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# AN APPRAISAL OF THE PERFORMANCE OF PRIVATIZED ENTERPRISES IN DEVELOPING COUNTRIES

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# AN APPRAISAL OF THE PERFORMANCE OF PRIVATIZED ENTERPRISES IN DEVELOPING COUNTRIES

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## 1. INTRODUCTION

For more than two decades privatisation has been advocated as the predominant way to solve the problems facing ailing public enterprises in developing countries (Shleifer, 1998; Shirley and Walsh, 2001). In practice, relatively few developing countries had used this method of public enterprise reform until the late 1980's. Instead, in the early 1980's many developing country governments persisted with various types of reforms to public enterprises while they were still inside the public sector (Cook and Kirkpatrick, 1988, 1995; World Bank, 1995). Many governments were hesitant to privatise, either because they were unconvinced by the available empirical evidence or because privatisation was proving to be more difficult to implement in developing countries than originally anticipated (Cook and Minogue, 1990). Initially, the evidence was less specific, focusing on the poor performance of economies that had pursued inward-oriented development strategies in which state-owned enterprises had played a significant role. When more specific enterprise level evidence emerged it was concentrated on the performance of enterprises from the industrialised countries, where sufficient time had elapsed to provide a reasonable assessment of post-privatisation outcomes (Cook and Kirkpatrick, 1995). Studies of the post-privatisation performance in developing countries eventually began to emerge in the 1990's as the pace of privatisation accelerated. Several earlier studies became influential in indicating that privatised enterprises in developing countries had performed well and contributed to the overall welfare of their economies (Galal, Jones, Tandon and Vogelsang, 1992; Megginson, Nash and van Randenborgh, 1994). In 1998, Megginson and Netter presented a survey of the literature on the theoretical and empirical research in relation to the performance of privatised enterprises. Their observation, at the time, was that the weight of academic evidence was decidedly in favour of privatisation on efficiency and profitability grounds. They concluded that 'little doubt now remains that privatisation 'works', in the sense that divested firms almost always become more efficient, more profitable, increase their capital investment spending, and become financially wealthier (Megginson and Netter, 1998, p.40).

However, these studies were to miss the bulk of privatisation that was yet to occur in the utilities sectors (telecommunications, electricity, gas, and water). Private investment in utilities grew significantly from under 20 billion US dollars per year in the early 1990's to a peak in 1997 of 128 billion dollars, and a cumulative total of 755 billion dollars between 1990 and 2001 (Harris, 2003). The scramble to produce early empirical evidence that would confirm or refute the theoretical arguments put forward in favour of privatisation raised two issues. First, whether the tendency to concentrate on a comparison between the situation before and after privatisation was the most appropriate one to pursue rather than a consideration of the counterfactual i.e. what would have happened in the absence of privatisation. The primary justification for using the former was related to the limited data available in the post-privatisation period and the ease of methodology compared to the counterfactual approach. Second, whether the mixing of data from industrialised and developing countries would permit conclusions to be drawn about the performance of privatised enterprises from both sets of countries. The samples in the earlier studies were heavily biased towards the industrialised countries, and in some cases little attempt was made to analyse them separately. Nevertheless, the overwhelming conclusion that could be drawn from these earlier studies was that privatisation was working in a variety of deeply contrasting institutional contexts found in industrialised and developing countries. In effect, the institutional context appeared as a neutral variable. This result was puzzling because it conflicted with our knowledge of developing countries, which indicated that they were characterised by relatively weak legal systems and underdeveloped institutions and systems of regulation in comparison with their industrialised country counterparts. Further, relatively little was known about how systems of corporate governance worked in developing countries (Shleifer and Vishny, 1997).

The earlier results concerning the positive impact of privatisation had also been confirmed in a second spate of empirical studies conducted towards the end of the 1990s. For example, D'Sousa and Megginson (1999, p.23) also claimed that "privatisation 'works', and it works in almost every institutional setting examined." In general, these studies continued to compare the pre- and post-privatisation performance, and to indirectly test hypotheses, drawn from theory, relating to the superior set of incentives that privatisation brings.

The purpose of this paper is to examine the performance of privatised enterprises in developing countries since privatisation. There are three main differences introduced in this paper compared to earlier work. First, the paper concentrates on an analysis of enterprises

drawn from a wide range of developing countries, with a larger sample than used in previous studies. Second, a distinction is drawn between privatised enterprises that are in regulated and non-regulated sectors of the economy. By regulated industries is meant the privatised public utilities that are subjected to various forms of economic regulation. The performance of privatised enterprises, whether in regulated sectors or not, is also compared to the performance of enterprises in the private sector which have not previously been owned by the public sector. Third, a comparison of performance is made between different periods of privatisation and not with pre- and post-privatisation episodes. New data is available which extends the period over which performance can be measured. In some cases this allows us to compare periods that are at least ten years apart.

