ABSTRACT

Soon after becoming an independent country, the planners adopted strategies for a self reliant and economically independent India. It called for heavy investment in infrastructure hence the concept of Public Sector Undertakings (PSUs) emerged. Since 1947 these PSUs have been playing a major role in Indian economy; but they did not perform as expected in a corporate world. The scholars were and still are divided on the performance measures of PSUs. Some maintain that the PSUs were not established to generate revenue or make surplus but to serve the society while the other argue that PSUs have no right to waste the hard earned money of tax payers. The debate continued and the government in the year 1991 started opening up its economy and giving up protection to PSUs in some form or the other. It started taking out some of its share and selling it to public, generally termed as disinvestment.

The researcher made an attempt to find out if the disinvestment resulted in the desired objective or not. The performance of PSUs after the disinvestment and has used established measures of financial performance like ratios, return on assets, return on investment and other similar financial indicators to arrive at conclusions.

The thesis has been divided into seven chapters. First chapter provides background and evolution of Public Sectors Undertakings in India. It is followed by the contribution of PSUs in Indian economy and history of PSUs. Thereafter, a brief description of methodology for disinvestment has been discussed. In Chapter II background of disinvestment and the need for disinvestment, rationale for disinvestment and major Policy Guidelines have been discussed. These guidelines include bidding procedures, global scenario and World Bank Guidelines. The important features of Disinvestment Commission have also been discussed in this chapter.

In Chapter III survey of literature has been provided. This section, first explain how has the survey of literature been organised and then it talks about economic and political issues and the historical perspective. Governments at central level ahs played major role in the disinvestment process. Some governments have supported the move while some have opposed. Accordingly the pace with which disinvestment drive has moved reflects the form of government and its thinking. Hence the disinvestment during the period of various governments has been
discussed in details. The period, importantly includes Congress led government, United Front Government Period and BJP Government Period. The chapter also discusses post sale related issues of select PSUs and post closing adjustments. This has enabled the researcher to identify the research gaps. At the end of this chapter summary of literature review has been provided. In chapter IV the Research Methodology has been discussed. It includes introduction to research methodology, statement of problems and objectives of study, sampling procedure and justification of the sample, hypotheses and testing procedure, methodology of data collection, analysis and presentation. Chapter V analyses problems and prospects of disinvestment, major issues, and employees related issues and legal issues. In chapter VI, critical analysis of prospects of disinvestment has been discussed. Economic analyses of select PSUs, critical analysis of select PSUs and major problems resulting from disinvestment have been discussed. Thereafter hypotheses have been tested using appropriate tools. In chapter VII, conclusion and suggestions have been given.

Brief account of each chapter is given below.

**Introduction:**

In pre-independence era, there were hardly any "Public Sectors" in our economy. Indian Railways, The Post & Telegraph, The Port Trust, The Ordnance and the Aircraft Factories and a few more Government controlled undertakings were there in the name of PSUs. After independence, India adopted the road of planned economic development through Five year plans. In this India opted for dominance of the Public Sector firmly believing that political independence without economic self-reliance would not enable the Government to fulfill the aspirations of the countrymen. The passage of Industrial Policy Resolution of 1956 and adoption of socialist pattern of society as the national economic goal of the country built the foundation of the dominant public sector as we see it today. It was believed that a dominant public sector would reduce the inequality in the distribution of income and wealth and advance the general prosperity of the nation. During all five year plan periods the PSUs emerged as major economic entities of the country. The investment in public sector enterprises grew from Rs. 29 Crore in 5 PSU on 01.04.1951 to Rs.2,52,554 Crores in 240 PSUs on 31.03.2000 and to
the tune of Rs. 5,55,740 crores in 2009. This shows how important PSUs were for the government.

Public Sector Undertakings (PSUs), were given a special role in India's planned economy, grew both in terms of numbers and investment for over four decades from the early 1950s. At the commencement of the First Five Year Plan there were five PSUs with a total investment of Rs. 29 crores. At the end of the Seventh Plan in 1990; there were 244 PSUs and the investment in them had gone up to Rs. 99,329 crores. Although disinvestments had started from the early 1990s, at the end of the Eighth Plan in 1997, investment had soared to Rs. 213,610 crores. At the end of the fiscal year 2000-01, PSUs had a total investment of Rs. 274,114 crores. The PSUs made a significant contribution to industrial production, 100 percent in lignite, over 80 per cent in coal, crude oil and zinc, almost 50 percent in aluminum and over 30 per cent in finished steel.

In terms of profitability, the PSUs showed diverse patterns. In 2000-01, 122 enterprises made a profit with the top 10 among them - giants such as the Oil and Natural Gas Corporation (ONGC), the National Thermal Power Corporation (NTPC), the Indian Oil Corporation (IOC) and the Videsh Sanchar Nigam Limited (VSNL) – accounting for close to 70 per cent of the total net profit of Rs. 19,604 crores. Sector-wise, petroleum, power and communications contributed to 60 per cent of the profits. During that year, there were 111 loss-making enterprises with a total loss of Rs. 12,839.00 crores.

