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IMPACT OF DISINVESTMENT ON FINANCIAL PERFORMANCE: A STUDY OF INDIAN PUBLIC SECTOR ENTERPRISES FROM PETROLEUM INDUSTRY

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ABSTRACT

Liberalization has brought out competitiveness and effectiveness through various reforms and strategic thinking in government enterprises. This recognized emergence paved way to disinvestment, expected to enhance the financial performance/profitability of public sector enterprises. In this paper, the comparison has been made between disinvested and non disinvested select central public sector enterprises (PSEs). The extent of difference in the financial performance of the select enterprises has been taken place primarily in terms of profitability over a period of 12 years (1996-2007). Profit test is a conventional test to access the economic efficiency and rate of return (ROR), which is widely accepted measure to determine profitability. The study has been done on the select 15 Indian PSEs which represents the entire sector of petroleum industry. Findings suggest that disinvestment has yielded significant improvement in their performance.

Keywords: *Disinvestment, financial performance, public sector enterprises, Non-disinvested, profitability.*

Introduction

Liberalization has led to the importance of competitiveness, efficiency and effectiveness of strategic thinking, through various reforms in the public sector enterprises (PSEs). The need of disinvestment has been realized virtually in all corners of the world for more than two decades (starting from mid 1980s) to divest state owned enterprises (through privatization programs) to enhance the performance and productivity in the government organizations. It is a process of reducing the involvement of the state in the functioning of the public sector enterprise through privatization of the equity capital. Boubakri and Cosset (1998) state that the analysis of privatization phenomenon in the wide set of developing countries, should allow to determine that privatization is beneficial in the economic environment and institutional setting specific to the country.

The divestment had been realized as an economic necessity at a time when the country (India) was on the brink of economic disaster and facing the threat of being declared insolvent by the external economic community. At that juncture, the Government, *inter-alia*, had initiated the divestment of shareholdings of public sector enterprises (PSEs).

Nagraj (2005) describes profitability, as a yardstick of measuring PSEs performance; it gained

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importance when governments world over started to feel the burden of loss making PSEs on their budget deficits. In India too, this is evident from the importance accorded to financial performance ratios in the Memorandum of Understanding (MoU). By 1993-94, 50 per cent weightage was given to financial profitability (nearly 20% on return on assets, ROA) in the composite score evaluation of targets set under MoU, by almost all PSEs signing MoU's. Boubakri and Cosset (1998) find newly privatized firms' exhibit significant increase in profitability, operating efficiency, capital investment spending, real sales employment level and dividends. They also find the decline in leverage following privatization.

In the analysis, firms' profitability performance is measured using two accounting ratios, namely, return on sales (ROS) and return on assets (ROA) as adopted in several studies in the literature (Boardman and Vining, 1989, 1992; Boubakri and Cosset, 1998; Souza and Megginson, 1999; Megginson et al, 1994). ROS, the profit margin capturing profitability of each rupee of sales, is calculated as profit before tax ratio of sales. ROA, a measure of the ability of the management to convert firms' capital to profits, is defined as profit before taxes as a ratio of total assets. One other profitability performance variable frequently used in the literature is return on equity (ROE). However, ROE cannot be calculated for firms with negative net-worth, a problem that is faced by almost one fourth of total PSEs by 2001.

In this paper the impact of disinvestment of central public sector enterprises (PSEs) has been examined. The comparison has been made to examine the financial and operating performance of the select PSEs. The profitability ratios have been used to estimate the financial and operating performance at firm level. The study has been done on entire 15 Indian PSEs from petroleum industry. The comparison has been made between disinvested and non-disinvested public sector enterprises, based on their financial performance.

The paper has been divided into five sections. Section 1 deals with review relating to the disinvestment and privatization. Section 2 is concerned with literature review pertaining to reforms, privatization and performance measures. The methodology adopted and data collection are discussed in section 3; the major findings are enumerated in section 4. Concluding observations are contained in section 5.