The interesting finding from our analysis is that much of the earlier optimism about privatisation, and indeed the effectiveness of regulation in respect to the utility industries, may have been premature. In part, this is supported by the declining trend in infrastructure investment after 1997 in developing countries as indicated by the World Bank (Harris, 2003). It may also have been the case that the mixing of industrialised and developing country experience, with a bias in samples towards the former, masked what had been happening to privatised enterprises in developing countries.

In keeping with other prominent studies, we concentrate our analysis on operating and financial variables, while recognising that these will not provide a complete picture of the economic performance and contribution of privatised enterprises. Studies relying on financial variables alone for assessing enterprise performance have been criticised for using data that would tend to inflate the results in favour of privatisation. Our analysis indicates that the use of financial data can just as easily reveal poor as well as good performance, and therefore, is a useful component for assessing the overall performance of privatised enterprises.

In the next section the paper briefly reviews the relevant literature. Section three discusses the methods and data used in the analysis. Section four presents the main findings and analyses the results for each of the performance measures. Section five examines the correlation statistics and introduces factor analysis in order to more critically assess the relationship between performance indicators. The final section draws conclusions.

## 2. PRIVATISED ENTERPRISE PERFORMANCE

In recent years a spate of studies using samples of enterprises have indicated that the performance of public enterprises has improved after they were privatised. Prominent among those have been Galal, Jones, Tandon and Vogelsang (1992), Megginson, Nash and van Randenborgh (1994), Boubakri and Cosset (1998, 1999), D'Souza and Megginson (1999), and Dewenter and Malatesta (2000). All the above studies, except for the Galal et al (1992), used a similar method to show that privatisation resulted in higher profitability and greater efficiency and concurred that capital investment had increased.

Galal, Jones, Tandon and Vogelsang (1992) compare twelve large enterprises in three middle-income developing countries and the UK. They investigated the impact of privatisation on efficiency and welfare by examining the changes in prices and outputs after privatisation and the effects on consumer and producer surpluses. They reported that in eleven of the twelve cases enterprises experienced a gain in net welfare and on average, the present value of these gains equalled 26 percent of the enterprises' pre-divestiture sales revenue. They found that employees were better off in three cases, and in no case were workers worse off. They concluded that the loss to consumers from higher prices was considerably smaller than the benefits of improved quality of service.

Megginson, Nash and van Randenborgh (1994) covered a multinational, multi-industry sample of enterprises to compare the pre- and post-privatisation performance of 61 enterprises from 18 countries and 32 different industries. The sample included six developing and 12 industrialised countries. The evidence suggested that profitability and operating efficiency increased significantly after privatisation. They found no evidence that employment levels fell after privatisation. The sample of enterprises was limited to publicly quoted enterprises that had been privatised through public share issues.

The study by D'Souza and Megginson (1999) was based on 85 enterprises in 28 countries over a more recent period 1990 to 1996. They covered enterprises in sixteen industrialised countries and transitional countries. The study included a large number of regulated utilities. They reported significant improvements in profitability, operating efficiency, output and capital investment. Employment declined but not significantly.

In an earlier study Dewenter and Malatesta (1997) compared the relative efficiency of 1369 non-US public and private enterprises reported in Fortune 500 during 1975, 1985 and 1995.

They found that private enterprises had a statistically lower employee to sales ratio than state enterprises. They also found that private enterprises were more efficient than state enterprises but concluded that privatisation itself did not lead to increased profitability. The later study of Dewenter and Malatesta (2000) used 63 privatised enterprises covering a period of thirteen years between 1981 and 1994. In general, they found that profitability and productivity increased with privatisation.

The study by Boubakri and Cosset (1998), unlike the others, was confined to developing countries. They examined the financial and operating performance of 79 privatised enterprises in 21 countries between 1980-92, although many developing countries only began to privatise towards the end of the period. These results reinforced the view that transferring a public enterprise to private ownership leads to a significant increase in enterprise performance. A similar study was also undertaken by Carlin, Fries, Schaffer and Seabright (2001) examining enterprise performance in transitional economies.

