{jt} + \alpha_2 SLCs\ ratio\,(\%)^2_{jt} + \alpha_3 SOEPs\ ratio\,(\%)_{jt} + \alpha_4 SOEPs\ ratio\,(\%)^2_{jt} + \alpha_5 SOEGs\ ratio\,(\%)_{jt} + \alpha_6 SOEGs\ ratio$$
$$(\%)^2_{jt} + \alpha_7 OTHERs_{jt} + \alpha_8 Firm's\ characteristic\ variables_{jt} + \alpha_9 Year\ dummies_{jt} + \alpha_{10} Industry\ dummies_{jt} + \varepsilon_3, \tag{3}$$

where, for firm j and year t, ε_3 is the error term of the model. *SLCs ratio (%)*, *SOEPs ratio (%)*, and *SOEGs ratio (%)* are the state ownership ratios (for > 0% and ≥25%) associated with different types of state owners. *SLCs ratio (%)^2*, *SOEPs ratio (%)^2*, and *SOEGs ratio (%)^2* are their squared terms. The measures of firm performance and value in the regressions are ROA and Tobin's Q, respectively.

The results for M1 and M2 in Panel A of Table 9, where we use the full sample of state-controlled firms with any level of government ownership, display an inverted-U-shaped relationship between the three types of state owners and firm performance. The estimated results for M3 and M4 in Panel A of Table 9 reveal that, when we specify government ownership and its squared term as independent variables, a nonlinear relationship between government ownership and firm performance (and value) is evident. In an unreported test, we use Wald tests to check whether all of the estimated coefficients in the four models differed significantly from zero, and concluded that a nonlinear state ownership–performance relationship exists among listed firms in Vietnam. Likewise, the results in Panel B of Table 9, where we use samples of state-controlled firms with government ownership of at least 25%, indicate a significant nonlinear relationship for government ownership and SLCs, especially when measuring performance with ROA. The nonlinear relationship for SOEPs or SOEGs is not significant.

These findings of an inverted-U-shaped relationship are consistent with the existing corporate governance literature (Shleifer and Vishny, 1986, 1997, among others), which suggests that increases (decreases) in firm value are associated with the gains from monitoring activities (losses from expropriation) of large shareholders. Especially in the case of SLCs, our results align with those of Dewenter et al. (2010), who suggest that the relationship between firm value and SWF ownership is of a nonmonotonic form.

Focusing more closely on the reflection point (or optimal state ownership relation) generated from the models in Panels A and B of Table 9, we present Fig. 1a (state firms with any level of government ownership) and Fig. 1b (state-controlled firms with at least 25% government ownership).

As shown in Fig. 1a and b, the level of optimal state ownership varies across the different types of state owners. For SLCs, the optimal state-ownership level (combining ROA and Tobin's Q) is between 30% and 35% of total shareholdings, whereas for SOEPs and SOEGs, it is between about 40–45% and 50–55%, respectively. These figures are very similar to those in McConnell and Servaes (1990), who estimate the relationship between insider ownership and Tobin's Q. They find that Tobin's Q increases as insider ownership increases up to about 40–50% of total shareholdings and then decreases. The figures are also consistent with those of Dewenter et al. (2010). Combining all three types of state ownership together, we identify an optimal level of state ownership of about 45%, a figure quite similar to the range of 35% to 50% reported in existing studies, namely, 35% in McConnell and Servaes (1990), 35% in Hess et al. (2010), and 30–50% in Wei (2007). Fig. 1a and b contribute to the literature by providing greater detail on the optimal level of state ownership for the different types of state owners.

7. Additional tests

7.1. Endogeneity issues

Endogeneity issues may affect our results for several reasons. For example, the state may rescue or bail out underperforming state-controlled firms (UNDP, 2007). However, this would only become a problem if the results of the analysis suggested that state-controlled firms have poorer performance than nonstate firms. As our results suggest the opposite (thereby emphasizing the positive dimension of state ownership), we can ignore survival bias. In addition, using the OSIRIS database, we find that the average performance (ROA) of the listed firms in our sample in 2006 is relatively smaller than that for listed firms in 2005. This suggests that the firms in our sample did not experience poor performance in the years prior to our sample period. On this basis, we further assert that survival bias is not a major problem confronting our research.[19]

Another possible source of bias is that the state did not randomly choose which SOEs to privatize (Boehmer et al., 2005; Boubakri et al., 2011; Campos and Esfahani, 1996; Gupta et al., 2008). Shleifer and Vishny (1997) suggest that potentially profitable firms are the best candidates for privatization. This can lead to a greater likelihood of better performance by state-controlled firms compared with nonstate-controlled firms.

