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POST-PRIVATIZATION: DO FIRMS WITH HIGHER RESIDUAL STATE OWNERSHIP ENGAGE IN MORE RISK-TAKING ACTIVITIES? – EVIDENCE FROM VIETNAM

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ABSTRACT

While some innovation and risk taking are essential to stay competitive, state-owned enterprises (SOEs) are presumed to have little incentives to take risk because they are already positioned in an advantageous seat, fully equipped with abundant resources, be it policy or financial resources. Using a sample of 81 post-privatization SOEs that are listed on the two exchanges in Vietnam from 2001 to 2015, this study is designed to explore the role of residual state ownership in firm's risk-taking behaviors. The result from this research confirms that firms with higher level of residual state ownership after privatization are less likely to engage in risk-taking activities.

Keywords: Privatization, Risk taking, State ownership

1. INTRODUCTION

1.1 PRIVATIZATION IN VIETNAM

The current trend toward privatization has been considered as a keystone of the economic reform in industrialized as well as in developing countries (Baumol, 1997). The objectives of privatization are to enhance economic efficiency, to improve state-owned enterprises ("SOE" hereafter) performance, to reduce government intervention and to create competition in monopolized sectors. In many contexts, the terms "privatization" and "equitization" are used interchangeably; however, "equitization" more truly reflects the characteristic of post-privatized ownership structure in Vietnam, since the Vietnamese government only sells a portion of its assets to private sectors and still holds significant stakes, especially in indispensable industries (e.g., energy, telecommunication). Statistics of the Ministry of Finance in 2014 shows that, among 247 SOEs under privatization in 2011-2014, only three are selling more than 5% of

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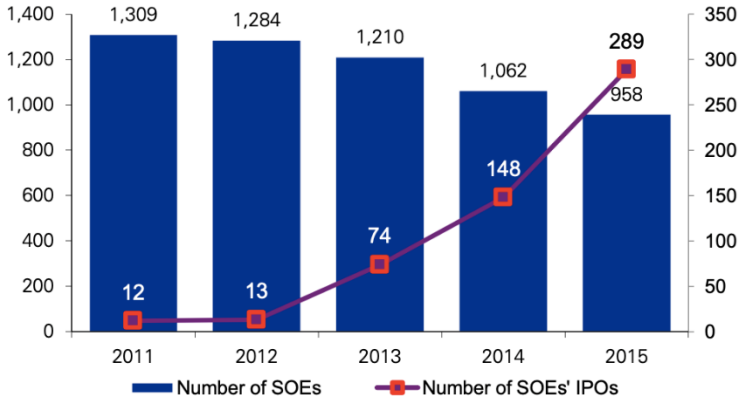
shares to foreign investors and the state still holds the majority of shares at the enterprises after privatization.

Figure 1: The progress of state divestment from SOEs from 2011 -2015[1]



Even though Vietnamese government has improved over last three decades, the gap between the government's aspirations and actual implementation has yet to be filled. The fragmentation (horizontally and vertically) of state power creating scattered and overlapping management causes a lack of operational efficiency in many SOEs. The privatization process, however, gave rise to a significant change in ownership structure of privatized SOEs, and is therefore a perfect setting to study the relationship between residual state ownership and risk-taking behaviors.

1.2 STATE OWNERSHIP AND RISK TAKING

Agency theory claims that ownership structure affects the ability of owners to influence corporate risk-taking, the fundamental underpinning of a firm's growth, performance, and survival in long run (Bromiley, 1991; John et al. 2008). While a vast literature examining the effect of ownership structure on risk-taking often focuses on managerial, insider and institutional ownership (Berger et al. 1997; Chaganti & Damanpour, 1991; Chen et al. 2006), only a limited number of empirical studies (Gurunlu & Gursoy 2010; Zou et al. 2006) have studied the impact of state ownership on risk-taking.