The major contributors to the losses were Hindustan Fertilizer, the Fertilizer Corporation of India (FCI), Bharat Cooking Coal, and some other enterprises dealing with coal. The return on investment of all PSUs taken together remained low - post-tax profitability being only about 5 per cent on capital employed. According to reports "The public sector in India, which was perceived to be the vehicle of speedy economic development, has run into rough waters. It not only failed to produce surpluses which it was expected to generate for future growth, but the return on investment remained poor. "The question that is examined is whether disinvestment and privatisation can lead to better results."
Disinvestment Background and rationale:

As the PSUs did not result in desired objective as perceived by many, and also the economy at international level was opening up, the government started the process of loosing some of its control on PSUS by disinvesting and giving part of ownership to private persons. Looking at the year 1970 the performance of most of the public enterprises was far below the expectations. The weakness and defects of public enterprises started manifesting with grave danger to Government and economy in many countries, with no solution in sight. By the mid 1980 globally the political opinion was veering round to the view that the proportion of GNP due to Government economic activity should be reduced to the extent possible and business activities should be left to private sector as far as possible. During the 1980s, collapse of the socialist economy of the Soviet Block, introduction of economic reforms by Russia, East European countries and China knocked the bottom out of protagonists of Government intervention in every commercial activity for the benefit of the masses. The Industrial policy of 1991 started the process of delicensing and except 18 industries, Industrial licensing was withdrawn. The market was opened up to domestic private capital and foreign capital was provided free entry up to 51 % equity in high technology areas. The aim of economic liberalisation was to enlarge competition and allowing new firms to enter the market. Thus the emphasis shifted from PSEs to liberalisation of economy and gradual disinvestment of PSEs. When the crises of foreign debt services was at its peak, a paradigm shift of Government's economic policy orientation originated in 1991 which was a turning point in this regards.

Because of the current revenue expenditure on items such as interest payments, wages and salaries of Government employees and subsidiaries, the Government was left with hardly any surplus for capital expenditure on social and physical infrastructure. Whereas the Government should have been spending on basic education, primary health and family welfare, huge amounts of resources are blocked in several non-strategic sectors such as hotels, trading companies, consultancy companies, textile companies, chemical and pharmaceutical companies, consumer goods companies, etc. Not only this - the continued existence of the PSEs was forcing the Government to commit further resources for the sustenance of many non-viable Public Sector Enterprises.
Because of burgeoning revenue deficit in Central budget year after year on account of current revenue expenditure on items such as interest payments, wages and salaries of Government employees and subsidies, the Government was left with hardly any surplus for capital expenditure on social and physical infrastructure. Huge amount of public resources were blocked in several non-strategic PSEs giving meager return Government is forced to commit further resources for sustenance of many non viable PSEs in absence of exit route. Above all it had to service huge amount of outstanding debt before any money was available for investment in infrastructure. All these Government economic woes led to an obviously straight forward option of divestment of Government stake in PSEs.

Various methods of disinvestment were devised and adopted by the government. Among others it included policies on selection of bidders, determination of reserve price, offer for sale, sale of residual equity by the auction method, strategic sale, offers for sale, auction method and valuation.

A very important development that took place in this direction was the constitution of Disinvestment Commission which made many recommendations through its various reports.

It suggested Strategy and Issues in its report submitted in December, 1996, while underlining the importance of the subject of valuation, discussed three basic approaches to valuation like Discounted Cash flow (DCF), Relative valuation and Net asset value.

Survey of Literature;

Articles, research papers, reports from various committees including those tabled in the parliament, news paper reports and debates in both houses of parliament have been studies to cover the work done by other researchers in this area. In all 166 such references have been quoted. In this chapter efforts have been made to study the research work of various scholars on the subject. The study also includes refereed journals, books, news papers and periodicals and business magazines such as the Business Standards and Business Today. Political commentary from various sources including the library of the parliament and other sources
have been scanned. A perusal of work done by the learned scholars shows that much has been researched on contribution of public sectors, pros and cons of having them in the economy or not. The social aspect of their existence too has been elaborated. But the effect of disinvestment on sectors has not been quantitatively measured like in which direction their stocked moved. What was the impact on their Price Earning Ratio and for that matter on many financial parameters which are considered as nerves of any organization? Hence the researcher thought it fit to study this rather less explored area and efforts have been made in this direction.

The articles reviewed by the researcher so far more or less confirm that no study has been conducted to find out the effect of disinvestment from financial angle especially with reference to improvement in ratio as a measure of financial analysis. Hence the researcher could find a research gap which has been tried to be filled in through this research. How has the researcher tried to fill in this gap, has been done has been discussed in the subsequent chapter on research methodology.

