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**RATIO ANALYSIS OF PRIVATIZED CENTRAL PUBLIC SECTOR ENTERPRISES (CPSES)**

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**ABSTRACT:**

This study is an attempt to assess the impact of privatization of public sector enterprises. To capture the changes brought by change of ownership, the sample was restricted to all those CPSEs that have been completely privatized in India. The sample is comprehensive in the sense that it comprises of both profit and loss making CPSEs the five parameters on which the companies were tested are Profitability, Efficiency, Leverage, Liquidity and Employment. In only one parameter employment, there was significant change and that too declined in post disinvestment period. Under this situation, the need and significance of Privatization of Central Public Sector Enterprises is not only questionable for profit making units but also for loss making ones.

**KEYWORDS:** Disinvestments, CPSEs, Privatization, Ratio Analysis

## **INTRODUCTION:**

This study is an attempt to assess the impact of privatization of public sector enterprises. To capture the changes brought by change of ownership, the sample was restricted to all those CPSEs that have been completely privatized in India, with the central government having sold its controlling block to private players. The list of companies in the sample chosen is presented in Table 1. Due to data non-availability Modern Food Industries Ltd. (MFIL) and privatized hotels were excluded from the sample and all other privatized CPSEs were included.

The sample is comprehensive in the sense that it comprises of both profit and loss making CPSEs. The difference between post and pre disinvestment performance was analysed by using the methodology from Megginson and D'Souza (1999) with some changes. Not all financial ratios or variables on which performance was judged were same and additional ratios were added to the study. The five parameters on which the companies were tested are Profitability, Efficiency, Leverage, Liquidity and Employment. In Table 2 all the ratios and the expected direction of change in these ratios have been discussed.

Although we know that public sector enterprises and private enterprises work with different objectives and gauging performance through profitability is not the best option, it is essential to see what has been the change in profitability, after complete change in ownership. The expected change in profitability is positive and post-disinvestment profitability is expected to be significantly higher than in the pre-disinvestment period. Similarly all other parameters (efficiency, liquidity and employment) are expected to increase significantly and leverage ratios to decrease significantly post-disinvestment, if privatization is to be considered successful.

## **MATERIAL AND METHOD:**

The data of the sample firms were collected through their Annual Reports of different year. For the analysis pre and post disinvestment mean was computed for every proxy, for the three year period before and after disinvestment. The mean of indicators before and after disinvestment are presented in Table 3. Then the Wilcoxon signed-rank test was used to test for significant changes in the two mean values. For comparing the mean of two samples Wilcoxon signed-rank test is one of the most apt 'non-parametric statistical hypothesis test'. This test was conducted through STATA 10.1 and the results of the test are presented in Table 4.

## RESULTS AND DISCUSSION:

### a) Profitability:

The most interesting results were found for this parameter. The case for profitability improvement after disinvestment is considered obvious but this study found opposite results. In this sample there were firms (VSNL, BALCO, HTL) whose profitability decreased in the post disinvestment period. The mean of Profit after tax increased by Rs 126.85 million but this increase was insignificant according to Wilcoxon signed-rank test. Three profitability ratios were calculated: Return on Assets, Return on Capital Employed and Return on Net Worth. Out of the three calculated profitability ratios, two decreased in the post disinvestment period. Return on Capital Employed and Net Worth declined by -3.275 and -2.54 respectively (Table3) but this decrease was insignificant (Table4). Return on Asset increased by 0.64 (Table3) but this increase was again statistically insignificant (Table4). From this one thing can be concluded that strangely disinvestments in India have not even increased profitability.

### b) Leverage:

Leverage ratios help in evaluating the firm's ability to meet its debt obligations. The two leverage ratios calculated were: Total outside Liability to Total Net Worth (TOL/TNW) and Debt to Equity Ratio (DE). The expectation is that after disinvestment a firm's debt obligations will reduce and this will reduce the leverage ratios. But the results found were quite opposite. The leverage ratios TOL/TNW and DE increased by 0.12 and 0.075 respectively. The increase was statistically insignificant but one can conclude that there was no positive impact of disinvestment in this regard.

### c) Liquidity:

Liquidity ratios help in evaluating the firm's ability to meet its short-term debt obligations. For this study, Current ratio was used as proxy for liquidity and it is calculated as follow: Current assets by Current Liabilities (CA/CL). Technically, liquidity should have increased in post disinvestment period but again there was a slight decline in liquidity by 0.085; but the decline was statistically insignificant. Clearly, privatization in India had no impact on liquidity of the units.

