

IMPACT OF DISINVESTMENT ON LISTING AND NON-LISTING CPSES AT BSE

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ABSTRACT

The main objective of disinvestment policy in India is to promote people's ownership of Central Public Sector Enterprises to share in their prosperity through disinvestment. The disinvestment process to facilitate unlocking the true value of the Central Public Sector Enterprises for all stakeholders – Investors, Employees, Company and the Government and to list all profitable Central Public Sector Enterprises on stock exchanges. Higher disclosure levels due to listing to bring about greater transparency and accountability in the functioning of the Central Public Sector Enterprises. The study compares the pre- and post disinvestment financial and operating performance of the selected disinvested Central Public Sector Enterprises (CPSEs) of Indian Manufacturing sector based on the listing status at BSE. The listing and non-listing of CPSEs at Bombay Stock Exchange (BSE) plays an important role in performance improvement after disinvestment. A sample of 12 firms is drawn from various cognate group viz., Fertilizer, Heavy Engineering, Medium & Light Engineering, Petroleum (refinery & marketing) and Transportation Equipment of Indian CPSEs. The period of analysis covers 5 years before and 5 years after disinvestment. To measure the significant change of disinvested CPSEs based on listing status at Bombay Stock Exchange, the sample is split up into two subsamples; listed and unlisted disinvested CPSEs which might lead to difference in the profitability, operating efficiency, output, employment, solvency and stock indicators. To test our predictions, the technique of Megginson et al. (1994) was followed in order to determine post disinvestment performance changes. The analysis is based on ratio analysis, mean, Wilcoxon on Signed-rank test and proportion test based on Sign test are used as principal methods for testing significant changes in variables. The Mann-Whitney Rank-Sum Test has been used for analyzing the significant difference in variables between listed and unlisted sample. Hence, it is documented that financial and operating performance of the disinvested CPSEs unlisted is higher compared to listed disinvested CPSEs at BSE. Thus, there is a huge 'go to market' knowledge gap which exists in several PSUs. What are the steps involved in getting listed, what processes need to be followed, what approvals need to be taken, what disclosures need to be made, what has been the history of disinvestments in India, etc.

KEYWORDS: Disinvestment; Listed; Unlisted; Profitability; Operating Efficiency; Output; Employment; Solvency; Stock Indicators.

INTRODUCTION

The public sector played a vital role in development of an economy. With economic liberalization, post-1991, sectors that were exclusive preserve of the public sector enterprises were opened to the private sector. “The CPSEs, therefore, are faced with competition from both domestic private sector companies (some of which have grown very fast) and the large Multi-National Corporations (MNCs). Hence, the need for the Government to get rid of these units and to concentrate on core activities was identified. The Government also took a view that it should move out of non-core businesses, especially the ones where the private sector had now entered in a significant way. Finally, disinvestment was also seen by the Government to raise funds for meeting general/specific needs. In this direction, the Government adopted the 'Disinvestment Policy'. This was identified as an active tool to reduce the burden of financing the PSUs. Disinvestment of government equity in CPSEs began in 1991-92 following the Industrial Policy Statement of 1991, which stated that the Government would divest part of its holdings (minority share-holding) in select CPSEs. Till 1999-2000, disinvestment was primarily through sale of minority shares in small lots. From 1999-2000 till 2003-04, the emphasis of disinvestment changed in favor of strategic sale. The current policy on disinvestment envisages people's ownership of CPSEs while ensuring that the Government equity does not fall below 51 per cent and Government retains management control.

Public enterprises in most of the countries of the world, so as also in India were created to accelerate economic and social development. Jawaharlal Nehru, the first prime minister of independent India called the public sector units (PSUs) the “Temples of modern India”. The serious budgeting and fiscal deficits of the government and severe pressure on the country's balance of payments created the ‘necessity. The Nehruvian ‘commanding heights’ concept was seen to have lost its relevance. Disinvestment has been a major political and economic phenomenon over the past few decades, and researchers continue to target it for both theoretical and empirical work. Since first application in Britain in 1979 under Thatcher government, privatization has come to be accepted and employed throughout the world, often under conditions of considerable controversy. Given that most socialist and communist economies from every region in the world have recently started implementing economic reform programs, the reduction in size of the public sector through disinvestment has become an important part of such programs. Privatization has being a subject of intense global debate in recent years. The concept has received so much criticism from labour unions, academia and individuals. However in recent times, we are witnessing sweeping changes in the economics of both developed and developing countries. Several developing and transition economies have embarked on extensive privatization programs in the last two and a half decades as means of attaining macroeconomic stability, fostering economic growth and managing public sector borrowing arising from corruption, subsidies and subventions to State Owned Enterprises (SOEs)

Conceptual Framework

Investment and disinvestment are two sides of the same coin. When we deal with the investment management, it automatically encompasses disinvestment also, as what is investment for one is disinvestment for another, particularly in the secondary market. A company or a government organization will typically disinvest an asset either as a strategic move for the company, or for raising resources to meet general/specific needs. Disinvestment is a wider term extending from dilution of the stake of the government to a level where there is no change in the control to dilution that results in the transfer of management. The transfer of ownership may occur when in an enterprise the dilution of government ownership is beyond 51 per cent. The disinvestment implies that the government will sell to public or private enterprises / public

institutes' part of its holding in public sector enterprises. The main objective of disinvestment policy in India is to promote people's ownership of Central Public Sector Enterprises to share in their prosperity through disinvestment. The disinvestment process to facilitate unlocking the true value of the Central Public Sector Enterprises for all stakeholders – Investors, Employees, Company and the Government and to list all profitable Central Public Sector Enterprises on stock exchanges. Higher disclosure levels due to listing to bring about greater transparency and accountability in the functioning of the Central Public Sector Enterprises.