Section 1: Review of Disinvestment and Privatization

The Industrial Policy Resolution of 1991outlined the economic reforms; in fact, every Government annual budget virtually has declared that the privatization goal is to reduce Government ownership to 26% of equity (the minimum equity holding necessary for certain voting powers) in all state-owned firms (except defense, atomic energy, and railways). Disinvestment was initiated by selling a portion of equity shares of selected central public sector enterprises (PSEs) to investment institutions, which were free to dispose off these shares in the then booming secondary stock market. The process, however, came to an abrupt halt when the market collapsed in the aftermath of Harshad Mehta led scam, as the asking prices plummeted below the reserve prices.[4] Since the stock market remained subdued for much of the 1990s, the disinvestment targets remained largely unachieved.

Due to change in Government at the Centre in 1996, led to some rethinking about the policy. A Disinvestment Commission was constituted in 1997 to advise the Government for disinvestment in a particular enterprise, its modalities and the utilization of the proceeds.

The new Government came to power in 1998, preferred to sell large chunks of equity in

4 Though disinvestment was not part of the scandal, the process got somewhat discredited as some officials associated with the policy reforms were found have had an association with Harshad Mehta.

selected enterprises to "strategic" partners – a euphemism for transfer of managerial control to private enterprises. A separate ministry was created to speed up the process, as it was widely believed that the operating ministries are often reluctant to part with PSEs for disinvestment, means loss of power for the concerned ministers and civil servants. The process of disinvestment was initiated by inviting bids, bypassing the stock market (which continued to be sluggish), justified on the grounds of better price realization. Notwithstanding the serious discussion on the utilization of disinvestment proceeds, they continued to be used only to bridge the fiscal deficit.

In the decade following the launch of the privatization program, the Government sold minority shares through a variety of methods including auctions and public offerings in domestic markets, and through global depository receipts in international markets. However, through 1999 the federal Government sold an average of just 19.2% of equity in 40 out of 258 industrial, financial, and service sector firms and majority stakes in none.

Strategic sale in many countries have been controversial as it is said to give rise to a lot of corruption, discrediting the policy process. Aware of such pitfalls, efforts were made to be transparent in all the stages of the process: selection of consultants to advise on the sale, invitation of bids, opening of tenders and so on. Between 1999 and 2003, much greater quantum of public assets were sold in this manner, compared to the earlier process, though the realized amounts were consistently less than the targets (except in 2003).

Nonetheless, there are series of allegations of corruption and malpractices in many of these deals that have been widely discussed in the press and the parliament. Instances of under-pricing of assets, favoring preferred buyers, non-compliance of agreement with respect to employment and retrenchment, and many incomplete contracts with respect to sale of land and assets have been widely reported.

Amid disinvestment and privatization, some new PSEs are also created. For instance, many departmental activities were being corporatised (setting up of BSNL, for instance) with a view to disinvestment. New PSEs are also formed to take up newer activities like road development corporations (promoted by state Governments to execute highways and irrigation projects).

Section 2: Literature Review

Privatization is a process for change of ownership and control (ADB, 2001). Differences in approach and outcome are the prime reasons for this special evaluation study, namely, to provide more comprehensive understanding of privatization and guidance on how it should be managed. The study is a part of the review process of the Asian Development Bank (ADB) for evaluating its operations. No single institutional framework stands out as the best for privatization. Studies show, however, that for privatization to be successful, it is essential to define the roles and powers of participants, and ensure that legal, regulatory, and enforcement mechanisms precede divestment. A cautious approach is dominant and tends to undermine the effectiveness of privatization.

Koen (1998) stresses that privatization has reduced the size of the public sector which is still quite prominent across the economy. He has suggested that privatization alone is not the answer of good governance. Managerial skills, the existence of performance incentives, transparency and a sound legal system are also required.

Nagaraj (2005) opines that it is widely believed that PSEs' respectable profitability ratio (gross profits to capital employed) is mainly on account of the surpluses of the petroleum sector enterprises whose pricing includes an element of taxation. The profitability ratio of PSEs has improved since the 1980s even excluding the petroleum sector enterprises – clear evidence on improvements in PSEs financial performance. But could it be merely due to faster rise in administered prices of PSEs' output (on account of their monopolist position in the domestic market)?

He further states that disinvestment is unlikely to affect economic performance since the state continues to be the dominant shareholder, whose conduct is unlikely to be influenced by share prices movements (or return on equity). Privatization can be expected to influence economic outcome provided the firm operates in a competitive environment; if not, it would be difficult to attribute changes in performance solely or mainly to the change in ownership.

