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**PRIVATIZATION: EFFECTS OF OWNERSHIP
STRUCTURES AND COMPETITION ON
PERFORMANCE**

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Abstract

This study adopts the frameworks of the privatization and x-efficiency theories to examine the effects of ownership and competition on the performance of 153 firms in Vietnam over a three years period after their privatization. The goal of the study is to determine whether firm performance in a competitive environment would improve with privatization. Problems with the measures for competition and performance raise questions to the validity of the results of this study and of prior privatization research. Suggestion is made with respect to the importance of longitudinal study in privatization research.

I. Introduction

Privatization has been called “the most important innovation in corporate finance outside the United States during the last half of the twentieth century” (Megginson, 1999). Defined as the “transfer of firm ownership from governments to private investors” (Vickers and Yarrow, 1988), privatization is considered a legitimate tool of statecraft by governments of more than 100 countries. It is one of the key elements of the continuing global phenomenon of the increasing use of markets to allocate resources (Megginson & Netter, 2001).

Privatized firms are the most valuable companies in seven of the ten largest non-U.S. stock markets (Boutchkova & Megginson, 2000). Governments have raised more than \$700 billion through some 750 public share offerings since 1997 (Megginson & Netter, 2001). The total market value of privatized firms worldwide in 1999 is nearly \$2.5 trillion or approximately 6.3 percent of the world's aggregate market capitalization. Of this amount, approximately one trillion dollars are revenue gains for governments (Boutchkova & Megginson, 2000).

Numerous theoretical and empirical studies on privatization in the economics literature seek to explain performance of state-owned enterprises and privatized firms. State-owned enterprises (“SOEs”) are government-owned or government-controlled economic entities that generate the bulk of their revenues from selling goods and services (Haggarty and Shirley, 1995). Privatized firms are former SOEs that have undergone a change in ownership structure and are no longer 100% government-owned or controlled after privatization. Current explanations for the performance of privatized firms center on the removal of political discretion (Boycko, Shleifer & Vishny, 1996) and increasing competition (Leibenstein, 1978). However, empirical studies have shown mixed results in different countries. Some studies provide support for better performance under private ownership structure than under state ownership structure (Boardman & Vining, 1989; Vining & Boardman, 1992; Boycko, Shleifer & Vishny, 1994, 1996; Ehrlich, Gallais-Hamonno, Liu & Lutter, 1994; Kole & Mulherin, 1997; Dewenter & Malatesta, 2000). Other studies provide support for better performance under more competition regardless of the ownership structure (Pinto, Belka & Krajewski, 1992; Li, 1997; Majumdar, 1996). Thus one of the major open questions in the field of privatization research today is whether performance in a competitive environment would improve even more with privatization (Megginson & Netter, 2001).

Attempting to address this open question, this study explores the effects of ownership structure and competition on the performance of 153 firms in Vietnam over a three years period after their privatization. The paper is structured in six sections. Section II describes the progress of Vietnamese privatization since its beginning. Section III discusses the conceptual framework of the theories of privatization and x-efficiency, and develops the hypotheses to be tested. Section IV explains the data, methodology and variables. Section V summarizes the

results and analyzes the findings. Section VI concludes and offers some suggestions for future studies.

II. Vietnamese privatization

Currently SOEs are among the biggest companies in the East Asia Pacific region. Nearly one third of the world's population reside here; yet regional governments have generated less than 5% of the global privatization proceeds (World Bank, 2000). Vietnam, with nearly 80 million residents, is the 4th most populated country in the East Asia Pacific region. It has 30,000 domestic companies, among which are approximately 5,000 SOEs (World Bank, 2001).

The privatization program in Vietnam is carried out under the name of "equitization" or more broadly "transformation". The Vietnamese government defines the term "equitization" and "transformation" interchangeably by the following six distinctive characteristics: (1) An "equitized" or "transformed" company is registered as a Joint-Stock Company under the Enterprise law applicable to private enterprises. (2) Shares of the company are sold at a price determined by a valuation committee. (3) The State often retains some share. (4) Private outsiders rarely have a majority stake. (5) Workers and managers are usually majority owners. (6) Ownership is generally diffused in the following pattern: If the government retains a majority shareholding, no institution may hold more than 10% of the shares and no individual is allowed to hold more than 5%. If the government holds less than a majority, then the limit is 20% per institution and 10% per individual (Decree 103). For the purpose of consistency with existing privatization literatures, the terms "equitization" and "transformation" are uniformly referred to as privatization throughout this paper.