Listing leads to better and timely disclosures, bringing in greater transparency and professionalism, thus protecting the interest of the investors. Greater efficiency by way of being accountable to thousands of shareholders. Listing provides an opportunity to raise capital to fund new projects/undertake expansions/diversifications and for acquisitions. Listing raises a company's public profile with customers, suppliers, investors, financial institutions and the media. A listed company is typically covered in analyst reports and may also be included in one or more of indices of the stock exchanges. Bombay Stock Exchange is the oldest stock exchange in Asia with a rich heritage, now spanning three centuries in its 133 years of existence. What is now popularly known as BSE was established as "The Native Share & Stock Brokers' Association" in 1875. BSE is the first stock exchange in the country which obtained permanent recognition (in 1956) from the Government of India under the Securities Contracts (Regulation) Act 1956. BSE's pivotal and pre-eminent role in the development of the Indian capital market is widely recognized.

PSUs or Public Sector Undertakings are among the largest and most profitable organizations in India. As on 31 July 2013, of the total of 260 Central Public Sector Enterprises (CPSEs) and subsidiaries of CPSEs, only 50 were listed. 46 of these were listed at BSE, which constituted 15% of the total market capitalization of 5110 companies listed at BSE. In addition, 28 Public Sector Banks (PSBs) with their subsidiaries and 6 State Level Public Enterprises (SLPEs) accounted for another 4% of the total market capitalization at BSE. Thus all PSUs together constituted 19.7% of the total market capitalization at BSE or Rs. 12.33 lakh crore. PSUs constitute 24% of the total market capitalization of companies listed at BSE (as on 28 February 2013). PSUs have the potential for even a more dominant role, with a large number of profitable unlisted CPSEs that can go to the market. Based upon data (of profit making PSUs as on 27th December 2012), there are as many as 100 3-year profit making CPSEs that are still unlisted. With the government's announcement of reducing its stake in listed and unlisted (profit-making) companies to 90% via public offers, a large number of PSU public offers are now in the pipeline. This would also help achieve the goal set out in the Congress manifesto which stated that "Indian people have every right to own part of the shares of public sector companies, while the government retains the majority shareholding."

Disinvestment Status in India

The objective of Disinvestment policy is to promote people's ownership of Central Public Sector Enterprises through increased participation of retail investors. For the first four decades after Independence, the country was pursuing a path of development in which the public sector was expected to be the engine of growth. However, the public sector overgrew itself and its shortcomings started manifesting in low capacity utilization and low efficiency due to over manning, low work ethics, over capitalization due to substantial time and cost over runs, inability to innovate, take quick and timely decisions, large interference in decision making process etc. Hence, a decision was taken in 1991 to follow the path of Disinvestment. There are primarily three different approaches to disinvestments in India (from the sellers' i.e. Government's perspective). A minority disinvestment is one such that, at the end of it, the government retains a

majority stake in the company, typically greater than 51 per cent, thus ensuring management control. Historically, minority stakes have been either auctioned off to institutions (financial) or offloaded to the public by way of an Offer for Sale. A majority disinvestment is one in which the government, post disinvestment, retains a minority stake in the company i.e. it sells off a majority stake. Historically, majority disinvestments have been typically made to strategic partners. Complete privatization is a form of majority disinvestment wherein 100% control of the company is passed on to a buyer.

The change process in India began in the year 1991-92, with 31 selected PSUs disinvested for Rs.3, 038 crore. In August 1996, the Disinvestment Commission, chaired by G V Ramakrishna was set up to advise, supervise, monitor and publicize gradual disinvestment of Indian PSUs. It submitted 13 reports covering recommendations on privatization of 57 PSUs. However, the Disinvestment Commission ceased to exist in May 2004. The Department of Disinvestment was set up as a separate department in December, 1999 and was later renamed as Ministry of Disinvestment from September, 2001. From May, 2004, the Department of Disinvestment became one of the Departments under the Ministry of Finance. Against an aggregate target of Rs. 54,300 crore to be raised from PSU disinvestment from 1991-92 to 2000-01, the Government managed to raise just Rs. 20,078.62 crore (less than half). The reasons for such low proceeds from disinvestment against the actual target set were: unfavorable market conditions, offers made by the government were not attractive for private sector investors, lot of opposition on the valuation process, no clear-cut policy on disinvestment, strong opposition from employee and trade unions, lack of transparency in the process and lack of political will. This was the period when disinvestment happened primarily by way of sale of minority stakes of the PSUs through domestic or international issue of shares in small tranches. The value realized through the sale of shares, even in blue chip companies like IOC, BPCL, HPCL, GAIL & VSNL, however, was low since the control still lay with the government. Most of these offers of minority stakes during this period were picked up by the domestic financial institutions. Unit Trust of India was one such major institution.

During the period from 2001-02 - 2003-04 the maximum number of disinvestments took place. These took the shape of either strategic sales (involving an effective transfer of control and management to a private entity) or an offer for sale to the public, with the government still retaining control of the management. The valuations realized by this route were found to be substantially higher than those from minority stake sales. During this period, against an aggregate target of Rs. 38,500 crore to be raised from PSU disinvestment, the Government managed to raise Rs. 21,163.68 crore. The issue of PSU disinvestment remained a contentious issue during the period from 2004-05 – 2008-09. As a result, the disinvestment agenda stagnated during this period. In the 5 years from 2003-04 to 2008-09, the total receipts from disinvestments were only Rs. 8515.93 crore. A stable government and improved stock market conditions initially led to a renewed thrust on disinvestments. The Government started the process by selling minority stakes in listed and unlisted (profit-making) PSUs. From 2009-10 onwards period saw disinvestments in companies such as NHPC Ltd., Oil India Ltd., NTPC Ltd., REC, NMDC, SJVN, EIL, CIL, MOIL, etc. are made through public offers. However, from 2011 onwards, disinvestment activity has slowed down considerably. As against a target of Rs.40, 000 crore for 2011-12, the Government was able to raise only Rs.14, 000 crore.