Brooks (1994) has emphasized that there is a major shift in performance of public sector undertakings with special focus on performance of financial aspects. A lot of comparative work has been done in this regard. It is superseded by a distinction between research into new areas at research frontier and research targeted towards improving and developing industrial products and processes of PSEs.

Broadmaan and Vining (1989, 1992) compared the financial performance of private corporations (PCs), PSEs and mixed enterprises, among the largest non-US industrial firms for their analysis. The result showed that on an average ROE of PCs were higher than PSEs and mixed enterprises. PCs generally have higher performance than the rest in terms of profitability and efficiency.

Sheikh (1990) describes that the PSEs have not lived upon their expectations due to variety of factors. In particular, there has been growing concern over their poor financial performance and the consequent financial burden upon developing countries (like India) which is viewed as unsustainable in the long-run.

Bradbury (1999) states that accounting ratios are used to assess the financial performance despite their well-known shortcomings. The prime performance measures are return on equity (ROE), return on assets (ROA) and return on revenue (ROR). Growth in revenue is also measured. Similar measures are employed in major studies that utilize accounting ratios to examine economic performance (Rumelt 1974; Boardman and Vining 1989; Karpoff and Rice 1989). The financial performance, in terms of return on equity, shows a steady improvement during the transition from a Government department to a state owned enterprise (SOE). The mean ROE during pre-SOE period (1985-1988) is 15.5 per cent compared to 24.6 per cent over the SOE period (1989 to 1994).

Jain and Yadav (2005) in their study have measured financial performance of the central PSEs (classified in service and manufacturing groups) in India. Relevant data relating to return on total assets (ROTA) of PSEs indicates that service enterprises have better profitability than manufacturing enterprises during the aggregate period (1991-2003), whereas, return on capital employed (ROCE) is substantially higher than ROTA for manufacturing compared to service PSEs.

In sum, the focus of the most of the studies is based on the comparison of PSEs with private or with multinational enterprises. However, in-depth study related to the impact of disinvestment on financial performance of PSEs was lacking. This study is a modest attempt to judge the performance between disinvested and non-disinvested select PSEs (engaged in petroleum industry) over a period of time. The performance has been judged on the basis of profitability ratios relating to investments namely, return on total assets (ROTA), return on capital employed (ROCE) and return on shareholders equity (ROSE).

Section 3: Research Methodology

The purpose of the study is to examine the performance in terms of profitability of select PSEs (engaged in petroleum industry) over a period of twelve years (1996-2007). The entire time span of twelve years has been segmented into two phases i.e. 1996-2001 and 2002-2007. The first phase (1996-2001) focuses on the foundation and empowerment to public sector enterprises by partially disinvesting. The second phase (2002-2007), is in the nature of threshold to implement a more open and active program of privatization. The main objective of the study is to identify whether there has been an improvement in financial performance of PSEs (of the group as a whole); the disaggregative analysis has been separately carried out for disinvestment PSEs as well as non-disinvested PSEs to ascertain whether the disinvested PSEs have performed better compared to non-disinvested PSEs. Besides, the study also aims at judging whether there has been a significant change in their financial performance during the second phase vis-à-vis the first phase.

The study is limited to the Petroleum PSEs in India, where highest amount of disinvestment has taken place; consisting 15 enterprises in total, out of those 9 enterprises have gone for disinvestment. Time series data has been used for the study. For the purpose of the study, Central for Monitoring Indian Economy (CMIE) prowess database has been used.

Financial performance has been measured in terms of profitability ratios based on investments (assets, capital employed and equity funds). The reason is profitability is a widely accepted measure for assessing the financial performance of the business enterprises. For the purpose of analysis ROR have been computed in three ways: These are a) return on total assets (ROTA), b) return on capital employed (ROCE) and c) return on ordinary shareholders' equity (ROSE) The first two ROR highlight, how efficiently financial resources are deployed by the PSEs; the ROR on the common shareholders' equity indicates the return provided to their equity owners.