### d) Efficiency:

For capturing changes in efficiency, changes in Asset Turnover Ratio were analysed. This ratio was first calculated using Gross Fixed Assets and then Net Fixed Assets. If privatization had positive impact then efficiency should have increased and hence ATR should have

increased. But the results were not coercive in any one direction. ATR using gross fixed assets declined but the decline was not statistically insignificant. ATR using net fixed asset increased and the increase was statistically significant for one sided test ( $H_a$  : Net Sales / Net fixed assets (Before) – Net Sales / Net fixed assets (After) < 0) at 0.0925 p-value. This increase in ATR can be challenged because this ratio wasn't calculated after adjusting sales for inflation.

**e) Employment:**

Total income by Compensation to employees (TI/COE) was used as proxy for employment. Number of employees was not used as proxy for employment because of lack of reliable data for it. It can be observed from Table 4 that there was a significant decline in employment. For the one sided test (TI/COE (Before) – TI/COE (After) > 0) p value was 0.0669.

The two significant changes were brought in 'ATR using Net fixed Assets and Employment'. As discussed earlier, increase in efficiency cannot be stated by surety. So, there is only one parameter left in which the process of disinvestment had significant impact and that was decrease in employment. Under this situation, the need and significance of Privatization of Central Public Sector Enterprises is not only questionable for profit making units but also for loss making ones.



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Table 1: List of companies taken as samples

1.	Bharat Aluminium Company Ltd. (BALCO)
2.	CMC Ltd. (CMC)
3.	Hindustan Zinc Ltd. (HZL) (consolidated)
4.	HTL Ltd. (HTL)
5.	Indian Petrochemicals Corporation Ltd. (IPCL)
6.	Lagan Jute Machinery Co. Ltd. (LJMC) (Subsidiary of Bharat Bhari Udyog Nigam Ltd. hereinafter referred to as BBUNL)
7.	Jessop & Co. Ltd. (Subsidiary of BBUNL)
8.	Maruti Udyog Ltd. (MUL)
9.	Paradeep Phosphates Ltd. (PPL)
10.	Videsh Sanchar Nigam Ltd. (VSNL)

Table 2 : Summary of Indicators on which performance was assessed

Parameters	Proxies	Expected Direction of Change
Profitability	Profit after Tax ( PAT )	$PAT_{before} < PAT_{after}$
	Return on Assets (ROA) -PAT as % of Total Assets	$ROA_{before} < ROA_{after}$
	Return on Capital Employed (ROK) - PAT as % of Capital Employed	$ROK_{before} < ROK_{after}$
	Return on Net Worth (RONW) - PAT as % of Net Worth	$RONW_{before} < RONW_{after}$
Leverage	Total Outside Liability to Total Net Worth (TOL/TNW)	$TOL/TNW_{before} > TOL/TNW_{after}$
	Debt to Equity Ratio (DE)	$DE_{before} > DE_{after}$
Liquidity	Current Ratio (CR)	$CR_{before} < CR_{after}$
	Total income / Total assets net of miscellaneous expenditure (TI / TA)	$TI / TA_{before} < TI / TA_{after}$
Efficiency	Asset Turnover Ratio (ATR) - a) Net Sales / Gross fixed assets b) Net Sales / Net fixed assets	$ATR_{before} < ATR_{after}$
	Work in Progress Turnover	$WIPTR_{before} < WIPTR_{after}$

	Ratio (WIPTR)	
	Finished Goods Turnover Ratio (FGTR)	$FGTR_{before} < FGTR_{after}$
Employment	Total income / Compensation to employees (TI/COE)	$TI/COE_{before} < TI/COE_{after}$

**Table 3 : Mean value of indicators before and after disinvestment**

Parameters	Proxies	Mean (Before) (Median)	Mean (After) (Median)	Change (After- Before)	
Profitability	Profit after Tax (PAT)	293.6 million	420.45 million	126.85 million	
	Return on Assets (ROA)	3.775	4.415	0.64	
	Return on Capital Employed (ROK)	7.29	4.015	-3.275	
	Return on Net Worth (RONW)	8.16	5.62	-2.54	
Leverage	Total Outside Liability to Total Net Worth (TOL/TNW)	0.48	0.6	0.12	
	Debt to Equity Ratio (DE)	0.06	0.135	0.075	
Liquidity	Current Ratio (CR= CA/CL)	1.13	1.045	-0.085	
Efficiency	Asset Turnover Ratio (ATR)	Net Sales / Net fixed assets	3.035	3.065	0.03
		Net Sales / Gross fixed assets	1.55	1.415	-0.135
Employment	Total income /	0.01	0.015	0.005	

	Compensation to employees (TI/COE)			
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Table 4 : Summary of Results