Research methodology:

Survey of literature has established that there exists a gap in the researches carried out by various learned scholars. Majority of them have heavily relied on the theatrical construct and financial information of the firms has rarely been sued to measure the effect of disinvestment. Adequate efforts have not been made to find out what happened in the market prior to the announcement of disinvestment and after the announcement. Following objectives were outlined for this research.

(i) To study and measure the profitability of PSUs after and before disinvestment using ratio as a measure in analysis in general and ratio analysis of specific sectors
(ii) To study the return on total assets pre and post disinvestment
(iii) To study the return on Capital Employed of PSUs
(iv) To study the return on shareholder's equity of PSUs
(v) To study the Return on Investment (ROI) of PSUs in pre and post disinvestment scenario
(vi) To test the hypothesis in respect of above and conclude
The problems and prospects of disinvestment in PSUs can be studied from many angles. One can conclude based on the related researches conducted in the area and the critical analysis of experts reported in various journals, newspapers and government reports. However, relying on the published figures in the form of audited financial statements and drawing conclusion from these figures in the form of accepted financial analysis methods have been considered as objective basis of arriving at conclusion. Hence the present research in general aims at making profitability analysis of selected Indian Public Sector Enterprises - before and after disinvestment. It takes into account the impact of economic reforms measures introduced by the Government of India and aims at examining the operational efficiency and profitability of selected Indian Public Sector and to explain the trends in profitability of the select Indian Public Sector in pre and post disinvestment scenario.

Data was collected from one sources and that is secondary. The main theoretical source has been the RBI annual reports, FEMA / FERA Acts, RBI Bulletins, Disinvestment Manuals, Annual Reports of Companies, CMIE publications, Economic Survey, Budget, News letters of Banks, Occasional papers from RBI economic department, Research papers published in various magazines, Trade Journals, News papers clippings, Text Books on International Financial Management the government reports. Main source for financial information has been the annual reports of the sectors studied.

**Database:** Information was collected from the PROWESS database for financial ratios and also from “Database of BS1000, India's Corporate Giants” published by Business Standard in December 2007. It is the research study of top 1000 companies of India by the Business Standard magazine. Quota sampling is used for selection of sample size. The population is first segmented into mutually exclusive sub-groups and then the chosen were Textiles, Engineering, Pharmaceuticals, Chemicals, Consumer durables, Automobiles, Cement, Steel and Information Technology. Then, judgement is used to select the top 10 units/companies from each segment based on the assumption that top companies would be engaged in active management of foreign exchange exposure and expected to get proper responses to the questionnaire. It is this second step, which makes the technique one of non-probability sampling. The advantages of quota sampling are the speed with which information can be collected, the lower cost of doing so and the convenience it represents. (Business Standard, December 2007)
H01: Post disinvestment PSUs have not made desired progress
H02: Post disinvestment return on profitability of PSUs has not improved
H03: Post disinvestment return on capital employed of PSUs has not improved
H04: Post disinvestment return on equity of PSUs has not improved
H05: Post disinvestment return on investment of PSUs has not improved

After financial statements were collected, important ratios were calculated taking pre and post disinvestment scenario. The important ratios have further been analysed for specific sectors. Based on the calculation of ratios and the result thereof, the hypothesis have been tested and presented.

Having calculated the ratios of select PSU in the pre and post disinvestment scenario, statistical tests were applied to ascertain if the findings truly reflect the changes or these are by chance only. The relevant tests in this regards are F Ratios and their significance has been tested at 95% level of confidence. First the effect has been measured then tested sector-wise. In most the cases the results have been tested on monthly basis too.

Analysis

The PSU disinvestment programme, to begin with, merely attempted to raise revenue for the government as a part of a soft option to contain its fiscal deficit from becoming unmanageable. The stock market in India has not been an effective instrument to raise investment resources for private business enterprise let alone public sector investment. There are few takers in the Indian private corporate sector who are in a position to take advantage of PSU disinvestment. They are neither willing nor able to take over the management even profitable PSUs. They do not have the funds, technological tools or management skills for running the giant industrial and commercial undertakings in the public sector.

The ability of the PSUs to face up to the hostile competition posed by the TNCs has thus been crippled. The position of not only PSUs but of even the private Indian domestic corporations has also been gravely weakened. This has helped the TNCs to maximise the profitability of their operations in India and take over the PSUs cheaply. The sale of the equity of the Gas Authority of India and the sale of the Modern Foods company in the public sector by the
Hindustan Lever a subsidiary of Lever Brothers, a TNC and the privatisation of the management of Indian Airlines emphasizes this position very well.

Disinvestment schemes devised from time to time to raise substantial revenues for the government by selling the equity of PSUs has obviously lost its charm for the self-styled economic reformers in the government of India, according to Najudappa (1998) The idea of the creation of a "special purpose vehicle" for the holding of the government equity in PSUs, before their sale at a reasonable price as well as arrangements for buy back and cross holdings by PSUs which was toyed with for sometime, has also been dropped. The official policy has now been geared for the outright sale of PSUs to the TNCs. The talk of the, "drain on the fiscal resources" of the government because of the setting up of the PSUs is, of course, a myth which has been assiduously spread to pave the way for the privatisation-globalisation process to make unhindered headway. There really are not any valid economic or social welfare reasons in official policy making but ideological preference for privatisation of the economy which the ruling elite in India has now accepted and is vigorously pursuing.

