Pre-Post Performance Assessment Of Privatization Process In Pakistan

Ahmed Nawaz Hakro* and Muhammad Akram **

The study is designed to compare the operating and financial performance of (before-after) privatization process in Pakistan. A number of performance indicators are used to measure the profitability, efficiency, capital investment, output, employment and leverages. Wilcoxon Rank Test (with its Z-tests) is used to testify the performance indicators both in pre-post privatization scenarios. Insignificant results are documented for profitability, efficiency, output and dividends parameters. No significant or convincing evidence is found which suggest significant change in financial and accounting performance indicators of privatization process in Pakistan.

1.0 Introduction

Privatisation process is started in late eighties in Pakistan with a clear mission statement - "Privatization is envisaged to foster competition, ensuring greater capital investment, competitiveness, and modernization, resulting in enhancement of employment and provision of improved quality of products and services to the consumers and reduction in the fiscal burden". The success of process is widely debated: economists offer several arguments in favour of transferring government run firms and parastatals to the private sector. Other economists feel this may not happen for a number of reasons.

Privatisation results in higher level of efficiency but such claims cannot be substantiated always, e.g. (Alam, 1989), (Beesley, 1997), (Candoy, 1989), (Caves and Christensen, 1980), (CIDA, 1987), (Dotgson, 1987), (Foreman Peck, 1989), (Kemal, 1993. 1996), (Naqvi and Kemal, 1991, 1994, 1998), (Sen, 1992), (Selim, 1988), (Kikeri, Nellis and Shirley, 1992) among others- indicated that in most of the cases privatisation led to improvement in efficiency, but at least in 25 per cent of the cases it did not.

In Pakistan privatisation efforts started in 1988 with different policies. However, it was not until the creation of the Privatisation Commission (PC) on January 22,
1991 that the pace of privatisation picked up. Although the PC's mandate was initially restricted to industrial transactions but by November 1993 it expanded to include Energy (power, oil and gas), Transport (aviation, railways, ports and shipping), Telecommunications, and Banking and Insurance (commercial banks, development finance companies, and insurance companies) etc. 66 numbers of units privatised between 1991 and 1994. By end-1997, the total increased to 92 while by the end-2004; the number stood at 121, and by August 12, 2006 the number reached to 161.

An important question is being raised whether the 17 years process of privatization or transferring state-owned enterprise (SOE) to private ownership significantly improves operating and financial performance. Whether significant differences in profitability, output, operating efficiency, leverage, capital investment and employment variables exists in post-privatization? Consequently, the objective of this study is to assess the operating performance of privatization processes of Pakistan in its pre-post scenarios. To the best of authors' knowledge, no study is conducted in Pakistan to assess the pre-post performance of privatization process. The study conducted in Pakistan privatization context largely focuses case studies approach or partial analysis of one sector/industry with limited number parameters of efficiency. The results are mixed, sometimes inconclusive and these studies are too old to rely on. Largely, these studies suffer from limited availability of observations or transactions, relying on limited variables and limited efficiency parameters etc. This study is designed to assess the process based on larger number of indicators of performance and large number of observations of transactions to compare both pre-post scenarios of privatization process in Pakistan.

The rest of the paper is organised in sections, section II consists of literature review, Section III Methodology, Section IV- results and discussion and Section V conclusion and policy recommendations.

II. Literature Review

(Paul Starr, 1988) recognizes two approaches of privatization: radical and conventional-with some subtle but important differences between two approaches. The radical view of privatisation is a reassignment of property rights, and more moderate conventional view of privatisation as an instrument for fine-tuning of a three-sector economy. According to (Nellis, 1999), privatization has generally proved its worth in Central and Eastern Europe and the Baltic states and therefore, what seemed excellent on political reasons-the emphasis was usually on massive, speedy transactions with substantial ownership stakes awarded to ‘insider’ stakeholders. Author explains the success of this approach is due to the transition states closest to the western markets and traditions. Whereas, state led approaches (the functions assumed by government) become more common, grew as well, until, in many countries,
SOEs practically dominated economic activity and when the public sector controls such a high proportion of economic activity, even in a market system, serious problems in the economy will often result such as, absence of competition, profit or profit motive, macroeconomic imbalances, artificial price hikes, excess employment and non-competitive industrial base (see e.g. Sullivan, CIPE for further discussion).