As a robustness check, we use instrumental variable (IV) regressions to address potential causality problems. The instrumental variables are required to satisfy two conditions. First, the instrumental variables must be relevant, or correlated with the endogenous variable. Second, the instrumental variable needs to be uncorrelated with the error term of the performance regression. In the corporate governance literature, it is usually difficult to find good instrumental variables, as many variables that are correlated with the endogenous variables are correlated with the firm performance through various mechanisms. In this study, we use a study abroad dummy relating to the firm's CEO and the firm's geographic location as two main instrumental variables to examine the effect of state

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[19] We thank a referee for this argument countering any apparent problem with survival bias.

Table 9

OLS regressions, without a constant term, estimating nonlinear relationship between type of state owner and firm performance as well as value

Panel A: (> 0% of government ownership)

	M1	M2	M3	M4
	ROA	Tobin's Q	ROA	Tobin's Q
Gown (> 0%)			31.38***	1.099**
			(7.249)	(0.547)
Gown^2 (> 0%)			−34.76***	−1.191*
			(9.734)	(0.708)
SLCs ratio (> 0%)	55.33***	2.221**		
	(13.900)	(1.047)		
SLCs ratio^2 (> 0%)	−78.24***	−2.576		
	(24.440)	(1.892)		
SOEPs ratio (> 0%)	37.24***	2.117***		
	(12.950)	(0.813)		
SOEPs ratio^2 (> 0%)	−43.69**	−2.933**		
	(21.300)	(1.248)		
SOEGs ratio (> 0%)	29.91***	1.010*		
	(7.098)	(0.573)		
SOEGs ratio^2 (> 0%)	−30.24***	−0.856		
	(9.260)	(0.757)		
OTHERs dummy	3.253**	0.198*	2.487*	0.116
	(1.499)	(0.102)	(1.389)	(0.097)
Foreign dummy (≥10%)	2.261***	0.274***	2.326***	0.281***
	(0.830)	(0.074)	(0.840)	(0.073)
Log (assets)	−0.120	−0.002	−0.081	0.001
	(0.097)	(0.008)	(0.092)	(0.008)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	1259	1233	1259	1233
Adjusted R^2	0.492	0.722	0.490	0.720

Panel B: (≥ 25% of government ownership)

	M3	M4	M1	M2
	ROA	Tobin's Q	ROA	Tobin's Q
Gown (≥ 25%)			16.67***	0.643*
			(5.098)	(0.374)
Gown^2 (≥ 25%)			−19.97**	−0.769
			(8.364)	(0.576)
SLCs ratio (≥ 25%)	47.64***	2.617**		
	(15.450)	(1.161)		
SLCs ratio^2 (≥ 25%)	−79.61***	−4.092*		
	(29.460)	(2.189)		
SOEPs ratio (≥ 25%)	19.190	0.778		
	(12.780)	(0.604)		
SOEPs ratio^2 (≥ 25%)	−24.610	−1.100		
	(23.630)	(1.079)		
SOEGs ratio (≥ 25%)	11.56**	0.286		
	(4.970)	(0.459)		
SOEGs ratio^2 (≥ 25%)	−11.020	−0.167		
	(7.970)	(0.714)		
OTHERs dummy	−0.894	0.007	−0.991	−0.004
	(0.965)	(0.069)	(0.962)	(0.069)
Foreign dummy (≥10%)	2.114**	0.272***	2.147**	0.278***
	(0.835)	(0.073)	(0.840)	(0.072)
Log (assets)	0.049	0.005	0.066	0.006
	(0.087)	(0.007)	(0.080)	(0.007)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	1259	1233	1262	1236
Adjusted R^2	0.489	0.722	0.486	0.721

