

## Does Change in Ownership from Public to Private Affects Firm's Performance? An Empirical Analysis of Select Central Public Sector Enterprises in India

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### ABSTRACT

**Purpose-**In this study, an attempt is made to analyse the effect of ownership change on firm's performance, identify the key determinants other than ownership which affects their performances, and to distinguish the effect of ownership from other factors.

**Design/Methodology/Approach-** The study is limited to financial and operating performance analysis of 206 central public sector enterprises in India. Multiple regression analysis is employed to determine the magnitude and direction of relationship between dependent and independent variables and identify variables other than ownership which affects performance of SOEs.

**Findings-** It is found that ownership transition has statistically significant effect on performance of firms. Further, firm specific factors and other parallel reforms have significantly influenced their performance. The evaluated regression model is highly significant with F-ratio of 49.580 at 99 percentsignificance level. The degree of explanation of the model is robust with adjusted R2 at 0.974, implying that only 2.60 percent of explanation in the dependent variable cannot be explained by designated independent / explanatory variables.

**Originality/value-** The study would be useful to public functionaries to reach to a policy view on whether to simply transfer ownership or transfer ownership with increased competition or exposing public enterprises into competition for enhancing their efficiencies, an alternative to privatization and ownership transfer.

**Paper type-** Empirical Research Paper.

**KEYWORDS** State-owned Enterprises | Central Public Sector Enterprises | Privatization | Ownership | Autonomy

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## Introduction

The root of privatization goes back to the early 1980s when USA's Ronald Reagan and United Kingdom's Margaret Thatcher started privatizing State Owned Enterprises (SOEs) on a wide scale. After the collapse of communist political system in the late 1980s, many transition economies, especially the Eastern European countries, the formerly U.S.S.R, launched comprehensive privatization programme. India where sizeable number of Central Public Sector Enterprises (CPSEs) has been underperforming yesteryears; the government has been hard pressed to find solutions to enhance their performances through disinvestment/ privatization. Notably, the Industrial Policy 1991 clearly stipulated that in order to raise resources and encourage wider public participation, a part of the government's shareholding in the public sector would be offered to mutual funds, financial institutions, general public and workers. The Indian privatization drive has been boosted up and came out of the political shadows/camouflage when the President of India in his opening address to Parliament budget session (2002) stated that "It is evident that disinvestment in public sector enterprises is no longer a matter of choice but an imperative ... The prolonged fiscal haemorrhage from the majority of these enterprises cannot be sustained any longer, ....." . Resultantly, a large number of CPSEs have been put through disinvestment, while some others have been privatized over the years. Of the 234 operational CPSEs, 81 CPSEs (including 20 Hotels of Hotel Corporation of India) have been divested for 195 times over the period 1991-92 to 2015-16 (some CPSEs have been divested for multiple times). In view of this, it is pertinent to review how ownership changes from public to private affect the financial and operational performance of CPSEs. Further, increase in competitive pressures during the early reforms era in India forced firms to adopt a variety of strategies including mergers/acquisitions/amalgamation, reliance more on in-house research and development, building marketing and distribution related complementary assets as part of product differentiation strategy. It also raised the importance of sub-contracting/outsourcing/ disinvestment of manufacturing activities and reduced the degrees of vertical integration. The export orientation increased significantly across industries signalling enhanced global competitiveness of Indian firms.

## Objectives of the Study:

The aim of this study is (i) to analyse how change in ownership structure affects the financial and operating performance of select central public sector enterprises in India, (ii) to identify the key determinants or factors other than ownership that affect their performances, and (iii) to distinguish the effect of ownership from other factors such as 'firm specific factors' as well as 'reform measures' that have been taken placed parallelly.