Evidence demonstrates that private owned firms outperformed state owned enterprises e.g. (Megginson and Netter, 1998) privatization significantly (often dramatically) improves the operating and financial performance of divested firms. (Boubakri and Cosset, 1998) review before-and after-performance of 79 privatised firms in 21 developing countries mostly middle income, including Bangladesh, Jamaica, Nigeria, Pakistan and Philippine and conclude that on average the firms in their sample indicated significant increases in profitability, operating efficiency, capital investment spending, output and employment, and a decline in leverage and an increase in dividends. (Havrylyshyn and McGettigan, 1998) IMF study surveys-finds that private owners generally outperform state-owned firms. The multi-country surveys supported by the positive findings of a growing number of country case studies. Other studies such as (Mokhtar Khattab, 1998) review of the post-privatization performance of 28 divested firms in Egypt reveals increased sales (71 percent of the sample), increased earnings (68 percent), increased average salary per worker (96 percent), and a decline in both short- and long-term debt (82 percent. (Rafael and Florencio, 1997) study of 218 privatizations in Mexico found on average, 24 percentage point increase in the ratio of operating income to sales, document increases in profitability and output, and substantial decline in unit costs and employment levels. (Dowlah, 1996) indicates seven of ten large loss-making manufacturing firms privatized in Bangladesh returned to profitability, showing increases in output, sales, capacity utilization and labor productivity, and declining unit costs.[There is] robust evidence that state enterprises and mixed enterprises are less profitable and less efficient than private corporations see e.g. (Boardman and Vining, 1989). There is virtually universal consensus that privatisation improves efficiency (Boycko, Sheifer, and Vishny, 1993). Without exception, the empirical findings indicate that the same level of output could be provided at substantially lower costs, if output is produced by the private rather than the public sector e.g. (Bennett and Johnson, 1979).

Other set of studies find little evidence of improvement, such as (Caves and Christenson, 1980), (Aharoni, 1986), (Boardman and Vining, 1989) among others. (Atkinson and Halvorsen, 1986) demonstrate contrary to what is predicted in the property rights literature, no evidence of inferior efficiency performance of government owned selected utility services. Public ownership is not inherently less efficient than private ownership, the oft-noted inefficiency of government enterprises stems from their isolation of effective competition rather than their public ownership per se On the other hand, case study approach (Sheikh, 1985) found that the average level of performance after adjusting for changes in prices
and capital stock is higher for the period under public ownership compared to private ownership regime. The author further finds that improvement in performance is accompanied by improvement in productivity of capital. (Naqvi and Kamal, 1991) demonstrate that some public enterprises show losses, most of enterprises made sufficiently large profits, and that their high rates of profit cannot be attributed to the high rates of protection. Researchers have found that the average rate of protection for industries in the public sector lowers than that for the industries in the private sector. (Bishop and Kay, 1989) evaluated the consequences of British privatisation program and found that most privatised industries grown since privatisation and grown more than those industries that remained in public ownership. However, the privatised firms, which grown rapidly, are doing so even before privatisation. (Chishty, 1985) of Jute textile mills-case study approach found competition and better performance of private mills from state-owned mills. (Marshall, 1986) rapid privatisation made system more vulnerable to financial difficulty. (Foreman and Manning, 1988) compared British Telecom (B.T) with five telecommunication firms elsewhere and conclude that B.T is apparently less efficient than telecommunication companies in both Norway and Denmark and more efficient than Spain and Italy. (Kapstein, 1988) formerly private firms taken over by government were bankrupt based on case study approach.