Gown is government ownership. The SLCs ratio (> 0%) is government ownership of SLCs, the SOEPs ratio (> 0%) is government ownership of SOEPs, and the SOEGs ratio (> 0%) is government ownership of SOEGs. Ratio^2 indicates squared terms. The level of government ownership ranges from 0% to the maximum level in SLCs, SOEPs, and SOEGs. Table 1 provides definitions of the remaining variables. The figures in parentheses are robust standard errors. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
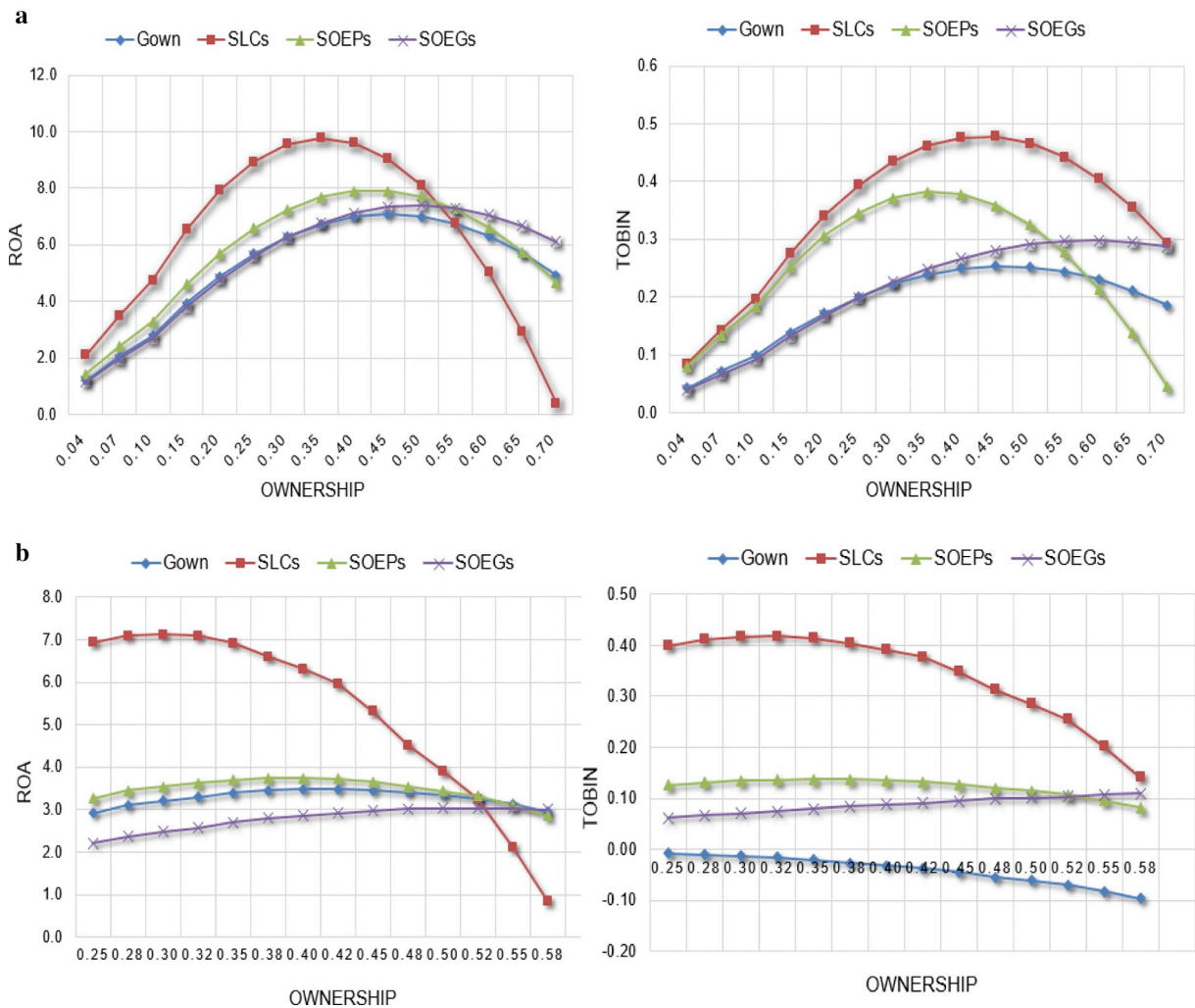
a

b

Fig. 1. a. Inverted-U-shaped relationship between state ownership and firm performance as well as value (state firm samples for any levels of government ownership).
b. Inverted-U-shaped relationship between state ownership and firm performance as well as value (state-controlled firm samples with > 25% of government ownership).

ownership on ROA and Tobin's Q. In addition, we use strategic industry and firm age as additional instrumental variables to examine the effect of various types of state ownership. We employ Hausman tests and overidentifying restrictions tests to check whether the instrument relevance condition and the instrument exogeneity condition are met.

First, we use the study abroad dummy that relates to the firm's CEO as the instrument. Usually, firms disclose whether their CEOs have studied abroad. Although it is not easy to identify where the CEOs studied and when, we conjecture that many CEOs with experience studying abroad in our sample studied in socialist countries, such as the Soviet Union or China, because we can identify several CEOs who certainly studied in these countries.[20] In addition, there were many Vietnamese students who studied in these countries before the collapse of the Soviet Union in 1991. Because of the cordial relationships between Vietnam and other socialist countries in this period, most of the qualified Vietnamese students received scholarships to study in socialist countries, including the Soviet Union, China, and Eastern Europe, which had single-party regimes governed by communist parties. Many of these students are recorded as becoming key cadres in the fields of business, politics, economics, science, technology, and culture.[21] We argue that firms'

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[20] For instance: a) Madame Nguyen Thi Mai Thanh, Chairwoman of REE Company, studied in East Germany; b) Mr Truong Gia Binh, Chairman of FPT Company, studied at Lomonosov Moscow State University, Russia; and c) Madame Mai Kieu Lien, CEO and former Chairwoman of Vinamilk Co., studied at Moscow State University, Russia.

