**SECTION 1
ACADEMIC
INVESTIGATIONS
& CONCEPTS**

AGENCY COSTS AND CORPORATE GOVERNANCE MECHANISMS IN INDIAN STATE-OWNED COMPANIES AND PRIVATELY OWNED COMPANIES - A PANEL DATA ANALYSIS

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Abstract

This paper explores the impact of corporate governance reforms and changing ownership patterns of core public sector enterprises. A number of reforms were introduced by the Government of India in 1991, and intensified in 2004 with the aim of improving efficiency and financial performance across state owned enterprises. The core state enterprises provide a unique opportunity to consider two aspects of the reforms. First, did the reforms have an impact, and second, is there a distinguishable difference between wholly government owned and partially-public shareholding enterprises? The public listed companies provide a suitable reference point for comparison. A comprehensive dataset of 123 SOEs and matching listed public companies for 10 years was collected for the study. A regression approach is adopted with agency cost as the dependant variable and several corporation-specific governance variables. Size and industry are the independent variables. The findings of the study indicate that the agency costs for mixed ownership models tend to be lower than those of the concentrated state-owned firms because they operate in an open market with the market facing the regulatory framework of a competitive environment.

Keywords: Agency Costs, Corporate Governance Mechanisms, State-Owned Companies, Privately Owned Companies

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1. Introduction

This paper examines the impact that changing ownership structures and government-initiated reforms to corporate governance have had on agency cost in state owned enterprises (SOEs) in India. Conventional wisdom might suggest that SOEs are less efficient than the private sector and that progress of reforms toward a private sector model will enhance efficiency and reduce agency costs. The reforms to corporate governance in Indian SOEs, particularly the larger enterprises

termed central public sector enterprises (SOEs), provide an interesting context to explore the traditional principal-agent (PA) agency cost. As the movement toward mixed ownership models gains more appeal, the generalizable lessons may have a broader significance.

The Government of India (GOI) avowed an intention to raise billions of rupees from further issues of shares in listed and unlisted SOEs and has engaged in corporate governance reforms designed to enhance the performance of SOEs prior to the initial public offering (IPO) or further sell-down

existing mixed ownership entities (MOE) (Locke & Duppati, 2014). The relative efficiency and associated return-risk attributes of these new MOE are investigated in this paper. In particular, consideration is given to the returns vis à vis private sector counterparts, the level of agency cost and the impact of various reforms introduced by the GOI on returns and principal-agent costs (PA).

Listed public companies operating in similar sectors are included in the analysis as benchmarks for comparisons. There is a traditional view that public sector enterprises, in terms of financial performance, are not as efficient as private sector enterprises. Various empirical studies have purportedly established the veracity of this traditional wisdom and multiple arguments espoused as to why this should be so. However, in the Indian context these studies are a little dated and lack the empirical rigour that might be expected of contemporary investigations. The relationship between ownership structure and firm performance has been an important research topic during the last three decades and has produced ongoing debate in the literature of corporate finance. Agency theory contends agency conflicts are especially severe in firms with large, free cash flows (Jensen, 1986). It is important to examine the Indian case from the perspective of agency conflict because enormous national resources are locked up in the public sector enterprises.

Partial privatisation of SOEs are witnessed in super economies like China with continuing listings of SOEs on the Shenzhen and Shanghai stock exchanges through to much smaller economies like New Zealand, which was at the forefront of privatisation of public sector enterprises in the 1980s and has now embarked upon a partial privatisation of several energy generators. The NZ Government will retain 51% of energy shares and in the case of Air New Zealand; it has retained 53% of shares.

India has a large programme of partial sale of SOEs. Recently announced reforms for SOEs aimed to make them more attractive to private investors facilitating a further issue of shares to the public. With economic liberalisation post-1991, sectors that had been the exclusive preserve of SOEs were opened up to the private sector. The SOEs therefore faced competition both from domestic private sector companies and large multi-national companies (MNCs). In response, in 2007 the GOI empowered the key SOEs that had comparative advantage in terms of strategic importance, turnover, net worth and financial performance, by granting them higher levels of autonomy and financial powers.

A comprehensive dataset of 123 SOEs and matching listed public companies for 10 years has been collected for this study. A range of statistical techniques, including descriptive statistics, t-test,

correlation and regression techniques, are used to explore the relationship between agency costs and enterprise related variables.

The remainder of the paper is organised as follows: The second section briefly presents the framework of corporate governance reforms from the Indian context; the third section presents the extant literature and hypotheses; section four presents the data and estimation framework of the study; the fifth section presents empirical discussion and the final section summarizes the findings and proceeds with some critical points and recommendations for potential future research.