To study the trend of financial performance, based on rates of return, the descriptive statistical values and positional values, i.e., mean and median have been computed. The entire set of data has been analyzed by using Statistical Package for Social Sciences version 13.0(SPSS Package) and Microsoft Excel software. To give credence to our findings, we have attempted to use statistical tools, namely, paired t-test to test the significant difference in two phases.

Section 4: Findings

Relevant data of profitability, in terms of rate of returns (RORs) of the sample firms in terms of mean and median values are segregated into three parts-a) return on total assets (ROTA), b) return on capital employed (ROCE) and c) return on shareholders equity (ROSE).

The first two types of RORs have been determined on the basis of operating profits, i.e., earnings before interest and taxes. By precluding effect of financial structure and taxes, these rates focus directly on operating efficiency. The rationale for inclusion of interest is that the RORs exclusively based on pre-tax profits would be an under-estimate as the interest paid to the lenders is excluded from the net profits (in numerator) whereas total capital employed as well as total assets (as a part of denominator) includes borrowed funds.

Further, while ROTA is useful as an overall measure of performance in respect of operating efficiency, ROCE manifests how efficiently funds of owners and lenders are used. Since the sum of capital employed (shareholders' equity/fund + borrowings) is lower than assets, the ROCE, *perforce,* would be higher than ROTA. Shareholders fund comprises shareholders capital plus reserves and surplus minus accumulated losses. The ROCE indicates how efficiently the long-term funds of owners and lenders are being used. The higher the ratio, the more efficient is the use of capital employed.

The real owners of the business are ordinary shareholders who bears all the risk and are entitled to all residual profits after all outside claims including preference dividend are met in full. The profitability of a firm from owners' point of view should, therefore, in the fitness of things, be assessed in terms of the return to the ordinary shareholders equity (ROSE). This ratio under reference serves this purpose. The ROSE is calculated dividing profit after taxes and preference dividends by the average equity fund. ROTA, ROCE, and ROSE have been calculated of the sample PSEs at three levels are: i) all enterprises at aggregate level, ii) disinvested PSEs at aggregate level and iii) non-disinvested PSEs at aggregate level.

Net-worth is reflecting the position of shareholders fund; the negative balance may distort the calculations of return on shareholders fund (ROSE). Hence, the companies incurring negative ROSE due to negative net-worth or negative net-profits have been excluded from the study for that period only. The PSEs excluded are: ONGC Videsh Ltd., Bongolian Refinary Ltd. and Indian

Oil Blending Ltd.

Relevant data contained in table 1 enumerates the improvement in the mean values of ROTA and ROCE in phase-2 compared to phase-1; for instance, ROCE has increased from 18.81 per cent in the first phase to 27.4 per cent in the second phase (app. by 45 per cent); the corresponding values are 12.33 and 15.71 per cent in case of ROTA (increased by 25 per cent). As far as ROSE is concerned, the increase is more than three-fifths during second phase vis-à-vis first phase. Similar conclusions follow, based on median values of these rates of return (Table 3). However, the results of paired t test table 2 finds significant difference in case of ROSE only.

The disaggregative analysis undertaken separately for disinvested and non-disinvested PSEs indicates that the financial performance (based on all three types of RORs) of disinvested PSEs has been better than of non-disinvested PSEs for the entire period as well as two sub-phases of the study. The relevant respective figures for disinvested and non-disinvested PSEs are 25.93 per cent and 14.26 per cent (ROCE), 14.39 per cent and 11.11 per cent (ROTA) and 21.55 per cent and 20.19 per cent (ROSE) for the entire 12 years period of the study (Tables 4 and 5). However, t-test has been observed to be insignificant (Table 6).

The better performance of disinvested PSEs compared to non-disinvested PSEs has also been corroborated by the median values of ROCE and ROSE during the period of the study. However, in the case of ROTA, the median value was higher for non-disinvested PSEs (14.62 per cent), *vis-à-vis*, 13.21 per cent for disinvested PSEs. However, even in case of ROTA, it is important to note that its value was greater for disinvested PSEs in both sub-phases (Tables 7 and 8).

