

IMPACT OF NON STRATEGIC DISINVESTMENT ON FINANCIAL PERFORMANCE OF CPSEs

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ABSTRACT

The main purpose of this research is to determine empirically the impact of disinvestment on the financial performance and operating efficiency of central public sector enterprises (CPSEs) in India which got divested through public offering with government retaining the controlling stake during the period of 2009 to 2017. This study also tries to determine the role of CPSE size, CPSE industry and CPSE control in determining post disinvestment financial performance. This study has sampled 22 CPSEs listed on S&P BSE Index and disinvested in a period from 2009 to 2017 through public offer. The performance of CPSEs is measured through ratios analysis employing financial and operating ratios of return on assets, return on equity, return on net worth, net income efficiency, asset turnover ratio and sales to capital ratio. The significance of difference between pre- and post disinvestment performance is determined through Wilcoxon signed-rank test. The findings of the study indicate an overall decrease in profitability however the decrease was found to be statistically insignificant. It was also found that two of the operating efficiency decreased significantly. The role of CPSE size, CPSE industry and CPSE control was found to be very limited in determining post disinvestment financial performance. The results do not find the positive impact of disinvestment on financial performance of CPSEs as against the commonly held notion the probable reason may be the mode of disinvestment in which the only minority shares are disinvested while government retaining controlling stake, poor pre disinvestment financial state of CPSEs, negative rate of return on capital employed by CPSEs and inefficiency which need explored by the future researchers. The original value of the research comes from the fact that this study is the first which tries to determine the impact of disinvestment on the financial performance of CPSEs in disinvested through public offering with government retaining the controlling stake.

Keywords: *Disinvestment, Financial Performance, Operating Efficiency, Indian CPSEs, Public Offer.*

Introduction

Disinvestment of public sector enterprises has been an important agenda of governments all around the world and India is no exception. This phenomenon has been observed irrespective of the political philosophies of the ruling government (Megginson, 2014). In India the disinvestment of public sector enterprises started after major economic reforms announced in 1991 that basically included liberalization of business, augmentation of private ownership of business and disinvestment of government ownership in public sector enterprises (PSEs) was an important element of the new economic policy to enhance the economic performance of ailing PSEs (Arun and Nixon, 2000). In fact, it is widely hypothesized that the government owned and controlled firms are less efficient or at least less profitable than their private counterparts (Mandiratta and Bhalla, 2017) and privatization of public sector enterprises is mooted to enhance their economic performance (Boycko et al., 1996; Chirwa, 2001).

In developing countries disinvestment in public sector enterprises is also a response to the need of reducing the fiscal deficit which otherwise is high due heavy borrowings for funding the development activities (Bienen & Waterbury, 1989). As far as India is concerned it is no exception, the disinvestment was mooted to enhance the performance of PSEs along with its contribution in state budget to address the problems of fiscal deficit and balance of payment (Malik, 2003).

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In India PSEs operate at central, state and municipal levels, owned and controlled by central, state and local level governments respectively. This study deals with central public sector enterprises denoted as CPSEs. Disinvestment in India can be divided into four phases (BSE, 2021) – a period of 1991-92 to 2000-01 during which minority PSU stakes were disinvested in small trenches, next period from 2001-02 to 2003-04 was known to be golden period in which many PSUs were disinvested either through strategic sales (involving an effective transfer of control and management to a private entity) or through an offer for sale to the public, with the government still retaining control of the management. The next phase of 2004-05 to 2008-09 witnessed stagnation of disinvestment due to instability of governments. In the fourth phase from 2009-10 to 2020-21 saw disinvestment gain picking up through public offering with government retaining the controlling stake which is also the current disinvestment policy. This study tries to evaluate the policy of disinvestment in CPSEs through public offering with government retaining the control.

Although disinvestment is seen as a strategy to enhance the performance of CPSEs along with contribution to the fiscal requirements, however, recent researches shows that the main purpose of enhancement of CPSEs performance may not always be achieved after disinvestment and on the contrary it has been observed that the some of the performance indicators have declined significantly after disinvestment (Alipour, 2013; Chen, Firth & Wei Zhang, 2008; Mandiratta and Bhalla, 2017 & 2020; Mathur and Banchuenvijit 2007; Naib 2003). This study tries to determine the impact on the financial performance of CPSEs disinvested through non strategic public mode with government retaining control considering almost all the CPSEs disinvested during 2009 to 2021. The financial performance of CPSEs disinvested through public mode is explored as this mode become prevalent after 2003 and the considerable disinvestment is done is through this mode from 2009 to 2021 that calls for assessment of this mode for performance of CPSEs.

Literature Review

The literature review tries to explore the researches determining the performance of public sector enterprises after disinvestment or privatization. The review covers studies conducted both a global level and specifically in India.