Review of Literature

There may also be distortions in the constraints of public sector managers because of the absence of a credible bankruptcy threat to these firms. Facing a soft budget constraint, managers have little incentive to cut costs. Soft budget constraints may also distort managerial incentives if the government uses loans to pursue objectives other than profit maximization. The political perspective by investigating whether government loans to firms can explain variation in firm performance. In contrast, the managerial perspective on the advantage of private over public ownership argues that participation in the stock market gives managers better incentives by monitoring firm performance and gathering information on manager investments. None of the shares of the Indian public sector firms in our sample were traded on the stock market prior to disinvestment. Since the extent of market liquidity affects the incentives of stock market participants to gather information on firms (**Holmstrom and Tirole, 1993**)¹. **Meggison, Nash and Van Randenborgh (1994)**² developed a proxy variable methodology to test whether a significant operational and financial performance changes exist between pre and post privatization period of divested firms. They compare both pre and post privatization 3-year average performance ratios for 61 firms in 18 countries over the period 1961-1989. The finding indicates significant increases in output, operating efficiency, profitability, capital investment spending and dividend payments are found along with significant decreases in leverage. The changes in employment after privatization are found to be insignificant.

Macquieria and Zurita (1996)³ compared pre- versus post-privatization performance of 22 Chilean companies privatized from 1984 to 1989. Use Megginson, Nash and Van Randenborgh (MNR) methodology to perform analysis first without adjusting for overall market movements (as in MNR), then with an adjustment for contemporaneous changes. Unadjusted results virtually identical to MNR, significant increase in output, profitability, employment, investment, and dividend payments. After adjusting for market movements, however, the changes in output, employment, and liquidity are no longer significant, and leverage increases significantly.

Mohammed Omran (2004)⁴ examined the performance of 54 newly privatized Egyptian firms against a matching number of SOEs Document significant improvements in Profitability, operating efficiency, capital expenditure, dividends and liquidity. On the other hand, significant decreases have been documented for employment, leverage and no significant change in output is observed following privatization relative to SOEs. **Dr. Jamal Ibrahim Bdour et al. (2007)**⁵ investigates the potential impact of privatization on the financial and operating performance of the Jordanian Cement Factories Company (JCFC) as an attempt to contribute to the debate on how privatization of public enterprises may affect the financial and operational performance of these enterprises. The data were obtained from the annual financial reports of JCFC five years before and five years after privatization. Performance criteria were calculated and compared to determine whether there are significant differences among them in the pre- and post-privatization periods. Related statistics of JCFC share performance were further compared with the market and industry indicators. The findings revealed that while privatization did not seriously affect JCFCs operating performance and profit, it led to liquidity improvement, debt reduction, improved investments, and a decline in overstaffing.

Cuong Duc Pham and Tyrone M Carlin (2008)⁶ examined the impact of privatization on a sample of previously state owned enterprises in Vietnam. Using a detailed, financially focused methodology and drawing on data sourced from audited general purpose financial

statements, our analysis suggests evidence of material variation in financial performance and position post privatization compared to the position observed immediately prior to privatization. Specifically, our data suggests that after being privatized, firms generally exhibit reductions in profitability, improved liquidity, some degree of improvement in working capital management, an increase in financial leverage accompanied by a higher degree of solvency risk and greater calls on cash resources for the purpose of funding capital expenditure. Our results assist with understanding the impact of privatization as a reform technique in developing economies, and may assist policy makers and managers better target areas of likely risk, during the process of transition from public to private ownership. **Motasam Tatahi and Almas Heshmati (2009)**⁷ examined the change in operating and financial performance of Swedish firms that was either partly or fully privatized during the period of 1989-2007. Findings indicate that improvements in performance of firm with regard to Profitability, efficiency, capital structure and liquidity. Thus, Swedish enterprises did change after privatization but not significantly.

Gupta Seema, P.K. Jain, Surendra S. Yadav and V.K. Gupta, (2011)⁸ assessed the financial performance of disinvested Central Public Sector Enterprises (CPSEs) in India on the basis of several dimensions on pre and post disinvestment bases over the life span of more than two decades (i.e. 1986-87 to 2009-10); financial performance has been measured on the basis of select profitability, efficiency, liquidity, leverage and productivity ratios. The findings suggest that partial or small amount of disinvestment has not yielded desired results in majority of dimensions; it may be virtually due to variety of problems faced by PSEs even after disinvestment, such as high cost and non-competitive industrial structure, operational inefficiency due to high governmental interference, environment restrictions (delegation of operational and functional autonomy to the managers through performance contracts) and less proportion of disinvestment. **Surafel Yilma Gurm (2012)**⁹ the potential impact of privatization on the financial and operating performance of State Owned Enterprises (SOEs) in the Leather sub sector as an effort to find out how the privatization of public enterprises may affect the financial and operational performance of these enterprises. The data were obtained from the annual financial reports of seven firms in the stated industry four years before and four years after privatization. Performance criteria were calculated and compared to determine whether there are differences among them in the pre- investigated and post-privatization periods. The findings revealed that while privatization did not seriously affect privatized enterprises operating performance and profitability, it led to liquidity improvement, debt reduction, increased investments, and a decline in overstaffing.

Kishor C. Meher and Samiran Jana (2013)¹⁰ examined the impact of ownership due to strategic sale on financial performance of the privatized Public sector enterprises between pre and post privatization of Paradeep Phosphates Ltd, India. The various statistical tests have confirmed the significance of financial performance through improvement of short term financial position bringing liquidity in case of Paradeep Phosphates Ltd. **Dr. Himanshu Joshi**¹¹ analyzed the basic difference between private and public ownership is the difference in objectives, viz; welfare maximization by the public sector and profit maximization by the private sector. Therefore, there are good reasons for the thinking that the ownership of a firm will have significant effects on its behaviour and performance of an enterprise. Present study is an attempt to analyze the impact of change in the ownership on financial performance of public sector enterprises in general and Bharat Heavy Electricals Limited in particular. In this study, disinvestment of the government shareholding has been taken as an event and pre – disinvestment mean value of various financial parameters for financial years (1986-91) is compared with post- disinvestment mean value of financial years (1992-2000). Our result shows

that disinvestment improves the profitability and liquidity position of BHEL while it has affected the dividend payout negatively.