Although the mean rates of return (all 3-sets) of the non-disinvested PSEs are lower than those of disinvested PSEs, the improvement in the financial returns, over-the period, shows better statistics in the case of non-disinvested PSEs (Table 4 and 5). For instance, the ROCE has registered more than 1.5 times increase for such enterprises in the sub-phase two compared to sub-phase one (the figures are 17.03 per cent and 6.61 per cent); the corresponding increase was 0.6 times only in case of disinvested PSEs. Likewise, non-disinvested PSEs have shown nearly 90 per cent increase in ROSE and ROTA during the two sub-phases of the study; the incremental performance rate has been much lower for disinvested PSEs during the period of the study under reference.

In view of better incremental change shown by non-disinvested PSEs during 2002-7 compared to 1996-2001. The paired t test has shown a significant difference in the performance of disinvested PSEs in phase two, vis-à-vis, in phase one at 5% level (in respect of ROCE) and at 10% level (for ROTA and ROSE) (Table 9); however, the difference was insignificant in all three types of RORs in the case of non-disinvested PSEs (Table 10).

In sum, in spite of better rate of change noted for non-disinvested PSEs, the disinvested PSEs have performed better than non-disinvested PSEs throughout the period of the study

Table 1: Mean Values relating to ROTA, ROCE and ROSE of the Sample Public Sector Enterprises (Petroleum Industry) for the years (1996-2007)
(Figures are in percentages)

Years	N	ROTA	N	ROCE	N	ROSE
1996	12	14.90	12	22.29	11	*18.40
1997	11	13.07	11	20.53	11	*15.47
1998	11	14.11	11	22.55	10	*19.10
1999	11	14.33	11	22.78	10	*19.61
2000	12	11.45	12	17.46	12	15.39
2001	13	9.75	13	14.85	12	*13.91
2002	13	11.07	13	17.23	12	*16.93
2003	13	17.73	13	32.19	13	25.08
2004	13	18.29	13	34.31	13	29.32
2005	13	17.87	13	31.01	12	*31.80
2006	11	14.41	11	23.44	11	22.43
2007	9	18.00	9	30.20	9	23.12
1996-2001	13	12.33	13	18.81	13	15.60
2002-2007	13	15.71	13	27.40	13	24.59
1996_2007	13	14.50	13	23.79	13	21.13

Note *ONGC Videsh LTD. (1996-99) Bongolian Refinary(2001,2002) and Indian Oil Blending ltd (2005) have been excluded, because of having negative net-worth.

Table 2: Paired Samples Test of Petroleum Public Sector Enterprises for the Year 1996-2007

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
ROTA	(1996-2001) (2002-2007)	-3.38	10.65	2.95	-9.82	3.05	-1.15	12	0.27
ROCE	(1996-2001) (2002-2007)	-8.59	16.35	4.54	-18.47	1.29	-1.89	12	0.08
ROSE	(1996-2001) (2002-2007)	-8.99	12.28	3.41	-16.41	-1.56	-2.64	12	0.02

Table 3: Median Values relating to ROTA, ROCE and ROSE of the Sample Public Sector Enterprises (Petroleum Industry) for the years (1996-2007) (Figures are in percentages)

Years	N	ROTA	N	ROCE	N	ROSE
1996	12	13.38	12	22.70	11	*18.92
1997	11	11.56	11	16.24	11	*14.76
1998	11	12.92	11	22.17	10	*17.62
1999	11	14.31	11	22.69	10	*20.06
2000	12	11.57	12	17.84	12	15.25
2001	13	9.84	13	16.17	12	*15.66
2002	13	11.60	13	19.60	12	*15.01
2003	13	15.83	13	33.66	13	26.58

2004	13	16.86	13	37.60	13	27.56
2005	13	17.93	13	29.90	12	*27.20
2006	11	11.96	11	22.33	11	22.46
2007	9	18.37	9	26.98	9	22.99

Note *ONGC Videsh LTD. (1996-99) Bongolian Refinary(2001,2002) and Indian Oil Blending ltd (2005) have been excluded, because of having negative net-worth.