## Review of Past Studies:

History of literature reveals divergent views on superiority of the one ownership over the others. Studies such as *Bardhan and Roaner (1992)*; *Nagaraj (1997)*; *Kole and Mulherin (1997)*; *Omran (2001)*; *Nagaraj (2006)*; *Jones, et al. (2007)*; *Kuznetsov, et al. (2008)*; *Singh and Paliwal (2010)* etc. have found that public ownership is better than private ownership. Studies which have claimed that private ownership leads to more efficient and widespread outcome than public ownership include *Martin and Parker (1995)*; *Chhibber and Majumdar (1998)*; *Udeaaja (2006)*; *World Bank (2010)*; *Huang and Boateng (2013)*; *Gunasekar and Sarkar (2014)*; *Jayachitra and Venkatraman (2015)* etc. Studies such as *Chhibber and Majumdar (1998)*; *Majumdar (1998)*; *Tian (2000)*; *Astami, et al. (2010)*; *Liu, et al. (2015)* have documented that even mixed enterprises or partial privatisation is better than complete public ownership. On the other hand, studies such as *Goodman and Loveman (1991)*; *Hartley, et al. (1991)*; *Bardhan and Roaner (1992)*; *Kaur (2004)*; *Parker (2004)* propelled that efficiency is independent of ownership and fruits of privatization can be realized only when it is accompanied by other reform measures such as corporate governance, transparency and accountability, shared responsibility, ethical business practices etc.

It is believed that in the process of disinvestment/ privatization, the extent of ownership holding is diluted and a change in ownership from public to private affects economic efficiency of the firm (*Verma Gakhar and Phukon, 2018*). Enterprise autonomy through performance contracts has a positive and statistically significant effect on the performance of SOEs (*Gunasekar and Sarkar, 2014*). *Huang and Boateng (2013)* found that higher state shareholding lead to inefficiency and relatively poor performance. *Halkos and Salamouris (2002)* found that public owned enterprises exhibit continuously lower efficiency on an average as compared to their counterpart private sector as well as the average efficiency of the industry sectors in which they belong to as inducing competition contributes positively in increasing efficiency. *Rao and Guha (2006)* found that ownership structure has important implications for corporate governance and protection of minority shareholder's interest and thereby affect the operational efficiency. *Udeaaja (2006)* documented that public enterprises do not have cost-minimizing and clear-cut profit objective and their openness to manipulation by politicians may set non-commercial objectives for the enterprises in pursuit of their political agendas, which may prove extremely counter-productive and lead to gross inefficiency. *Chhibber and Majumdar (1998)* concluded that higher levels of government ownership have a more detrimental impact on performance than lower levels in competitive sectors. *World Bank (2010)* documented that private firms outperform central public sector enterprises (CPSEs) and CPSEs with minority state shareholding outperform those with majority state shareholding. The poor performance of CPSEs is attributed to the level of

government ownership. *Liu, Beirne and Sun (2015)* assessed the economic effects of privatization and ownership transfer of 1184 Chinese firms on their performance and found that the mix of state and private ownership, i.e., partial privatisation emerges as the best performing type of ownership model for Chinese firms. Overall, ownership transformation is the most appropriate approach for reforming SOEs and has been successful in terms of performance improvement and bringing private investment to state firms. *Jayachitra and Venkatraman (2015)* in a study of 12 firms from various cognate groups and partitioned into minority, majority and complete privatization to differentiate their performance, found greater performance improvement for the group of companies that experience dilution of government ownership beyond 51 per cent than others. *Astami, et. al (2010)* in their study of 157 SOEs (114 fully SOEs and 43 partially privatized SOEs) in Indonesia examined ownership structure and its effects on performance of the enterprises. The study found that SOEs with private sector ownership have higher performance standard than those fully owned by the government. The average profit for fully government-owned SOEs (1.7%) is significantly lower than partially privatised SOEs (6.2%). *Majumdar (1996)* used industry-level survey data to evaluate the performance differences between SOEs, mixed enterprises and privately-owned Indian companies for the period 1973-1989 and found that efficiency scores averaging 0.975 for privately-owned firms which is significantly higher than the average 0.912 for mixed enterprises and 0.638 for SOEs. *Tian (2000)* studied the relation between state shareholding and corporate performance of 825 publicly traded Chinese companies and found that performance of private enterprises is significantly superior to that of mixed enterprises and corporate value generally declines with state ownership.