Alipour (2013) examined the impact of privatization on the performance of state-owned enterprises (SOEs) in Iran. The empirical results stated negative effects of privatization on the profitability whereas no impact was found on sales efficiency.

Arun and Nixon (2000) explored the process and procedure of disinvestment of Indian public sector enterprises privatized between 1991 and 1997 and concluded that there are some problems in disinvestment process like assumed under-pricing of shares sold, ambiguity and the absence of a common set of goals between the Government of India and the disinvestment commission.

Bortolotti et al. (2002) examined the financial and operating performance of national telecommunication companies to find out the determinants of improved performance. Empirical results observed significant contribution of regulatory changes in combination with ownership changes toward better performance of privatized concerns. **G.I**

Boubakri and Cosset (1998) compared pre and post-privatization financial and operating performance of companies which have experienced either full or partial privatization in developing countries. The results showed significant increases in profitability, operating efficiency, capital investment spending, output, employment level and dividends. Significant drop in leverage for unadjusted measures was also witnessed. **G.I**

Boubakri et al. (2005) examined the determinants of performance changes of newly privatized firms in developing countries. Empirical results witnessed significant increase in profitability, efficiency, investment and output throughout the sample firms.

Chen, Firth and Wei Zhang (2008) analyzed the impact of China's Modern Enterprise System (MES) reforms on the efficiency and profitability of selected state-owned enterprises. The results of empirical analysis found no significant improvements in performance and efficiency even after China's restructuring program.

D'souza and Megginson (1999) compared pre and post-privatization financial and operating performance and the results indicate significant improvements in profitability ratio, output, operating efficiency, dividend payment and capital expenditure were witnessed whereas debt- equity ratios indicating leverage position were found to be reduced. **G.M**

Dharwadkar et al. (2000) highlighted the issues of agency theory in explaining the relationship between firm privatization and performance. The study suggested that post privatization performance of firms can be improved by using suitable ownership, management and corporate structures that caters to various agency problems in the framework of weak governance.

Dinc and Gupta (2011) investigated the influence of various political and financial factors on the decision to privatize government-owned firms in India. They compared 49 federal government owned firms with privatized government-owned firms in India in the duration of 1990 to 2004. Regression analysis revealed that privatization decisions do get effected by firm level financial variables and location specific electoral factors. This study relevantly contributed in the privatization literature as it explored the major role played by political variables in the privatization decisions.

Ghosh (2008) compared the financial performance of fully government- owned (FGOs) and partially government- owned (PGOs) in India in order to examine whether disinvestment really matters or not. The paper concluded that although disinvested firms did not witness improved profitability levels, other performance indicators such as labor intensity, leverage and wages had shown significantly positive results.

Gouri (1997) tried to determine the impact of the non-policy on privatization of Indian public sector enterprises. The study made a descriptive comparison of pre disinvestment and post disinvestment using growth percentages. The study concluded that if Indian public sector enterprises want to increase efficiency it through employing the tool of privatization it is important that the policy makers first need to clearly demarcate the domains in the industry that are open to competition and requires no control from the sectors where there is government monopoly and certain amount of control is required by the government.

Gupta (2005) analyzed the impact of partial privatization on profitability, productivity and investment of Indian PSUs and found a positive impact of partial privatization on the overall performance of PSEs.

Gupta, et al. (2011) assessed the pre- and post disinvestment financial performance of disinvested CPSEs in India over a span of more than two decades of 1986 to 2000. The study considered 38 CPSEs and adopted ratio analysis technique for comparison and employed t-test. The study found positive results indicating improved performance of partially privatized public firms in majority of the dimensions after divesting non controlling shares in the same.

Mandiratta and Bhalla (2017) examined post disinvestment financial and operating performance of 15 public sector units disinvested in India through public share offering mode during 2003-2012. The study employed ratio analysis and it was concluded that the disinvestment led to significant increase in overall operating efficiency of CPSEs whereas the profitability position remained the same.

Mandiratta and Bhalla (2020) examined the impact of disinvestment on the financial and operating performance of 26 listed CPSEs in India divested through stock market mechanism during the time period of 2000-2014. The study adopted various financial ratios. The overall results of the study indicate statistically significant fall in profitability ratios.

Mathur and Banchuenvijit (2007) examined the changes in financial and operating performance of 103 newly privatized firms in the both emerging and developed countries. The study finds significant increase in profitability ratios, sales and net income efficiency, dividend payouts, output and leverage position; however a decline in employment levels were witnessed.

Megginson et al. (1994) compared the pre and post post-privatization (either full or partial) over a period of 1961-1990 in developed nations. Results depict significant hike in firm's profitability, real sales, capital expenditure, dividend payout ratios and overall operating efficiency in the post privatization period with no major fall in average employment level.