Another set of studies based on public private efficiency comparison like (Boardman and Vining, 1989) found private corporations are more profitable and more efficient. (Bishop & Kay, 1989) found most of the privatised industries grown since privatisation and grown more than those industries that remained in public sector. (Adam, Cavendish and Mistry, 1992) found privatisation improved profitability and efficiency. (Magginson, Nash and Randenborgh, 1994) by using Panel of forty-one enterprises found strong performance improvements without lowering employment firms increased real sales, become more profitable, increased capital investment spending and improved their operating efficiency. (Galal et al. (1994, by using cost-benefit analysis found gains in case of 11 out of 12 companies. (Aftab, Safiya and Khan, 1995) concluded that private firms are more profitable than employee buyouts firms. (Bengali, 1998) took industrial enterprises from cement, automobile and chemical sectors and applied simple ratio analysis with brief institutional characteristics of the enterprises particularly focusing on the labour issues after privatisation. Profitability and efficiency is decreased for five out of seven companies, while solvency ratios show a significant increase for three out of seven companies. (Mehdi, 1998) revealed both efficiency and profitability decreased after privatisation. (Megginson et al., 1994) documented strong performance improvements, without lowering employment, after privatisation, firms increased real sales, became more profitable, increased their capital investment spending; improved their operating efficiency and expanded their work force. Furthermore, these firms lowered their debt levels and increased dividend pay-out. They found significant changes in the size and composition of corporate boards of directors after privatisation. (Bousoffiane et al., 1997) analysed the effect of privatisation on the nine
organisations privatised in the UK in 1980s and found mixed results in technical efficiency of those organisations in pre- and post-privatisation periods by using data envelope analysis (DEA). In some cases there clear evidence of an improvement in technical efficiency; in others, no discernible impact of ownership on performance.

The literature demonstrates the mixed results of performance in cross country studies or case study of few firms or limited sectors e.g. (Bengali 1998), (Aftab, Safiya and Khan, 1995), (Galal, et.al., 1994), (Kepstein, 1988), (Foreman and Manning, 1988), (Marshal, 1986), (Shaikh, 1985), (Chishty, 1985), (Koo, 1988) and (Naqvi and Kemal, 1998) etc. These studies are inclusive in terms of deriving operating and financial performance and limited in their scope to determine the comprehensive evidence about privatization process as a whole in Pakistan. These studies are limited in their scope and content, the results are not updated. This study is an attempt to fill this gap by assessing the performance of the process based on larger parameters and indicators to compare the pre-post eras of privatization process.

III. Methodology

Number of studies e.g. (Megginson, 1994), (Boubakari and Cosset, 1998), (Megginson, Nash, and Van Randenborgh, 1994) and (D Souza, & Magginson 1999) frequently used Wilcoxon Rank Test (with its Z-tests) as the test of significance for the change in Median Value for the assessment of performance parameters. The efficiency is measured as percentage change in performance of the firms and the Z-test - percentage change in performance of each of the proxy, in both the periods of pre and after privatisation. The study examines the same variables that are used by (Boubakari and Cosset, 1998), (Megginson, Nash, and Van Randenborgh, 1994), (D Souza, & Magginson, 1999). This study used one or multiple proxies per variable. Profitability, investment, leverage, and dividend variables measures in percent. Efficiency and output measures are in index values, value during the year of privatisation is defined as 1.0 & inflation-adjusted sales figures is used in the efficiency and output ratios. CPI data is taken from published sources of Ministry of finance; economic survey. The study used local currency in our analysis.

Table-1 presents testable predictions and empirical proxies which are used and employed by (Boubakari and Cosset, 1998), (Megginson, Nash, and Van Randenborgh, 1994) and( D Souza, & Magginson, 1999), this study also test same hypotheses that privatization will (1) increase a firm's profitability (2) increase its operating efficiency, (3) increase its capital investment spending (4) increase its output, (5) decrease employment, (6) decrease leverage, and (7) increase dividend payments.
Table I. TESTABLE HYPOTHESES