[21] Between 1954 and 1991, approximately 7000 Vietnamese students were sent to the Soviet Union to study in various fields at different levels. See Vu Khoan, former Secretary of the Party Central Committee and former Deputy Prime Minister of Vietnam (http://en.qdnd.vn/foreign-affairs/bilateral-relations/vietnam-soviet-union-friendship-485931).

CEOs who studied abroad were most likely sent to socialist countries (Soviet Union, China, or Eastern Europe).[22] Therefore, the CEOs who received their education abroad are more likely to be familiar with communist ideology and to be more politically oriented. In turn, this may influence government ownership and the types of state owners for listed firms. Thus, we define the study abroad dummy of the firm's CEO as a dummy variable that equals one if the firm's CEO studied in a foreign country; otherwise, it equals zero. The direct link between this variable and firm performance may not be strong considering that many of the CEOs have studied in countries with nonmarket economies.

Second, we specify the location of the firm's headquarters as an instrument, following Boubakri et al. (2008). The northern part of Vietnam, especially the Red River Delta provinces,[23] which include the capital city of Hanoi, is considered the political center of the country (London, 2009). It is where the communist party and its government agencies are located. Firms that are located in these provinces may be more likely to be politically influenced and under stronger political controls than are firms in other provinces. Based on the argument of Boubakri et al. (2011) that a country's political system is associated with residual state ownership in privatized firms, we argue that a firm's location, associated with different levels of political influence, can determine government ownership and the types of state owners for listed firms. Therefore, we define firm location as a dummy variable that equals one if the firm is located in Red River Delta provinces, and otherwise equals zero. However, the link between firm location and performance may not be strong, considering that the Ho Chi Minh area is as developed as the Hanoi area.

Third, we follow Tian and Estrin (2008) and Wei et al. (2005) in defining the strategic industry variable as the IV. As shown in Table 2, the distribution of state firms in our sample is not constant across industries. Moreover, the state is likely to invest in industries that are strategic and more important for the economy. This supports the argument that the presence of strategic industries affects government ownership and the types of state owners for listed firms. We define the strategic industry variable as a dummy variable that takes a value of one if the industry is strategic (energy, materials, or utilities) and zero otherwise.[24]

In addition, we argue that state firms with a longer history of incorporation may have a greater influence on the local community and thereby maintain closer political connections with local authorities in Vietnam. Concomitantly, the government is more likely to maintain ownership in a firm that is important to the local economy. As a result, government ownership and the type of state owners may also depend on firm age.

In Table 10A, we first identify the study abroad dummy of the firm's CEO and the firm's geographic location as the two instruments. The results in Table 10A indicate that state firms (and state-controlled firms) are positively and significantly associated with better performance, as measured by ROA. Tests of endogeneity (using Hausman tests) indicate that the state firm dummy in M1 and the state-controlled firm dummy in M3 are potentially endogenous factors. We conduct overidentifying restrictions tests to check the instrumental exogeneity condition, that is, whether our instrumental variables are correlated with the error term in performance regression. The results of the test of overidentifying restrictions, which examine instrument validity are insignificant in M1 and M3, indicating that the choice of instruments is valid. In other words, our instrumental variables satisfy instrument exogeneity conditions in these models. The results of M1 and M3 are also consistent with the prior findings that state shareholdings positively relate to performance.[25]

We continue the robustness checks by testing the nonlinear relationship between state ownership and firm performance. In Table 10B, we specify both government ownership and its squared term as endogenous variables. As for the IVs, we first estimate the determinants of government ownership and then use the predicted value of government ownership and its squared term as instrumental variables. We employ this strategy to avoid the risk of "forbidden regression" (Wooldridge, 2010). The results in Table 10B confirm the significant inverted-U-shaped relationship between government ownership and firm performance (ROA) as well as value (Tobin's Q). In Table 10B, the results of the Hausman tests generally indicate that the government ownership variables are potentially endogenous factors. The results of the overidentifying restrictions tests are not reported in Table 10B because the number of endogenous variables is the same as that for the instrumental variables.

In Table 11, we specify SLCs, SOEPs, and SOEGs as the three endogenous variables. We instrument the endogenous variables with seven variables: firm's geographic location, the study abroad dummy of the firm's CEO, strategic industry, firm age, strategic industry ∗ firm's geographic location, strategic industry ∗ study aboard dummy of the firm's CEO, and strategic industry ∗ firm age.

The results for M1 in Table 11 indicate that state owner dummies (SLCs, SOEPs, and SOEGs) are positively and significantly related with better firm performance, as measured by ROA. In addition to M1, we report the results for M3 and M4, in which we use state owner dummies with government ownership of at least 25%. The results for M3 and M4 indicate that state owner dummy variables (SLCs) have a positive and significant relationship with firm performance (ROA) and firm value (Tobin's Q).