2. Background

Corporate governance reforms in India began in the early 1990s and were modified and intensified in 2000 with a goal of ensuring comparable performance between SOEs and their private counterparts. The period 2000 to 2012 was significantly impacted by global events such as sanctions against Iran, a major trading partner, the global financial crisis and domestic events including major terrorism incursions. These factors may confound results in this study to some extent, but the adaptability of SOEs, vis à vis listed public companies, is also worthy of research.

The Department of Public Enterprise (DPE), which is a nodal agency under the Ministry of Heavy Industries and Public Enterprises, Government of India (GOI), issued guidelines delegating decision-making powers to the leading firms and other profitable companies and improved SOE governance through the induction of independent directors and improvements to the performance monitoring system. Substantial progress has been made to remove barriers to competition, reducing government financial support, and listing SOEsSOEs on capital markets. Clause 49 of the Listing Agreement has been instrumental in putting listed SOEs on the same footing as private companies. The 2007 CG Guidelines were geared to raising further awareness of compliance with board, disclosure and other governance practices. Corporate governance reforms also empowered the boards of large SOEs by grantinging financial and operational autonomy, professionalisation of the "Board of Directors" in PSEs and dramatically reducing state compliance guidelines and requirements from 700 to 105 and modifying 25. The boards of the empowered SOEs were given enhanced powers in the area of investment in joint ventures/subsidiaries. The powers included making equity investment available to establish financial joint ventures and wholly owned subsidiaries in India or abroad and to undertake mergers and acquisitions in India or abroad, subject to ceiling of 15% of the net worth of the concerned SOEs in one project, limited to an

absolute ceiling of Rs.500 million (Rs.100 million for second category SOEs (referred to as Navratnas).

A SOE is eligible to attain financial autonomy and should fulfil the following conditions:

• It should be listed on an Indian stock exchange with minimum prescribed public shareholding under Securities Exchange Board of India regulations,

• It should have an average annual turnover of more than Rs.2500 million during the last 3 years,

• It should have average annual net worth of more than Rs.1500 million during the last 3 years,

• It should have an average annual net profit after tax of more than Rs.500 million during the last 3 years,

• It should have significant global presence/international operations.

These empowered SOEs have undertaken a number of initiatives directed toward better performance and enhanced efficiency. They include a Voluntary Retirement Scheme (VRS); Professionalisation of Boards; a Memorandum of Understanding (MoU) system in SOEs. In 2013, amendments to the Companies Act added a new requirement of including gender diversity on boards.

The SOEs operate under dynamic market conditions; while some of them may face a shortage of staff, others may have excess staff. The GOI initiated a Voluntary Retirement Scheme (VRS) to help rationalise SOE manpower. Several measures have been taken by the DPE to professionalise SOEsCPSE boards. Guidelines issued by the DPE in 1992 provide for induction of outside professionals SOEsfor SOESOE boards as part-time non-official directors. Further, it has been decided that candidates from state- level public enterprises (SLPEs) and the private sector will also be considered as non-internal candidates for selection to the post of functional directors in SOEsSOEs subject to the eligibility criteria.

The MOU system was initiated in 1986 following the Arjun Sengupta Committee Report (1984). Since its inception it has been perceived as a practical solution to tackle various issues pertaining to SOEs and includes: i) the widely held perception that SOEs are less efficient than their private sector counterparts; ii) SOEs are unable to perform at efficient levels because of a multiplicity of objectives; iii) lack of clarity of objectives and confused signals imparted to the management followed by diluted accountability, and iv) absence of functional autonomy. The main purpose of the MoU system is to ensure a level playing field for the public sector enterprises compared with the private corporate sector. The management of the enterprise is made accountable to the government through a promise of performance. The

government continues to have control over these enterprises by setting targets at the beginning of the year and by 'performance evaluation' at the end of the year (Public Sector Enterprise Survey, 2010-11). Performance evaluation is undertaken based on a comparison of the actual achievements and the annual targets agreed between the government and the SOESOE. The target constitutes both financial and non-financial parameters with different weights assigned to the different parameters. In order to distinguish 'excellent' from 'poor' the annual performance is measured on a 5-point scale (Public Sector Enterprise Survey, 2010-11).