## Methodology of the Study:

Performance is a relative concept and is affected by a range of factors other than ownership. Many research studies, such as, *Meggison and Netter (2001)*; *Cabanda and Ariff (2002)*; *Kikeri and Nellis (2004)*; *Astami, et al. (2010)* advocated that performance of an enterprise may be affected by a variety of factors other than degree of ownership. These could be the firm specific factors (such as age, size, liquidity, solvency, profitability, efficiency, market performance of the firms etc.) and parallel reforms (such as financial and managerial autonomy extended to the firms, execution of performance contract, listing in the stock exchanges, implementation of corporate governance principles etc.). Authors who have used these proxies as independent/ control/ dummy variables are:- Size of the Firm [*Ozgulbas, et al. (2006)*; *Astami, et al. (2010)*]; Age of the Firm [*Rajeev and Vani (2004)*]; Industry sector operated [*Halkos and Salamouris (2002)*; *Astami, et al. (2010)*]; Degree of autonomy [*Gupta, et al. (2010)*; *Mathur and Mathur (2013)*; *Gunasekar and Sarkar (2014)*]; Performance contract/ MoU [*Gupta, et al. (2011)*; *Simpson (2013)*; *Gunasekar and Sarkar (2014)*]; Listing in Stock Exchanges [*Meggison and Netter (2001)*; *Rao and Guha (2006)*; *Banaluddin (2007)*; *Wolf and Pollitt (2008)*]; Corporate governance [*World Bank (2010)*; *Chattopadhyay (2011)*; *Semmar (2012)*; *Som (2013)*; *D'silva and Joseph (2013)*]; Asset-in-place [*Astami and Tower (2006)*; *Astami, et al. (2010)*]; Financial leverage [*Astami, et al. (2010)*]. It is, therefore, essential to identify the extent to what these factors affect performance. This could be explored through applying *multiple regressions* by introducing a set of dependent (metric) and independent (metric as well as non-metric or dummy variables). Studies which applied such techniques are *Sathye (2005)*; *Banaluddin (2007)*; *Kumar (2014)*; *Kim and Chung (2008)*; *Astami, et al. (2010)*; *Liu, et al. (2015)*; *Shi and Sun (2016)*; *Rajeev and Vani (2004)* etc. The study is based on the following regression model:

$$\text{Performance} = f[(\text{Ownership}) + (\text{Firm Specific Factors}) + (\text{Parallel Reforms}) + \dots + \epsilon]$$

Or

$$Y = a + \sum_{i=1}^n b_i X_i + \epsilon_i$$

Or

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + \dots + b_n X_n + \epsilon$$

Where,

Y = Dependent variable performance

a = Intercept/Constant

$b_1, b_2, b_3, b_4, \dots, b_n$  = Regression slopes/Regression coefficients

$X_1, X_2, X_3, X_4, \dots, X_n$  = Independent variables which affect the dependent variable performance, and

$\epsilon_n$  = Residuals or Error term which have a normal distribution with mean 0 and constant variance  $\sigma^2$ .



In the above equation, performance is measured in terms of return on net worth (RoNW). Ownership is measured in terms of pure-public ownership (CPSEs where no divestment has happened so far and entire 100% equity is hold by the government), private ownership (CPSEs which have been privatized and government equity holding is being reduced to the extent of 49% to 0%) and mixed ownership (CPSEs which have been divested once or more and government equity holding is still more than 50%). Firm specific factors are measured in terms of age, size, liquidity, solvency, profitability, efficiency and market performance of firms. Parallel reforms are measured in terms of dummies such as financial and managerial autonomy extended to the firms, execution of performance contract, listing in the stock exchanges and implementation of corporate governance principles. The sample design follows a multi-stage sampling method. In India, there are 290 non-financial CPSEs as on 31<sup>st</sup> March 2016. Of this, 234 CPSEs are operational and balance 56 is under construction. Of the 234 operational CPSEs, whereas there are some CPSEs which are not functioning on commercial basis, for some CPSEs data is not available and these have been further reduced from the list of sample size. Hence, the target sample size is 206 CPSEs.