Prior studies, however, shows contradictory results on this relationship. From a political perspective, it is posited that SOEs are inefficient since the government's objectives is not to maximize the firm's profitability but rather to stabilize employment and social benefits. The government will therefore lack incentives to take risky investment that might result in

[1] Source: Stoxplus - Vietnam's leading integrated service company for supplying a comprehensive package of financial and business information, analytical tools, and industry analysis

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unemployment and unstable economic conditions. Hence, a decreased level of state equity can eliminate conflicts between social goals and profit maximization. Likewise, the managerial view of SOEs posits that the lack of control exerted by the government over management of SOEs causes severe agency problems, leading to ineffective performance and decreasing firm-value. Managers of SOEs is deterred by the bureaucratic structure of the government, which emphasizes compliance rather than value creation (Li et al., 2013). As a result, they tend to be less motivated to strive for organizational effectiveness and efficiency. Even though Li et al. (2013) proves that further privatization may enhance the efficiency and productivity of the SOEs, some studies argue that privatized SOEs managers will continue to perform under the administrative-bureaucratic system as in the dominant residual state ownership. In this sense, Borisova et al., (2012) suggests that state ownership and corporate risk-taking have a negative relationship. This is further confirmed by Boubakri et al. (2013), and by Zhou et al. (2017), who claims that firms with higher state ownership tend to be inefficient in taking advantage of the abundant resources granted to them.

Another strand of research suggests that greater state ownership is associated with higher risk-taking in emerging markets (Zhu and Yang, 2016). This is backed by the notion that firms with large state ownership are not as conservative in risk-taking because they can expect to receive government assistance if they fall into financial difficulties (Wang et al., 2008). Also, Zhai et al. (2015) conclude that firms with a considerable level of state ownership have advantages when it comes to borrowing money from banks, thereby increasing the degree of corporate risk-taking.

The mixed results from previous literature prompted this research study. This study extends the current literature in the context of a transitional economies which is normally characterized by weak legal environment and provides further empirical evidence about the relationship between state ownership and risk-taking of privatized SOEs in Vietnam. Also, a thorough understanding of the effect of ownership identity after privatization helps the government to implement a winning divestiture strategy.

2. DATA AND METHODOLOGY

2.1 DATA

We constructed a panel of non-financial, privatized SOEs listed on the Vietnamese stock exchanges including Ho Chi Minh Stock Exchange and Ha Noi Stock Exchange. The data set is compiled from different sources. The initial source of information is Viet Nam Government Portal website, available at http://doimoidoanhnghiep.chinhphu.vn/, which provides the company names and the year of privatization of all SOEs from the year of 2001 up to now. Based on this list, we filtered the SOEs that were later listed on the two exchanges up to the year of 2015 (to

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ensure collection of accounting data at least 4 years afterwards). In Vietnam, for various reasons many privatized SOEs still hesitate to launch IPOs, making the sample size materially smaller than it is supposed to be.

Accounting and ownership data are collected from the most trusted stock market data provider in Vietnam - Vietstock. Only firms with earnings available for at least four consecutive years after privatization is considered. The final data is an unbalanced panel consisting of 239 firm-year observations for 81 SOEs that were privatized in the period 2001- 2015. Most privatizations in the period were seen in Construction, Food & Beverage, Manufacturing and Transportation services, and the period 2003-2005 witnessed an "explosion" in the number of successful deals.

Table 1: Sampling distribution of SOEs after privatization in Vietnam

Panel 1: By year of privatization

Year of privatization	Freq.	Percent
1999	1	1.23
2000	1	1.23
2001	2	2.47
2002	1	1.23
2003	17	20.99
2004	28	34.57
2005	9	11.11
2006	7	8.64
2007	6	7.41
2008	1	1.23
2009	1	1.23
2010	1	1.23
2011	2	2.47
2013	3	3.70
2014	1	1.23
Total	81	100