Naib (2003) examined the impact of disinvestment on the performance of disinvested public sector enterprises in India from 1991 to 2000. Employing ratios employing paired t-test. The study revealed mix results, although it was found that the profitability and leverage ratios declined significantly whereas dividend payout and efficiency ratios increased significantly after the disinvestment.

Omran (2004) evaluated the financial and operating performance of newly privatized state-owned enterprises in Egypt to determine whether such performance differs across firms according to their new ownership structure. Results of the study indicate significant increase in profitability, operating efficiency, capital expenditures and dividends. However, significant decrease in employment, leverage and risk were found following privatization.

Peter, De Bruijn, and Rwegasira(2010) evaluated the performance of privatized enterprises in the plantation sector and sampled 15 enterprises in Sri Lanka privatized during 1992–1999. The results revealed that after controlling for industry- specific effects, privatization led to significant positive results in the post-privatization period.

Sankar et al. (1994) conducted a conceptual study to explore the aspects of disinvestment policy in Indian PSUs. The authors studied the experience of disinvestments in Indian public sector enterprises. Given the historical background and current scenario of Indian PSUs, the authors presented the profitability status of Indian PSEs as well.

Sun, Tong and Tong (2002) examined whether government ownership affects the performance of China's SOEs in the privatization process over the period 1994–1997. The study employed panel data analysis and the statistical results report positive relationship between government ownership and firm performance.

Research Problem and Objectives

In India, the strategy of disinvestment has been followed since 1991 in one form or other with some very large disinvestments and wide socio-economic implications. Taking into consideration a long disinvestment history in India only few researches exist exploring the various aspects of disinvestment and its impact on the performance of CPSEs. Most of the existing studies are conceptual in nature describing the process of disinvestment, giving a historical account, comparing performance or at the maximum presenting and analyzing descriptive statistics (Arun and Nixon, 2000; Dharwadkar et al., 2000; Gouri, 1997). And majority of the empirical studies done in India are pre- 2010 when the disinvestment in India was done either in auction mode or in strategic mode with government transferring controlling stake. There is an absolute dearth of empirical researches determining the impact of disinvestment specifically in the time period of 2009-21 when the partial disinvestment is done which may be considered as non strategic mode. This study comes close to the researches of Gupta (2005), Gupta et al. (2011) and Madiratta and Bhalla (2017, 2020). The first two studies analysed the impact of partial disinvestment on financial performance and found improved performance of partially privatized public firms however the time frame of these studies is pre- 2010 when the disinvestment was done either in auction mode or in strategic mode. Madiratta and Bhalla (2017) analysed CPSEs disinvested in a period of 2003-2012 and found enhanced operational efficiency while profitability remained unchanged. Madiratta and Bhalla's (2020) is the only study in the time frame of 2000-2014 that encompassed disinvestment through public offer and found fall in profitability of the partially disinvested CPSEs. The researches done on the CPSEs disinvested prior to 2010 shows positive impact on performance however the CPSEs disinvested after 2010 shows negative impact on performance (Madiratta and Bhalla, 2020). There is a major change in disinvestment policy from 2009 and the CPSEs were disinvested through non strategic public offer without transfer of control it becomes imperative to determine the impact of non strategic disinvestment on the performance of CPSEs to assess the effectiveness of non strategic disinvestment policy. Also since the CPSEs greatly vary in size, type of industry and the level of government control, these factors may also affect the post disinvestment performance of CPSEs. This study tries to determine the impact on the financial performance of CPSEs disinvested through non strategic mode considering almost all the CPSEs disinvested during 2009 to 2017. The financial performance of CPSEs disinvested through public mode is explored because this mode became prevalent after 2003 and the considerable disinvestment is done through this mode from 2009 to 2021 that calls for assessment of this mode of disinvestment. This research differs from the earlier studies first in the way that it considers only CPSEs disinvested through public mode and this study enhances the time frame of disinvested firms, further this study focuses only on profitability ratios through four major profitability ratios and finally this study also takes into account the role of CPSE size, industry and control in determining post disinvestment profitability. As per the research questions the objectives of the study are:

- To determine the impact of non strategic disinvestment on profitability of CPSEs disinvestment in a period of 2009 to 2018.
- To explore the role of CPSE size, CPSE industry and CPSE control in determining post disinvestment profitability.