STATEMENT OF THE PROBLEM

The most important criticism levied against public sector undertakings has been that in relation to the capital employed, the level of profits has been too low. Even the government has criticized the public sector undertakings on this count. Of the various factors responsible for low profits in the public sector undertakings, most important among them are; price policy of public sector undertakings, under – utilization of capacity, problem related to planning and construction of projects, problems of labour, personnel and management and lack of autonomy. The government in order to put an end to these problems, decided to disinvest its stake in the PSUs (Public Sector Undertakings). The companies traditionally established as pillars of growth have now become a burden on the economy. Except few mighty oil and petroleum companies, almost all other PSUs are incurring losses. The national gross domestic product and gross national savings are also adversely affected by low returns from PSUs. About 10 to 15 per cent of the total gross domestic savings are reduced on account of low savings from PSUs. With the equity markets having come off their historic lows in March 2009, there are certain signs of recovery. However, this should not be of any concern to the Government as PSUs, being high quality paper, would always find ready investors if the pricing is reasonable. PSU disinvestment of 10 per cent as per the Government's announced intentions, at attractive prices to retail investors, could ensure a strong message to the investment community about the Government's resolve to continue with reforms. Hence, it very important to analyze the financial and operating performance of disinvested Central Public Sector Enterprises in India which are very far from satisfactory. Therefore, the present study is undertaken to analyze the financial and operating performance of disinvested Central Public Sector Enterprises of Indian Manufacturing Sector based on listing status at Bombay Stock Exchange.

Objectives of the Study

The general objective of the study is to empirically analyze the financial and operating performance of listing and non-listing status of selected disinvested CPSEs at Bombay Stock Exchange (BSE) of manufacturing sector in India.

Hypothesis

On the basis of the objectives of the study the following two main alternative hypotheses were developed for the purpose of the present study.

- Ha₁** - According to the listing and non-listing status in which disinvested CPSEs operate, there is significant difference between changes in financial performance of subsample groups following disinvestment.
- Ha₂** - According to the listing and non-listing status in which disinvested CPSEs operate, there is significant difference between changes in operating performance of subsample groups following disinvestment.

To support the above two hypothesis, six sub-hypotheses are in need of examination. These six sub-hypotheses are as follows:

- 1) There is a significant difference between profitability before and after disinvestment.
- 2) There is a significant difference between operating efficiency before and after disinvestment.
- 3) There is a significant difference between output before and after disinvestment.
- 4) There is a significant difference between employment before and after disinvestment.
- 5) There is a significant difference between solvency position before and after disinvestment.
- 6) There is a significant difference between stock indicators before and after disinvestment.

Methodology and Empirical Model

As noted earlier the main purpose of this study is to examine the impact of disinvestment on the financial and operating performance of disinvested CPSEs of manufacturing sector in India based on listing status at BSE. The study used secondary sources of data, which are collected from the capital market database called Centre for Monitoring Indian Economy Private Limited (Prowess CMIE). The research design used in the study is a “before- and-after” design (also known as the pre-test/post- test design). A “before and after” design can be described as two sets of cross section observations on the same population to ascertain the nature of the change in the phenomenon or variable (s), between two points of time. The change is measured by comparing the difference in the phenomenon or variables at the before and after periods. The most appropriate method in such a research is a post-event research methodology known as casual comparative method.

The research design adopted is similar to those employed by **Meggins et al. (1994)**, **Boubakri and Cosset (1998)** and **D’Souza and Megginson 1999**). Data on disinvested CPSEs for an eleven years, five years prior to the disinvestment and a five years period after the year of disinvestment for each disinvested firm in manufacturing sector were collected. According to purpose, the present research is classified as an applied research. Based on methodology and (nature, it is also presented as descriptive research. To measure the effects of disinvestment on firm performance, at first performance measures for every firm for the years before and after disinvestment was calculated. Then, the mean of each measure is computed for each firm over the before disinvestment (years –5 to –1) and after disinvestment (years +1 to +5) periods. The main objective of the study is to do a comparative analysis of disinvested firms before and after disinvestment mainly in manufacturing sector. Therefore, the research design tries to identify whether the CPSEs perform better after disinvestment.

Sampling Design

Disinvested practices have started to implement in India since 1991. India has opted for the disinvestment for the period of 23 years (1991-92 to 2013-14). There are 260 CPSEs in India at present. Out of which only 80 CPSEs were disinvested during the period 1991-92 to 2013-14. Total disinvested enterprises till 6th July 2013 consist of 158 CPSEs. CPSE’s consist of five sectors namely; Agriculture, Electricity, Manufacturing, Mining and Services. The analysis of the sectoral breakdown of the disinvestment in CPSEs in India within 1991-92 to 2013-14 shows that disinvested enterprises in manufacturing sector constitute 40.50 per cent of the total disinvestment of CPSEs which is higher than other sectors in India since 1991-92. (Table 1).

Keeping in view the scope of the study, it is decided to include all the 28 CPSEs in manufacturing sector which was disinvested during the period 1991-1992 to 2013-2014. But, owing to several constraints such as non-availability of financial statements, it was compelled to restrict the number of sample enterprises to 12 (Table 2). Thus, Multi-stage sampling technique is used. The final sample which constitutes 42.85 per cent of disinvested CPSEs of manufacturing sector in India during the time period 1991-1992 to 2013-2014 is selected using the following criteria: (i) Disinvested CPSEs should operate in manufacturing sector; (ii) Disinvested CPSEs are requested to have financial data for a period of eleven years encompassing five years before disinvestment and five years after disinvestment and (iii) The latest year of disinvestment is taken into account for the selection of sample and where there is no further dilution of stake by the government till 06 July 2013.