From an international perspective, it is worth mentioning that the period from 2000 onwards featured a phenomenon of global integration as a consequence of cross border mergers and acquisitions by emerging nations into the mature markets. Progress stalled with the global financial crisis that occurred in 2008 and the outcome was economic downturn across the globe affecting the GDP growth rate at varied magnitudes. Later the occurrence of Euro-zone crisis in 2010 also had an impact. Global integration spill-overs from the financial crisis were evident in Asian countries and India was no exception. According to the Reserve Bank of India's annual report (2012), the real GDP growth increased from 6.7% in 2008-09 to 7.4 % in 2009-10 (a period of recovery), and later increased further to 8.5% in 2010-2011. However, the growth in GDP weakened to 6.5% in the year 2011-12.

3. Theory and Hypotheses

Several theories are proposed within the literature, including stewardship, tournament theory (Lazear & Rosen, 1981), institutional theory (Scott, 2004), stakeholder theory (Freeman, 1984), managerial hegemony (Kosnik, 1987), and resource dependent theory (Pfeffer and Salancik, 1978) to explain aspects of corporate governance and provide insights into how owners, directors and management may interact.

Agency theory promoted by Jensen & Meckling (1976) is arguably one of the most important theories in corporate governance. It provides a base from which to investigate the relationship between the provider of resources (shareholder or principal) and user of resources (manager) in a company. The owner of the resource is the principal, and the person who is responsible for the use and control of the resource is the agent. Agency costs arise if the principal and agent have conflicting interests and the agent pursues his/her own benefits at the expense of the principal (Eisenhardt, 1989). According to Jensen & Meckling, agency costs include the monitoring expenditures by the principal, the bonding expenditures by the agent, and the residual loss.

When corporations issue shares publicly and absorb the new resource from outside, potentially mangers may be incentivised to increase their on-the-job consumption, relax, and reduce work effort. Information asymmetry arises when management has information which the owners do not possess (Zahra & Filatotchev, 2004), and when an agent has more information than the principal, the information asymmetry may affect the efficiency of the monitoring and hurt the benefits of principal. The agent will search for all possible opportunities to increase his or her own wealth.

This study provides an Indian context for studying the work of McKnight & Weir, (2009) & Ang, Cole & Lin, (2000). The agency model identifies a number of governance mechanisms which realign the interests of agents and principals and so reduces agency costs (McKnight & Weir, 2009). The traditional agency model identifies governance mechanisms that yield better governance relative to other less effective mechanisms. However, there is a range of optimal governance structures each consistent with performance-maximising (agency cost minimising) outcomes and that performance and governance are endogenously determined. The optimal structures model therefore assumes that the corporate governance reforms in India through clause 49, professionalization of boards and the MOU system, represents a value-maximising outcome for Indian firms. Consequently, the implementation of the reforms will result in a shift in governance structures, thereby enabling the firms to move to another value maximising situation. Alternatively, businesses will incur costs as they adopt the non-optimal structures recommended by the reforms.

An implicit assumption, therefore, is that firms incur trivial costs associated with changing governance structures in response to the DPE guidelines as a consequence of the corporate governance reforms. In this case, the CG reforms neither harm nor benefit shareholders and so will not affect agency costs. Therefore, no relationship is expected between the governance mechanisms and agency costs.

However, the four layered principal-agency relationship model proposed by Scrimgeour and Duppati (2014) indicates challenges for the SOEs in India in spite of the corporate governance reforms in that country. They conclude that bureaucracy, political interference and political patronage continue to persist in Indian cases. Expanding on the study of Scrimgeour and Duppati (2014), the present study empirically examines whether the differences in the degree of financial autonomy granted to SOEs towards encouraging them to be independent in funding their activities and operate in open markets will have any implications on agency costs. For this purpose the study classifies the SOEs into two groups based on their structures:

Listed (mixed ownership model) and unlisted (concentrated ownership). The argument is that the listed companies will be subject to market and regulatory conditions and there will be competitive neutrality between the SOEs and privately listed companies, and the issue of state intervention will be less for listed SOEs compared to the unlisted SOEs. The study proposes the following hypothesis:

H_1: Agency costs for listed SOEs and private listed companies (mixed ownership models) will be lower than the unlisted SOEs (concentrated ownership model)

Jensen and Meckling (1976) argue that debt is an important influence on agency cost. Firms with higher levels of debt are more closely monitored by debt-holders and thus managers have fewer opportunities to pursue non-value maximizing activities. Two arguments can be put forward to support the assumption that there is a positive association between a firm's leverage and its corporate governance leading to efficiency improvements. First, highly leveraged firms enhance their corporate governance in order to gain greater reputation. As pointed out by Jensen (1986), debt commits the firm to pay-out cash, and thereby reduces the amount of "free" cash available to managers to engage in the type of pursuits that favours their own personal benefits, like building empires, corporate jets and plush offices. Second, another benefit of debt financing is noted by Grossman and Hart (1982) who suggest that if bankruptcy is costly for managers, perhaps because they lose benefits of control or reputation, then debt can create an incentive for managers to work harder, consume fewer perquisites and make better investment decisions, etc., to reduce the probability of bankruptcy. This mitigation of the conflicts between managers and equity-holders constitutes the benefit of debt financing.