Table 4: Mean Values relating to ROTA, ROCE and ROSE of the Sample Disinvested Public Sector Enterprises (Petroleum Industry) for the years (1996-2007) (figures are in percentages)

Years	N	ROTA	N	ROCE	N	ROSE
1996	9	14.23	9	23.45	9	18.66
1997	9	11.28	9	19.92	9	15.53
1998	9	12.69	9	22.05	9	19.23
1999	9	12.49	9	22.06	9	19.48
2000	9	10.37	9	17.61	9	15.96
2001	9	10.04	9	16.76	8	*16.54
2002	9	10.80	9	18.36	8	*19.28
2003	9	20.56	9	39.87	9	31.00
2004	9	21.29	9	42.51	9	33.84
2005	9	20.65	9	37.53	9	28.88
2006	8	12.58	8	22.02	8	15.73
2007	7	16.45	7	29.01	7	21.68
1996-2001	9	11.85	9	20.31	9	17.44
2002-2007	9	17.18	9	32.01	9	25.94
1996_2007	9	14.39	9	25.93	9	21.55

Note: *Bongolian Refinary (2001,2002) has been excluded, because of having negative net-worth.

Table 5: Mean Values relating to ROTA, ROCE and ROSE of the Sample Non-Disinvested Public Sector Enterprises (Petroleum Industry) for the Years (1996-2007) (figures are in percentages)

Years	N	ROTA	N	ROCE	N	ROSE
1996	3	16.93	3	18.80	2	17.23
1997	3	-37.44	3	-51.12	2	15.20
1998	2	20.51	2	24.77	1	17.95
1999	2	22.63	2	25.98	1	20.81
2000	3	14.69	3	17.00	3	13.71
2001	4	9.11	4	10.56	4	8.65
2002	4	11.68	4	14.68	4	12.23
2003	4	11.35	4	14.91	4	11.77
2004	4	11.55	4	15.87	4	19.14
2005	4	11.59	4	16.36	3	40.56
2006	3	19.27	3	27.24	3	40.29
2007	2	23.45	2	34.36	2	28.14
1996-2001	4	6.56	4	6.61	4	11.48
2002-2007	4	12.40	4	17.03	4	21.56
1996_2007	4	11.11	4	14.26	4	20.19

Note: *ONGC Videsh ltd (1996-99) and Indian Oil Blending ltd (2005) have been excluded, because of having negative net-worth

Table 6: t-test of Disinvested and Non-Disinvested Petroleum Public Sector Enterprises For the Year 1996-2007

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Rota 96_07	Equal variances assumed	5.30	0.04	0.68	11	0.51	3.28	4.83	-7.36	13.91
	Equal variances not assumed			0.47	3.28	0.67	3.28	6.96	-17.83	24.39
Roce 96_07	Equal variances assumed	8.77	0.01	1.98	11	0.07	11.67	5.90	-1.32	24.66
	Equal variances not assumed			1.30	3.12	0.28	11.67	8.96	-16.23	39.57
Rose 96_07	Equal variances assumed	0.72	0.41	0.51	11	0.62	1.36	2.66	-4.51	7.22
	Equal variances not assumed			0.40	3.84	0.71	1.36	3.36	-8.12	10.84

Table 7: Median Values relating to ROTA, ROCE and ROSE of the Sample Disinvested Public Sector Enterprises (Petroleum Industry) for the years (1996-2007) (figures are in percentages)

Years	N	ROTA	N	ROCE	N	ROSE
1996	9	12.37	9	22.76	9	18.92
1997	9	10.46	9	16.24	9	14.76
1998	9	12.00	9	22.17	9	17.29
1999	9	12.21	9	22.69	9	19.34
2000	9	10.69	9	17.76	9	18.55
2001	9	9.84	9	18.03	8	*17.99
2002	9	11.60	9	20.86	8	*19.70
2003	9	16.80	9	33.77	9	28.59
2004	9	17.82	9	38.89	9	31.98
2005	9	17.93	9	29.90	9	24.32
2006	8	10.97	8	19.86	8	19.63
2007	7	13.46	7	24.83	7	22.34
1996-2001	9	10.76	9	21.45	9	17.88
2002-2007	9	13.24	9	29.91	9	24.77
1996_2007	9	13.21	9	27.57	9	21.38

Note: *Bongolian Refinary (2001,2002) has been excluded, because of having negative net-worth.