The results of the Hausman tests of M1 and M3 indicate that the three state owner dummies are potentially endogenous variables. In addition, we conduct overidentifying restrictions tests to check the instrument exogeneity conditions. It is shown that the selection

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[22] We estimated that the average year of birth of firms' CEOs in our sample is 1960. Therefore, before the collapse of the Soviet Union (1991), the average CEO age was 31 years old. This was a common age to study overseas. Historically, the relationship between Vietnam and the Western countries (which have market economies) was strained prior to 1991. Vietnam had diplomatic relationships only with socialist countries during this time. Therefore, it was less likely that Vietnamese people would have studied in Western countries before 1991. We argue that if the firms' CEOs in our sample studied in foreign countries, it is likely that they were sent to a socialist country.

[23] Hanoi is the capital and its nearby provinces are Hatay, Vinhphuc, Haiduong, Hungyen, Thaibinh, Quangninh, Ninhbinh, Hanam, and Namdinh.

[24] Boubakri et al. (2009) suggest that privatization of strategic industries is a politically sensitive issue.

[25] The results of the Wald tests for IV M1 and M3 in Table 10A also show that the coefficients for the state and state-controlled dummies are significantly larger than that of the OTHERs dummy. This is consistent with the results of earlier tests that suggest better relative performance by state and state-controlled firms compared with their private counterparts.

Table 10A

Instrumental variable regression results for relationships between state firm and firm performance as well as value.

	M1	M2	M3	M4
	ROA	Tobin	ROA	Tobin
State dummy	38.97**	1.611		
	(17.060)	(1.389)		
State-controlled dummy ($\geq 25\%$)			17.69**	0.662–
			(8.964)	(0.585)
OTHER dummy	9.284	0.393	36.66**	1.571
	(6.364)	(0.416)	(17.420)	(1.416)
Foreign dummy ($\geq 10\%$)	4.097***	0.319***	3.029***	0.299***
	(1.319)	(0.083)	(0.960)	(0.070)
Log (assets)	−0.622	−0.020	−1.533**	−0.063
	(0.418)	(0.028)	(0.767)	(0.063)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	929	909	929	909
Instruments (IVs)				
# Firm geographic location	Yes	Yes	Yes	Yes
# Study abroad dummy	Yes	Yes	Yes	Yes
Hausman tests				
- Ho: variables are exogenous				
Robust score $\chi^2(2)$	2.56*	0.17	3.57*	0.85
Robust regression F	2.61*	0.17	3.53*	0.83
(1, 877)				
Overidentifying restrictions tests				
- Ho: selection of IVs is appropriate				
Score $\chi^2(1)$	0.12	0.07	1.3	0.41
Wald tests	Testing differences in coefficients			
State = OTHER	8.62***	0.54		
State-controlled = OTHER			9.32***	2.25

Table 10B

Instrumental variable regression results for relationships between government ownership and firm performance as well as value.

	M1	M2	M3	M4
	ROA	Tobin's Q	ROA	Tobin's Q
Gown ($> 0\%$)	143.9***	3.764**		
	(27.310)	(1.618)		
Gown^2 ($> 0\%$)	−188.0***	−5.963***		
	(38.240)	(2.059)		
Gown ($\geq 25\%$)			149.8***	3.512**
			(33.060)	(1.700)
Gown^2 ($\geq 25\%$)			−217.8***	−6.281**
			(49.770)	(2.465)
OTHERs dummy	18.05***	0.276	10.55***	0.023
	(4.072)	(0.296)	(3.583)	(0.215)
Foreign dummy ($\geq 10\%$)	2.521***	0.219***	2.819***	0.217***
	(0.793)	(0.054)	(0.949)	(0.056)
Log (assets)	−0.610***	0.006	−0.331	0.017
	(0.204)	(0.016)	(0.218)	(0.013)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	1219	1194	1222	1197
Instruments (IVs)				
# Predicted Gow_0	Yes	Yes		
# Predicted Gow_0 * Predicted Gow_0	Yes	Yes		
# Predicted Gow_25			Yes	Yes
# Predicted Gow_25 * Predicted Gow_25			Yes	Yes
Hausman tests				
- Ho: variables are exogenous				
Robust scoreχ^2 (2)	18.15***	10.98***	21.77***	10.36***
Robust regression F (2, 1201)	10.43***	5.61***	12.57***	5.31***

Table 11

Instrumental variable regression results of relationships between different types of state owners and firm performance as well as value.