The process of privatization has proceeded slowly and deliberately in Vietnam. The government began to implement the pilot program between 1991 and 1995 under a voluntary participation basis. Only seventeen SOEs completed the privatization by the end of 1997. Considered the first phase of privatization as a learning phase, the Vietnamese government had thoroughly monitored the privatization program and identified the following seven obstacles (Arkady and Mallon, forthcoming):

1. Management concerns for the loss of preferential treatment given to SOEs by the government.
2. Lack of clear and transparent guidelines on the privatization procedures.
3. Economic concerns for the privatization of the large number of small SOEs.
4. Lack of liquidity in share trading.
5. Limited institutional capacity to implement privatization.
6. Complex institutional arrangements slow down progress.
7. Political concerns about the impact of privatization.

Aware of these obstacles, the government began the second phase of privatization (1996-2000) in a more forceful, dual framework. Firstly, the privatization program was no longer voluntary. With few exceptions, all SOEs were mandated to prepare for privatization. Secondly, the government strengthened the institutional framework to support the privatization program. A new decree was issued subjecting all SOEs to restructuring and making explicit the government's policy to: (1) support employee share ownership, (2) change management, (3) approve management performance incentives, (4) increase assets of the State, (5) raise income of employees, and (6) contribute to national economic growth (Decree 44). As a result, over 700 SOEs were privatized in a period of five years.

Currently in the third phase of privatization (2001-2005), the Vietnamese government has made public its plan to privatize approximately all of two thousand smallest SOEs; i.e. those with tens of workers and low turnover (Saigon Times, 2002). This category of small SOEs had been identified by the government during the first phase of the privatization program. Considering the costs and benefits of privatization, the restructuring of such small state companies into joint-stock companies was determined as uneconomical, but necessary. The government's solution to this problem is a new privatization scheme officially described as "privatization through Entrusting (to labor collectives), Leasing, Contracting Out and Sale" (Decree 103). Under this new privatization scheme, profitable SOEs with capital less than 1 billion Vietnamese dong ("VND") (about US\$70,000) and loss-making SOEs with capital less than VND5 billion (about US\$350,000) are subject to privatization. The new privatization program, aimed specifically at these SOEs, is to transfer state ownership to ownership of the labor collectives using one of the methods of Entrusting Leasing, Contracting out and Sale. In the case of Sales method, discounts, occasionally up to 100%, are standard. As of the end of 2001, i.e., less than one year into the program, 37 SOEs have been sold, 4 contracted out and 61 entrusted to labor collectives (none leased) (CIEM, 2002).

Following the positive initial results of the new privatization program aimed at the smallest SOEs, the Vietnamese government now plans to triple the total number of privatized firms in Vietnam by the end of 2005 (Saigon Times, 2002). To date, there has not been any empirical study employing statistical methods to examine the progress of the country's privatization program. Thus the aim of this research is to sort through the ownership structure and the competition factors driving the performance of the privatized SOEs. The main research question of this paper is whether privatized SOEs will perform better with increasing private outsider ownership and competition.

III. Conceptual framework

Gains from private outsider ownership

A principal reason for privatization is the presence of information asymmetries and incomplete contracting problems, which lead to severe incentive problems

and efficiency losses from public ownership (Zinnes, Eilat, and Sachs, 2001). The theory of privatization suggests that SOEs operate inefficiently because managers pursue the objectives of politicians who are acting owners of the firm (Boycko et al, 1996). It argues that politicians normally give higher priority to garnering the votes of the people, whose major concern is employment, than to maximizing the firm's performance. Politicians recognize that the voting public may not be aware of the potential profits that the inefficient SOEs are wasting but are keenly aware of the alternative uses of tax revenues (Boycko et al, 1996). Thus politicians normally support spending the profits of the SOEs on labor without remitting them to the Treasury, rather than generating new subsidies for the SOEs to maintain excess labor (Shleifer and Vishny, 1994). In addition, managers of SOEs develop the perception of soft budget constraint, and expect *ex post* political support or write-offs to cover losses due to production inefficiencies (Kornai, 1986; Berglof and Roland, 1998; Frydman, Gray, Hessel and Rapaczynski, 2000).

Privatization has been suggested as a solution to the incentive-efficiency link and soft budget constraint problems of SOEs. It normally involves major changes in the SOE's goal from rent-seeking to value-maximizing, its overall strategic orientation from fulfilling government requirements to customer orientation, and its governance, cost, organizational, asset, and capital structures (Akimova and Schwodiauer, 2000). The restructuring of the SOE is difficult because of the nature of its state ownership. Boycko et al (1996) suggest that the closer the shareholders' goals to those of the politicians, the less likely the restructuring necessary to improve the firm's performance is to occur. Workers, if they can get subsidies or write-offs from the politicians, are also unlikely to want layoffs in a restructuring. In this way, workers share the politicians' goal of employment maximization.