Assessing the effects of privatisation can be quite problematic. Besides the simple question of data availability, there is always the issue of which measure or set of measures most appropriately captures the effect of changing ownership. As Parker and Kirkpatrick (2004) indicate, measuring changes in profitability will tend to flatter privatisation if under state ownership non-profit goals were deliberately pursued. Performance may also change because of other economic events not always directly related to privatisation. Further studies of these kinds can suffer from data inconsistencies, as datasets are put together that record financial statistics derived from different accounting practices.

The D'Souza and Megginson (1999) paper does attempt some form of control for other effects that may influence the outcome of privatisation by splitting the sample to include enterprises where the government shareholding is reduced to less than fifty percent. This is intended to indicate a loss in voting control by the government. Although even in this case, the actual loss of control will depend on the remaining distribution of shareholding. D'Sousa and Megginson found that performance improves more significantly when voting control is relinquished.

In contrast to the other studies cited, D'Sousa and Megginson (1999) also found that investment, defined as capital expenditures divided by sales and capital expenditures divided by total assets, decreased but was statistically insignificant. These results, however, may be

explained by the increase in sales and total assets growing faster than capital expenditures, and do not necessarily indicate a fall in investment.

## 3. DATA AND METHODOLOGY

In line with previous studies on operational and financial performance this study uses a range of performance measures based on capital investment, employment, leverage, output, sales efficiency, and profitability. Capital investment has been measured by capital expenditure to total assets (CETA), employment (EMP) by the total number of employees, total debt to total assets (TDTA) has been used to measure leverage, output has been measured by sales (SA) (adjusted by the consumer price index (CPI), 1995 = 100, CPI has been taken from the World Bank World Development Indicators), sales efficiency has been measured by sales to total employment (SE), and return on assets (ROA) has been used as a proxy for profitability.

The data has primarily been obtained from Thomson One Banker Analytics and the names of privatised enterprises and the years of privatisation have been identified by referring to the World Bank Privatisation Database. The privatisation database contains information relating to privatisation transactions from the late 1980s. Our datasets were compiled by taking the first and the latest three year means and medians of each performance indicator after privatisation (for enterprises privatised in 1998 and/or those that did not have more than 6 years time-series data after privatisation, the first and latest two year means and medians were calculated). In most cases, the first three year data were collected from the earlier part of the 1990s and the latest three years from the late 1990s and early 2000s (up to 2003). The privatised enterprises were divided into two broad categories, namely the regulated utilities (electricity, gas, telecommunication, and water) and non-utilities. While the study mainly analyses the changes in means and medians for the performance indicators, the paired t tests and the Wilcoxon signed ranks tests in medians between the first three and the latest three years have also been conducted to statistically verify the changes.

In order to compare the performance of privatised enterprises with the private sector in general, data for private enterprises has also been collected. For those enterprises, means and medians for the performance indicators have been calculated for the periods 1993-97 and 1998-2002. In addition, the top 10 best performing private enterprises within a country have also been identified by following two selection criteria (subject to data availability). The first was based on the best ROA performance in medians during the period 1998-2002, and

the second based on each indicator's best performance in medians during the same period. In some countries, the data for private enterprises included multi-national corporations (MNCs).

Enterprises included in the study were chosen on the basis of data availability from Argentina, Brazil, Colombia, Egypt, Ghana, India, Indonesia, Jordan, Malaysia, Mexico, Morocco, Pakistan, Peru, the Philippines, South Africa, South Korea, Sri Lanka, Singapore, Thailand, Turkey, Venezuela, and Zimbabwe, a total of 22 developing countries.

It should be pointed out that, as with other similar studies, there is a conceptual problem associated with the use of cross-country cross-enterprise data. The lack of data does mean that the sample selected cannot fully present the true population in a statistically satisfactory manner. Indeed, the number of privatised enterprises analysed in previous studies of this kind has been less than 100, and often less than 50. The World Bank privatisation database reveals that from 1988 to 1998, over 2800 enterprises were partially or fully privatised in developing countries. Therefore, the data used in previous studies were most likely biased towards certain segments of the true population, and conceivably only included the better performing enterprises. This was likely the case, because the better performers would probably respond more positively to completing questionnaires, and those listed in stock markets have already fulfilled appropriate financial criteria to be listed in the first place. Nevertheless, despite the relatively larger database used in the present study, it is not fully representative of the true underlying population.

## 4. RESULTS

This section presents the results and analyses them according to each performance measure. For each performance measure the results are discussed at the enterprise level across all the sample countries. A preliminary examination of the data has revealed that there are outliers in the observations across enterprises and, in some instances, within the time-series data for an enterprise. Outliers obviously lead to upwardly or downwardly biased estimates, in particular for the mean values, resulting in a significant difference between the value of means and medians. Accordingly, while showing the mean values for each indicator in the tables, the main focus rests on an analysis of the median values. At the end of the section the results are also briefly summarised for each category of enterprise at a country level.