	M1	M2	M3	M4
	ROA	Tobin's Q	ROA	Tobin's Q
SLCs dummy	70.98***	1.667		
	(22.710)	(1.353)		
SOEPs dummy	69.76***	1.214		
	(23.420)	(1.423)		
SOEGs dummy	51.51***	1.376		
	(19.250)	(1.177)		
SLCs dummy ($\geq 25\%$)			47.29***	1.900*
			(16.570)	(1.101)
SOEPs dummy ($\geq 25\%$)			19.680	0.879
			(12.430)	(0.913)
SOEGs dummy ($\geq 25\%$)			12.590	0.801
			(9.418)	(0.544)
OTHERs dummy	9.908	0.598	58.52***	1.334
	(6.424)	(0.426)	(20.670)	(1.283)
Foreign dummy ($\geq 10\%$)	3.441**	0.316***	0.654	0.288***
	(1.463)	(0.087)	(2.038)	(0.090)
Log (assets)	−0.582	−0.032	−2.099**	−0.054
	(0.462)	(0.027)	(0.879)	(0.054)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	886	871	886	871
Instruments (IVs): (1) firm geographic location, (2) study abroad dummy, (3) strategic industry, (4) firm age, (5) strategic industry * firm geographic location, (6) strategic industry * study abroad dummy, (7) strategic industry * firm age.	Yes	Yes	Yes	Yes
Hausman tests				
- Ho: variables are exogenous				
Robust score χ^2 (2)	13.47***	1.07	14.19***	3.21
Robust regression F (3, 1132)	4.51***	0.35	5.44***	1.08
Overidentifying restrictions tests				
- Ho: selection of IVs is appropriate				
Score χ^2 (1)	0.71	6.74**	3.33	3.58
Wald tests	Testing differences in coefficients			
Ho: SLCs = SOEPs = SOEGs = OTHER = 0	4.29	1.32		
Ho: SLCs = SOEPs = SOEGs = OTHER	10.16**	3.29		
Ho: SLCs = SOEPs	0.01	1.28		
Ho: SLCs = SOEGs	4.22**	0.33		
Ho: SOEPs = SOEGs	1.98	0.10		
Ho: SLCs_25 = SOEPs_25 = SOEGs_25 = OTHER_25 = 0			6.89**	1.99
Ho: SLCs_25 = SOEPs_25 = SOEGs_25 = OTHER_25			9.01**	3.49
Ho: SLCs_25 = SOEPs_25			2.73*	1.63
Ho: SLCs_25 = SOEGs_25			6.66***	1.64
Ho: SOEPs_25 = SOEGs_25			0.42	0.01

of the IVs is valid. Test statistics for the overidentifying restrictions tests are not significant in M1, M3, and M4, indicating that instrumental exogeneity conditions are satisfied. Together, the results obtained from M1 and M3, after controlling for potential endogeneity problems, suggest that government ownership by different types of state owners is related to better performance and that SLCs perform the best.[26] These findings are consistent with those derived earlier from the univariate and multivariate tests.[27]

In addition to IV regressions, we use the Heckman regression model to control further for the selection bias, given a possible concern that government ownership is higher in firms that are more profitable. Using the Heckman regression model enables us to examine the effect of government ownership by controlling for the likelihood that the government owns the shares of these firms. The results in Table 12 show that the relation between government ownership and firm performance has an inverted U-shaped form, consistent with our earlier findings.

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[26] The results of the Wald tests for IV M1 and M3 in Table 11 show that the coefficient for the SLCs dummy is significantly larger than those for other state owners.

[27] We use different sets of IVs for an additional robustness check. We use listing location, firm age, and strategic industry, as well as their interaction terms for Tables 10A and 11. The results are qualitatively and significantly similar to the results presented in this paper.

Table 12

Heckman sample selection models, without a constant term, estimating relationship between government ownership and firm performance as well as value.

	M1	M2	M3	M4
	ROA	Tobin's Q	ROA	Tobin's Q
Gown (> 0%)	32.71***	1.456***		
	(5.557)	(0.429)		
Gown^2 (> 0%)	−35.76***	−1.505***		
	(7.474)	(0.575)		
Gown (≥25%)			18.08***	0.828***
			(3.636)	(0.279)
Gown^2 (≥25%)			−21.52***	−0.914**
			(5.942)	(0.456)
Foreign dummy (≥10%)	3.769***	0.390***	3.679***	0.391***
	(0.624)	(0.049)	(0.624)	(0.049)
Log (assets)	−0.068	−0.0162**	0.092	−0.009
	(0.094)	(0.007)	(0.087)	(0.007)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Mills (lambda)	0.190	0.481***	0.080	0.481***
	(2.087)	(0.169)	(2.110)	(0.171)
Observations	1219	1196	1222	1199
Wald χ^2 (15)	235***	745***	225***	758***

Gown is government ownership of > 0% and 25% or above. The state dummy is used as the endogenous variable and strategic industry and firm age are the two instrument variables. Table 1 provides definitions of the remaining variables. The figures in parentheses are robust standard errors. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

7.2. Foreign ownership

In addition to the above IV regressions,[28] we consider the interaction between foreign ownership and each of the three state owner dummies to discern whether the effect of foreign ownership varies by different type of state owners, particularly for SLCs. To do this, we incorporate interaction terms (*SLCs * foreign ownership, SOEPs * foreign ownership, SOEGs * foreign ownership*) into the regressions.