It is a simplistic view of the role of public enterprise in economic development and the principles that should govern the measurement of its efficiency that the yardstick of commercial profitability alone should be considered. The fact must be reckoned with that while public enterprise should operate in such a way as to augment public savings, they have also to put up with planned losses in order to provide essential goods and services to the mass of the people which the private enterprises, guided by only the profit maximization motive, will not do. PSUs indeed provide relatively cheap inputs to the private sector and thus help the generation of surpluses in the economy. The point is that PSUs may not directly generate financial surpluses. But those who make large profits by using subsidized inputs provided by the PSUs to them should be required to contribute a fair part of these profits by way of taxes and other savings instruments to augment resources for stepping up overall investment for economic growth according to right order of social priorities. It is indeed wrong mindlessly to flog the PSUs. The easy path of raising the prices of goods and services provided by the PSUs in order to extract surpluses for investment may tend in many cases to be counterproductive and self-defeating. Returns from PSUs can be enlarged meaningfully only by improvements in the efficiency of their operations and fuller utilisation of their capacity which should not be
blocked by imports that are competitive to indigenous production capacities, both in the public and private sectors.

One may conclude that the disinvestment posed some major challenges special with reference to employees as private sector never wanted a huge wage bill to be paid as it was sure to get the same work done with far lesser manpower partly due to efficiencies and partly by exploiting them. This resulted in large litigations. All these issue ultimately affected the bottom line that is the profitability which we have discussed subsequently

**Critical analysis**

Critical analysis of prospects of disinvestment has been carried out with the help of qualitative data. Profitability analysis, return on investment and return on almost all financial parameters has been analysed in pre and post disinvestment era. Following parameters were used in arriving at the conclusions.

**(A) Return on Total Assets**

1. Earnings before depreciation, interest and tax to Gross Total Assets called Gross Surplus Ratio (GSR)
2. Earnings before interest and tax to Total Assets (EBIT/TA)
3. Operating Cash Flow to Gross Total Assets (OCF/GTA)
4. Profit After Tax to Total Tangible assets (PAT/TTA)

**(B) Return on Capital employed**

1. Retained cash flow to Capital employed called Cash Flow Ploughed Back Ratio (CFPBR)
2. Net Profit Before Interest and Tax to Capital Employed (NPBIT/CE)

**(C) Return on Shareholders' Equity**

1. Profit After Tax to Shareholders' Equity (PAT/SHE)
2. Operating Cash Flow to Shareholders' Equity (OCF/SHE)

3. Earnings Before Interest and Tax to Interest Charges (EBIT/Fixed Interest Charges)

The analysis of the above profitability ratios of selected public sector industries across various sectors during before and after disinvestment. Among others, it shows that the gross profit ratio of Steel industry reveals an increasing trend in, the pre-disinvestment period was 2.11 in 2007-08 (the lowest range) and indicates 7.53 in 2008-09 as the highest range barring 2000-01 which was 2.11. It implies gradual increase in gross profit to a limited extent. The post-disinvestment shows 2.84 in 2001-2002 as the lowest and 13.20 in 2005-06. The average of this ratio is 3.65 in the pre-disinvestment period, whereas in the post-disinvestment period the average of this ratio is 7.20. This shows that the gross profit ratio has improved in the Post-disinvestment period. However, this was not significant as per 't' value. While considering the whole period, the average of this ratio refers to 5.42. The high value of the two periods reveals more fluctuations in this ratio in the pre and post disinvestment period. The compound annual growth rate of this ratio of Steel industry for the two periods is referred to as 8.05 in pre-disinvestment period and 9.74 in the post-disinvestment periods.

In Minerals and Metals industry, the gross profit ratio is ranging from 0.10 in 2001-02 to 24.32 in 2007-08 barring - 0.41 and - 0.77 respectively for the pre-disinvestment period. For the post-disinvestment period the Gross Profit ratio ranged between 14.27. The average of this ratio before disinvestment is 6.63 and 21.20 for the post-disinvestment period which indicates that there is a significant improvement in the gross profit ratio of Minerals and Metals industry during post-disinvestment period which is found significant at 1 % level. The average of this ratio for the whole period is 14.30 and 09.35 respectively for pre and post disinvestment period. The average growth for pre and post disinvestment period in this industry was 6.7 and 3.9 respectively.

The range of gross profit ratio in Coal and Lignite industry is 1.71, the lowest being 9.10 and the highest for the pre-disinvestment period barring 2001-02 and 2007-08 which shows -4.88 and 5.66 respectively. The lowest and highest range of gross profit ratio is 7.40 in 2005-06 and 29.20 in 2007-08 for the post-disinvestment period. The average of this ratio is 3.80 and 15.93
in the pre and post disinvestment period respectively. The average of this ratio of Coal and Lignite is marked with significant improvement in the post-disinvestment period.