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>PROXIES</th>
<th>PREDICTED RELATIONSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td>Return on Sales (ROS) = Net Income / Sales</td>
<td>ROS_A &gt; ROS_B</td>
</tr>
<tr>
<td></td>
<td>Return on Assets (ROA) = net Income / Total Assets</td>
<td>ROA_A &gt; ROA_B</td>
</tr>
<tr>
<td></td>
<td>Return on Equity (ROE) = Net Income / Total Equity</td>
<td>ROE_A &gt; ROE_B</td>
</tr>
<tr>
<td>Operating Efficiency</td>
<td>Sales Efficiency (SALEFF) = Sales / Total Employment</td>
<td>SALEFF_A &gt; SALEFF_B</td>
</tr>
<tr>
<td></td>
<td>Net Income Efficiency (NIEFF) = Net Income /Total Employment</td>
<td>NIEFF_A &gt; NIEFF_B</td>
</tr>
<tr>
<td>Capital Investment</td>
<td>Capital Expenditure to Sales (CESA) = Capital Expenditure / Sales</td>
<td>CESA_A &gt; CESA_B</td>
</tr>
<tr>
<td></td>
<td>Capital expenditure to Total Assets (CETA) = Capital Expenditure /Total Assets</td>
<td>CETA_A &gt; CETA_B</td>
</tr>
<tr>
<td>Output</td>
<td>Real Sales (SAL) = Nominal Sales / Consumer Price Index</td>
<td>SAL_A &gt; SAL_B</td>
</tr>
<tr>
<td>Employment</td>
<td>Total Employment (EMPL) = Total number of employees</td>
<td>EMPL_A &lt; EMPL_B</td>
</tr>
<tr>
<td>Leverage</td>
<td>Debt to Assets (TDTA) = Total Debt / Total Assets</td>
<td>TDTA_A &lt; TDTA_B</td>
</tr>
<tr>
<td>Dividend to Sales</td>
<td>DIVSAL = Dividend / Sales</td>
<td>DIVAL_A &gt; DIVAL_B</td>
</tr>
</tbody>
</table>

Performance measurement proxies for every selected firm is calculated to over a period of seven year covering three years before and three years after privatization plus the year of privatization. Thereafter mean value of each variable for each firm over the 3 year before and after periods is calculated. Year of privatization is excluded from the mean calculation since it is phase of both state and private ownership. To test for differences in the pre- and post-
privatization performance improvements, study used Wilcoxon signed-rank test procedure similar procedure used by above said studies to identify any significant differences in the mean values of the ‘before’ and ‘after’ samples. Later, the firms are further clustered into sector-wise performance to determine the overall nature of performance in each of the sector. The results are based on the standardized test statistic Z with median difference (pre-post) as numerator.

The data selection is limited to those SOEs that are fully or partially sold to private investors through a public offering, mainly because these SOEs that are privatized in this way generate post financial and accounting data that is directly comparable to pre-divesture data.vii

The study excluded those smaller firms from analysis such as newspaper, roti plants, ghee plants and utility stores firms etc. The exclusion is based on the nature of divesture, small amount of transaction and the non availability of data. Some of the exclusion is based on the criteria that data sometimes is not available due to firms closed down or the privatization commission is not publishing the data of fully privatized firms. The fully privatized firm's data is derived from their annual published sources such as annual reports. The data selection is also based on the selection of firms lying in different major sectors like oil and gas, cement, auto, chemical and fertilizer and banks and financial sector etc. The study used overall 49 units out of 161 of more than 72% of total transaction amount. Data limitation is recognized by the authors as the sample suffers from a selection bias in number but data coverage is reasonable as 72 percent of total amount of transactions is undertaken for analysis. Second the study is first of its kind to update and investigate the various performance indicators of efficiency of 17 years privatization experience in Pakistan.

IV. Empirical Results and Discussion

The overall results are presented in table II and selected sector-wise results are in table III. Profitability: profitability is based on three ratios: return on sales (ROS), return on assets (ROA), and return on equity (ROE). Net income as a profit measure is used in the numerator of all three ratios. Returns on sales, and return on assets and return on equity are the ratio of rupee flow measure as the indicator is expected to increase significantly after privatization. The mean and median values of all the profitability indicators show statistically insignificant based on Wilcoxon Z test, in other words the firms are not expanding profit margins after privatization. Wilcoxon tests show that ROS, ROA and ROE decrease significantly after privatization, as the Z-statistics is highly insignificant.
## Table II. Overall Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>No of obs.</th>
<th>Mean Before (Median)</th>
<th>Mean After (Median)</th>
<th>Mean Change (Median)</th>
<th>Z-Statistics for Difference in Medians (After-Before)</th>
</tr>
</thead>
</table>