Selection of Variables

The variables that refer to the different factors that may influence disinvested firms' performance. Specifically, the study seeks to determine whether, following disinvestment, the disinvested CPSEs of manufacturing sector in India: improved their financial and operating performance. In the present study, an attempt has been made to cover financial and operating performance of disinvested firms based on the listing status at BSE. As firms move from public to private ownership or both, their profitability should increase. More specifically, the present studies seek how firms' (1) profitability ratios, (2) operating efficiency, (3) output, (4) employment, (5) solvency ratios, and (6) stock indicators are affected by disinvestment. The empirical evidence of these studies suggests that disinvestment could lead to an improvement in profitability, efficiency, outputs and stock indicators. On the other hand, although there is no consistent result with regard to the employment level and debt it is expected to decline after disinvestment. Table 3 presents variable description, performance measurement and expected results of the performance measure after disinvestment used in the present study. It focuses on the characteristics, which are examined for changes resulting from divestiture. The symbols A and B in the testable predictions stand for 'after' and 'before' divestiture.

Tools of Analysis

The tools used for the purpose of analysis of the present study are: ratio analysis, mean, Wilcoxon signed-ranked test is adopted to test for significant changes in the variables before and after disinvestment. The proportion test to determine whether the proportion (P) of companies experiencing changes in a given direction is greater than what would be expected by chance, typically testing whether $P = 0.5$ based on Sign test has been employed. The Mann-Whitney Rank-Sum Test has been used for analyzing the significant difference in variables between listed and unlisted sample.

Empirical Model

To overcome the problem of different past performance among subsamples, the following methods are used to measure the variables.

(a) Absolute Performance Change Method

To test for the significant difference in performance change of each subsample group, the data are adjusted to ensure that such comparison is valid. In this method, the absolute change in mean performance for each firm and subsample are calculated as follows:

$$APC = P_{i,t} - P_{i,t-1}$$

Where: *APC* is absolute performance change,
 $P_{i,t}$ is the mean performance after -disinvestment period, and
 $P_{i,t-1}$ is the mean performance before -disinvestment period.

(b) Relative Performance Change Method

Since absolute changes are problematic as a measure of performance when the measure of performance is itself is an absolute measure. However, it is of important to take into consideration the history of companies' performance by calculating the performance after disinvestment relative to performance before disinvestment. Accordingly, the relative performance change of for subsamples is calculated as follows:

$$RPC = (P_{i,t} - P_{i,t-1}) / P_{i,t-1}$$

Where: *RPC* is relative performance change,
P_{i,t} is the mean performance after -disinvestment period, and
P_{i,t-1} is the mean performance before -disinvestment period.

Overall, the data analysis is conducted using a general-purpose statistical package called SPSS. Basically, SPSS is a collection of statistical analysis routines. SPSS provides a broad range of data manipulation and transformation procedures, statistical procedures, and charting facilities. The version IBM SPSS Statistics 20 for Windows of SPSS has all the necessary statistical routines for conducting the tests required in this research. The entire set of data has been analyzed by using SPSS.

Empirical Analysis

The listing and non-listing of CPSEs at Bombay Stock Exchange (BSE) plays an important role in performance improvement after disinvestment. The main objective of disinvestment policy in India is to promote people's ownership of Central Public Sector Enterprises to share in their prosperity through disinvestment. The disinvestment process to facilitate unlocking the true value of the Central Public Sector Enterprises for all stakeholders – Investors, Employees, Company and the Government and to list all profitable Central Public Sector Enterprises on stock exchanges. Higher disclosure levels due to listing to bring about greater transparency and accountability in the functioning of the Central Public Sector Enterprises. To measure the significant change of disinvested CPSEs based on listing status at Bombay Stock Exchange, the sample is split up into two subsamples; listed and unlisted disinvested CPSEs.

Analysis of changes in profitability based on listing status at BSE

Table 4 reveals the profitability performance of listed and unlisted disinvested CPSEs at BSE before and after disinvestment. The listed companies show positive improvement in ROC, ROA and ROE after disinvestment. The unlisted companies show significant improvement in all the indicators of profitability measures after disinvestment except in ROE. Though, the improvement is statistically insignificant based on Wilcoxon test at 1 per cent and 5 per cent level of significance. Table 5 compares the performance changes in profitability between listed and unlisted sample companies. The Mann-Whitney Rank-Sum test compares whether there is significant difference between listed and unlisted companies. Under absolute performance change method the average rank for unlisted sample companies are higher than the mean rank for listed sample companies, for OPM, NPM, ROC and ROA indicating that unlisted sample companies scored higher than listed sample companies. Under absolute performance change method the indicators OPM, NPM and ROA are statistically significant as the p-value is small, significant at 5 per cent level. The ROC and ROE are statistically insignificant. Under relative performance change method all the profitability measures shows that there is a significant difference between listed and unlisted sample companies except ROE. Thus, it is concluded that listed sample companies scores significantly higher than unlisted sample companies. Hence the hypothesis is rejected for ROE.

Analysis of changes in operating efficiency based on listing status at BSE

Table 4 reveals the operating efficiency performance of listed and unlisted disinvested CPSEs at BSE before and after disinvestment. The mean value of listed and unlisted companies showed that normalized real sales efficiency is positive after disinvestment. The improvement is statistically significant for listed and unlisted companies based on Wilcoxon test at 1 per cent and 5 per cent level of significance. The Sign test results for normalized real sales efficiency performance revealed a significant increase in number of firms that changed as predicted as p-value is less than 0.05. The mean of unlisted companies shows a decline in normalized real net income efficiency after disinvestment. Table 5 compares the performance changes in operating efficiency between listed and unlisted sample companies. The Mann-Whitney Rank-Sum test compares whether there is significant difference between listed and unlisted companies. Under absolute performance change method and relative performance change method the average rank for unlisted sample companies is higher than the mean rank for listed sample companies, indicating that unlisted sample companies scored higher than listed sample companies in normalized real sales efficiency. The findings revealed that there is no significant difference between listed and unlisted sample companies. Thus, the hypothesis is rejected. Under absolute performance change method and under relative performance change method the average rank for listed sample companies is higher than the mean rank for unlisted sample companies, indicating that listed sample companies scored higher than listed sample companies in normalized real net income efficiency after disinvestment. The findings revealed that there is no significant difference in normalized real net income efficiency between listed and unlisted sample companies. Thus, the hypothesis is rejected under absolute performance method. Under relative performance change method the findings revealed that there is a significant difference in normalized real net income efficiency between listed and unlisted sample companies. Thus, the hypothesis is accepted.