Table 8: Median Values relating to ROTA, ROCE and ROSE of the Sample Non-Disinvested Public Sector Enterprises (Petroleum Industry) for the Years (1996-2007) (figures are in percentages)

Years	N	ROTA	N	ROCE	N	ROSE
1996	3	15.57	3	17.86	2	17.23
1997	3	12.29	3	14.05	2	15.20
1998	2	20.51	2	24.77	1	17.95
1999	2	22.63	2	25.98	1	20.81
2000	3	15.55	3	17.91	3	14.88
2001	4	7.66	4	8.85	4	7.93
2002	4	12.23	4	16.64	4	12.38
2003	4	7.59	4	10.83	4	9.96
2004	4	8.61	4	12.51	4	22.79
2005	4	12.59	4	18.73	3	32.25
2006	3	15.78	3	26.65	3	32.00
2007	2	23.45	2	34.36	2	28.14
1996-2001	4	10.03	4	11.69	4	13.73
2002-2007	4	9.30	4	13.83	4	24.52
1996_2007	4	14.62	4	19.32	4	20.73

Note: *ONGC Videsh ltd (1996-99) and Indian Oil Blending ltd (2005) have been excluded, because of having negative net-worth

Table 9: Paired Samples Test of Disinvested Petroleum Public Sector Enterprises For the Year 1996-2007

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
ROTA	(1996-2001) (2002-2007)	-5.33	7.66	2.55	-11.22	0.56	-2.09	8	0.070
ROCE	(1996-2001) (2002-2007)	-11.70	14.31	4.77	-22.70	-0.70	-2.45	8	0.040
ROSE	(1996-2001) (2002-2007)	-8.50	11.95	3.98	-17.68	0.69	-2.13	8	0.065

Table 10: Paired Samples Test of Non-Disinvested Petroleum Public Sector Enterprises For the Year 1996-2007

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
ROTA	(1996-2001) (2002-2007)	-5.85	18.69	9.35	-35.59	23.90	-0.63	3	0.58
ROCE	(1996-2001) (2002-2007)	-10.42	22.53	11.26	-46.26	25.43	-0.92	3	0.42
ROSE	(1996-2001) (2002-2007)	-10.09	14.84	7.42	-33.70	13.53	-1.36	3	0.27

Section 5: Concluding Observations

The above analysis of profitability aspect of the sample PSEs (engaged in petroleum industry) would seem to suggest that its record of the rates of return on capital employed (ROCE) as well as on shareholders equity (ROSE) is satisfactory, the respective figures being 23.79 per cent and 21.13 per cent for the entire 12 years period (1996-2007) of the study. There seems to be a potential for improvement in the rates of return on total assets (ROTA) by having better utilization of resources.

These findings are notable as well as revealing in that they are contrary to the popular belief that the financial performance/profitability of PSEs is unsatisfactory. The better profitability record of PSEs may be attributed, to the market extent, to the various steps taken by the Government. These include, professionalization of the PSE Boards, periodic performance review by the administrative ministries, signing of MOUs with PSEs, rationalization of manpower through voluntary retirement schemes, technology up gradation etc. Further the government is delegating enhanced powers to Board of Directors of the PSEs to ensure better performance in the new competitive environment from time to time. We believe that these measures seem to have a salutary effect on their financial performance.

As far as the impact of disinvestment on financial performance is concerned, the analysis shows that the disinvested PSEs have performed better than the non-disinvested PSEs during the entire period of the study. It is eloquently borne out by the fact that all three types of rates of return were sizably higher for disinvested PSEs *vis-à-vis* non-disinvested PSEs. Thus, the study shows that disinvestment has positive impact on financial performance of PSEs. However, this difference (statistically) has not been significant.

Viewed from other perspective, the financial performance of non-disinvested enterprises was not unsatisfactory. In fact, the ROSE at 20.19 per cent can be regarded as very satisfactory. This apart, they have shown a better rate of improvement in their all sets of profitability ratios in the phase two (2002-7) compared to the phase one (1996-2001) than those of disinvested PSEs.

It is worth emphasizing that the findings are based on the small set of data pertaining to petroleum industry of PSEs. However, more robust and conclusive results regarding the impact of disinvestment could be derived by considering all PSEs (of all business sectors).

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