Research Model and Hypothesis Formulation

The main purpose of this research is to determine the impact of non strategic disinvestment on profitability of CPSEs and also to explore the role of CPSE size, CPSE industry and CPSE:

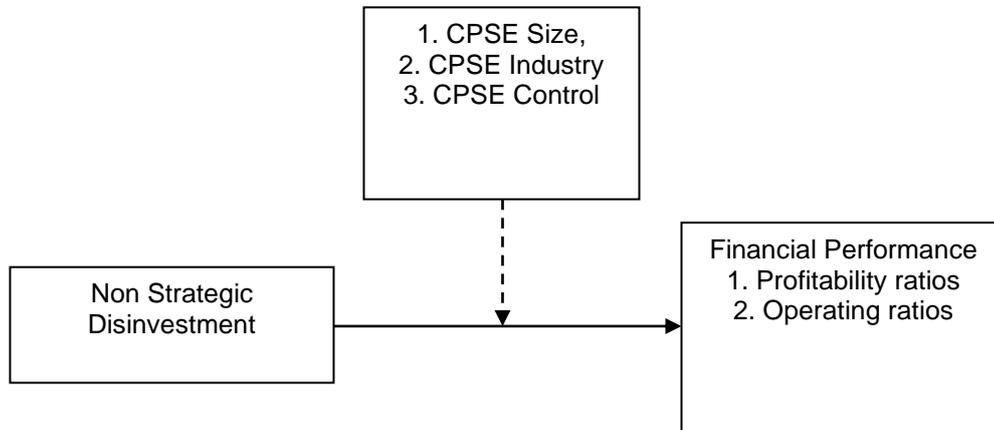


Figure 1: Research Model

As per the research objectives and model the main hypotheses derived for the study are:

- H₁:** There is a significant impact of non strategic disinvestment on the profitability of CPSEs.
- H_{2.1}:** There is a significant impact of size in determining the post disinvestment profitability of CPSEs.
- H_{2.2}:** There is a significant impact of industry in determining the post disinvestment profitability of CPSEs.
- H_{2.3}:** There is a significant impact of control in determining the post disinvestment profitability of CPSEs.

Research Methodology

• Sample, Data Collection and Data Source

This study has sampled 22 CPSEs listed on S&P BSE Index and disinvested a period from 2009 to 2017 as shown in the below table 1. The initial year selected is 2009-10 because it is considered as the start of fourth phase of disinvestment in India (BSE, 2021) during which government offloaded minority stake in listed and unlisted CPSEs. Financial Data is collected for three years prior to the disinvestment year and three years after the disinvestment year. Accordingly the latest disinvestment year considered is 2016-17 so that the data for at least three years after disinvestment is available. If minority shares of CPSEs have been offloaded several times over the years then the disinvestment year is taken as the year when the CPSE is first disinvested. Data is collected from the year wise financial reports of CPSEs published by Department of Public Enterprises available at dpe.gov.in. Financial reports available at the websites of the CPSEs were also referred. List of the disinvested CPSEs along with the data related to the disinvestment year, industry and disinvested stake is sourced from bsepsu.com a PSU Service Initiative of BSE.

• Methods

The main purpose of the study is to compare the pre and post disinvestment financial performance of CPSEs. As shown in the research model the financial performance is assessed through profitability and operational efficiency ratios. This study compares three profitability ratios – Return on Assets, Return on Equity and Return on Net Worth and the three operational efficiency ratios are Net Income Efficiency, Asset Turnover Ratio and Sales to Capital Ratio. For comparison of financial ratios Wilcoxon signed-ranks test is mostly employed to statistically test the pre- and post disinvestment performance (Megginson et al., 1994, Boubakri and Cosset, 1998; D'Souza & Megginson, 1999; Mandiratta & Bhalla, 2020). This test assesses the null hypothesis that the median difference in pre-disinvestment and post-disinvestment sample variables is zero. Wilcoxon signed-ranks test employs the z-test statistic, with the sample size of minimum ten observations so that the statistic approximates a standard normal distribution. Accordingly the null and alternate hypotheses related to the financial ratios are represented below.

Table 1: CPSE Sample List

S N	CPSE					S N	CPSE				
	Name	Disinvest -ment Year	S	I	C		Name	Disinvest -ment Year	S	I	C
1	BHARAT ELECTRONICS	2016-17	2	1	2	12	NBCC	2016-17	2	3	1
2	COAL INDIA	2010-11	3	2	2	13	NHPC	2016-17	1	1	2
3	CONTAINER CORP	2015-16	2	3	2	14	NTPC	2015-16	3	1	1
4	ENGINEERS INDIA	2010-11	2	3	1	15	OIL INDIA	2012-13	2	2	1
5	HINDUSTAN COPPER	2012-13	1	2	1	16	POWER FINANCE	2015-16	2	3	2
6	INDIA TOURISM	2013-14	1	3	1	17	POWER GRID	2010-11	3	3	1
7	INDIAN OIL	2015-16	3	1	2	18	RASHTRIYA CHEMICALS	2012-13	1	1	1
8	MMTC	2013-14	1	3	1	19	REC	2009-10	2	3	1
9	MOIL	2010-11	1	2	1	20	SAIL	2012-13	3	1	2
10	NATIONAL ALUMINIUM	2012-13	2	2	1	21	SHIPPING CORP	2010-11	2	3	1
11	NATIONAL FERTILIZERS	2013-14	1	1	2	22	SJVN	2010-11	1	1	2
S - CPSE Size: 1- Miniratna, 2- Navratna, 3- Maharatna;											
I - CPSE Industry: 1- Manufacturing, 2- Mining, 3- Services;											
C - CPSE Control: 1- $\geq 75\%$ Govt. Stake after Disinvestment, 2 - $< 75\%$ Govt. Stake after Disinvestment.											