**Profitability: Return on Assets (ROA)**

Table 1 shows the values of means and medians and the corresponding results of the paired t (t statistics) and the Wilcoxon signed ranks (z statistics) tests between the two periods specified. With respect to privatised enterprises as a whole (shown as 'All' in the table), it is evident that profitability diminished between the first three years after privatisation and the latest three years. This negative change is more apparent in the privatised utility sector than in the privatised non-utility sectors. In the case of the former, both statistics for the corresponding tests are statistically significant, confirming the negative change. However, the statistics for the privatised non-utility sectors are statistically insignificant, suggesting that overall, privatised non-utilities have maintained the level of ROA over the two periods.

In relation to the percentage values for ROA, those for the first three year medians are almost the same between the privatised utility and non-utility sectors (around 8.5 percent). However, the value decreased by 3.8 percent in the utility sector, compared to 1.7 percent in the non-utilities. In the utility sector, over 80 percent of enterprises experienced negative changes in profitability, compared to only 58 percent in the non-utility sector. As a result, although the utility sector had a slightly higher ROA during the first three years after privatisation (8.8 percent) than the non-utility sector (8.5), its rate (5.0) is clearly lower than the non-utility sectors (6.7) in the latest three years.

These negative changes are also observed among private enterprises not previously publicly-owned. During the period 1993-97, their median value was 7.1 percent, but decreased to 4.9 percent during the period 1997-2002. The negative trend is similar to that for privatised utilities, with the result that privatised non-utility enterprises appear to have performed the best with respect to ROA when compared to privatised utilities and all private enterprises.

However, when the performance of the best performing private enterprises becomes the comparator, it is apparent that their performance is far better than all categories of privatised enterprises. In terms of median, ROA increased from 12 to 14 percent (the decreased mean suggests that some outliers experienced substantial negative changes between the two periods). It appears that the majority of the best performing enterprises (57.8 percent) have increased profitability between the two periods, and have out-performed all other enterprises.

## Table 1 Return on Assets

**Privatised enterprises**

| | Obs | Average (%) | | % dif | % | | t | Median (%) | | % dif | % | | z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F3Y | L3Y | | negative | positive | | F3Y | L3Y | | negative | positive | |
| Utilities | 46 | 10.36 | 4.82 | -5.54 | 80.4 | 19.6 | -3.49*** | 8.78 | 4.96 | -3.82 | 82.6 | 17.4 | -3.90*** |
| Non-Utilities | 100 | 10.16 | 7.94 | -2.22 | 59.0 | 41.0 | -1.18 | 8.46 | 6.73 | -1.73 | 58.0 | 42.0 | -1.25 |
| All | 146 | 10.22 | 7.31 | -2.91 | 65.8 | 34.2 | -2.63*** | 8.20 | 6.17 | -2.03 | 66.2 | 33.8 | -3.23*** |

**Private enterprises**

| | | 1993-97 | 1998-2002 | | | | | 1993-97 | 1998-2002 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | 1338 | 9.72 | 4.56 | -5.16 | 69.3 | 30.7 | -9.04*** | 7.09 | 4.85 | -2.24 | 70.3 | 29.7 | -16.47*** |
| Top 10 (a) | 166 | 16.13 | 14.45 | -0.19 | 48.2 | 51.8 | -0.89 | 11.97 | 14.11 | 2.14 | 42.2 | 57.8 | 2.47*** |

**Note:** obs = number of observations (enterprise). F3Y = first 3 years after privatisation, and L3Y = latest 3 years. Negative = percentage of enterprises that experienced a negative change (i.e. F3Y > L3Y), and positive = percentage of enterprises that experienced a positive change (F3Y < L3Y). t = t statistics of paired t tests. z = z statistics of Wilcoxon Signed Ranks tests. ***, **, and * = statistically significant at 0.01, 0.05, and 0.10 level, respectively. Top 10 (a) = best performing enterprises based on ROA.

**Output: Sales**

In this case, the sales values were adjusted by the consumer price index (CPI, 1995 = 100). Inflation in some of the sample countries increased significantly after 1995. Consequently, the countries in which the CPI reached more than 200 were eliminated from the dataset. The countries excluded were Colombia, Ghana, Indonesia, Mexico, Turkey, Venezuela, and Zimbabwe. The results were normalised by setting the mean and median values for the first period to unity.