The theory of privatization suggests that firms pursuing profit maximization goals will perform more efficiently than firms pursuing employment maximization goals. SOEs are wholly-owned by the government and therefore are subjected to the control of the politicians whose primary pursuit is employment maximization rather than profit maximization. Following this logic, the performance of SOEs will improve with less government ownership, or more private ownership. Moreover, as argued earlier, workers may also share similar employment maximization goal of the politicians. Under this argument, the performance of SOEs will improve with less worker ownership, or more outsider ownership. Ideally, purely private firms, without government or worker ownership, will most likely have no employment maximization goal. However, because state ownership is rarely replaced by purely private, unregulated firms (Megginson and Netter, 2001), increasing private outsider ownership is expected to have an increasingly positive effect on performance. Thus it is hypothesized:

H1: The more private outsider ownership the privatized firm has, the better its performance.

Gains from more competition

The x-efficiency theory suggests that inside a firm there is always a level of x-inefficiency, defined as the excess of actual over minimum cost for a given output (Comanor and Leibenstein, 1969). SOEs (or any multi-person firm) operate inefficiently because the output from a given combination of capital and labor will depend on a host of psychological factors, which lead employees to exert varying degrees of effort. The amount of effort exerted by labor depends on the constraint concern and pressure, which are relatively limited due to at least three x-inefficiency factors: (1) contracts for labor are incomplete; (2) the production function is not completely specified or known; and (3) not all inputs are marketed or, if marketed, are not available on equal terms to all buyers (Comanor and Leibenstein, 1969). With the limited constraint concern and pressure, neither individuals, nor firms, nor industries are as productive as they can be (Leibenstein, 1975).

There have been numerous empirical studies examining the efficiency of labor in firms operating under different competitive pressure. With respect to privatization, Djankov and Murrell (2002) have conducted a meta-analysis of 21 studies on the effects of increasing competitive pressure on the performance of privatized firms. Their analysis shows that competition has been a major force behind improvements in enterprise productivity in transition economies as a whole. However the effect of competition varies from positive in some countries in Eastern Europe, to negative in all of the Commonwealth of Independent States (Perevalov, Gimadi, and Dobrodey, 2001; Warzynski, 2001). A test of this hypothesis, using a sample of privatized firms in Vietnam, would add insights into the different impacts of competition on the performance of firms across different regions. Thus it is hypothesized:

H2: More competition is associated with better performance of privatized firms.

Gains from private outsider ownership and competition

As discussed previously, the theory of privatization suggests that firms will perform better if the political and worker controls are reduced. The reduction of political and worker control is operationalized by the increase in private outsider ownership. Similarly, the x-efficiency theory suggests that firms will perform better when the x-inefficiency level will be reduced, i.e. when firms experience more competition in the market. Combining these two theories, it is reasonable to propose that firms will perform better if there is more private outsider ownership and more competition in the market. Thus, it is hypothesized:

H3: Under more competition, the more private outsider ownership the privatized firm has, the better its performance.

Selection bias

An important source of skepticism about existing results in privatization research centers on the possible biases in estimates that might arise either from simultaneous causation or from selection bias (Djankov and Murrell, 2002).

Currently there is no agreed theory on how to model the process of change within a firm and the government's selection of firms for privatization (Djankov and Murrell, 2002). The selection bias issue, not just the government's selection of firms for privatization but also the investors' selection of firms for ownership, remains a major challenge in privatization research.

Scholars have attempted to counter the selection bias through various methods. With respect to controlling for the government's selection bias, Frydman, Gray, Hessel and Rapaczynski (1999) have used a dummy variable to model pre-privatization differences between state firms and privatized firms and verified that performance of those firms selected for privatization, but not yet privatized, is closer to that of state firms than privatized ones. With respect to controlling for the owners' selection bias, the methods and results vary in different countries. Djankov and Murrell (2002) use the method of meta-analysis to examine 24 studies on 20 countries, focusing on the link between ownership structure and performance. They suggest several issues of owners' selection bias: (1) the state keeping the best enterprises during privatization, (2) the managers fighting harder to retain control when prospects were good, and (3) the foreigners were only willing to pay for efficient enterprises. Their meta-analysis of the 24 studies, having weighted those with more attention to the issue of selection bias mentioned above, show (1) relative position of most owners remains the same whatever the treatment of selection bias; (2) selection bias reduces the estimated magnitudes of most ownership effects; and (3) only the results for managers and workers show a considerable degree of sensitivity to how selection bias is handled (Djankov and Murrell, 2002).

Djankov and Murrell (2002)'s extensive review of privatization studies in transition economies shows there have been privatization studies controlling for the selection bias of foreign investors who were only willing to pay for efficient enterprise. What is missing is a privatization study controlling for the selection bias for ownership of good firms by private outsider investors, not just by foreign investors. A control for this specific selection bias is significant because it has been shown in finance literatures that investors can benefit from an investment strategy of buying past winner and selling past losers (Barberis, Shleifer, and Vishny, 1998; Jeegadesh and Titman, 1993; Chan, Jegadeesh and Lakonishok, 1996). This suggests that private outsider investors will more likely seek ownership in past winners, i.e., privatized firms with prior good performance. If such a pattern exists, the relationship between ownership structure and performance of privatized firms will be significantly affected by the prior performance factor.