The results of M1 and M2, shown in Table 13, show that the interaction terms (*SLCs * foreign ownership* and *SOEGs * foreign ownership*) exhibit significantly positive relationships with firm performance (ROA and Tobin's Q). The results of the Wald tests show that the magnitude of the estimated coefficient for the interaction term for SLCs is also larger than that for SOEPs and SOEGs in most of the models.

Together, these results effectively illustrate the positive interactive effects of foreign ownership and state ownership (SLCs and SOEGs). More specifically, foreign effects are likely to be larger for SLCs. One interpretation of this result is that the Vietnamese SWF, the SCIC, as an active (state) shareholder in SLCs, plays an important role in attracting investment for these firms from foreign strategic investors.[29] As argued by Nguyen et al. (2012), the SCIC enhances good corporate governance, and foreign strategic investors generally invest in firms with sufficient capital, advanced managerial skills and technology, and long-term investing commitments and monitoring. Thus, the interactive effects between the SCIC and foreign investors may contribute to the enhanced performance of SLCs.

8. Conclusion

This paper examines the effects of state ownership on firm performance and value using Vietnamese data. The main results are as follows. First, we argue that state ownership in listed firms exerts a positive effect on firm performance. Using univariate and multivariate tests, we find evidence that state-controlled firms outperform nonstate firms (private firms), and this supports the argument that state ownership does not necessarily lead to poor firm performance, especially in the case of listed firms in the post privatization period. The evidence of positive state ownership effects may ease the concerns of Boardman and Vining (1989) that privatized firms with state controlling ownership continue to follow the redundant systems of traditional SOEs, resulting in poorer firm performance.

The argument that firms with government ownership have superior insider information and a greater ability to influence policies and regulations may explain the relatively poorer performance of nonstate firms. In addition, state-controlled firms, unlike private

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[28] We thank a referee for suggesting this further analysis of the effects of foreign ownership.

[29] There is a question over the possible adverse relationship between foreign ownership and firm performance when foreign investors choose high-performing or good-governance firms in which to invest, but further research is required to clarify the precise nature of these foreign ownership effects.

Table 13

Interaction term between types of state owners and foreign ownership.

	M1	M2	M3	M4
	ROA	Tobin's Q	ROA	Tobin's Q
SLCs dummy	20.67***	1.107***		
	(5.870)	(0.376)		
SLCs * fown	25.03***	2.395***		
	(9.046)	(0.664)		
SOEPs dummy	20.72***	1.207***		
	(5.899)	(0.375)		
SOEPs * fown	5.326	0.602		
	(7.653)	(0.521)		
SOEGs dummy	20.91***	1.063***		
	(5.781)	(0.365)		
SOEGs * fown	21.58***	2.706***		
	(6.783)	(0.699)		
SLCs dummy (≥25%)			1.476	0.020
			(1.533)	(0.090)
SLCs_25 * fown			30.18***	2.690***
			(7.119)	(0.648)
SOEPs dummy (≥25%)			3.251*	0.111
			(1.697)	(0.082)
SOEPs_25 * fown			−0.174	−0.331
			(9.169)	(0.462)
SOEGs dummy (≥25%)			1.528	−0.081
			(0.977)	(0.061)
SOEGs_25 * fown			17.72***	2.436***
			(5.691)	(0.768)
Fown	−1.240	−0.148	2.061	0.234
	(5.485)	(0.283)	(3.318)	(0.247)
OTHERs dummy	19.77***	1.252***	−0.826	0.011
	(5.851)	(0.378)	(0.961)	(0.070)
Log (assets)	−0.783***	−0.0427**	0.068	0.007
	(0.274)	(0.019)	(0.083)	(0.008)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	1259	1234	1259	1234
Adjusted R^2	0.503	0.74	0.501	0.74
Wald tests	Testing differences in coefficients			
Ho: SLCs = SOEPs	0.00	1.21		
Ho: SLCs = SOEGs	0.04	0.33		
Ho: SOEPs = SOEGs	0.03	5.05**		
Ho: SLCs * fown = SOEPs * fown	4.50*	5.79**		
Ho: SLCs * fown = SOEGs * fown	0.18	0.16		
Ho: SOEPs * fown = SOEGs * fown	5.74**	7.11***		
Ho: SLCs_25 = SOEPs_25			0.75	0.77
Ho: SLCs_25 = SOEGs_25			0.00	1.53
Ho: SOEPs_25 = SOEGs_25			1.2	6.02*
Ho: SLCs_25 * fown = SOEPs_25 * fown			7.56***	16.97***
Ho: SLCs_25 * fown = SOEGs_25 * fown			2.83*	0.10
Ho: SOEPs_25 * fown = SOEGs_25 * fown			3.28*	10.27***