Table 2 shows the changes in means and medians for sales (SA). It appears, judging from the median values, that output levels decreased by 10 percent among the privatised enterprises. Specifically, the privatised utilities reduced their output by 13 percent, and privatised non-utilities by 6 percent. However, the Wilcoxon tests, as well as the paired t tests, are all insignificant, suggesting that overall, the level of output for enterprises has been maintained between the two periods. On the other hand, in relation to the proportionate changes, 68.9 percent of the utilities experienced a negative change between the two periods, while 31.1 percent of them recorded a positive change. Among the non-utilities, the corresponding figures are 56.2 percent and 43.8 percent, respectively. Thus, although statistically speaking, the privatised enterprises maintained their level of sales between the periods, the majority of the enterprises actually experienced a reduction in sales.

A negative change is more evident among private enterprises as a whole, including the best performing enterprises. However, the Wilcoxon tests for the top enterprises are also statistically insignificant, indicating that these enterprises can be considered to have maintained their output levels.

## Table 2 Sales (adjusted by CPI)

**Privatised enterprises**

| | Obs | Average | | % dif | % | | t | Median | | % dif | % | | z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F3Y | L3Y | | negative | positive | | F3Y | L3Y | | negative | positive | |
| Utilities | 45 | 1 | 0.98 | -0.02 | 68.9 | 31.1 | -0.32 | 1 | 0.87 | -0.13 | 68.9 | 31.1 | -0.88 |
| Non-Utilities | 73 | 1 | 1.02 | 0.02 | 56.2 | 43.8 | 0.31 | 1 | 0.94 | -0.06 | 56.2 | 43.8 | -0.85 |
| All | 118 | 1 | 1.00 | 0.00 | 61.0 | 39.0 | 0.09 | 1 | 0.90 | -0.10 | 61.0 | 39.0 | -1.32 |

**Private enterprises**

| | | 1993-97 | 1998-2002 | | | | | 1993-97 | 1998-2002 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | 1603 | 1 | 1.53 | 0.53 | 71.2 | 28.8 | 0.86 | 1 | 0.75 | -0.25 | 72.8 | 27.2 | -15.44*** |
| Top 10 (a) | 112 | 1 | 1.17 | 0.17 | 58.0 | 42.0 | 0.33 | 1 | 0.92 | -0.08 | 60.7 | 38.4 | -1.62 |
| Top 10 (b) | 120 | 1 | 1.16 | 0.16 | 55.0 | 45.0 | -1.79** | 1 | 0.93 | -0.07 | 57.5 | 42.5 | 0.32 |

**Note:** obs = number of observations (enterprises). F3Y = first 3 years after privatisation, and L3Y = latest 3 years. Negative = percentage of enterprises that experienced a negative change (i.e. F3Y > L3Y), and positive = percentage of enterprises that experienced a positive change (F3Y < L3Y). t = t statistics of paired t tests. z = z statistics of Wilcoxon Signed Ranks tests. ***, **, and * = statistically significant at 0.01, 0.05, and 0.10 level, respectively. Top 10 (a) = best performing enterprises based on ROA, and Top 10 (b) = best performing enterprises based on sales/employment.

**Sales Efficiency: Sales/Employment**

Table 3 presents the changes in sales efficiency (SE). Sales values were also adjusted by the CPI and, as before, the countries with higher a CPI have been excluded. The privatised utilities recorded the highest positive changes between the two periods (23 percent in median). Judging from the medians, the privatised non-utilities appear to have suffered a slight decline in their efficiency, but the Wilcoxon test is statistically insignificant for this sector, suggesting statistically that overall the non-utilities maintained the level of sales efficiency. In average terms, however, the non-utilities also recorded a positive change. This indicates that there exist some positive outliers in the observations. In terms of proportionate changes in medians, 66.7 percent of the utilities experienced a positive change, whereas 33.3 percent of them recorded a negative change. On the other hand, 54.2 percent of the non-utilities had a negative change and 45.8 percent experienced a positive change. These changes are the same when measured in average terms.

By contrast, private enterprises as a whole reduced their sales efficiency by as much as 15 percent in terms of the median value, even though in average terms it increased, indicating that some extremely positive outliers exist in the observations. The best performing private enterprises based on ROA performance (shown as 'Top 10(a)' in Table 3) also experienced reductions in sales efficiency. On the other hand, the best performing private enterprises based on sales efficiency performance ('Top 10(b)') exhibited a significant difference between average and median values, suggesting the existence of significant positive outliers. In median terms, they recorded a negative change, which is statistically insignificant. Accordingly, overall these enterprises maintained their level of sales efficiency over the two periods.