Parameters	Proxies	Null Hypothesis	Alternate Hypothesis		
			One –sided Test (p value)		Two – sided Test (p value)
Profitability	Profit after Tax	$H_o$ : Profit after Tax (Before) – Profit after tax (after) = 0	$H_a$ : Profit after Tax (Before) – Profit after tax (after) > 0	$H_a$ : Profit after Tax (Before) – Profit after tax (after) < 0	$H_a$ : Profit after Tax (Before) – Profit after tax (after) ≠ 0
			0.8675	0.2291	0.4583
	Return on Assets	$H_o$ : PAT as % of Total Assets (Before) – PAT as % of Total Assets (after) = 0	$H_a$ : PAT as % of Total Assets (Before) – PAT as % of Total Assets (after) > 0	$H_a$ : PAT as % of Total Assets (Before) – PAT as % of Total Assets (after) < 0	$H_a$ : PAT as % of Total Assets (Before) – PAT as % of Total Assets (after) ≠ 0
			0.8275	0.2858	0.5716
	Return on Capital Employed	$H_o$ : PAT as % of Capital Employed (Before) – PAT as % of Capital Employed (after) = 0	$H_a$ : PAT as % of Capital Employed (Before) – PAT as % of Capital Employed (after) > 0	$H_a$ : PAT as % of Capital Employed (Before) – PAT as % of Capital Employed (after) < 0	$H_a$ : PAT as % of Capital Employed (Before) – PAT as % of Capital Employed (after) ≠ 0
			0.8675	0.2291	0.4583
	Return on Net Worth	$H_o$ : PAT as % of Net Worth (Before) – PAT as % of Net Worth (after) = 0	$H_a$ : PAT as % of Net Worth (Before) – PAT as % of Net Worth	$H_a$ : PAT as % of Net Worth (Before) – PAT as % of Net Worth	$H_a$ : PAT as % of Net Worth (Before) – PAT as % of Net Worth



			(after) > 0	(after) < 0	(after) ≠ 0
			0.9331	0.1431	0.2863
Leverage	Total Outside Liability to Total Net Worth (TOL/TNW)	$H_0$ : TOL/TNW (Before) – TOL/TNW (after) = 0	$H_a$ : TOL/TNW (Before) – TOL/TNW (after) > 0	$H_a$ : TOL/TNW (Before) – TOL/TNW (after) < 0	$H_a$ : TOL/TNW (Before) – TOL/TNW (after) ≠ 0
			0.6445	0.5000	1.0000
Leverage	Debt to Equity Ratio	$H_0$ : Debt/Equity (Before) – Debt/Equity (after) = 0	$H_a$ : Debt/Equity (Before) – Debt/Equity (after) > 0	$H_a$ : Debt/Equity (Before) – Debt/Equity (after) < 0	$H_a$ : Debt/Equity (Before) – Debt/Equity (after) ≠ 0
			0.8569	0.2617	0.5235
Liquidity	Current Ratio	$H_0$ : CA/CL (Before) – CA/CL (after) = 0	$H_a$ : TOL/TNW (Before) – TOL/TNW (after) ≠ 0	$H_a$ : TOL/TNW (Before) – TOL/TNW (after) ≠ 0	$H_a$ : TOL/TNW (Before) – TOL/TNW (after) ≠ 0
			0.7709	0.3555	0.7111
Efficiency	Asset Turnover Ratio	$H_0$ : Net Sales / gross fixed assets (Before) – Net Sales / gross fixed assets (After) = 0	$H_a$ : Net Sales / gross fixed assets (Before) – Net Sales / gross fixed assets (After) > 0	$H_a$ : Net Sales / gross fixed assets (Before) – Net Sales / gross fixed assets (After) < 0	$H_a$ : Net Sales / gross fixed assets (Before) – Net Sales / gross fixed assets (After) ≠ 0
			0.5747	0.5747	1.0000
		$H_0$ : Net Sales / Net fixed assets (Before) – Net Sales / Net fixed assets (After) = 0 (After)	$H_a$ : Net Sales / Net fixed assets (Before) – Net Sales / Net fixed assets (After) > 0 (After)	$H_a$ : Net Sales / Net fixed assets (Before) – Net Sales / Net fixed assets (After) < 0	$H_a$ : Net Sales / Net fixed assets (Before) – Net Sales / Net fixed assets (After) ≠ 0
			0.9564	0.0925	0.1849



Employment	Total income / Compensation to employees (TI/COE)	$H_o$ : TI/COE (Before) – TI/COE (After) = 0	$H_a$ : TI/COE (Before) – TI/COE (After) > 0	$H_a$ : TI/COE (Before) – TI/COE (After) < 0	$H_a$ : TI/COE (Before) – TI/COE (After) ≠ 0
			0.0669	0.9738	0.1338