The scenario of power sector reflects that the gross profit ratio in the Power sector in the pre-disinvestment period is 2.27 as against 6.94 in 2001-02 and 5.00 in 2007-08 during post-disinvestment period. The average of this ratio before disinvestment was 6.57 against 5.79 in the post-disinvestment period. The mean difference between gross profit ratio in the pre-disinvestment and post-disinvestment was found to be significant at 5% level. For the whole period the average of this ratio computed was 1.90. The decrease in gross profit ratio may be due to the reason that the Power industry's operational efficiency was not satisfactory in the post-disinvestment period. The average growth for pre and post disinvestment period in this industry was 2.09 and 3.01 respectively.

In Petroleum industry, the gross profit ratio ranged between 9.20 and 14.60 in the pre-disinvestment period whereas it ranged between 8.91 in 2001-02 to 13.40 in 2007-08 in the post-disinvestment period. The average of this ratio of petroleum industry stood at 11.88 against 11.04 in the pre-disinvestment and post-disinvestment periods respectively. For the whole period the average of this ratio was 11.46. Both pre and post-disinvestment periods registered more consistency in this ratio. The compound annual growth rate in this ratio before disinvestment was 0.81 against 2.49 in the post disinvestment period.

The overall analysis of statistical values of gross profit ratio for these industries suggests that among all the selected industries under review, the difference in mean values between before and after disinvestment was the highest in Minerals and Metals followed by Coal and Lignite and then Steel. All the three remaining industries registered lesser improvement in this ratio in the post-disinvestment period. Thus it is clear from the above analysis that the industries viz. Steel, Minerals and Metals and Coal and Lignite's had a better management in post-disinvestment period than the other industries.

Similarly all ratios have been calculated and discussed for all industries studies which followed over all analysis in pre and post disinvestment scenario.
Steel Industry - After Disinvestment

Here the impact of some parameters of the company's position and performance on the profitability related to post disinvestment period (2001-02 to 2007-08) by computing Karl Pearson's correlation co-efficient between the profitability measure and the selected ratios indicating the company's position and performance has been studies. Results of steel industry shows that the correlation co-efficient between CR and ROI is 0.414. It unveils that there is a low degree of positive association between the two variables, profitability and CR. The correlation Co-efficient value is found to be insignificant at 5% level. The correlation Co-efficient between QR and ROI is 0.570. It means that there is a moderate degree of positive association between QR and ROI. The correlation co-efficient is found to be insignificant. There is no association between CITR and profitability which is known through the value of correlation co-efficient which is -0.001. The correlation co-efficient is also insignificant at 5% level. The co-efficient of correlation between T A TR and ROI worked out to 0.485 which establishes the fact that there is a moderate degree of positive association between profitability and T A TR. The coefficient of correlation is insignificant at 5% level. While analysing the association between CETR and ROI the table discloses the correlation co-efficient at 0.02002 which depicts there is a very low degree of positive association between CETR and profitability. The correlation co-efficient between FTTR and ROI shows -0.016 which uncloaks the truth that there is very low negative association between FTTR and ROI.

From the above analysis, it can be inferred that out of six ratios used for correlating with ROI, five ratios viz. CR, QR, CITR, T A TR, CETR showed positive association while the remaining FTTR displayed absence of association in the pre-disinvestment period while the post disinvestment period's performance is as follows: All the six selected ratios except CITR and FTTR, registered positive association viz. CR, QR, TATR and CETR. There was negative association between FTTR and ROI. The association between CITR and ROI was absent.

Minerals and Metals Industry - Before Disinvestment

The correlation co-efficient between ROI and CR is 0.219 in Minerals and Metals industry. It reveals that there is a low degree of positive association between current ratio and profitability. The value of correlation co-efficient is found to be insignificant at 5% level. The next ratio under analysis is Quick Ratio which indicates there is a moderate degree of positive association
between ROI and QR whose value is 0.532 which is insignificant at 5% level. The correlation co-efficient between CITR and ROI is 0.625. It discloses that there is a moderate degree of positive association between profitability and CITR. It proves that the correlation co-efficient appears to be significant at 1% level. The co-efficient of correlation between CETR and ROI is 0.166. It connotes there is a low degree of positive association between the two variables viz. profitability and CETR. The Co-efficient of correlation between FTTR and ROI depicts moderate degree of positive association of 0.514. It is also insignificant at 5% level.