Panel 2: By Industry

Industry	Freq.	Percent
Agriculture - Forestry - Fishing	2	2.47
Construction - Real estate	17	20.99
F&B - Tobacco	11	13.58
Manufacturing	17	20.99
Mining	7	8.64
Others	1	1.23
Petroleum	3	3.70
Pharmaceuticals - Chemistry	7	8.64
Telecommunications	1	1.23
Transportation - Logistic services	8	9.88
Utilities	5	6.17
Wholesale - Retail	2	2.47
Total	81	100

Panel 3: By exchange

Stock Exchange	Freq.	Percent
HNX	36	44.44
HOSE	45	55.56
Total	81	100

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2.2 MODEL

To be consistent with previous research, this study adopts the following models:

$$\text{RISKTAKING} = \alpha + \gamma_1 \text{STATEOWN} + \gamma_2 \text{CONTROLS} + \sum_{K=1}^{K-1} \text{YEAR} + \sum_{Y=1}^{Y-1} \text{IND} + \varepsilon$$

(**Model 1)**

$$\text{RISKTAKING} = \alpha + \gamma_1 \text{AVG\_STATEOWN} + \gamma_2 \text{CONTROLS} + \sum_{K=1}^{K-1} \text{YEAR} + \sum_{Y=1}^{Y-1} \text{IND} + \varepsilon$$

(Model 2)

Consistent with previous studies (John et al., 2008; Hilary and Hui, 2009; Acharya et al., 2011; Faccio et al., 2011; Boubakri et al., 2013), the dependent variable, RISKTAKING is the volatility (standard deviation) of earnings over four years, where earnings is measured by the ratio of the firm's Earnings before Interest and Taxes (EBIT) to Total Assets.

STATEOWN is the percentage of shares held by the government (Chen *et al.*, 2017), calculated by taking the state ownership stake at the end of the first year of the period over which the earnings volatility is calculated.

CONTROLS denote the set of control variables including ROA, firm size, leverage, CAPEX.

YEAR, IND are dummies that control for year-, and industry-fixed effects, respectively, ε is an error term.

All independent variables are measured at the first-year end of the period over which RISKTAKING is measured. (John et al., 2008).

In the **Model 2**, we consider an alternative proxy for state ownership, AVG_STATEOWN, calculated by taking the average government stakes in the four-year-period over which earnings volatility is measured. This metric of state control is expected to help alleviate the problem of overestimation of state ownership if taken in the first year only as in **Model 1**.

2.3 VARIABLES

RISKTAKING: Following Faccio et al., 2010; John et al., 2008, the proxy for risk-taking is the company's earnings volatility over 4 years:

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$$RISKTAKING = \sqrt{\frac{1}{T-1}\sum_{t-1}^{T}\left(E_{i,t} - \frac{1}{T}\sum_{t-1}^{T}E_{i,t}\right)^2} \; |T = 4$$

Where $E_{i,t} = \frac{EBIT_{i,t}}{A_{i,t}}$;

$N_{i,t}$ indexes the firm i and year t, and $EBIT_{i,t}$ is equal to the earnings before interest and taxes of firm i in year t; $A_{i,t}$ is defined as the total assets; T over (0 to +3, +1 to +4,+2 to +5;+3 to +6; +4 to +7)

State ownership denoted as:

STATEOWN is the dependent variable in model 1, which is measured by percentage of ownership held by the government (Chen et al., 2017)

AVG_STATEOWN is calculated by taking the average state ownership for the four-year-period over which RISKTAKING is measured (Boubakri et al., 2013)

Based on the prior studies, control variables comprise standard variables associated with risk-taking (John et al., 2008; Faccio et al., 2010; Boubakri et al., 2013)