Data Analysis and Hypothesis Testing

The analysis is presented in two sections, the first section analyses the impact of disinvestment on financial performance through Wilcoxon signed-ranks test. The descriptive statistics related to performance ratios and results of Wilcoxon test are presented in the below table. The mean for each performance parameter is calculated twice – firstly for three years before and secondly for three years after the disinvestment. This is done to determine the changes in parameters after disinvestment. The pre- and post disinvestment parameters are compared through Wilcoxon's signed rank sum test that employs median values to test the significance of difference and produces z-statistics and its p-value.

Table 2: Performance Proxies and Null Hypothesis

Performance Indicators	Performance Proxies	Wilcoxon's Test Null Hypothesis
Profitability	Return on Assets (ROA) = Net profit after taxes/Total assets	$ROA_{Bf} = ROA_{Af}$
	Return on Equity (ROE) = Net profit after taxes/Total equity	$ROE_{Bf} = ROE_{Af}$
	Return on Net Worth (RONW) = Net profit after taxes/Shareholders fund	$RONW_{Bf} = RONW_{Af}$
Operational Efficiency	Net Income Efficiency (NIE) = Net profit after taxes/Total number of employees	$NIE_{Bf} = NIE_{Af}$
	Asset Turnover Ratio (ATR) = Gross sales/Total assets	$ATR_{Bf} = ATR_{Af}$
	Sales to Capital Ratio (SCR) = Gross sales/Capital employed	$SCR_{Bf} = SCR_{Af}$
*Bf - before disinvestment, Af - after disinvestment		

It may be observed from the below table that all the three profitability ratios decreased after disinvestment however the decrease is insignificant. It may be concluded that the profitability of CPSEs remained statistically unchanged although an overall fall in profitability may be inferred from the descriptive statistics. It may also be observed that among the operational efficiency ratios NIE increased significantly while ATR decreased significantly and SCR decreased after disinvestment however the decrease is insignificant. It can be concluded that among the operational efficiency ratios NIE and ATR of CPSEs respectively increased and decreased significantly after disinvestment whereas the SCR remained statistically unchanged although an overall fall in SCR may be inferred from the descriptive statistics.

Table 3: Results of Wilcoxon Test

Performance Parameter	Parameter Before and After	Mean	Mean Difference Af-Bf	Z Statistics Difference	p-Value
ROA	ROA Bf	.1009	-0.03	-1.672 ^b	.095
	ROA Af	.0705			
ROE	ROE Bf	3.2486	-1.12	-1.023 ^b	.306
	ROE Af	2.1293			
ROCE	ROCE Bf	-3.0356	3.40	-1.575 ^b	.115
	ROCE Af	.3653			
NIE	NIE Bf	70.0480	37.23	-2.581 ^b	.010
	NIE Af	107.2761			
ATR	ATR Bf	0.7899	-0.19	-2.224 ^c	.026
	ATR Af	0.6041			
SCR	SCR Bf	177.5638	-40.44	-.921 ^c	.357
	SCR Af	137.1230			

a. Wilcoxon Signed Ranks Test; b. Based on positive ranks.
c. Based on negative ranks.

The second section analyses the role of CPSE size, industry and control in determining post disinvestment profitability and efficiency through group analysis employing Wilcoxon signed-ranks test in each group of size, industry and control separately. For profitability, the analysis is done for ROA and for efficiency the analysis is done only for NIE since these parameters are the main proxies of profitability and efficiency. The results are presented in the table 3 presented above.

It can be observed from table 3 that ROA decreased in all three CPSE size groups of Miniratna, Navratna, and Maharatna however the decrease is not significant in any of the groups, hence it may be inferred that size doesn't have any role in determining post disinvestment ROA of CPSEs. Similarly the NIE of all three CPSE size groups of Miniratna, Navratna, and Maharatna increased after disinvestment however the increase is not significant in any of the groups, hence it may be inferred that size also doesn't have any role in determining post disinvestment NIE of CPSEs. It may be concluded that the size of CPSEs does not impact the post disinvestment profitability and efficiency of CPSEs.