### Profitability

- **Return on Sales (ROS) = Net Income / Sales**
  - No of obs.: 164
  - Mean Before (Median): 0.067 (0.021)
  - Mean After (Median): -0.062 (0.048)
  - Mean Change (Median): -0.130 (0.02)
  - Z-Statistics: 0.054

- **Return on Assets (ROA) = net Income / Total Assets**
  - No of obs.: 152
  - Mean Before (Median): -0.022 (0.006)
  - Mean After (Median): 0.027 (0.002)
  - Mean Change (Median): 0.050 (-0.003)
  - Z-Statistics: -0.006

- **Return on Equity (ROE) = Net Income / Total Equity**
  - No of obs.: 145
  - Mean Before (Median): 1.200 (-0.505)
  - Mean After (Median): -4.512 (-0.552)
  - Mean Change (Median): -5.712 (-0.046)
  - Z-Statistics: -0.006

### Operating Efficiency

- **Sales Efficiency (SALEFF) = Sales / Total Employment**
  - No of obs.: 141
  - Mean Before (Median): 1.185 (0.773)
  - Mean After (Median): 0.393 (0.244)
  - Mean Change (Median): -0.794 (-0.528)
  - Z-Statistics: -0.013

- **Net Income Efficiency (NIEFF) = Net Income /Total Employment**
  - No of obs.: 128
  - Mean Before (Median): 0.072 (0.053)
  - Mean After (Median): -0.028 (0.001)
  - Mean Change (Median): -0.100 (-0.052)
  - Z-Statistics: -0.006

### Capital Investment

- **Capital Expenditure to Sales (CESA) = Capital Expenditure / Sales**
  - No of obs.: 149
  - Mean Before (Median): -0.013 (0.036)
  - Mean After (Median): -0.024 (-0.024)
  - Mean Change (Median): -0.010 (-0.0161)
  - Z-Statistics: -0.125

- **Capital expenditure to Total Assets (CETA) = Capital Expenditure /Total Assets**
  - No of obs.: 156
  - Mean Before (Median): 0.083 (0.022)
  - Mean After (Median): -0.101 (-0.003)
  - Mean Change (Median): -0.185 (-0.025)
  - Z-Statistics: -0.261

### Output

- **Real Sales (SAL) = Nominal Sales / Consumer Price Index**
  - No of obs.: 156
  - Mean Before (Median): 9.389 (7.375)
  - Mean After (Median): 3.050 (2.216)
  - Mean Change (Median): -6.338 (-5.158)
  - Z-Statistics: -0.402

### Employment

- **Total Employment (EMPL) = Total number of employees**
  - No of obs.: 88
  - Mean Before (Median): 467.063 (432.79)
  - Mean After (Median): 565.25 (537.34)
  - Mean Change (Median): 98.1861 (104.55)
  - Z-Statistics: 7.964***

### Leverage

- **Debt to Assets (TDTA) = Total Debt / Total Assets**
  - No of obs.: 167
  - Mean Before (Median): 0.281 (0.378)
  - Mean After (Median): 0.321 (0.311)
  - Mean Change (Median): 0.040 (-0.067)
  - Z-Statistics: -0.104

### Dividends

- **DIV/SAL = Dividend / Sales**
  - No of obs.: N/A

---

**Efficiency:** For efficiency measurement, inflation-adjusted sales per employee (SALEFF) and net income per employee (NIEFF) is used. Both variables show significant decrease in median after privatization. Z statistics value –0.013 for
SALEFF and –0.006 for NIEFF both are highly insignificant. Demonstrate that there is no significant efficiency gain after privatization.

**Capital Investment:** capital expenditure divided by sales (CESA) and capital expenditures divided by total assets (CETA) are used as two proxies. Both of the variables show negative signs in mean and median values, neither of both variables are significant based on the Z-statistics.

**Changes in Output:** The output proxy is measured by adjusted nominal sale with consumer price index. The Z-test shows that real sales are not significant after privatization, and the change is negative at both mean and median level values.