As a result, it appears that the privatised utilities have exhibited the best performance in terms of sales efficiency, although a word of caution is in order. The number of observations for privatised utilities in relation to this particular performance indicator is relatively small, at only 27, and therefore the results may be biased.

## Table 3 Sales (adjusted by CPI) / Employment

**Privatised enterprises**

| | Obs | Average | | % dif | % | | t | Median | | % dif | % | | z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F3Y | L3Y | | negative | positive | | F3Y | L3Y | | negative | positive | |
| Utilities | 27 | 1 | 1.31 | 0.31 | 33.3 | 66.7 | 2.75*** | 1 | 1.23 | 0.23 | 33.3 | 66.7 | 2.38** |
| Non-Utilities | 48 | 1 | 1.19 | 0.19 | 56.3 | 43.7 | 1.00 | 1 | 0.98 | -0.02 | 54.2 | 45.8 | -0.12 |
| All | 75 | 1 | 1.23 | 0.23 | 48.0 | 52.0 | 1.84* | 1 | 1.03 | 0.03 | 46.7 | 53.3 | 1.54 |

**Private enterprises**

| | | 1993-97 | 1998-2002 | | | | | 1993-97 | 1998-2002 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | 449 | 1 | 1.23 | 0.23 | 63.3 | 36.7 | 1.68** | 1 | 0.85 | -0.15 | 64.8 | 35.2 | -5.56*** |
| Top 10 (a) | 49 | 1 | 0.91 | -0.09 | 67.3 | 32.7 | -1.78** | 1 | 0.75 | -0.25 | 69.4 | 30.6 | -2.47** |
| Top 10 (b) | 80 | 1 | 2.03 | 1.03 | 56.3 | 43.7 | -1.76** | 1 | 0.92 | -0.08 | 53.8 | 46.2 | -0.13 |

**Note:** obs = number of observations (enterprises). F3Y = first 3 years after privatisation, and L3Y = latest 3 years. Negative = percentage of enterprises that experienced a negative change (i.e. F3Y > L3Y), and positive = percentage of enterprises that experienced a positive change (F3Y < L3Y). t = t statistics of paired t tests. z = z statistics of Wilcoxon Signed Ranks tests. ***, **, and * = statistically significant at 0.01, 0.05, and 0.10 level, respectively. Top 10 (a) = best performing enterprises based on ROA, and Top 10 (b) = best performing enterprises based on sales/employment.

**Employment**

As indicated in Table 4, the number of employees in medians has fallen in private enterprises (-11.2 percent) compared to privatised enterprises (-3.1) between the two periods. Within privatised enterprises, employment in the utilities fell more than in non-utilities. Specifically, the privatised utilities reduced the number of employees by nearly 4 percent, compared to a just over 2 percent fall in privatised non-utilities. In the case of the latter, however, the Wilcoxon tests are statistically insignificant, and hence, statistically speaking, the non-utilities maintained the number of employees between the two periods. With respect to the shares, 71.1 percent of the utilities experienced a negative change and the remaining achieved a positive change. In contrast, 58.1 percent of the non-utilities recorded a positive change in employment.

Confining the analysis to the best performing private enterprises, the best performing enterprises based on ROA maintained their level of employment, while the best enterprises based on the employment criteria considerably increased the number of employees by 26 percent over the two periods.

## Table 4 Employment

| | Obs | Average | | % dif | % | | t | Median | | % dif | % | | z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F3Y | L3Y | | negative | positive | | F3Y | L3Y | | negative | positive | |
| Utilities | 38 | 11126 | 9787 | -12.0 | 73.7 | 26.3 | -2.15 | 2710 | 2605 | -3.9 | 71.1 | 28.9 | -2.60*** |
| Non-Utilities | 74 | 11440 | 10548 | -7.8 | 58.1 | 41.9 | -1.54 | 2661 | 2606 | -2.1 | 41.9 | 58.1 | -0.97 |
| All | 112 | 11333 | 10290 | -9.2 | 63.4 | 36.6 | -2.40*** | 2688 | 2606 | -3.1 | 62.5 | 37.5 | -2.43** |

**Private enterprises**

| | | 1993-97 | 1998-2002 | | | | | 1993-97 | 1998-2002 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | 1316 | 6087 | 5778 | -5.1 | 59.2 | 40.7 | -1.65** | 1971 | 1751 | -11.2 | 59.0 | 40.8 | -3.80*** |
| Top 10 (a) | 100 | 6760 | 6029 | -10.8 | 51.0 | 48.0 | -0.74 | 1942 | 1942 | 0.0 | 50.0 | 49.0 | -0.12 |
| Top 10 (b) | 165 | 13479 | 15134 | 12.3 | 41.3 | 58.8 | 2.34*** | 7218 | 9100 | 26.1 | 41.9 | 58.1 | 2.55*** |