For example, Chung (2000) states that highly leveraged Korean companies would go for corporate governance reform with the introduction of outside directors in order to reduce debt ratio, to enhance the competitiveness of the firm or to show their restructuring efforts to shareholders and stakeholders. Second, Cho and Kim (2003) suggest that highly leveraged firms could be pressured by their borrower, such as financial institution to enhance its corporate governance. Black, Jang & Kim (2003) and Brown and Caylor (2004) also find a positive association between leverage and corporate governance. The graph depicts the uneven distribution of debt across the SOEs.

Graph 1. Variation in Debt Distribution among the SOEs
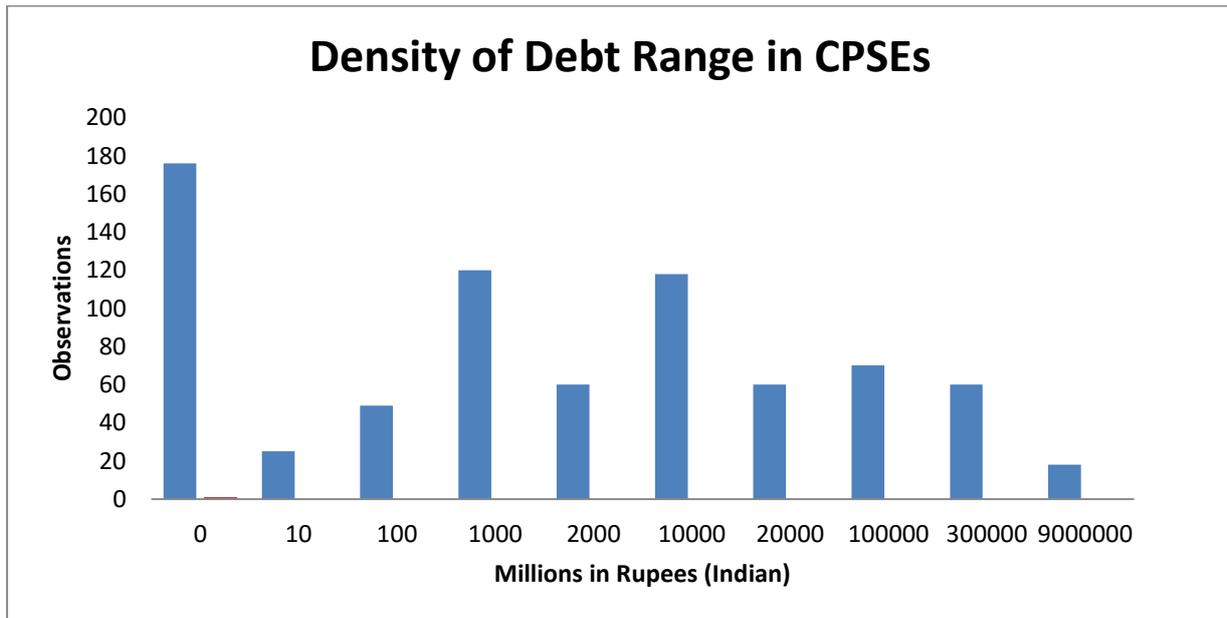
According to Department of Public Enterprise survey report (2011), the structure of financial investments in SOEs underwent change from 2003 to 2011. While the share of paid-up capital in total investment was 32.57% during 2002-03, it declined to 23.31% in 2010-11. The share of long-term loans on the other hand, went up from 66.56% in 2002-03 to 76.40% in 2010-11. The total investment increased significantly in SOEs over the years. While the GOI continues to have majority equity holding in SOEs (78.41%), the other sources of investment (equity and loans) included financial institutions, banks, private parties (both India and foreign), State governments and holding companies. The share of financial institutions/banks, which was 39.89% in 2004-05, has gone up to 59.93% in 2011.