**Minerals and Metals Industry - After Disinvestment**

In Minerals and Metals industry, the correlation co-efficient between ROI and CR is 0.678. This unfolds the fact that there is a moderate degree of positive association between CR and ROI. The correlation is found to be insignificant at 5% level. There is a low degree of positive association between QR and ROI as the correlation co-efficient shows 0.148, which is statistically insignificant at 5% level. The correlation co-efficient between CITR and ROI is -0.024 which unmask the truth that there is very low degree of negative association between the two variables, profitability and CITR. The co-efficient correlation is found to be insignificant. The correlation coefficient between TATR and ROI is 0.756. It uncloaks the fact that there is moderate degree of positive association between TATR and ROI. The correlation co-efficient between FTTR and ROI is -0.120 which implies there is a low degree of negative association between profitability and FTTR. The correlation co-efficient is found to be insignificant at 5% level.

The overall analysis of Minerals and Metals industry indicates that none of the selected ratios had negative association with Return on Investment (ROI) in the pre-disinvestment period. In the post-liberalisation period positive association between ROI and selected ratios was recorded in CR, QR, T ATR and CETR. It was negative in CITR and FTTR.

**Coal and Lignite Industry - Before Disinvestment**

In Coal and Lignite industry, the correlation co-efficient between CR and ROI is 0.258. It unfolds the fact that there is a low degree of positive association between profitability and current ratio. The value of correlation co-efficient is established to be insignificant at 5% level. There is a low degree of positive association between QR and ROI which is shown in the table at 0.111. It exposes that the value of correlation Coefficient is found to be insignificant. The
next ratio under analysis is CITR. Here there is a low degree of negative association between profitability and CTTR whose value is -0.208. The value of correlation co-efficient appears to be insignificant at 5% level. Correlation co-efficient between TATR and ROI is 0.609. It unfolds that there is a moderate degree of positive association between the variables profitability and TATR. The value of correlation co-efficient is found to be insignificant at 5% level. A moderate degree of positive association is brought to light between CETR and ROI which bears the value 0.578. The correlation co-efficient is established to be insignificant. The correlation co-efficient between FTTR and ROI is 0.235. It unveils the truth that there is low degree of positive association between FTTR and ROI. The value of correlation co-efficient is found to be insignificant at 5% level.

Coal and Lignite Industry - After Disinvestment.

In Coal and Lignite industry, the correlation co-efficient, between CR and ROI is 0.0417. It exposes the truth that there exists very low degree of negative association between ROI and CR. The correlation co-efficient is found to be insignificant. There is a high degree of positive association between QR and ROI. The value of correlation co-efficient is 0.853 which is statistically significant at 1% level. The correlation co-efficient at -0.290 between CITR and ROI indicates that there is a low degree of negative association. The correlation co-efficient is found to be insignificant. There is a low degree of negative association between TATR and ROI which is proved through the value of correlation co-efficient at -0.208. The co-efficient co-relation is found to be insignificant. The correlation co-efficient between CETR and ROI is 0.159 which shows that there is a low degree of positive association between CETR and ROI. The correlation co-efficient is found to be insignificant. There is a moderate degree of negative association between FITR and ROI which is known through the correlation co-efficient at -0.566. The correlation co-efficient is found to be insignificant.

From the above analysis it is known that positive association was there in CR, QR, TATR, CETR and FTTR while CITR recorded negative association with ROI in the pre-disinvestment period. In the post-disinvestment period, positive association was there in QR and CETR while the remaining ratios viz. CR, CITR, TATR and FTTR registered negative association with ROI.
**Power Industry - Before Disinvestment**

One of the important among energy producing industries, power shows that there is a moderate degree of positive association between ROI and CR as the correlation co-efficient shows 0.569 which is statistically insignificant at 5% level. The correlation co-efficient between QR and ROI is 0.607. This emphasizes that there is a moderate degree of positive association between QR and ROI which is found to be insignificant at 5% level. There is a low degree of positive association between CITR and FTTR of power industry which is shown in the table as 0.263 which is also found to be insignificant. In case of correlation co-efficient between TATR and ROI, which is laid out at 0.043, there is almost non-existence of association between profitability and T A TR. The value of co-efficient of correlation is found to be insignificant at 5% level. The value of correlation co-efficient between CETR and ROI is 0.568. This shows that there is a moderate degree of positive association between CETR and profitability.

**Power Industry - After Disinvestment**

In Power industry, the correlation co-efficient between CR and ROI is 0.265 which uncertain the truth that there is a low degree of positive association between CR and profitability. The correlation co-efficient is found to be insignificant. The co-efficient of correlation between QR and ROI is -0.097 which unfurls the truth that there is a negligible degree of association between the variables profitability and QR. The value of correlation co-efficient is found to be insignificant. The correlation co-efficient between CITR and ROI is 0.394. This shows there is a low degree of positive association between CITR and ROI. The value of correlation co-efficient is found to be insignificant. The Co-efficient of correlation of power industry between TATR and ROI is 0.568 which discloses that there is a moderate degree of positive association between TATR and profitability. The last ratio under discussion, establishes the association between FTTR and ROI at -0.594, which means that there is a moderate degree of negative association between profitability and FTTR.