**Employment:** Normally, it is expected that the employment after privatization should decline. But results demonstrate that the employment level on the average for three year periods –3 to –1 and +1 to +3, employment increase after divestiture. The test shows a significant average (median) increase in employment from 457 employees to 565 employees after privatization. Z statistics is highly significant at one percent level.

**Leverages:** Total debt to total assets is declining in both mean and median values and highly insignificant Z statistics. It was expected that leverage for the privatized firms should decline significantly, but the Z-statistics is highly insignificant.

Most of the sub samples of selected sectors-wise classification of performance indicators in table III, demonstrate insignificant post privatization performance in profitability. Though, two of the eleven median values increase and are significant based on the Wilcoxon test. The return on assets is significant for chemical and fertilizer sector and return on equity of cement sector is showing significant based on Wilcoxon test. The overall profitability in all the four sectors is showing insignificant results.

All efficiency parameters sector wise in table III, demonstrate insignificant efficiency improvements after privatization, though there is little positive changes in median value after privatization. This is unexpected result as regardless of sector usually after divesture privatization yields significant higher real output per worker. No sector shows any significant change in efficiency, though some of the efficiency parameters are showing positive change in median value after privatization but the test statistics is showing insignificant results.
### Table III. Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>No of obs</th>
<th>(Median) Before</th>
<th>(Median) After</th>
<th>(Median) Change (After-Before)</th>
<th>Z-Statistics for Difference in Medians (After-Before)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profitability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on Sales (ROS) = Net Income / Sales</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil and Gas Sector</td>
<td>54</td>
<td>0.30</td>
<td>0.09</td>
<td>-0.20</td>
<td>-0.002</td>
</tr>
<tr>
<td>Cement Sector</td>
<td>58</td>
<td>0.07</td>
<td>-0.44</td>
<td>-0.52</td>
<td>-0.952</td>
</tr>
<tr>
<td>Chemical and Fertilizer Sector</td>
<td>79</td>
<td>-0.02</td>
<td>0.02</td>
<td>0.05</td>
<td>0.001</td>
</tr>
<tr>
<td>Banks and financial Sector</td>
<td>98</td>
<td>-0.08</td>
<td>0.07</td>
<td>0.15</td>
<td>0.392</td>
</tr>
<tr>
<td>Return on Assets (ROA) = net Income / Total Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil and Gas Sector</td>
<td>54</td>
<td>0.10</td>
<td>0.00</td>
<td>-0.10</td>
<td>-0.891</td>
</tr>
<tr>
<td>Cement Sector</td>
<td>58</td>
<td>0.01</td>
<td>-0.06</td>
<td>-0.08</td>
<td>-0.043</td>
</tr>
<tr>
<td>Chemical and Fertilizer Sector</td>
<td>79</td>
<td>-0.21</td>
<td>0.16</td>
<td>0.38</td>
<td>11.244***</td>
</tr>
<tr>
<td>Banks and financial Sector</td>
<td>98</td>
<td>-0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.082</td>
</tr>
<tr>
<td>Return on Equity (ROE) = Net Income / Total Equity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil and Gas Sector</td>
<td>54</td>
<td>4.90</td>
<td>5.3</td>
<td>0.39</td>
<td>1.02</td>
</tr>
<tr>
<td>Cement Sector</td>
<td>58</td>
<td>-0.50</td>
<td>-18.28</td>
<td>-17.77</td>
<td>-8.432***</td>
</tr>
<tr>
<td>Chemical and Fertilizer Sector</td>
<td>79</td>
<td>-0.79</td>
<td>-0.55</td>
<td>0.24</td>
<td>0.070</td>
</tr>
<tr>
<td><strong>Operating Efficiency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Efficiency (SALEFF) = Sales / Total Employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil and Gas Sector</td>
<td>32</td>
<td>0.17</td>
<td>0.01</td>
<td>-0.15</td>
<td>-0.003</td>
</tr>
<tr>
<td>Cement Sector</td>
<td>45</td>
<td>2.60</td>
<td>0.24</td>
<td>-2.36</td>
<td>-0.001</td>
</tr>
<tr>
<td>Chemical and Fertilizer Sector</td>
<td>36</td>
<td>0.77</td>
<td>0.91</td>
<td>0.14</td>
<td>0.005</td>
</tr>
<tr>
<td>Net Income Efficiency (NIEFF) = Net Income / Total Employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil and Gas Sector</td>
<td>32</td>
<td>0.05</td>
<td>0.00</td>
<td>-0.05</td>
<td>-0.002</td>
</tr>
<tr>
<td>Cement Sector</td>
<td>45</td>
<td>0.18</td>
<td>-0.11</td>
<td>-0.29</td>
<td>-0.002</td>
</tr>
<tr>
<td>Chemical and Fertilizer Sector</td>
<td>36</td>
<td>-0.02</td>
<td>0.02</td>
<td>0.04</td>
<td>0.006</td>
</tr>
<tr>
<td><strong>Capital Investment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Expenditure to Sales (CESA) = Capital Expenditure / Sales</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil and Gas Sector</td>
<td>54</td>
<td>0.06</td>
<td>0.00</td>
<td>-0.06</td>
<td>-0.136</td>
</tr>
<tr>
<td>Cement Sector</td>
<td>58</td>
<td>-0.14</td>
<td>-0.02</td>
<td>0.11</td>
<td>0.491</td>
</tr>
<tr>
<td>Chemical and Fertilizer Sector</td>
<td>79</td>
<td>0.03</td>
<td>-0.04</td>
<td>-0.08</td>
<td>-0.174</td>
</tr>
<tr>
<td>Banks and financial Sector</td>
<td>98</td>
<td>-0.04</td>
<td>-0.07</td>
<td>-0.03</td>
<td>-0.132</td>
</tr>
</tbody>
</table>
Hakro & Akram