Nonetheless, debt is mostly contributed by banks and financial institutions which are themselves public sector enterprises, like the Life Insurance Company of India and State Bank of India. This is at odds with the conventional theory about using leverage as a mechanism for mitigating agency conflict. Viewed from a GOI perspective, the data suggests that leverage does not necessarily mitigate agency conflict because the lending institutions are also owned by the GOI. Hence the study proposes

H_2: *There are no linkages between the leverage and agency costs*

Rath, Nigam & Gupta, (2012) identify an issue with regard to efficiency of SOEs in which many profitable PSEs are generating profits not largely because of their operating profits and efficiency but because of the large interest earnings, which is non-operating income. This is a concern because company managers do not think of increasing operating efficiency/productivity to produce and sell more. Capacity utilisation is vital and companies should think of increasing productivity, resulting in to higher sales and improving profits. The study proposes the following hypotheses:

H_3: *There is a positive relationship between net income and agency costs and*

H_4: *There is a negative relationship between sales/revenue and agency costs.*

4. Method and Data

The research method is empirical drawing on financial data, relating to the financial performance of SOEs during the 10 year period 2003-2012, available in published sources. The sample consists of 123 Indian SOEs and private listed companies and a panel dataset is developed. The data covers the period over which significant corporate governance reforms occurred. The financial data are obtained from the databases of Thomson One and Department of Public Enterprise, Ministry of Heavy Industries. Information relating to the corporate governance variables is drawn from the Centre for Monitoring Indian Economy (CMIE) database. Additional information is obtained from the annual reports of the enterprises.

The variables used in the study are consistent with an agency theory approach to corporate governance. The underlying assumption is that the aim of governance is to enhance sustainable returns to stakeholders and increase the value of the enterprise. A regression approach is adopted with agency cost as the dependant variable and several corporation-specific governance variables plus size and industry variables as the independent variables.

The greater financial freedom granted to some SOEsSOEs includes being able to borrow. An increase in borrowing may reduce the cost of capital and improve efficiency. The reforms also altered the mix of directors and corporations can either replace some executive directors with new external directors or the board can expand. Potential entrenchment of directors and culture, which might be associated with higher agency costs, will be reflected in board growth rather than director substitution. Other variables control for size, industry and age effects.

The ratio of sales to total assets is commonly used as a proxy for agency cost (PA) and has the advantage of being generally robust in terms of distributional properties and is relatively simple to calculate. Aivazian (2005) uses this metric as a measure of efficiency when reviewing public sector entities. Efficiency is an important component for getting a corporation ready for partial privatisation and accordingly is a suitable metric when the intentions of the governance reforms are to drive better performance, increase profitability and increase corporate value.

5. Empirical Discussion

The analysis commences with a series of diagnostic tests ranging from descriptive statistics, correlation matrix, observing the trends in growth of sales and total assets to t-test and then random effect and fixed effects regression model. The t-test results of the sales, total assets and efficiency ratio provide a background for comprehending the agency costs in the three sets of companies under consideration.

The descriptive statistics of the Unlisted SOEs Listed SOEs and Private Listed Companies is given in Table.2. With regard to Return on Assets (ROA), Return on Sales (ROS), board size, sales, total assets, net income and efficiency ratio, the results indicate a higher mean for listed SOEs when compared to private listed companies and unlisted SOEs, while the unlisted SOEs and private listed companies have a higher leverage than the listed SOEs. The results indicate higher performance for listed SOEs in comparison to listed private and unlisted SOEs .