**Note:** obs = number of observations (enterprises). F3Y = first 3 years after privatisation, and L3Y = latest 3 years. Negative = percentage of enterprises that experienced a negative change (i.e. F3Y > L3Y), and positive = percentage of enterprises that experienced a positive change (F3Y < L3Y). t = t statistics of paired t tests. z = z statistics of Wilcoxon Signed Ranks tests. ***, **, and * = statistically significant at 0.01, 0.05, and 0.10 level, respectively. Top 10 (a) = best performing enterprises based on ROA, and Top 10 (b) = best performing enterprises based on (employment).

**Capital Investment: Capital Expenditure/Total Assets (CETA)**

The results for the paired t and the Wilcoxon tests shown in Table 5 are all negative and statistically significant except for the best performing enterprises based on the CETA criteria. Therefore, all enterprises, whether privatised or not, reduced their levels of capital investment between the two periods. Although the privatised utility sector recorded higher levels of capital investment in the first period (over 10 percent), they also recorded the largest reduction (-4.7 percent) in the second period. The non-utility sectors also reduced capital investment by 2.7 percent from a median value of 5.4 to 2.6 between the two periods. Indeed, almost 85 percent of the utilities and 66 percent of the non-utilities experienced a negative change.

The decline in capital investment is also common among private enterprises, except for the best performing enterprises based on CETA. The median values for the sample of all private enterprises decreased by 2.7 percentage points between the periods. The best performing companies based on ROA also experienced a decline of 1.1, while the best performing enterprises, based on CETA criteria, maintained capital investment since the paired t test and the Wilcoxon test results are statistically insignificant.

As far as the latest period is concerned, the privatised utility sector performed the poorest. This sector experienced a decrease in capital investment, which dropped by almost half, while the best performing enterprises based on the CETA criteria recorded the highest level of capital investment with a median value of 8.9 percent. Even the best performing enterprises, based on ROA, and the privatised non-utilities outperformed the private utilities in terms of capital investment.

## Table 5 Capital Expenditure / Total Assets

| | Obs | Average | | % dif | % | | t | Median | | % dif | % | | z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F3Y | L3Y | | negative | positive | | F3Y | L3Y | | negative | positive | |
| Utilities | 46 | 11.78 | 6.60 | -5.18 | 87.0 | 10.9 | -6.50*** | 10.67 | 5.96 | -4.71 | 84.8 | 13.0 | -4.75*** |
| Non-Utilities | 89 | 7.70 | 4.32 | -3.38 | 69.7 | 30.3 | -4.52*** | 5.35 | 2.61 | -2.74 | 66.3 | 33.7 | -4.29*** |
| All | 136 | 9.10 | 5.15 | -3.95 | 75.0 | 24.3 | -7.03*** | 7.11 | 3.70 | -3.41 | 72.8 | 26.5 | -6.37*** |

**Private enterprises**

| | | 1993-97 | 1998-2002 | | | | | 1993-97 | 1998-2002 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | 1304 | 7.53 | 4.62 | -2.91 | 76.6 | 22.9 | -8.72*** | 5.23 | 2.50 | -2.73 | 76.1 | 23.3 | -20.57*** |
| Top 10 (a) | 163 | 7.41 | 5.71 | -1.70 | 66.3 | 33.7 | -5.12*** | 5.31 | 4.18 | -1.13 | 69.9 | 29.5 | -5.40*** |
| Top 10 (b) | 166 | 10.82 | 10.21 | -0.61 | 50.6 | 49.4 | -1.17 | 8.53 | 8.91 | 0.38 | 53.6 | 46.4 | -0.81 |

**Note:** obs = number of observations (enterprises). F3Y = first 3 years after privatisation, and L3Y = latest 3 years. . Negative = percentage of enterprises that experienced a negative change (i.e. F3Y > L3Y), and positive = percentage of enterprises that experienced a positive change (F3Y < L3Y). t = t statistics of paired t tests. z = z statistics of Wilcoxon Signed Ranks tests. ***, **, and * = statistically significant at 0.01, 0.05, and 0.10 level, respectively. Top 10 (a) = best performing enterprises based on ROA, and Top 10 (b) = best performing enterprises based on capital expenditure/total assets.