Analysis of changes in output based on listing status at BSE

Table 4 reveals the normalized real sales performance of listed and unlisted disinvested CPSEs at BSE before and after disinvestment. The mean value of listed and unlisted companies showed that normalized real sales is positive after disinvestment. The mean change of listed and unlisted companies shows a positive improvement in normalized real sales after disinvestment. Though, the improvement is statistically insignificant for unlisted companies based on Wilcoxon test at 1 per cent and 5 per cent level of significance. The Sign test results for normalized real sales performance revealed an insignificant increase in number of firms that changed as predicted as p-value is not less than 0.05. Table 5 compares the performance changes in normalized real sales between listed and unlisted sample companies. The Mann-Whitney Rank-Sum test compares whether there is significant difference between listed and unlisted companies. Under absolute performance change method and under relative performance change method the Average Rank for unlisted sample companies is higher than the mean rank for listed sample companies, indicating that unlisted sample companies scored higher than listed sample companies. The findings revealed that there is no significant difference between listed and unlisted sample companies. Thus, the hypothesis is rejected.

Analysis of changes in employment based on listing status at BSE

Table 4 reveals the change in employment level of listed and unlisted disinvested CPSEs at BSE before and after disinvestment. The mean value of listed and unlisted companies showed that number of employees is negative after disinvestment. Though, the decline in changes in employment level is statistically insignificant based on Wilcoxon test at 1 per cent and 5 per cent level of significance. The Sign test results for employment level revealed an insignificant

increase in number of firms that changed as predicted as p-value is not less than 0.05. Table 5 compares the performance changes in average number of employees between listed and unlisted sample companies. The Mann-Whitney Rank-Sum test compares whether there is significant difference between listed and unlisted companies. Under absolute performance change method the average rank for unlisted sample companies is higher than the mean rank for listed sample companies, indicating that unlisted sample companies scored higher than listed sample companies. The findings revealed that there is no significant difference between listed and unlisted sample companies. Thus, the hypothesis is rejected. Under relative performance change method the average rank for listed sample companies is higher than the mean rank for unlisted sample companies, indicating that listed sample companies scored higher than unlisted sample companies. The findings revealed that there is no significant difference between listed and unlisted sample companies. Thus, the hypothesis is rejected.

Analysis of changes in solvency based on listing status at BSE

Table 4 reveals the solvency of listed and unlisted disinvested CPSEs at BSE before and after disinvestment. The listed companies show negative changes only in mean values of DER, PR and LDR and a positive change in mean value of ICR after disinvestment. The unlisted companies show negative change in mean values of LDR and a positive change in DER, ICR and PR after disinvestment. Though, the changes in solvency measures are statistically insignificant based on Wilcoxon test at 1 per cent and 5 per cent level of significance. Hence, the hypothesis is rejected. Table 5 compares the performance changes in solvency between listed and unlisted sample companies. The Mann-Whitney Rank-Sum test compares whether there is significant difference between listed and unlisted companies. The average rank for listed sample companies is higher than the mean rank for unlisted sample companies for ICR and PR indicating that listed sample companies scored higher than listed sample companies. Under absolute performance change method solvency measures shows that there is no significant difference between listed and unlisted sample companies. Thus, the hypothesis is rejected. However, under relative performance change method revealed that there is a significance difference between listed and unlisted sample for the ICR and PR solvency measures. In all the other measures under relative performance change method the hypothesis is rejected.

Analysis of changes in stock indicators based on listing status at BSE

Table 4 reveals the stock indicators performance of listed and unlisted disinvested CPSEs at BSE before and after disinvestment. The mean value of listed and unlisted companies showed that EPS and book value per share are positive after disinvestment. The mean change of listed companies shows a decline in Earnings Per Share and Book value per share after disinvestment. Though, the improvement is statistically insignificant based on Wilcoxon test at 1 per cent and 5 per cent level of significance. Table 5 compares the performance changes in stock indicators between listed and unlisted sample companies. The Mann-Whitney Rank-Sum test compares whether there is significant difference between listed and unlisted companies. Under absolute performance change method the average rank of EPS for unlisted sample companies is higher than the mean rank for listed sample companies, indicating that unlisted sample companies scored higher than listed sample companies. The findings revealed that there is no significant difference between listed and unlisted sample companies. Thus, the hypothesis is rejected. Under relative performance change method the average rank for listed sample companies is higher than the mean rank for unlisted sample companies, indicating that listed sample companies scored higher than unlisted sample companies. The findings revealed that there is a significant difference between listed and unlisted sample companies. Thus, the hypothesis is accepted. The performance change in stock measure during post-disinvestment period in relation to pre-

disinvestment period also showed that there is no significant difference between listed and unlisted companies in BSE under absolute performance change method and relative performance change method. Though, the average rank of listed companies is higher than unlisted companies. Hence, there is no significant difference among the cognate group in all the stock indicators. Thus, the hypothesis is rejected.