Moreover, studies in strategy literature also suggest prior good performance can be an indicator of future good performance (Amburgey and Miner, 1992). The experience of prior good performance can help firms prevent a precipitous change (Miller, 1986; Levitt and March, 1988), encourage a competency driven action that promotes success (Quinn, 1980), and facilitate organizational learning through retention of past successes (Levitt and March, 1988).

These finance and strategy arguments have generally suggested that (1) private outsider investors will seek out firms with good prior performance and (2) firms with good prior performance will have good future performance. Thus, good prior performance is treated in this study as having a significant influence on the selection of the private outsider investors. Taking into consideration of the possible effects of good prior performance on the ownership of privatized firms by private outsider investors, three new hypotheses on the performance of privatized firms are generated as follows:

- H4a: In a good privatized firm, the more private outsider ownership it has, the better its performance.
- H4b: In a good privatized firm, better performance is associated with more competition.
- H4c: In a good privatized firm operating under more competition, the more private outsider ownership it has, the better its performance.

IV. Description of data, methodology and variables

A sample of 425 privatized firms is drawn from survey data of all firms privatized in the fifteen mostly densely privatized provinces in Vietnam from 1991 to 2001. Responses are collected from 309 firms in July 2002. However, this study focuses on firm performance over a three year period and therefore includes only the 153 firms privatized in 1998 in the analysis (in order to have 3 year financial data).

The survey involves a questionnaire, which uses a collaborative and iterative design and consists of 44 general, qualitative and quantitative questions about the firms. The goal of the questionnaire is to understand: (1) the problems firms encountered during the privatization process, (2) the problems firms encountered after privatization and (3) the performance of the firms following privatization.

The questionnaires were personally delivered to the firms' CEOs, or their designated representatives, by a group of trained and hired interviewers who were officially introduced to the firms by the Central Institute of Economic Management and Vietnam's Chamber of Commerce and Industry. Interviewers were responsible for (1) answering any question respondents may have had with respect to the questions, (2) collecting the completed questionnaire, and (3) following up any missing information by phone or in person. The entire questionnaire distribution and collection process took place in the month of July

of 2002, with a response rate of 76%. Table 1 below describes the industry characteristics of the firms in the sample.

Table 1: Industry characteristics of respondents

Industry	No. of firms	% of firms
Agriculture	8	5.23%
Fishery	7	4.58%
Manufacturing	48	31.37%
Construction	16	10.46%
Telecom	2	1.31%
Transportation	18	11.76%
Trade & services	37	24.18%
Tourism	17	11.11%
Total	153	100.00%

V. Methodology

Regarding methodology of data analysis, Djankov and Murrell (2002) suggest that there are two common empirical methods in the examination of the effects of ownership structures on performance. One method compares cross-sectionally the performance of government-owned to privately owned firms. The other compares longitudinally the performance of the privatized firm before and after privatization. Only one study combines the two methods in order to control for any selection bias (Frydman et al, 1999).

This study follows the longitudinal method. The effects of ownership structures and competition on the performance of the privatized firms are examined using multiple regression models. Below is a description of the variables and formal statements of the models.

Dependent variables

Performance

Performance is measured as returns on sales calculated from profits before tax divided by sales over a three year period (ROS1=returns on sales in 1999 or 1 year after privatization ROS2=returns on sales in 2000 or 2 years after privatization, and ROS3=returns on sales in 2001 or 3 years after privatization). Although returns on assets (ROA) is typically a better financial measure of performance, it is not selected here because of the uncertain asset valuations of the firms in the sample by the government, rather than market mechanisms (see description of “equitization” earlier in the previous section). Moreover, Frydman, Gray, Hessel, and Rapaczynski (1999)’s study of privatization, considered as the most rigorous empirical research on privatization (Megginson & Netter, 2001; Djankov & Murrell, 2002), finds that performance improvement of privatized firms is concentrated in revenue improvement, rather than cost reduction, to

outsider owners. In this study, the measure of returns on sales (ROS), incorporating both revenues and costs factors, is intended to improve on the revenue measure of Frydman et al. (1999).

Independent variables

Private outsider ownership

Private outsider ownership (PRIVOUT) is defined as the percentage of shares of the firm owned by individual and institutional investors not affiliated directly with the firm or the government. It is used in this study as an indicator of the level of political and worker control in the firm under the logic of more private outsider ownership leading to more private outsider control and less political and worker control.