| Capital expenditure to Total Assets (CETA) = Capital Expenditure /Total Assets |
|----------------------------------|-----------------|---------|--------|--------|
| Oil Sector                       | 54              | 0.02    | 1.15   | -0.02  | -0.217 |
| Cement Sector                    | 58              | -0.03   | -0.00  | 0.03   | 0.034  |
| Chemical and Fertilizer Sector   | 79              | 0.26    | -0.30  | -0.56  | -5.815*** |

<table>
<thead>
<tr>
<th>Output</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil and Gas Sector</td>
<td>54</td>
<td>0.31</td>
<td>0.02</td>
<td>-0.28</td>
</tr>
<tr>
<td>Cement Sector</td>
<td>58</td>
<td>20.47</td>
<td>2.21</td>
<td>-18.26</td>
</tr>
<tr>
<td>Chemical and Fertilizer Sector</td>
<td>79</td>
<td>7.37</td>
<td>6.91</td>
<td>-0.46</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Leverage</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>54</td>
<td>-0.44</td>
<td>-0.10</td>
<td>0.34</td>
</tr>
<tr>
<td>Cement</td>
<td>58</td>
<td>0.32</td>
<td>0.17</td>
<td>-0.14</td>
</tr>
<tr>
<td>Chemical and Fertilizer Sector</td>
<td>79</td>
<td>0.81</td>
<td>0.76</td>
<td>-0.04</td>
</tr>
<tr>
<td>Banks</td>
<td>98</td>
<td>0.43</td>
<td>0.44</td>
<td>0.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dividends</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DIVSAL = Dividend / Sales</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*** Indicates significant at the 1 percent level
** Indicates significant at the 1 percent level
* Indicates significant at the 1 percent level
N/A: data not available

The sector-wise results of capital investment are insignificant except the fertilizer and chemical sector where capital expenditure ratio of total assets is highly significant at Wilcoxon test. It shows capital expenditure increased significantly after privatization as the capital expenditure is increased.

The output efficiency; no sector shows significant increase in real sales, both the Wilcoxon (median) test and median change (after-before) are insignificant and negative value. The results are similar to efficiency changes. Therefore, one can conclude that no change occurred in output and efficiency parameters after privatization.

Overall employment show significant changes after privatization. Overall employment increase in whole sample is contrary to our hypothesis that overall employment is decreased after privatization.