### Hypothesis:

**Alternate Hypothesis, H<sub>1</sub> 1:** Ownership structure of firm does not significantly influence its performance.

**Alternate Hypothesis, H<sub>1</sub> 2:** The presence of firm-specific factors and reforms process does not have significant influence on the performance of firm.

### Statistical Results:

In the initial model, we have considered as high as 30 explanatory variables such as Net Worth (NW), Total Assets (TA), Capital Employed (CE), Gross Working Capital (GWC), Net Profit Margin (NPM), Dividend Rate (DR), Net Sales (NS), Overhead Cost (OC), Sales Efficiency (SE), Net Income Efficiency (NIE), Raw-material Turnover Ratio (RTR), Debt Equity Ratio (DER), Interest Coverage Ratio(ICR), Cash Ratio (CR), Market Coverage (MC), Enterprise Value (EV), Earnings Per Share (EPS), Profit or Loss (POL), Industry Sector (IS), Ownership Structure (OS), Percent Stake Divested (PSD), Disinvestment Amount Realised (DAR), Disinvestment Efficiency (DE), Number of Years of Disinvestment (NYD), Expenditure on R&D (ERD), Autonomy (ATMY), Performance Contract (PC), Listing in the Stock Exchanges (LSE), PE Ratio (PER) and Corporate Governance (CG). However, some of these variables are highly correlated and these variables have been removed from the model by applying backward elimination method in order to avoid any spurious regression results.

Thus, in the final regression model (Table-1), we have left with 17 explanatory variables, i.e., CE, RTR, ICR, MC, CR, DR, EPS, GWC, ERD, SE, NIE, PER, POL, IS, PC, LSE and CG. All these 17 variables entered into the final model follow a normal distribution as tested by Kolmogorov-Smirnov test. Auto-correlation is checked through Correlation Coefficient Matrix. The problem of multi-co-linearity has been checked by calculating the Eigen value of the 17 variables and none of their value is found to be near zero. Multi-co-linearity is therefore, not a major problem. The independence of error terms or autocorrelation of residuals is tested with the help of Durbin-Watson test. As the calculated value of Durbin-Watson (1.826) is less than critical benchmark value (3.00), there appears to be no autocorrelation of residuals in the established regression models. The normality of the residuals are also tested by applying Kolmogorov-Smirnov test, which shows that residual follow a normal distribution and therefore, the problem of heteroscedasticity does not exist.

**Table-1: Regression Model with Return on Net Worth as Dependent Variable**

Independent Variables	Un-standardized Coefficients	Standardized Coefficients		t	Sig.
	B	Std. Error	Beta		
(Constant)	-3.411	5.114		-.667	.534
Net Sales	8.706	.000	.661	6.128	.002
Raw-material Turnover Ratio	.051	.013	.149	3.881	.012
Interest Coverage Ratio	.000	.000	-.696	-12.145	.000
Market Capitalization	5.061	.000	1.892	23.916	.000
Current Ratio	2.574	.556	.348	4.633	.006
Earnings Per Share	.089	.028	.219	3.161	.025
gross Working Capital	1.835	.000	.171	2.307	.069
Expenditure on R&D	-.002	.000	-.260	-5.635	.002
Sales Efficiency	-.092	.032	-.363	-2.889	.034
Industrial Sector	4.404	1.004	.250	4.388	.007
Listed in Stock Exchanges	-14.691	3.499	-.336	-4.199	.008
Corporate Governance	-5.907	2.631	-.166	-2.245	.075
PE Ratio	.669	.153	.313	4.375	.007
Capital Employed	-4.243	.000	-1.380	-13.780	.000
Dividend Rate	.004	.003	.058	1.321	.244
Debt Equity Ratio	6.404	2.954	.295	2.168	.082
Ownership Structure	8.714	2.907	.121	2.998	.030
<b>Explanation of the Model:</b>		<b>Significance of the Model:</b>			
R Square	0.994	F	49.580		
Adjusted R Square (R <sup>2</sup> )	0.974	Sig.	0.000		
Durbin-Watson test = 1.826					