The scenario of Power industry before disinvestment was as follows:

CR, QR, CITR and CETR recorded positive association with ROI whereas no association was recorded in TATR and FTTR with ROI. In the post- disinvestment period positive association with ROI was recorded in CR, CITR, T A TR and CETR. It was negative and negligible association with ROI in FTTR and QR respectively.
Petroleum Industry - Before Disinvestment

In petroleum industry, the correlation co-efficient between current ratio and ROI is 0.846. It unmasks that there is a high degree of negative association between profitability and current ratio. The value of correlation co-efficient is found to be significant 5% level. Secondly, there is a high degree of negative association between QR and FTTR as the correlation co-efficient shows -0.853.

Petroleum Industry - After Disinvestment

In Petroleum industry, the correlation co-efficient between current ratio and ROI is 0.315 which explains that there is a low degree of negative association between CR and profitability. The correlation co-efficient is found to be insignificant. There is a moderate degree of negative association between QR and ROI which shows that there is a low degree of negative association between profitability and CTTR. The correlation co-efficient is found to be insignificant. The correlation co-efficient between TATR and ROI is 0.733 which displays the information that there is a high degree of positive association between TATR and ROI. The correlation co-efficient between FTTR and ROI is 0.280 which reveals the fact that there is a low degree of positive association between FTTR and Profitability. The correlation co-efficient is found to be insignificant at 5% level.

From the above analysis it is clear that during pre-disinvestment period, positive association with ROI was conspicuous in CTTR, TATR and CETR whereas it was negative in CR and QR. In case of CETR it showed negligible association with ROI. In the post-disinvestment period 3 ratios viz. T A TR, CETR and FTTR recorded positive association with ROI while the remaining CR, QR and CTTR recorded negative association with ROI. Chemicals and Petrochemical Industry - Before Disinvestment

Chemicals and Petrochemical Industry - After Disinvestment

In Chemicals and Petrochemical the association between CR and ROI is at the lowest positive as the correlation co-efficient is shown at 0.181 which is also statistically insignificant. The Correlation co-efficient between QR and ROI is 0.250 which throws some light that there is a low degree of positive association between profitability and QR. The Correlation co-efficient is found to be insignificant. The coefficient of correlation between CTTR and ROI is 0.228. It
leaks out the truth that there is a low degree of positive association between the two variables CTTR and ROI which is also statistically insignificant. There is a low degree of positive association between TATO and ROI as the correlation coefficient shows 0.330 which is also statistically insignificant.

Conclusions

Following suggestions are offered to improve the impact of disinvestment of public sector enterprises. Mere disinvestment of PEs is not enough. Entire industries have to be restructured to ensure competitiveness. Even for natural monopolies, it will be necessary to introduce regulation and supervision to reproduce effective competition. Otherwise, privatised enterprises may not be able to reap substantial monopoly profits, leaving consumers worse off. Hence, improvements in efficiency do not follow from disinvestment per se, but, from the benefits that increased competition in the market place.

An alternative is to allow foreign capital to bid when PEs are put up for sale. The foreign investors would be in a position to bring in additional technology or management skills. Foreign investment may partly ease the scarcity of foreign exchange. But, a possible area of concern could be the element of control exercised by foreign interests on important sectors of the economy.

To remove the loss of revenue and the survival of uneconomic socially necessary services, special provisions have to be incorporated in various laws.

Disinvestment should not merely mean indiscriminate disinvestment, but efficiency and competitiveness in industry. The debate of disinvestment is not question of government or private control. It is essentially a question of competitiveness. It is a formidable task requiring shared political leadership and vision.

Evidence suggests that efficiency gains that are needed for improving a country's fiscal condition will materialise only if disinvestment is accompanied by extensive industrial restructuring. This will be best served if the process is allowed to evolve in a phased manner over a period of time.
Keeping in view the above observations relating to the study, the following measures are suggested which would go a long way to improve the profitability of Indian Public Sector Enterprises.

It is essential to have objective performance appraisal criteria for every public sector undertaking. For this purpose, the best way will be to introduce performance audit and revise the performance indicators. Commercial performance must take care of all the objectives and goals. For this purpose, a suitable system of financial and non-financial objectives must be developed. Policymaking should be based on realistic assessment of cost. According to present policies, if size of the economy grows, as grows the expenditure on public sector without adequate return an investment. Hence, the need for review of the role of public enterprises in this regard is needed.

In public sector there is invariably over-run of cost and time. This over-run makes the project partly sick at the inception itself. Economy, efficiency and effectiveness in public sector enterprises are need of the hour to improve overall performance of the Indian economy. The incidence of project failure in public enterprises has got to be curtailed.

For revamping the units, there is strong need to assign clear targets to ensure accountability of the management. Necessary budgetary support either equity or loan based should be provided. For each unit, physical and financial targets should be worked out, precisely spelling out how many financial resources are needed from the centre and from raising funds from the public and how much should be these from internal generation of funds. Public borrowings may be suggested for short term and medium term financial requirements of the public enterprises. Also efforts should be made to increase net income contribution of public sector corporations which is necessary to compete with private sector.