Competition

The usual approach to measuring the degree of market competition employs indicators of domestic market competition. However, such information is not available in Vietnam. To measure competition, survey questions asked respondents to identify the number of competitors in their markets one year before privatization (i.e., 1997) and again in year 2001. The variable COMPETITION is constructed from these two numbers. Defined as the change in the number of competitors between year 1997 and year 2001, COMPETITION is coded as 1 if there is more competition and 0 if there is same or less competition. Although this is a relatively subjective measure, it reflects the managers' belief in the existence of competitive pressure before and after privatization, which fits well with the working hypothesis of the x-efficiency theory that firms will minimize costs (thus improve performance) under competitive or environmental pressure.

Good firms

Theories on momentum strategies suggest that firms performing well before privatization will continue performing well after privatization. Three dummy variables (GOODFIRM1, GOODFIRM2, GOODFIRM3), are constructed to distinguish firms that are performing well from the other firms in the sample. GOODFIRM1 is coded as 1 if the firm's returns on assets (ROA) in year 1997 (no financial data are collected for the year of privatization in 1998) is greater than 15% and 0 if 15% or less. GOODFIRM2 and GOODFIRM3 are similarly coded using ROA in year 1999 and ROA in year 2000, respectively.

Interaction variables

Ownership structure and competition

The variable PRIVOUT is multiplied by the variable COMPETITION to create the interaction variable COMPRIVOUT. COMPRIVOUT measures the

percentage of shares owned by private outsiders in firms that have the experience of more competition in the market.

Ownership structure and good firms

The variable PRIVOUT is multiplied by the variable GOODFIRM1, GOODFIRM2, and GOODFIRM3 to create the interaction variables PRIVOUTGOOD1, PRIVOUTGOOD2, and PRIVOUTGOOD3. These interaction variables measure the percentage of shares owned by private outsiders in firms that have ROA greater than 15% in year 1997, 1999 and 2000.

Competition and good firms

The variable COMPETITION is multiplied by the variable GOODFIRM1, GOODFIRM2, and GOODFIRM3 to create the interaction variables COMPGOOD1, COMPGOOD2, and COMPGOOD3. These interaction variables capture those firms that experience more competition and have ROA greater than 15% in year 1997, 1999, and 2000.

Ownership structure, competition and good firms

The variable PRIVOUT is multiplied by the variables GOODFIRM1, GOODFIRM2, and GOODFIRM3 and the variable COMPETITION to create the interaction variable COMPPRIVOUTGOOD1, COMPPRIVOUTGOOD2, and COMPPRIVOUTGOOD3. These interaction variables measure the percentage of shares owned by private outsiders in firms that experience more competition and have ROA greater than 15% in year 1997, 1999, and 2000.

Control variables

Size

Firm sizes are controlled by firm's assets measured in Million Vietnamese dong during the three years following privatization. Measured firm's assets in log form, LOGASSET1 captures firm's size in year 1 after privatization, LOGASSET2 in year 2000 and LOGASSET3 in year 2001.

Tax exempt status

Vietnamese government generally supports privatized firms with tax exempt status. Firms with tax exempt status do not pay corporate income tax. The variables TAXEXEMPT1, TAXEXEMPT2, and TAXEXEMPT3 are constructed to capture firms that have the privilege of tax exempt status in 1999, 2000 and 2001.

Industry

In order to control for the differences in performance of particular industries, dummy variables are created in accordance with a simple industry identification system commonly used by the Vietnamese government. The reference category is the telecom industry (TELECOM). Seven dummy variables identify the industries of agriculture, fishery, manufacturing, construction, transportation, trading services and tourism services (AGRIC, FISHERY, INDUSTRIALS, CONSTRUCTION, TRANSPORT, TRADING, and TOURISM).

Table 2 below describes the variables, their operationalizations and the mean statistics.

Table 2: Description of variables, their operationalizations, and mean statistics

Variable	Obs	Mean	SD	Min	Max
ros1	153	0.06	0.15	-1.42	0.71
ros2	153	0.06	0.11	-0.78	0.59
ros3	153	0.06	0.10	-0.34	0.54
privout	153	0.18	0.22	0	0.92
competition	153	0.33	0.47	0	1
goodfirm1	153	0.36	0.48	0	1
goodfirm2	153	0.28	0.45	0	1
goodfirm3	153	0.24	0.43	0	1
compgood1	153	0.12	0.33	0	1
compgood2	153	0.09	0.29	0	1
compgood3	153	0.08	0.28	0	1
compprivout	153	0.05	0.12	0	0.76
privoutgood1	153	0.07	0.16	0	0.92
privoutgood2	153	0.05	0.14	0	0.92
privoutgood3	153	0.04	0.12	0	0.92
compprivou~1	153	0.01	0.06	0	0.43
compprivou~2	153	0.01	0.04	0	0.38
compprivou~3	153	0.01	0.05	0	0.43
logasset1	153	9.28	1.28	5.47	13.98
logasset2	153	9.29	1.27	5.48	13.98
logasset3	153	9.47	1.28	5.69	13.59
taxexempt1	153	0.33	0.47	0	1
taxexempt2	153	0.29	0.46	0	1
taxexempt3	153	0.24	0.43	0	1
agric	153	0.05	0.22	0	1
fishery	153	0.05	0.21	0	1
industrials	153	0.31	0.47	0	1
construction	153	0.10	0.31	0	1
transport	153	0.12	0.32	0	1
trading	153	0.24	0.43	0	1
tourism	153	0.11	0.32	0	1