The SLCs (≥25%) dummy equals one if the controlling shareholder is the SCIC and the government ownership level is at least 25%. The SOEPs (≥25%) dummy equals one if the controlling shareholder is a privatized SOE and government ownership is at least 25%. The SOEGs (≥25%) dummy equals one if the controlling shareholder is an EG or GC and government ownership is at least 25%. Similarly, SLCs, SOEPs, and SOEGs are dummy variables with government ownership of larger than 0%. Fown is collective foreign ownership. Table 1 provides definitions of the remaining variables. The figures in parentheses are robust standard errors. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

firms, may be able to attract more talented employees (by paying higher salaries and providing additional incentives).

Second, our study emphasizes the diverse effects generated by different types of state owners. We argue that firms controlled by a state owner that actively plays an effective monitoring role, exercises less political influence, imposes harder budget constraints, and bears little social responsibility performs better than firms controlled by other state controlling entities. Most notably, we find that SLCs (owned by the Vietnam's SWF, the SCIC) and SOEPs (controlled by privatized SOEs) perform better than SOEGs (controlled by state EGs or GCs). In particular, based on univariate tests, a significant conclusion is that SLCs generally perform better than the other firm types. The better performance of SLCs is entirely consistent with the findings in Ang and Ding (2006) and Feng et al. (2004) that government-linked companies in Singapore outperform companies without government links. The finding also supports the argument in Dewenter et al. (2010) that SWFs, as investors, are often active in carrying out monitoring activities and exerting influence in

target firms. In addition, the observed differences in the effects of certain types of state owners are consistent with work by Chen et al. (2009) and Wang (2003), which suggests that firms controlled by state owners that are more profit and commercially oriented perform better than other firms.

Finally, we find a nonlinear (inverted-U-shaped) relationship between state ownership and firm performance as well as between state ownership and firm value. This inverted U-shaped function is consistent with many prior studies, including Bhabra (2007), McConnell and Servaes (1990), Morck et al. (1988), and Stulz (1988). We also find that the level of optimal state ownership varies across the different types of state owners (ranging from about 30–35% in SLCs, to 40–45% in SOEPs, and 50–55% in SOEGs), which may provide important policy implications for the state in determining the appropriate level of ownership that will generate the greatest benefits for the controlled firm. The optimal levels found in this paper align with the results of earlier related studies that 35–50% is the optimal ownership level.

It is common for several types of state ownership to coexist in the one economy. One example is China, where, as shown by Chen et al. (2009), the stocks of listed companies can be held by the central government, local governments, SOEs, and state asset-management bureaus. Similarly, Dewenter et al. (2010) and other studies reveal that SWFs play a significant role in many countries. We believe our study contributes to a better understanding of the role of government ownership in its several forms, not just in Vietnam, but in many other economies around the world.

This table provides the results of IV regressions of the relationship between state firm and firm performance, where the firm's geographic location and the study abroad dummy of the firm's CEO are instruments. In IV M1 and M2, the endogenous variable is a state dummy that equals one if the firm has government ownership larger than 0% and is zero otherwise. In IV M3 and M4, the endogenous variable is a state-controlled dummy that equals one if the firm has government ownership of at least 25% and is zero otherwise. Table 1 provides definitions of the remaining variables. The figures in parentheses are robust standard errors. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

This table provides the results of IV regressions of the relationship between government ownership and firm performance, where predicted value of government ownership and its squared term variables are used as instrumental variables. In IV M1 and M2, the endogenous variable is government ownership larger than 0% (Gown (> 0%)). In IV M3 and M4, the endogenous variable is government ownership of at least 25% (Gown (> 25%)). Table 1 provides definitions of the remaining variables. The figures in parentheses are robust standard errors. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

This table shows the results of the IV model testing the relationship between the different types of state owners and firm performance where the instruments are: (1) firm geographic location, (2) study abroad dummy, (3) strategic industry, (4) firm age, (5) strategic industry ∗ firm geographic location, (6) strategic industry ∗ study abroad dummy, (7) strategic industry ∗ firm age. The three endogenous variables in M1 and M2 are SLCs, SOEPs, and SOEGs. The three endogenous variables in M3 and M4 are SLCs (> 25%), SOEPs (> 25%), and SOEGs (> 25%). Table 1 provides definitions of the remaining variables. The figures in parentheses are robust standard errors. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

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