The overstaffing and overhead personnel cost is a major reason of disappointing profitability of Public Sector Enterprises. Employment cost should be controlled through improvement in efficiency and productivity of employees. Extra staff should be diverted to other works. All efforts should be made to tune up the efficiency and ensure effectiveness in this regard. On the pattern of All India services, a new cadre in the name of public sector services should be organized in which professional managers should be selected. Members of this service should be posted at the top level management of these corporations in place of bureaucrats.
Audit has been playing an important part as an instrument of financial control in public sector undertakings. Reforms are also required in the existing pattern, system and method of audit. A change in the attitude of the audit control is also highly desirable. The auditors have to be trained especially for the purpose reviews of financial accounts and statements of these enterprises which have been established with different objectives and it must be seen that these aims are fulfilled to the best possible extent. Moreover, a system of efficiency audit is essential. The real need of the hour is efficiency, audit performance appraisal, management audit, achievement assessment in relation to public enterprises along with the built in system of reward cum punishment for managerial efficiency. It would be, of course a desirable for these charged with efficiency audit to be mere forward looking. There is a necessity of reorientation in the approach and efforts should be made to judge the management efficiency properly and far that there should be increased reliance upon the efficiency audit of these enterprises.

The formation of holding companies, to improve financial performance, ensure public enterprises - Government interface, devote greater functional autonomy to subsidiaries, formulate suitable operational policies and attempt greater flexibility in regard to pricing and investment are same measures suggested for efficient functioning of public enterprises. The financial information system, internal and external should be improved in order to strengthen decision making and the one hand and effective financial stability of the public enterprises on the other.

The Bureau of public enterprises should not only act as a clearinghouse of information and ideas relating to the public sector but also constitute a pool of experience which could be shared by various enterprises. It should help also the government in strengthening the working and performance of public sector enterprises.

The management information system should be systematical in order to assist decision making on the one hand and effective control over the public sector undertakings on the other.

The state government may give a cash grant to those undertakings which have accumulated losses and which are likely to improve their profits prospects in future. The central government assist for some sort of cash grants say consessional tax, less power tariff etc to revamp the already loss making units. Another way of helping out the losing concerns is to reconstruct their capital structure, including writing off the capital to the extent of over capitalisation.
Some of the public sector undertakings suffer from underutilisation of their capacities because of non-materialisation of expectations of demand. There should be a systematic and scientific market survey so as to assess the demand correctly before a project is conceived.

Many of the public sector undertakings have been characterized by delay in commissioning of their prospects mainly because of governmental delays in decision making. The Government should constitute a committee of secretaries of the concerned departments to expedite the setting up of projects in public sector, once they are planned and conceived by the government.

A control mechanism, based on initial evaluation of expectation, is possibly best suited for public enterprises. The evaluation of these enterprises should be based on exclusively on financial targets. The methods of exercising accountability and control in public enterprises, currently used, are characterized by a plethora of control agencies. Operating without any real basis for either locating accountability or control has no meaning. The sine-qua for such control that is a set of clearly specified targets and objectives to be handed over to particular unit is absent.

The public enterprises are having poor profitability owing to a variety of factors. One, major factor that has proved to be drag on the efficient functioning of the public enterprises is the multi point interference in its day to day decision making. The idea of Memorandum of Understanding (MoU) represents a genuine desire to give autonomy to the public enterprises management. At the same time, they have to be made accountable for better management and efficient operations of the enterprise. The government should be primarily concerned with overall strategic planning and policy rather than day to day functioning of the enterprises. Its responsibility is to ensure that the public money invested in these enterprises earns an appropriate rate of return and that the functioning of these enterprises is consistent with plan objectives including these related to employment, fair pricing, regional dispersal, of industries and, efficient use of scarce resources. Once the goals have been mutually agreed to, an enterprise should be held strictly accountable for its performance in relation the goal set and there should be an appropriate mechanism for evaluation of performance.

Spell out the mission of the enterprise, derive its broad objectives and obligations and delete objectives which will have to be evaluated with subjectivity.
It is recommended for PSUs to specify objectives which are amenable for performance evaluation and identify possible performance parameters for each of the specific objectives.

Checking the data availability on actual performance with regard to each of the possible performance parameter and specifying performance parameters and their quantifications is a must.

The findings and suggestions are not conclusive as in some cases the performance has improved and in other cases it has not. A close look at the analysis reveals that the factors were beyond disinvestment. Public perception would have played a major role in the change.

Some of the limitations that the researcher could note are that a study of this kind naturally calls for divulging confidential information by companies which was very difficult to get. Therefore, the researcher relied only on secondary data sources which were available in public domain like prowess database and companies balance sheets. The personal views of experts in a formal manner could not be obtained though thesis covers them in many other forms.

Future researcher can be undertaken in the areas covering opinions of experts. An empirical study would also be a possibility. Many other ways of measuring performance of PSUs are available which too can be studied and the effect of PSUs on competition and their social aspect also be studied.