Table 1. Descriptive Statistics of the Unlisted SOEs, Listed SOEs and Private Listed Companies
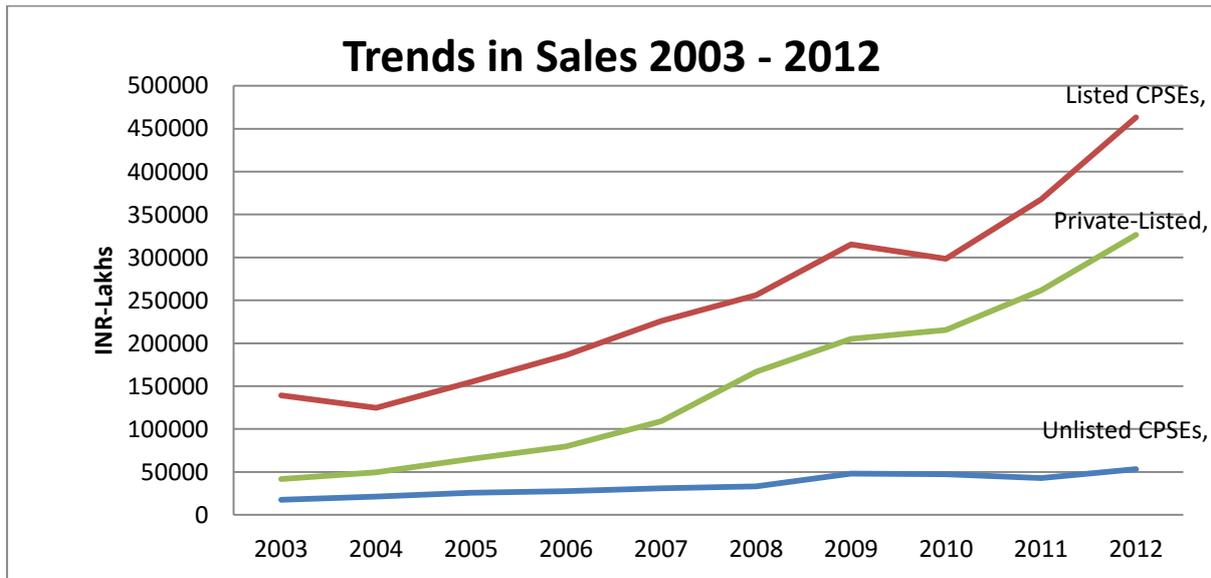
	Listed SOEs		Private Listed Companies		Unlisted SOEs	
Variable	Mean	S.D.	Mean	S.D.	Mean	S.D
ROA	0.1864	0.6715	0.1256	0.1634	0.1292	0.4388
Leverage (Lev)	0.4579	1.0567	0.6459	1.27	0.7481	1.7855
Age	42.82	13.41	49	26.34	38	15
Board-Size	14.99	4.60	12.82	3.730	9.88	3.685
Sales	2531416	5314732	1520339	3197547	347746.2	721016.1
Size	2299484	3244410	1928971	3752402	515186.5	1457580
Profitability	206820.5	346344.6	147425.9	279542.7	41304.88	141930.6
Manu	0.7142857	0.4525628	0.725	0.4470	0.4727	0.4997101
Non-Manu	0.2857143	0.4525628	0.278	0.4486	0.4997	0
Efficiency	1.63e+13	7.14e+13	1.302	2.575	1.05	1.757

Through the decade under review there were significant increases both in sales and total assets. Figure 1 presents a chart of trends in sales over the 10-year period and Figure 2 shows the trends in total assets. The unlisted SOEs experienced a doubling of sales (206%), the listed SOEs an increase of 232% and the private sector companies grew nearly seven times at 685%. In terms of total assets, the growth for unlisted SOEs is 194%, for listed SOEs the asset growth is 383% and for privately owned listed companies the growth in total assets is 607%.
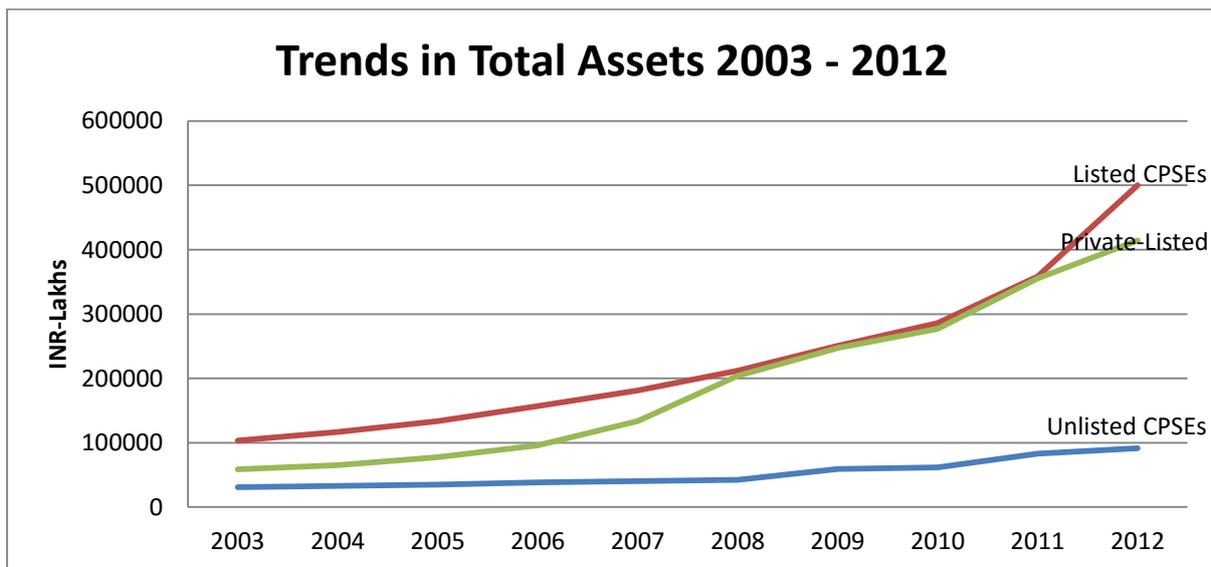
The financing of the SOE asset expansion is predominantly through GOI equity injections even though the government was running a deficit. As there was no increase in leverage it appears that there was no incentive to reduce agency cost and management perquisites increased.