Profitability (ROA): Trade-off theory suggests that a company should maximize its tax shield to increase earnings by taking on more debt, which would ultimately result in higher risk. However, the pecking order theory implies that highly profitable companies prefers to take less debt because internal funding should serve as the first choice for financing. Based on prior studies, we use ROA to proxy for profitability:

$$ROA = \frac{EBIT}{Asset}$$

Leverage: Firms engage in excessive risk-taking mainly through increased leverage. Therefore, we expect a positive relationship between leverage and risk-taking. Leverage ratio is measured by total debt to total asset as shown:

$$\text{Leverage} = \frac{Long\ term\ debt + Short\ term\ debt}{Total\ assets}$$

Size: A small and growing company might be prone to take on debt, because they don't have enough internal sources (e.g., retained earnings) to finance their projects. Larger firms, on the other hand, typically with more internal resources, tends to aim for a more conservative capital

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structure. We expect that size has a negative relationship with risk-taking. Firm's size is proxied by the logarithm of Total assets, which is in line with reported studies.

$$\text{Size} = Log\ (Total\ asset)$$

Capital expenditure reflects the managers' attitude of risk taking due to measuring investment propensity. Companies with high capital expenditures is expected to take more risky projects.

Table 2: Description of variables

Variables	Definition	Source
Ownership and state control variables		
STATEOWN	The percentage of shares held by the government.	Annual reports or (finance.vietstock.vn)
AVG_STATEOWN	Average state ownership for the period over which RISKTAKING is measured.	As above
Firm-level control variables		
ROA	The ratio of EBIT to total assets	Annual reports
LEVERAGE	The ratio of total debt to total assets	As above
SIZE	The natural logarithm of total assets	As above
CAPEX	The ratio of capital expenditure to total assets	As above
Corporate risk-taking variables		
RISKTAKING	Company earnings volatility is equal to: $RISK\ 1 = \sqrt{\frac{1}{T-1}\sum_{t-1}^{T}\left(E_{i,t} - \frac{1}{T}\sum_{t-1}^{T}E_{i,t}\right)^2}\ \|T = 4$ Where $E_{i,t} = \frac{EBIT_{i,t}}{A_{i,t}}$; $N_{i,t}$ indexes the firm i and year t, and $EBIT_{i,t}$ is defined as the earnings before interest and taxes of firm i in year t; $A_{i,t}$ is equal to the total assets; T over (0 to +3, +1 to +4,+2 to +5;+3 to +6; +4 to +7)	Annual reports

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2.4 DESCRIPTIVE STATISTICS

Table 3 presents descriptive statistics for the variables employed in the regression for 81 firms which was privatized in the period 2001-2015 that are listed on Ho chi minh and Hanoi Stock Exchange. Companies in the sample appear to be profitable, with a mean ROA of 9.3%.

Table 3: Descriptive Statistics

This table illustrates descriptive statistics for the regression variables. The dependent variable is RISKTAKING, calculated by the standard deviation of firm's Earnings over four years. State is percentage of state ownership. ROA is equal to the ratio of Earnings before Interest and Taxes divided by Total Assets. FIRMSIZE is measured as the natural log of Total Assets. LEVERAGE is the sum of short-term debt and long-term debt divided by Total Assets; CAPEX is capital expenditure divided by Total Assets.

Variable	Obs	Mean	Std.Dev.	Min	Max
RISKTAKING	239	.057	.245	.001	2.745
STATEOWN	239	.529	.18	0	.967
ROA	239	.093	.078	-.084	.532
FIRMSIZE	239	20.267	1.561	16.911	26.055
LEVERAGE	239	.575	.201	.076	.955
CAPEX	239	.056	.081	0	.458
AVG_STATEOWN	239	.508	.177	0	.961

2.5 CORRELATION TEST

Table 4 reports Pearson correlations for variables employed in this study. As can be seen, the level of state ownership, measured by two proxies, STATEOWN and AVG_STATEOWN, are negatively correlated with risk-taking. Also, risk-taking tends to be affected positively by SIZE, LEVERAGE and CAPEX, and negatively by ROA.