Summary and Conclusion

The study examined the overall financial and operating performance of 12 disinvested CPSEs of Indian Manufacturing Sector by comparing before and after disinvestment performance based on listing and non-listing CPSEs at BSE after disinvestment. The indicators used are profitability, operating efficiency, output, employment, solvency and stock indicators. The unlisted companies showed improvement in all the performance indicators except in NIE and DER after disinvestment. However, it was statistically insignificant based on Wilcoxon test. The listed disinvestment companies showed a significant improvement in SE, DER and ICR after disinvestment. Only listed disinvestment companies showed an increase in DPR after disinvestment. It is observed that unlisted disinvestment companies failed to pay dividend to its shareholders before and after disinvestment during the period of the study. Hence, it is documented that financial and operating performance of the disinvested CPSEs unlisted is higher compared to listed disinvested CPSEs at BSE. Thus, there is a huge 'go to market' knowledge gap which exists in several PSUs. What are the steps involved in getting listed, what processes need to be followed, what approvals need to be taken, what disclosures need to be made, what has been the history of disinvestments in India, etc.

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Table 1
Disinvestment based on Sector from 1991-92 to 2013-14 (As on 06 July 2013)

Sector	No. of Enterprises Disinvested	No. of Disinvestments	% of Disinvestment to Total No. of Disinvestments
Agriculture	-	-	-
Electricity	6	9	5.70
Manufacturing	28	64	40.50
Mining	11	31	19.60
Services	35	54	34.20
Total	80	158	100

Source: Department of Disinvestment, Ministry of Finance, Government of India.

Table 2
Sample Based on Different Approaches to Disinvestments

Cognate Group	Name of the enterprise	Latest year of disinvestment Year	Type of disinvestment	% stake disinvested	% residual equity with govt.
Fertilizers	Paradeep Phosphates Ltd.*	2001-02	Majority	74	26
Heavy Engineering	Bharat Heavy Electricals Ltd.	1994-95	Minority	32.26	67.72
	Jessop & Company Ltd.*	2003-04	Majority	72	27
	Lagan Jute Machinery Company Ltd.*	2000-01	Majority	74	26
Medium & Light Engineering	Bharat Electronics Ltd.	1994-95	Minority	24.16	75.86
	Maruti Udyog Ltd.	2007-08	Complete Privatization	45.79	0
Petroleum (refinery & Marketing)	Bongaigaon Refinery & petrochemicals Ltd.	2000-01	Complete Privatization	100	0
	Gail (India) Ltd.	2003-04	Minority	42.65	57.34
	Hindustan Petroleum Corporation Ltd.	1994-95	Minority	48.57	51.07
	Indian Oil Corporation Ltd.	1999-00	Minority	17.84	82.16
	Madras Refineries Ltd.	2000-01	Complete Privatization	68.73	0
Transportation Equipment	Bharat Earth Movers Ltd.	1994-95	Minority	39.26	60.81

*Unlisted CPSEs at BSE during the period of study.

Source: Department of Disinvestment, Ministry of Finance, Government of India.

Table 3
Testable Predictions of Financial and Operating Performance Indicators

Characteristic	Proxies	Testable Prediction
1. Profitability	Operating Profit Margin Ratio (OPM) = $\text{PBIDTA} / \text{Total Sales} * 100$	$\text{OPM}_A > \text{OPM}_B$
	Net Profit Margin Ratio (NPM) = $\text{PAT} / \text{Total Sales} * 100$	$\text{NPM}_A > \text{NPM}_B$
	Return on Capital Employed (ROC) = $\text{PAT} / \text{Capital Employed} * 100$	$\text{ROC}_A > \text{ROC}_B$
	Return on Total Assets (ROA) = $\text{PAT} / \text{Total Assets} * 100$	$\text{ROA}_A > \text{ROA}_B$
	Return on Net worth (ROE) = $\text{PAT} / \text{Net worth} * 100$	$\text{ROE}_A > \text{ROE}_B$
2. Operating Efficiency	Sales Efficiency (SE) = $\text{Real Sales} / \text{Number of Employees}$	$\text{SE}_A > \text{SE}_B$
	Net Income Efficiency (NIE) = $\text{Real Net Income} / \text{Number of Employees}$	$\text{NIE}_A > \text{NIE}_B$
3. Output	Real Sales (RS) = $\text{Nominal Sales} / \text{Consumer Price Index}$	$\text{RS}_A > \text{RS}_B$
4. Employment	Employment (EMP) = Number of Employees	$\text{EMP}_A < \text{EMP}_B$
5. Solvency	Debt-Equity ratio (DER) = $\text{Debt} / \text{Equity}$	$\text{DER}_A < \text{DER}_B$
	Interest cover ratio (ICR) = $\text{PBIT} / \text{Fixed Interest Charges}$	$\text{ICR}_A > \text{ICR}_B$
	Proprietary ratio (PR) = $\text{Shareholders Fund} / \text{Total Tangible Assets}$	$\text{PR}_A < \text{PR}_B$
	Long-term debt ratio (LDR) = $\text{Long-term Borrowing} / \text{Total Tangible Assets}$	$\text{LDR}_A < \text{LDR}_B$
6. Stock Indicators	Earnings per share (EPS) = $(\text{NPAT} - \text{Preference Dividend}) / \text{Number of Equity Shares}$	$\text{EPS}_A > \text{EPS}_B$
	Book value per share (BVPS) = $\text{Equity Shareholders Fund} / \text{Number of Equity Shares}$	$\text{BVPS}_A > \text{BVPS}_B$
	Dividend Payout Ratio (DPR) = $\text{Equity Dividend} / \text{Net Profit after tax and Preference Dividend} * 100$	$\text{DPR}_A > \text{DPR}_B$

Source: Megginson et al (1994).