Sector wise tests reveal that oil and gas sector and banking sector experience increase in leverage and this increase is statistically insignificant, where as in the cement and chemical fertilizer the median change is negative and statistically insignificant.
V. Conclusion

The study covers 72 percent of total transaction amount to examine the operating and financial pre-post privatization performance indicators. Most unexpected results are documented; no significant improvement in the performance indicators is observed after privatization. Contrary to the earlier studies conducted outside Pakistan and cross-country analysis demonstrate that private owned firms outperformed public sector firms. However, the results are consistent with some of the studies like (Caves and Christenson, 1980), (Aharoni, 1986), (Boardman and Vining, 1989, p.5) (Atkinson and Halvorsen, 1986), (Naqvi and Kamal, 1991), (Bishop and Kay, 1989) (Chishty, 1985), (Marshall 1986), (Foreman and Manning, 1988), (Kapstein, 1988), (Bengali, 1998). This study found no significant change in profitability, efficiency, output and dividends after privatization However, leverage indicator show that there is expected decline in post privatization but very insignificant Z-statistics value. Employment after privatization increased against the established hypothesis.

The result demonstrates that after privatized firms in sectors like banking, cement, oil and gas demonstrate no significant gain in profitability, output, investment, leverage and real sales. These results add to the growing empirical evidence that, after privatization, firms may not become more profitable and efficient. The unexpected results might demonstrate that with this data set or limited financial and accounting performance one cannot determine whether the insignificant performance is the result of privatization process or lack of regulatory environment in early period of privatization or overall slow down in economic activity generally recessionary decade of 90s and political and economic instability of 1998 nuclear tests and economic sanctions, political coup of 1998 or September 11, 2001 etc., country has experienced or combination of other factors etc.

One can conclude and recommend that over the seventeen years, privatization process perhaps transformed the world’s economic landscape by reduction in the role of the state in many nations’ economies but not significant changes resulted in operating and financial performance in achieving the very objectives of the privatization in Pakistan. It is the time to assess the direction of policy.

References


Aharoni, Y. 1986. The Evolution and Management of State-owned Enterprises,


Endnotes

i Privatisation program and regulatory reforms in Pakistan can be divided into five phases. First encouraging the private sector since 1947 to 1970; second, nationalisation program of 1971-77; third, denationalisation 1977-83; fourth, the privatisation movement from 1983-88; and fifth, 1988-1996 comprehensive privatisation programs. (See e.g. (Mushtaq and Chaudhary, 1996).

ii The reversal of nationalisation policy came with the introduction of Martial Order in 1978 leading to the handing over of three industrial units to their owners. Another Martial Order similar to the previous one was promulgated in 1979 for protection against any further nationalisation. Pakistan People Party (PPP) in 1988-90 was no longer committed to state enterprise as an engine of growth. In 1990 the Muslim League government headed by an industrialist committed to free market economy; budget deficit and pressure from donor agencies provided the background of a wide spread privatisation of state industrial units. Privatisation was an easy option to raise revenue to avoid mounting budget deficit. Nawaz Sharif government privatized 66 industrial units and commercial banks to the private sector in 1991-92. The government headed by Benazir (1993-96) privatised some more industrial units. Benazir government in privatisation perspective remained limited to privatisation of a power sector units and 13.2% equity stake of PTCL. Rest of the government timely continued privatization process.


iv No sector gets high marks for performing tasks for which there is poor information. The theory is also a historical; it makes no allowance for sunken investments in organizational capacity. To subject an organization to market forces to punish it to maximize the returns to residual claim holders; perhaps it will generate those returns more efficiently, He named it, Economic Model 2: Privatization as Relocation of Economic Functions.

v State-led strategies for economic growth were popular in the 1950s, 1960s and 1970s, when it was argued that the public sector was better suited than the private sector to foster and manage the industries most essential for economic growth.

vi In some of the cases large number of observations is taken where ever available to capture better mean values.

vii The secondary data of three years after and pre privatisation periods of various indicators of performance is used from a number of sources such as publications of Privatisation Commission of Pakistan, State Bank of Pakistan: Annual Reports of privatized firms (various years), Pakistan Bureau of Statistics, Reports of economic advisory Cell and Annual Reports and yearly financial accounts of the companies/firms.