Table 4: Group Analyses

CPSE Size Group Analysis						
	ROA			NIE		
Size Groups	1	2	3	1	2	3
No. of CPSEs in Group (N)	8	9	5	8	9	5
Mean Bf	.0875	.0866	.1481	11.49	141.70	34.75
Mean Af	.0573	.0552	.1191	14.59	197.24	93.64
Mean Diff. Af-Bf	-.0301	-.0314	-.0289	3.0956	55.5361	58.8856
Z Statistics	-.980 ^b	-1.244 ^b	-.405 ^b	-1.400 ^b	-1.481 ^b	-1.753 ^b
p-value	.327	.214	.686	.161	.139	.080
*CPSE Size Groups: 1- Miniratna, 2- Navratna, 3- Maharatna.						
CPSE Industry Group Analysis						
	ROA			NIE		
Industry Groups	1	2	3	1	2	3
No. of CPSEs in Group (N)	8	5	9	8	5	9
Mean Bf	.0624	.1922	.0843	16.96	29.66	139.67
Mean Af	.0499	.1507	.0443	21.52	83.06	196.96
Mean Diff. Af-Bf	-.0126	-.0415	-.0400	4.54	53.4083	57.2904
Z Statistics	-.840 ^b	-.944 ^b	-.889 ^b	-2.240 ^b	-.944 ^b	-1.481 ^b
p-value	.401	.345	.374	.025	.345	.139
*CPSE Industry Groups: 1- Manufacturing, 2- Mining, 3- Services.						
CPSE Control Group Analysis+A21						
	ROA			NIE		
Control Groups	1	2		1	2	
No. of CPSEs in Group (N)	13	19		13	19	

Mean Bf	.3309	.3276		25.89	133.83	
Mean Af	.1379	.4385		52.44	186.48	
Mean Diff. Af-Bf	-.1930	.1108		26.5515	52.6499	
Z Statistics	-1.852 ^b	-.178 ^b		-1.712 ^b	-1.955 ^b	
p-value	.064	.859		.087	.051	

*CPSE Control Groups: 1- $\geq 75\%$ Govt. Stake after Disinvestment, 2 - $< 75\%$ Govt. Stake after Disinvestment.

From CPSE industry analysis it was observed that ROA decreased in all three CPSE industry groups of manufacturing, mining and services however the decrease is not significant in any of the groups, hence it may be inferred that industry doesn't have any role in determining post disinvestment ROA of CPSEs. It was found that NIE of all three CPSE industry groups of manufacturing, mining and services increased after disinvestment and the increase is significant for manufacturing whereas it is insignificant for mining and services CPSEs. The findings indicate that post disinvestment NIE depends on the industry, hence it may be inferred that industry have a significant role in determining post disinvestment efficiency of CPSEs. It may be concluded that the industry of CPSEs does not impact the post disinvestment profitability of CPSEs however it affects their post disinvestment efficiency.

From CPSE control group analysis it was observed that ROA decreased CPSEs having $\geq 75\%$ Govt. Stake while it increased in CPSEs with $< 75\%$ Govt. Stake however the decrease or increase is not significant in any of the groups, hence it may be inferred that control level doesn't have any role in determining post disinvestment ROA of CPSEs. Similarly the NIE of both the control groups increased after disinvestment however the increase is not significant in any of the groups, hence it may be inferred that control level also doesn't have any role in determining post disinvestment NIE of CPSEs. It may be concluded that the CPSEs control does not impact the post disinvestment profitability and efficiency of CPSEs.

Discussion and Conclusions

This study compared pre- and post disinvestment performance of CPSEs employing three proxies of ROA, ROE and RONW for profitability and three proxies of NIE, ATR and SCR for efficiency. The results of the Wilcoxon test show that that the profitability of CPSEs remained statistically unchanged although an overall fall in profitability may be inferred from the descriptive statistics. These results are similar to those of Madiratta and Bhalla (2020) who found insignificant decrease in ROA and ROE. The result may support the theory that the overall profitability decreases after disinvestment as found and proposed by Naib (2003). The results also show that NIE of CPSEs increased significantly while ATR decreased significantly and SCR remained statistically unchanged although an overall fall in operational efficiency of CPSEs may be inferred. This result is in contrast to Madiratta and Bhalla (2020) who found insignificant change in NIE after disinvestment. The ATR changed significantly in negative direction, this finding supports Naib (2003) who found decrease in efficiency after disinvestment.