- Model 1: $ROS_{it} = f(PRIVOUT_{it}, control_{it})$
- Model 2: $ROS_{it} = f(COMPETITION_{it}, control_{it})$
- Model 3: $ROS_{it} = f(PRIVOUT_{it}, COMPETITION_{it}, (PRIVOUT_{it} * COMPETITION_{it}), control_{it})$
- Model 4a: $ROS_{it} = f(PRIVOUT_{it}, GOODFIRM_{it}, (PRIVOUT_{it} * GOODFIRM_{it}), control_{it})$
- Model 4b: $ROS_{it} = f(COMPETITION_{it}, GOODFIRM_{it}, (COMPETITION_{it} * GOODFIRM_{it}), control_{it})$
- Model 4c: $ROS_{it} = f(PRIVOUT_{it}, COMPETITION_{it}, GOODFIRM_{it}, (COMPETITION_{it} * GOODFIRM_{it}), (PRIVOUT_{it} * GOODFIRM_{it}), (PRIVOUT_{it} * COMPETITION_{it}), (PRIVOUT_{it} * COMPETITION_{it} * GOODFIRM_{it}), control_{it})$

VI. Results

Results show mixed support for the hypotheses over the three years period following privatization. Significant statistical support at 10% level or better is found for Hypotheses 1, 2 and 4c in year 1999, Hypothesis 2 in year 2000 and Hypotheses 1, 4b, and 4c in year 2001.

In year 1999, results show a direct positive relationship between performance and private outsider ownership (H1) and between performance and competition (H2). With respect to the good firms with ROA of 15% or higher (H4a, H4b, and H4c), there is only statistical support for better performance among good firms with more private outsider ownership and competition together (H4c). No support is found for good firms with more private outsider ownership (H4a) or good firms with more competition (H4b).

In year 2000, results show only one significant relationship between performance and competition (H2). In year 2001, results show that firms improve performance when there is more private outsider ownership for all firms (H1) and for good firms (H4b). Moreover, the performance is better for good firms when more competition is coupled with more private outsider ownership (H4c).

One of the major open questions in the field of privatization research today is whether performance in a competitive environment would improve even more with privatization. In this study, statistical support is found for this open question with respect to performance of good firms in year 2001 (H4c). However, for all firms, irrespective of their ROA, the relationship between private outsider ownership and competition is not significantly different from zero (H3).

Table 3 summarizes the hypotheses and findings. Table 4 provides selected regression summary for performance of privatized firms over the period of 3 years. Table 5 provides a correlation table for all variables employed in the analysis.

Table 3: Summary of hypotheses and results

No.	Hypotheses	Year 1	Year 2	Year 3
1	The more private outsider ownership the privatized firm has, the better its performance.	Supported	Not supported	Supported
2	Better performance is associated with more competition.	Supported	Supported	Not supported
3	Under more competition, the more private outsider ownership the privatized firm faces, the better its performance.	Not supported	Not supported	Not supported
4a	In a good privatized firm, the more private outsider ownership it has, the better its performance.	Not supported	Not supported	Not supported
4b	In a good privatized firm, better performance is associated with more competition.	Not supported	Not supported	Supported
4c	In a good privatized firm operating under more competition, the more private outsider ownership it has, the better its performance.	Supported	Not supported	Supported

Table 4: Selected regression summary for performance of privatized firms over a period of 3 years (control variables not included)