Figure 1. Sales for the period 2003 – 2012

Figure 2. Total Asset for the period 2003 – 2012

The sales, total assets and efficiency ratio for listed SOEs, unlisted SOEs and private listed companies are shown as pairwise comparison in Table 3 where the T-statistics indicate if they are significantly different. For sales, the results reveal significant difference in the mean of sales at 1% level for the listed SOEs and private listed companies in comparison to unlisted SOEs and also between the mean of sales of listed SOEs and private listed companies.

There are significant differences in the mean of total assets, at 1% level, for the listed SOEs and private listed companies in comparison to unlisted SOEs. The mean of total assets is not significantly different between listed SOEs and private listed companies. The t-test results indicate that the difference in the mean of total assets between the listed SOEs and private listed companies is not significant but difference for the mean of sales is significant at 1% level. This indicates a better performance for listed SOEs over private listed companies and also suggests lower agency costs for listed SOEs in comparison with private listed companies.

Table 2. t-Test results of Listed SOEs, Unlisted SOEs and Private Listed companies

	Sales	**Total Assets**	**Efficiency ratio**
Ownership models compared	**t-values**	**t-values**	**t-values**
Listed SOEs vs Unlisted SOEs	**6.82***	**8.786***	**3.837***
Listed SOEs vs Private listed	**2.84***	1.33	**3.837***
Private Listed vs Unlisted SOEs	**7.185***	**7.143***	**-1.353**

It is evident from Table 2 above that the t-test results show a significant difference at 1% level in the mean of efficiency ratio between listed SOEs and private listed companies. This indicates that the financial autonomy status granted to the listed SOEs is being effectively utilised. Likewise, there is a significant difference at 1% level in the mean of efficiency ratio of listed SOEs and unlisted SOEs, while there is no significant difference in the mean of efficiency ratio between unlisted SOEs and private listed companies. These results are consistent with the view that SOEs with mixed ownership structures operating in the open market economy are subject to less State intervention and operate on more competitive terms than the private listed companies. Concentrated state ownership companies i.e., unlisted SOEs are statistically significantly different at the 1% level in the efficiency ratio indicating a lower level of efficiency in the unlisted SOEs compared to listed SOEs. These results infer that the agency costs in the mixed ownership models (with substantial stake held by GOI) are relatively lower than the concentrated ownership models; accept H_1.

The correlation matrix for the variables was reviewed, revealing that only one pair are above 0.8 which indicates a likely mutlicollinearity problem.

OLS Pooled Regression Model

Ordinary least squares (OLS) regression is a traditional method to estimate the role of efficiency ratio (a proxy of agency costs) on firms' governance and performance determinants andhas been used widely in prior research. The initial regression results obtained in this study used the "vce robust" option to address a potential heterogeneity error and the multicollineartiy, mentioned above, in the model. One recognised problem is that the results can be biased by unobservable factors when using OLS estimation. The study therefore conducts panel data regression with a fixed or random effect model to capture unobserved time-invariant factors. The Hausman test is used to choose between fixed and random effect models.

As there are no missing data issues, as noted above, there is no need to consider completed panel testing. Three samples are considered and the estimations for the listed SOEs, unlisted SOEs and Private listed companies are reported in Table 3.

The Hausman specification test for listed SOEs in Table 3 suggests that the random effect model is more appropriate for estimating the efficiency ratio and its implications to agency costs equation with $\chi2 = 2.46$; Prob> $\chi2 = 0.4828$. Accordingly, a random effect model is pursued for listed SOEs.

In contrast, the Hausman specification test for unlisted SOEs suggests that the fixed effect model is more appropriate for estimating the efficiency ratio and its implications to agency costs equation as above with $\chi2 = 18.86$; Prob> $\chi2 = 0.0003$. Accordingly, a fixed effect model is pursued for unlisted SOEs.

In the case of the private listed companies, the Hausman specification test suggests that the fixed effect model is more appropriate in estimating the efficiency ratio and its implications to agency costs equation as above with $\chi2 = 84.71$; Prob> $\chi2 = 0.0000$. Accordingly, a fixed effect model is pursued for private listed companies.