This study also explored the impact of CPSE size, industry and control in determining post disinvestment profitability and efficiency. It is found that the size of CPSEs does not impact the post disinvestment profitability and efficiency of CPSEs. And industry of CPSEs also does not impact the post disinvestment profitability of CPSEs whereas it affects their post disinvestment efficiency. It is also found that the level of government control in CPSEs after disinvestment does not impact the post disinvestment profitability and efficiency of CPSEs. These results are in contrast to one of findings of Huang and Wang (2011) and Alipour, (2013) where size was found to have a significant role in determining ROE, whereas it similar to their other finding nonaffected of size in determining ROA. The results are also similar to Madiratta and Bhalla (2020) found insignificant role of size in determining profitability while significant role in determining efficiency.

The results of the study shows an overall decrease in performance and efficiency parameters except the NIE proxy that increased significantly supporting the assumption of Mathur and Banchuenvijit (2007) which states post disinvestment enhancement of efficiency due to better utilization of resources after privatization. As in the case of disinvestment in the selected period the control remains with the government hence better utilization of the resources could not be the reason of efficiency enhancement. The reason of NIE increase may be due to the fact that level of employment decreases significantly after disinvestment (Madiratta and Bhalla, 2020). As NIE is the ratio of net income and employment level, it will naturally increase if the employment level decreases. This may explain the significant increase of NIE in the Indian CPSEs disinvested during the selected period. Although the decrease is not significant, the findings of this study suggest an overall decrease in profitability and efficiency of CPSEs disinvestment through public offer in the selected period. As minority shares are offloaded and the management of the

CPSEs still remains with government, the benefit of disinvestment in terms of better utilization of resources (Mathur and Banchuenvijit, 2007), progressive structural and cultural changes (Cuervo and Villalonga, 2000) and private ownership structure (Hanousek et al., 2009) remains elusive for the disinvested enterprises having government control. Disinvestment through this mode may mops up large amount of funds for the government for various activities however it doesn't enhances the performance of CPSEs which is also one of the disinvestment prerogatives of government. This study suggests to the authorities in India to make changes in the disinvestment policies so that not only the objectives of fiscal financing is achieved but also the objective of CPSE performance enhancement is also fulfilled.

Extant literature shows none of the study has determined the impact on Indian CPSEs disinvested through public offering mode. This study basically contributes to the literature through bringing forth the impact of disinvestment on performance and efficiency of the CPSEs in India disinvested through public offering during 2009-10 and 2016-17 with government retaining control and the need to make commensurate changes in disinvestment policy. The main limitation of the study that it performs univariate analysis at the individual variables level, future researches may perform employing multivariate analysis including all the variables in single model producing more inclusive results. Future researches may also expand the duration of disinvestment and perform analysis taking into considerations other factors like CPSE size, industry, culture, leadership and management structure of CPSEs.

References

1. Alipour, M. (2013), "Has privatization of state-owned enterprises in Iran led to improved performance?", *International Journal of Commerce and Management*, Vol. 23 No. 4, pp. 281-305.
2. Arun, T.G. and Nixson, F.I. (2000), "The disinvestment of public sector enterprises: the Indian experience", *Oxford Development Studies*, Vol. 28 No. 1, pp. 19-32.
3. Bienen, H., & Waterbury, J. (1989), "The political economy of privatization in developing countries", *World Development*, Vol. 17 No. 5, pp. 617-632.
4. Bortolotti, B., D'Souza, J., Fantini, M. and Megginson, W.L. (2002), "Privatization and the sources of performance improvement in the global telecommunications industry", *Telecommunications Policy*, Vol. 26 No. 5, pp. 243-268.
5. Boubakri, N. and Cosset, J.C. (1998), "The financial and operating performance of newly privatized firms: evidence from developing countries", *The Journal of Finance*, Vol. 53 No. 3, pp. 1081-1110.
6. Boubakri, N., Cosset, J.C. and Guedhami, O. (2005), "Liberalization, corporate governance and the performance of privatized firms in developing countries", *Journal of Corporate Finance*, Vol. 11 No. 5, pp. 767-790.
7. Boycko, M., Shleifer, A. and Vishny, R.W. (1996), "A theory of privatization", *The Economic Journal*, Vol. 106, pp. 309-319.
8. BSE (2020), "Classification of CPSEs", available at: http://www.bsepsu.com/disinvest_database.asp (accessed on 1 February 2020).
9. BSE (2020), "Disinvestment in India", available at: http://www.bsepsu.com/disinvest_database.asp (accessed on 1 February 2020).
10. Chen, G., Firth, M. and Wei Zhang, W. (2008), "The efficiency and profitability effects of China's modern enterprise restructuring programme", *Asian Review of Accounting*, Vol. 16 No. 1, pp. 74-91.
11. Chirwa, E.W. (2001), "Privatization and technical efficiency: evidence from the manufacturing sector in Malawi", *African Development Review*, Vol. 13 No. 2, pp. 276-307.
12. Cuervo, A. and Villalonga, B. (2000), "Explaining the variance in the performance effects of privatization", *Academy of Management Review*, Vol. 25, pp. 581-590.
13. D'souza, J. and Megginson, W.L. (1999), "The financial and operating performance of privatized firms during the 1990s", *The Journal of Finance*, Vol. 54 No. 4, pp. 1397-1438.
14. Dharwadkar, B., George, G. and Brandes, P. (2000), "Privatization in emerging economies: an agency theory perspective", *Academy of Management Review*, Vol. 25 No. 3, pp. 650-669.