The evaluated **regression model is highly significant** as the **F-ratio is 49.580 at 0.000** per cent level of significance. The degree of explanation of the model is robust with **adjusted R<sup>2</sup> at 0.974** implying that only 2.60 per cent of the explanation in the dependent variable (i.e., performance in terms of RoNW) cannot be explained by the designated independent /explanatory variables. Alternatively, only 2.60 per cent of the explanation in the dependent variable by the 17 independent variables may be due to chance or error. The model further says that any change in the dependent variable due to a change in any of the 17 independent variables is 97.40 per cent accurate. *It is evident that all the factors- ownership structure, firm specific factors and parallel reforms have significantly affected the performance. The Alternate Hypothesis 1 and 2 are therefore rejected.*

## Analysis and Discussion:

The study has established that ownership transition has statistically significant effect on the financial and operational performance of firms. This means that as ownership changes from public to private, the operational and financial performance of firms are improved. History of literature reveals that *Kim and Chung (2008)* while used panel data for 22 Korean SOEs over a period of 10 years, found statistically significant positive relationship between privatization pressure and operating efficiency of SOEs. The study documented that SOEs' managers and employees when face privatization pressure, are subjected to hard budget constraint. Further, they are pressed to improve financial and operating efficiency in order to maximize sales proceeds. This implies that while finding ways to privatize SOEs, policymakers need to continually apply privatization pressures on SOE managers in order to impose hard budget constraints on SOEs. Similarly, *Sathye (2005)* found that financial performance and efficiency of partially privatized banks were significantly higher than that of the fully public banks and partially privatized banks seem to be catching up fast with fully private banks. *Rajeev (2004)* also noted that the government has recognized the fact that it is not the business of the government to run business and is slowly distancing itself from commercial activities. Government has realized that it does not have the best of managerial skills and if it waits till a factory becomes sick, there is no other alternative but to opt for closure whereby the workers suffer the most. Hence, the government started restructuring and privatizing even the profit making enterprises subject to the condition that there is strong presence of private sector and well-functioning market system.

The study has also found that firm specific factors and other parallel reforms adopted by the firms are significantly influencing their performance. This means that ownership is not the only factor which affects the performance of CPSEs. Performance of CPSEs is affected by variety of factors

including ownership, age and size of the CPSE, liquidity, solvency, profitability, efficiency, market performance, financial and managerial autonomy, execution of performance contract, listing in the stock exchanges, implementation of corporate governance principles etc. For example, *Estrin, et. al (2009)* in a study of 34 privatization case studies found that privatization, especially when accompanied by complementary reforms, have a positive effect on the level of aggregate output. Privatization per se does not guarantee improved performance, at least not in the short to medium-run. The type of private ownership, corporate governance, access to know-how and markets, legal and institutional systems matter for firms restructuring and performance. *Parker (2004)* looked at the relative roles of competition, regulation and ownership changes in determining performance improvement of the newly privatized SOEs. The study concluded that effective privatization requires an ecosystem of competition and regulation as evident by UK's experience to ensure that state monopolies does not turn into private monopolies which is more painful. *Kim and Kim (2007)* concluded that it is necessary to recognize privatization as a long-term and complex process of change, including changes in attitudes, values, perceptions, and mentality. *Bardhan and Roaner (1992)* found that full-scale private ownership is not necessary for the successful operation of competition and markets. Even in management literature, one does not find any analytical support for the alleged superior efficiency of private ownership. *Nagaraj (2006)* stated that the real problem is not the lack of efficiency in production, but one of pricing and collection of user charges, unless these problems are squarely addressed, public sector finances are unlikely shape up. *Koner and Sarkhel (2014)* contested that through disinvestment and privatization, the government is substituting private monopoly in place of public monopoly. They suggested that restructuring of PSUs is essential before they are being divested so as to enhance the value of shares and increase sale proceeds. *Kaur (2003)* concluded that factors which enhance the level of competition in an economy may be more important determinants of efficiency than a change of ownership per se. The emphasis therefore must be towards creating a more competitive environment than merely transferring the ownership of assets from the public to the private sector. *Bortolotti and Milella (2006)* noted that ownership and control in privatized companies in Western Europe has been partial and incomplete. In most cases privatization did not entail a dramatic change in governance structures as private ownership and public control actually seem to coexist. European governments firmly controlled (by voting rights and golden shares) a large part of the privatized companies, especially in strategic sectors. Understanding whether the coexistence of private ownership and public control is a European transient anomaly or a functional pattern of governance is important for policy reasons and might be an exciting avenue for future research.