	(1)			(2)			(3)			(4)			(5)			(6)		
	H1-99	H1-00	H1-01	H2-99	H2-00	H2-01	H3-99	H3-00	H3-01	H4a-99	H4a-00	H4a-01	H4b-	H4b-	H4b-	H4c-99	H4c-00	H4c-01
privout	0.13*	0.07	0.09*				0.16*	0.08	0.10*	0.1	0.11*	0.10**				0.16+	0.12*	0.13**
	(0.06)	(0.04)	(0.04)				(0.07)	(0.05)	(0.04)	(0.08)	(0.05)	(0.04)				(0.09)	(0.06)	(0.04)
competition				0.05+	0.03+	0.02	0.06+	0.04	0.02				0.05	0.03	0	0.07+	0.03	0.02
				(0.03)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)				(0.03)	(0.02)	(0.02)	(0.04)	(0.03)	(0.02)
comprivout							-0.09	-0.02	0							-0.15	-0.02	-0.08
							(0.13)	(0.09)	(0.08)							(0.15)	(0.10)	(0.07)
goodfirm										0.08*	0.10**	0.09**	0.10**	0.06**	0.07**	0.10*	0.09**	0.08**
										(0.03)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.04)	(0.03)	(0.02)
compgood													0	0.02	0.06+	-0.08	-0.01	-0.04
													(0.05)	(0.04)	(0.03)	(0.07)	(0.05)	(0.04)
privoutgood										0.04	-0.13	-0.01				-0.05	-0.14	-0.11
										(0.12)	(0.09)	(0.08)				(0.14)	(0.10)	(0.08)
comprivoutgood																0.68*	0.29	1.02**
																(0.32)	(0.27)	(0.20)
Constant	0.15	-0.01	-0.08	0.13	-0.02	-0.09	0.13	-0.02	-0.08	0.07	-0.01	-0.1	0.04	-0.03	-0.09	0.09	-0.01	-0.03
	(0.14)	(0.10)	(0.08)	(0.14)	(0.10)	(0.08)	(0.14)	(0.10)	(0.08)	(0.13)	(0.09)	(0.08)	(0.14)	(0.09)	(0.08)	(0.13)	(0.09)	(0.07)
Observations	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153
R-squared	0.13	0.18	0.22	0.12	0.19	0.19	0.16	0.2	0.23	0.2	0.26	0.35	0.2	0.25	0.34	0.25	0.29	0.5

Standard errors in parentheses
 + significant at 10%; * significant at 5%; ** significant at 1%

Table 5: Correlation table for all variables employed in analysis

CORRELATION TABLE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ros1	1																						
ros2	0.93	1																					
ros3	0.57	0.74	1																				
privout	0.22	0.21	0.25	1																			
competition	0.15	0.12	0.11	-0.14	1																		
goodfirm	0.03	0.00	-0.03	-0.07	0.09	1																	
compgood	0.10	0.07	0.08	-0.08	0.68	0.48	1																
comprivout	0.16	0.16	0.19	0.35	0.52	0.07	0.38	1															
privoutgood	0.07	0.08	0.11	0.58	0.00	0.48	0.17	0.37	1														
comprivoutgood	0.03	0.01	0.03	0.30	0.37	0.26	0.54	0.80	0.53	1													
logasset1	0.08	0.15	0.26	0.26	-0.07	0.06	0.01	0.07	0.16	-0.02	1												
logasset2	0.16	0.22	0.27	0.28	-0.04	0.06	0.02	0.10	0.17	0.00	0.96	1											
logasset3	0.17	0.23	0.28	0.25	-0.02	0.06	0.03	0.08	0.14	-0.03	0.95	0.97	1										
taxexempt1	-0.20	-0.25	-0.20	-0.15	0.07	0.11	0.09	-0.12	-0.08	-0.11	-0.18	-0.22	-0.23	1									
taxexempt2	-0.23	-0.29	-0.27	-0.12	0.06	0.07	0.02	-0.02	-0.07	-0.02	-0.15	-0.16	-0.18	0.62	1								
taxexempt3	-0.19	-0.27	-0.23	0.07	-0.07	-0.07	-0.11	-0.03	0.01	-0.08	0.07	0.03	0.01	0.60	0.49	1							
agric	0.12	0.12	0.04	0.08	0.02	0.00	0.04	0.09	0.00	0.03	-0.03	0.00	-0.05	-0.04	-0.02	0.08	1						
fishery	-0.06	-0.09	-0.10	-0.11	0.11	0.03	0.05	-0.03	-0.07	-0.06	-0.04	-0.05	0.05	0.06	-0.12	-0.05	1						
industrials	0.11	0.12	0.18	0.01	0.18	0.08	0.18	0.14	0.03	0.16	0.03	0.05	0.04	0.19	0.21	0.06	-0.16	-0.15	1				
construction	-0.03	-0.04	-0.04	-0.16	-0.02	0.04	-0.06	-0.12	-0.03	-0.09	0.08	0.06	0.08	-0.06	-0.08	0.06	-0.08	-0.07	-0.23	1			
transport	-0.01	-0.04	-0.07	-0.10	0.04	0.00	-0.07	-0.01	-0.08	-0.09	-0.04	-0.06	-0.03	-0.04	-0.15	-0.01	-0.09	-0.08	-0.25	-0.12	1		
trading	-0.02	-0.02	-0.05	0.17	-0.17	-0.02	-0.08	-0.07	0.16	-0.02	0.08	0.06	0.08	-0.10	-0.10	-0.03	-0.13	-0.12	-0.38	-0.19	-0.21	1	
tourism	-0.17	-0.12	-0.06	0.01	-0.12	-0.11	-0.06	0.00	-0.09	0.00	-0.13	-0.11	-0.13	-0.02	0.05	-0.05	-0.08	-0.08	-0.24	-0.12	-0.13	-0.20	1