18. Dinc, I.S. and Gupta, N. (2011), "The decision to privatize: finance and politics", *The Journal of Finance*, Vol. 66 No. 1, pp. 241-269.
19. Ghosh, S. (2008), "Does divestment matter for firm performance?: evidence from the Indian experience", *Economic Systems*, Vol. 32 No. 4, pp. 372-388.
20. Gouri, G. (1997), "The new economic policy and privatization in India", *Journal of Asian Economics*, Vol. 8 No. 3, pp. 455-479.
21. Gupta, N. (2005), "Partial privatization and firm performance", *The Journal of Finance*, Vol. 60 No. 2, pp. 987-1015.
22. Gupta, S., Jain, P.K., Yadav, S.S. and Gupta, V.K. (2011), "Financial performance of disinvested central public sector enterprises in India: an empirical study on select dimensions", *Journal of Applied Finance and Banking*, Vol. 1 No. 4, p. 57.
23. Hanousek, J., Kocenda, E. and Svejnar, J. (2009), "Divestitures, privatization and corporate performance in emerging markets", *Economics of Transition*, Vol. 17 No. 2, pp. 43-73.
24. Huang, Z. and Wang, K. (2011), "Ultimate privatization and change in firm performance: evidence from China", *China Economic Review*, Vol. 22 No. 1, pp. 121-132.
25. Malik, V. (2003), "Disinvestments in India: needed change in mindset", *Vikalpa*, Vol. 28 No. 3, pp. 57-64.
26. Mandiratta, P. and Bhalla, G. S. (2017), "Pre and Post Disinvestment Performance Evaluation of Indian CPSEs", *Management and Labour Studies*, Vol. 42 Nos 2, pp. 1-15.
27. Mandiratta, P. and Bhalla, G. S. (2020), "Disinvestment in Indian central public sector enterprises: a performance improvement measure", *Journal of Economic and Administrative Sciences*, Vol. 37 No. 4, pp. 496-521.
28. Mathur, I. and Banchuenvijit, W. (2007), "The effects of privatization on the performance of newly privatized firms in emerging markets", *Emerging Markets Review*, Vol. 8 No. 2, pp. 134-146.
29. Megginson, W.L., Nash, R.C. and Randenborgh, M. (1994), "The financial and operating performance of newly privatized firms: an international empirical analysis", *The Journal of Finance*, Vol. 49 No. 2, pp. 403-452.
30. Megginson, W.L. and Boutchkova, M.K. (2000), "The impact of privatisation on capital market development and individual share ownership (No. 53. 2000). Nota di Lavoro", *Paper Presented at The Third FIBV Global Emerging Markets Conference and Exhibition*, Istanbul, Turkey, available at: <https://www.econstor.eu/bitstream/10419/155107/1/NDL2000-053.pdf>.
31. Naib, S. (2003), "Partial divestiture and performance of Indian public sector enterprises", *Economic and Political Weekly*, Vol. 38 No. 29, pp. 3088-3093.
32. Omran, M. (2004), "Performance consequences of privatizing Egyptian state-owned enterprises: the effect of post-privatization ownership structure on firm performance", *Multinational Finance Journal*, Vol. 8 Nos 1-2, pp. 73-114.
33. Peter, S., De Bruijn, E.J. and Rwegasira, K. (2010), "Performance of privatized enterprises and impact of partial privatization in a developing country: case of Sri Lanka", *Journal of Transnational Management*, Vol. 15 No. 1, pp. 46-68.
34. Sankar, T.L., Mishra, R.K. and Lateef Syed Mohammed, A. (1994), "Divestments in public enterprises: the Indian experience", *International Journal of Public Sector Management*, Vol. 7 No. 2, pp. 69-88.
35. Sun, Q., Tong, W.H. and Tong, J. (2002), "How does government ownership affect firm performance? Evidence from China's privatization experience", *Journal of Business Finance and Accounting*, Vol. 29 Nos 1-2, pp. 1-27.