## Conclusion:

The change in ownership from public to private affects firm's performance through enhancing their economic efficiency. However, ownership alone cannot improve performance of firm. Therefore, to ensure that performance of CPSEs are improved through changing ownership from public to private, public authority has to undertake other associated reform measures such as extending financial and managerial autonomy, execution of performance contract, listing in the stock exchanges, implementation of corporate governance principles etc. It is felt that more careful deliberation requires on whether: a) to transfer the ownership to the private sector, or b) to transfer the ownership together with policies for increased competition and level playing field, or c) to expose the public enterprises into competition for enhancing their efficiencies, an alternative to privatization and ownership transfer.

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## Annexure 1

Submission Date	Submission Id	Word Count	Character Count
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**URKUND**

### Urkund Analysis Result

**Analysed Document:** 1.1 ERP-1 Ownership Structure and Firm Performance- GJEIS.docx (D76479693)

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### Reviewers Comment

#### Reviewer Comment 1:

206 central public sector enterprises in India are taken into consideration for analysis. This is quite a large sample size that the findings of the research can be generalized too. The title of the paper is quite new which empirically identifies and analyses the effect of ownership change on firm's performance.

#### Reviewer Comment 2:

The literature review portion is very well explained by giving proper citation wherever required. And the author has provided a number of references for readers to have an in-depth knowledge of the subject matter.

#### Reviewer Comment 3:

The paper is very well organised and presented by covering all important considerations and elements. A robust research methodology is applied for deriving the results which makes the findings more reliable and acceptable

Abhijit Phukon and Divya Verma Gakhar  
"Does Change in Ownership from Public to Private Affects Firm's Performance? An Empirical Analysis of Select Central Public Sector Enterprises in India"  
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### Editorial Excerpt

The article has 10% of plagiarism which is the accepted percentage as per the norms and standards of the journal for the publication. As per the editorial board's observations and blind reviewers' remarks the paper had some minor revisions which were communicated on timely basis to the authors (Abhijit & Divya) and accordingly all the corrections had been incorporated as and when directed and required to do so. The comments related to this manuscript are noticeable related to "**Effects of Ownership Change on Firm's Performance**" both subject-wise and research-wise. Considering the crucial role of change in ownership the author has tried to analyse the effect of ownership change on firm's performance, identify the key determinants other than ownership which affects their performances, and to distinguish the effect of ownership from other factors. The study has taken 206 central public sector enterprises in India in consideration and Multiple regression analysis is employed for analysis. It is found that ownership transition has a statistically significant effect on performance of firms. The paper is well written and some important considerations are highlighted. Overall, the paper promises to provide a strong base for the further studies in the area. After comprehensive reviews and editorial board's remarks the manuscript has been categorised and decided to publish under "**Empirical Research Paper**" category.

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