It is evident from Table 3 that the leverage is negative and significant for listed and unlisted SOEs and negative but insignificant for private listed companies. The significant statistical results at 1% level favours rejection of the null hypothesis for listed and unlisted SOEs while acceptance of the null in the case of the private listed companies. This indicates leverage does not mitigate agency conflict; accept H2.

In the case of listed SOEs, the results show a 1% statistically significant and positive association between company size, sales and efficiency ratio. This indicates that the listed companies are efficiently generating revenues from their investments, suggesting that the increase in sales results in an increase in the efficiency ratio and decrease in agency costs; accept H_3. On the other hand, the significant and negative net income at 1% level indicates that the revenues from non-operating sources are indicative of inefficient utilisation of resources and hence have a negative association with the efficiency ratio and a positive association with agency costs; accept H_4. The board size is significant at 1% level and has a negative association with the efficiency ratio indicating that greater board size tends to increase agency costs.

For the listed private companies the sales are significant at 1% level and have a positive association with the efficiency ratio. Board size is significant at 1% level with a negative association with efficiency ratio, indicating greater board size

tends to increase agency costs. In the case of the unlisted companies, company size has a significantly negative association with efficiency ratio at 1% level indicating that higher investments

might not result in generating revenues in proportion to the investments and thereby agency costs tends to increase.

Table 3. OLS Random and Fixed Effects Regression results of Efficiency Ratio (Sales to Total Assets) for different panels of the Listed SOEs

Variables	Listed SOEs	Unlisted SOEs	Private Listed companies
	Random Effect Model - Z - Values	**Fixed Effect Model - t - Values**	**Fixed Effect Model - t - Values**
Leverage	-3.64***	-2.94***	-0.56
	(0.000)	(0.003)	(0.577)
Company Size	8.22***	-2.44***	-1.64
	(0.000)	(0.015)	(0.102)
Sales	14.65***	0.37	2.45***
	(0.000)	(0.711)	(0.015)
Board Size	-2.03***	-1.13	-2.27***
	(0.043)	(0.260)	(0.024)
Company - Age	0.52	omitted	omitted
	(0.600)		
Profitability	-5.30***	0.78	-1.12
	(0.000)	(0.437)	(0.265)
ROA	0.53	0.88	1.52
	(0.598)	(0.378)	(0.130)
Sector: Manu		na	na
		na	na
Sector: Non-Manu	0.84	omitted	-0.29
	(0.398)		(0.771)
Constant	-0.60	9.04***	3.72***
	(0.545)	(0.000)	(0.000)
Observation	280	549	399
R-Square	0.77	0.036	0.48
Hausman Test	$\chi^2 = 2.46$; Prob> $\chi^2 = 0.4828$	$\chi^2 = 18.86$; Prob> $\chi^2 = 0.0003$	$\chi^2 = 84.71$; Prob> $\chi^2 = 0.0000$

4. Conclusions and Suggestions

The impact of corporate governance changes implemented in India during the period 2003-12 are analysed in this paper. In particular, the possibility that impacts differ between private sector companies listed on the stock exchange, state owned enterprises which have some public shareholding and are listed on the stock exchange (listed SOEs) and SOEs that are unlisted with no public shareholding. Efficiency of public sector versus private sector corporations continues to be debated in the literature and these changes in corporate governance provide evidence of the impact on agency cost, efficiency and return on investment for the differing forms of companies.

A strong upward trend in sales and the value of total assets was most noticeable for mixed

ownership corporations, followed by public companies. The mixed ownership companies showed resilience to economic shocks through the period which points to sound governance processes.

The findings of the study indicate that the agency costs for mixed ownership models tend to be lower than those of the concentrated state owned firms because they operate in an open market with market facing the regulatory framework of a competitive environment. Nevertheless, there does appear to be favouritism in access to resource rights and government contracting. In some instances this is overt, such as the granting of exploration permits and in other instances less clear such as in successful tendering of contracts State intervention is an issue and contributes to higher agency costs for concentrated-state owned companies.

Leverage does promote efficiency, returns and lower agency costs. However, the debt is typically bank loans and it is noted that in the listed SOEs State-owned banks have taken significant shareholdings. While this may be interpreted as the financial institutions and banks indicating confidence in SOEs it can also be seen as not reducing the risk to the State sector and likely to reduce risk taking on the part of the corporations as conservative banks exert an influence in the board room. This is an area for important future research.

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