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Table 4: Correlation matrix

This table reports estimates of the correlation coefficients for all variables of study. The dependent variable is RISKTAKING, calculated by the standard deviation of firm's Earnings over four years. State is percentage of state shares. ROA is equal to the ratio of Earnings before Interest and Taxes divided by Total Assets. FIRMSIZE is proxied as natural logarithm of Total Assets. LEVERAGE is the sum of short-term debt and long-term debt divided by Total Assets; CAPEX is capital expenditure divided by Total Assets.

Variables	RISK TAKING	STATE OWN	ROA	FIRMSIZE	LEVERAGE	CAPEX	AVG_STATEOWN
RISKTAKING	1.000						
STATEOWN	-0.005	1.000					
ROA	-0.017	-0.156	1.000				
FIRMSIZE	0.076	0.431	-0.146	1.000			
LEVERAGE	0.003	0.090	-0.699	0.171	1.000		
CAPEX	0.002	0.020	0.002	0.202	0.072	1.000	
AVG_STATEOWN	-0.017	0.920	-0.151	0.372	0.106	0.050	1.000

3. RESULT

Table 5 presents the results of regressing coefficients of state (STATEOWN and AVG_STATEOWN) on risk-taking measures. Both models show a negative relationship between risk-taking and state ownership post-privatization. In other words, firm with larger state ownership stake are inclined to take less risky investments. The finding of this research is consistent with recent studies (John et al., 2008; Boubakri et al., 2013; Vo 2018).

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Table 5: Regressions of risk-taking on state ownership

The dependent variable is RISKTAKING, calculated by the standard deviation of firm's Earnings over four years. State is percentage of state shares. ROA is equal to the ratio of Earnings before Interest and Taxes divided by Total Assets. FIRMSIZE is proxied as natural logarithm of Total Assets. LEVERAGE is the sum of short-term debt and long-term debt divided by Total Assets; CAPEX is capital expenditure divided by Total Assets.***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Model 1 is our baseline regression. In model 2, we employ an alternative proxy for state ownership by using AVG_STATEOWN. Year-fixed effect and industry-fixed effect are employed.

	Fixed Effects	
	(Model 1)	(Model 2)
STATEOWN	-0.165*	
	(1.67)	
AVG_STATEOWN		-0.166*
		(1.65)
ROA	0.18	0.19
	(0.64)	(0.68)
FIRMSIZE	0.008	0.008
	(0.60)	(0.56)
LEVERAGE	0.003	0.008
	(0.6)	(0.56)
CAPEX	0.003	0.008
	(0.02)	(0.06)
Intercept	0.129	0.138
	(0.6)	(0.65)
YEAR EFFECTS	YES	YES
INDUSTRY EFFECTS	YES	YES
Observations	239	239
F-stat	2.54	2.54
Adj. R-squared	0.16	0.16

4. CONCLUSION

Risk-taking is the key to achieve competitive advantages and sustained growth of enterprises by motivating innovation in business (Faccio et al., 2010). While some innovation and risk taking are essential to stay competitive, SOEs are presumed to have little incentive to take risk because they are already positioned in an advantageous seat, fully equipped with abundant resources, be it policy or financial resources. A second strand of research argues that SOEs might engage in

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more risk-taking activities since they will always be bailed out by the government if faced with financial difficulties. This is particularly true in transitional economies like Vietnam, where an observed weak corporate governance setting prompted bailouts of big SOEs over the last decade.

This issue motivates research about the role of state ownership in risk-taking among Vietnamese SOEs after privatization. In this research we rely on a unique database of 81 firms that were privatized in the period 2001-2015 and then made their listings in one of the two exchanges of Vietnam. We find that state ownership is negatively related to risk-taking, which means that firms with higher level of state ownership tend to avoid taking risk.

This study has a few implications for policy makers. If the government are persistent with the ultimate goal of state divestiture, that is, to aim for higher dynamic, operating efficiencies and improving the use of public resources through value-enhancing projects, it should follow through with strong support as well as strategic enforcement regarding corporate restructuring / obligated listings after privatization and regulations governing investor protection.

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