VII. Discussion

Before we begin discussing our research findings, we would like to acknowledge the weakness of our financial performance measure (ROS), which had been initially selected in accordance with prior research in privatization. The reason for the weakness of the financial performance measure relates to the theory of privatization which argues that there is inefficiency in SOEs and privatization helps improve efficiency. The operationalizations of efficiency as ROS may be a good measure of the firm's financial performance however it is not a good measure of efficiency as defined by the theory of privatization. A possible problematic scenario is that under government ownership, a firm may operate very inefficiently but because it benefits from political subsidies, e.g. preferential treatment securing governmental contracts, the firm may report excellent ROS. Moreover, with political subsidies, this type of firm may achieve even higher ROS in a market with more competitors because it does not have to compete for markets the same way as its competitors. On the other hand, under private ownership, a firm may operate very efficiently but because lacking the benefits of political subsidies, the firm may report poor ROS. This situation is especially exacerbated when it operates in a market with many competitors. In other words, without controlling for the existence of political subsidies to the firms, the ROS measure is likely not a valid measure of efficiency in the study of privatization. This belated recognition of the weakness of the dependent measure is our big disappointment. However, there is a salvaging point to be noted here. Our recognition of the weakness of the measure ROS in this study raises questions on the validity of previous privatization studies which had employed the same operationalizations of efficiency (cite the studies here).

Another weak measure in our study is competition which has been operationalized as the change in the number of competitors between year 1998 and year 2001. The problem relates to the measure of the positive change in the number of competitors in the firm's product market as operationalizations for increasing competition. As discussed in the previous paragraph, if the firm receives some political subsidies such as preferential treatment in securing government contracts, it may not experience more competition when there are more competitors in its product market. The problem in our study is that a positive change in the number of competitors may mean the firm's competitors are experiencing more competition, whereas the firm itself may not experience more competition. In addition, we also did not collect data for the number of competitors in year 1999 and 2000, which further compounded the problem of operationalizing the measure competition.

These two measurement errors made in our research design are significant enough to warrant the dismissal of the validity of our results. However, we would like to provide some discussions with respect to raising new questions for privatization research based on our measure of private ownership and its relationship with performance.

This study is one of the few privatization studies designed to follow firm's performance longitudinally. The different results over a three-year period raise a question of the time required for privatization to have an effect on the firm's performance in terms of efficiency and ROS. It is important to consider (1) the time when the effects will become apparent and (2) what are the factors affecting the length of time required for the effects to become apparent.

Our results on the effect of private outsider ownership on firm's financial performance indicate that there is a statistically significant positive relationship in year 1999 and year 2001, but not in year 2000. Moreover when we regress private outsider ownership against the financial performance of only the good firms, the relationship is not significantly different from zero (in a negative direction) for year 2000 and year 2001. These varying results raise an important issue for future privatization research; researchers should recognize the varying effects of time on the financial performance of firms after privatization.

In our study, firms generally perform better in year 1999, i.e. the year immediately following privatization. However, this performance may be due to the high level of x-efficiency accumulated inside the firm during the year of privatization; i.e. it may be possible that firms, knowing that new investors are carefully watching their performance in the first year, may be holding out on reports of sales until the next financial year. Conversations with managers during the course of data collection show some evidence for this practice. Moreover, our year 2000 results demonstrate that the relationship between performance and ownership is not significantly different from zero (in a positive direction for all firms and negative direction for the good firms). In other words, firms that may have been holding out on financial performance in year 1998 to report better performance in year 1999 can not maintain such performance in year 2000.

From our analysis, we would suggest that any cross-sectional study of privatization is prone to possible confounds such as that described above. A longitudinal analysis is an ideal correction of this problem. However if that is not possible, researchers should develop some control measures, e.g. corporate governance, to avoid any confound in the relationship between ownership and performance.

VIII. Conclusion

The goal of this study has been to determine whether firm performance in a competitive environment would improve with privatization. We erred in our research design and made invalid operationalizations of the measures for competition and efficiency. Although our errors prevented us from reaching our goal, we are comfortable with our results on the effects of private outsider ownership on performance, especially over a three year period following privatization. Moreover through our errors, we are able to raise questions on the validity of the efficiency construct that is commonly employed in privatization research. We believe this study provides good lessons for our own future research

on privatization. We hope that with additional data collection, we will be able to reach our goal in the next draft.

X. References

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