Table 4

Summary of Test for Significance Changes in Variables based on Listing Status of the Sample at BSE

Variables	Listing Status	N	Disinvestment		Change (After-Before)	Wilcoxon test (After-Before)		Sign test (Firms changed as Predicted)	
			Mean Before	Mean After		Z - Statistics	P- Value	Percentage (%)	P- Value
Profitability									
Operating Profit Margin Ratio	Listed	9	12.699	10.534	-2.165	-2.192	0.028*	22.220	0.180
	Unlisted	3	-8.947	5.595	14.542	-1.604	0.109	100.000	0.250
Net Profit Margin Ratio	Listed	9	5.202	5.165	-0.037	-0.059	0.953	55.556	1.000
	Unlisted	3	-33.633	3.127	36.759	-1.604	0.109	100.000	0.250
Return on Capital Employed	Listed	9	9.710	14.294	4.584	-1.836	0.066	77.780	0.180
	Unlisted	3	-43.883	6.068	49.951	-1.604	0.109	100.000	0.250
Return on Total Assets	Listed	9	6.067	7.311	1.244	-1.362	0.173	77.780	0.180
	Unlisted	3	-13.204	2.979	16.183	-1.604	0.109	100.000	0.250
Return on Equity	Listed	9	15.961	20.102	4.141	-1.125	0.260	55.560	1.000
	Unlisted	3	17.865	0.591	-17.273	0.000	1.000	66.670	1.000
Operating Efficiency									
Sales Efficiency	Listed	9	0.839	1.782	0.942	-2.547	0.011*	88.890	0.039*
	Unlisted	3	1.184	4.636	3.452	-1.604	0.109	100.000	0.250
Net Income Efficiency	Listed	9	1.274	1.618	0.345	-0.889	0.374	77.780	0.180
	Unlisted	3	2.674	-2.829	-5.504	-1.604	0.109	0.000	0.250
Output									
Real Sales	Listed	9	0.822	1.740	0.919	-2.192	0.028*	77.780	0.180
	Unlisted	3	1.185	3.932	2.747	-1.604	0.109	100.000	0.250
Employment									
No. of Employees	Listed	9	18086	16893	-1193	-1.125	0.260	66.670	0.508
	Unlisted	3	1004	909	-95	-1.342	0.180	100.000	0.500
Solvency									
Debt-Equity Ratio	Listed	9	0.820	0.563	-0.257	-1.599	0.110	77.780	0.180
	Unlisted	3	-1.460	-1.451	0.009	-0.535	0.593	33.330	1.000
Interest Cover Ratio	Listed	9	7.942	21.659	13.717	-2.547	0.011*	88.890	0.039*
	Unlisted	3	-1.621	6.599	8.220	-1.604	0.109	100.000	0.250
Proprietary Ratio	Listed	9	0.378	0.374	-0.004	-0.534	0.594	33.330	0.508
	Unlisted	3	-0.505	-0.241	0.264	0.000	1.000	66.670	1.000
Long-term Debt Ratio	Listed	9	0.160	0.128	-0.032	-1.067	0.286	66.670	0.508
	Unlisted	3	0.501	0.227	-0.275	-0.535	0.593	66.670	1.000
Stock Indicators									
Earnings Per Share	Listed	9	208.704	26.946	-181.758	-0.652	0.515	77.780	0.180
	Unlisted	3	-295.151	35.164	330.315	-1.604	0.109	100.000	0.250
Book Value Per Share	Listed	9	113.428	15.838	-97.589	-0.178	0.859	66.670	0.508
	Unlisted	3	143.651	90.105	-53.546	-1.069	0.285	33.330	1.000
Dividend Payout Ratio	Listed	7	24.218	24.521	0.302	-0.169	0.866	42.860	1.000
	Unlisted	0	-	-	-	-	-	-	-

*Significant at 5% level.
 Source: Computed.

Table 5

Summary of Comparison of performance changes in Variables between Listed and Unlisted Sample

Variables	Listing Status	N	Mann-Whitney Rank-Sum test					
			Absolute Performance			Relative Performance		
			Change Method			Change Method		
Average Rank	P-Value	H _a	Average Rank	P-Value	H _a			
Profitability								
Operating Profit Margin Ratio	Listed	9	5.22	0.033*	Accepted	8	0.013*	Accepted
	Unlisted	3	10.33			2		
Net Profit Margin Ratio	Listed	9	5	0.013*	Accepted	7.89	0.021*	Accepted
	Unlisted	3	11			2.33		
Return on Capital Employed	Listed	9	5.33	0.052	Rejected	8	0.013*	Accepted
	Unlisted	3	10			2		
Return on Total Assets	Listed	9	5	0.013*	Accepted	8	0.013*	Accepted
	Unlisted	3	11			2		
Return on Equity	Listed	9	6.67	0.782	Rejected	7.56	0.079	Rejected
	Unlisted	3	6			3.33		
Operating Efficiency								
Sales Efficiency	Listed	9	5.78	0.229	Rejected	6	0.405	Rejected
	Unlisted	3	8.67			8		
Net Income Efficiency	Listed	9	7.56	0.079	Rejected	8	0.013*	Accepted
	Unlisted	3	3.33			2		
Output								
Real Sales	Listed	9	5.89	0.309	Rejected	6.11	0.518	Rejected
	Unlisted	3	8.33			7.67		
Employment								
No. of Employees	Listed	9	6.44	0.926	Rejected	6.89	0.518	Rejected
	Unlisted	3	6.67			5.33		
Solvency								
Debt-Equity Ratio	Listed	9	6.22	0.644	Rejected	6.33	0.782	Rejected
	Unlisted	3	7.33			7		
Interest Cover Ratio	Listed	9	6.78	0.644	Rejected	8	0.013*	Accepted
	Unlisted	3	5.67			2		
Proprietary Ratio	Listed	9	6.89	0.517	Rejected	8	0.013*	Accepted
	Unlisted	3	5.33			2		
Long-term Debt Ratio	Listed	9	6.33	0.782	Rejected	6.33	0.782	Rejected
	Unlisted	3	7			7		
Stock Indicators								
Earnings Per Share	Listed	9	5.56	0.116	Rejected	7.78	0.033*	Accepted
	Unlisted	3	7			7		
Book Value Per Share	Listed	9	6.89	0.518	Rejected	6.89	0.518	Rejected
	Unlisted	3	5.33			5.33		
Dividend Payout Ratio	Listed	7	4	-	-	4	-	-
	Unlisted	0	0			0		

*Significant at 5% level.
 Source: Computed.