**Leverage: Total Debt / Total Assets (TDTA)**

Table 6 indicates that the privatised utility enterprises have generally exhibited the highest level of debt. During the first period, the level of debt for privatised utilities (26.9 percent) was slightly lower than that for private enterprises (27.7). In the second period, the median value for privatised utilities exceeded that for private enterprise (33.4 and 28.4 percent respectively). Among the privatised utilities, 67 percent recorded a positive change (in this case indicating a deterioration in the level of debts).

In comparison, the privatised non-utility enterprises maintained TDTA at a relatively low level (16.5 percent in the second period). The percentage difference between the two periods for the privatised non-utilities is less than 2 percent, and indeed the paired t and the Wilcoxon tests suggest that they maintained their level of debts. As a result, the level of debt among the privatised non-utilities is even lower than that of the best performing private enterprises when based on ROA criteria (17.2 percent). However, the best performing private enterprises (based on the TDTA criteria) show a much lower level of TDTA, and reduced the level further to a mere 0.03 percent from 6.0 between the two periods. As a result, the gap between these enterprises and the others widened significantly over the periods, and most particularly with respect to the privatised utility sector.

## Table 6 Total Debt / Total Assets

| | Obs | Average | | % dif | % | | t | Median | | % dif | % | | z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F3Y | L3Y | | negative | positive | | F3Y | L3Y | | negative | positive | |
| Utilities | 52 | 25.44 | 32.97 | 7.53 | 30.8 | 69.2 | 3.59*** | 26.88 | 33.43 | 6.55 | 30.8 | 67.3 | 3.53*** |
| Non-Utilities | 105 | 20.45 | 22.24 | 1.79 | 49.5 | 48.6 | 1.13 | 15.19 | 16.53 | 1.34 | 46.7 | 49.5 | 0.37 |
| All | 157 | 22.11 | 25.79 | 3.68 | 43.3 | 55.4 | 2.90*** | 18.44 | 21.06 | 2.62 | 41.4 | 55.4 | 2.51*** |

**Private enterprises**

| | | 1993-97 | 1998-2002 | | | | | 1993-97 | 1998-2002 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | 1338 | 29.42 | 36.76 | 7.34 | 47.6 | 50.5 | 3.30*** | 27.73 | 28.40 | 0.67 | 46.5 | 49.9 | 3.42*** |
| Top 10 (a) | 166 | 23.47 | 24.57 | 1.1 | 54.2 | 44.0 | 0.57 | 19.37 | 17.22 | -2.15 | 54.8 | 38.6 | -2.04** |
| Top 10 (b) | 166 | 11.39 | 8.01 | -3.38 | 57.8 | 30.1 | -4.12*** | 6.02 | 0.03 | -5.99 | 54.2 | 21.1 | -5.15*** |

**Note:** obs = number of observations (enterprises). F3Y = first 3 years after privatisation, and L3Y = latest 3 years. . Negative = percentage of enterprises that experienced a negative change (i.e. F3Y > L3Y), and positive = percentage of companies that experienced a positive change (F3Y < L3Y). t = t statistics of paired t tests. z = z statistics of Wilcoxon Signed Ranks tests. ***, **, and * = statistically significant at 0.01, 0.05, and 0.10 level, respectively. Top 10 (a) = best performing enterprises based on ROA, and Top 10 (b) = best performing enterprises based on total debt/total assets.

**Country Level Results**

The Appendix reports the analysis conducted on a country basis for the same categories of enterprises and performance indicators. The declining trend for the return on assets is evident for privatised utilities in all countries, although the extent of decline is less evident for countries in South Asia than the other country groups. Privatised non-utilities also showed a decline in profitability except in Pakistan and South Africa. Profitability in private enterprises also declined although not among the best performers except in some Latin American economies and Turkey .

Output of privatised utilities, measured by sales, declined in Latin America but generally showed a small increase in all other countries except the Philippines. Sales efficiency declined in Singapore, and to a lesser extent in Brazil, but rose in other countries.

Country variations are also observed for trends in employment for both privatised utilities and non-utilities. Countries in Latin America as opposed to South Asia and East and Southeast Asia witnessed sizable declines in employment following privatisation, with some exceptions for privatised non-utilities in Brazil and Mexico. Capital expenditure more or less declined in all countries for both categories of privatised enterprises as it did for the private sector in general, except for best performers in Brazil, Mexico, India, Turkey and South Africa. Finally, indebtedness increased for privatised utilities in all countries except Thailand, Malaysia, Venezuela, India, Pakistan and Turkey. Debts declined or increased more moderately for non-utilities except in Pakistan and Venezuela where they increased significantly.

## 5. ANALYSIS OF FINANCIAL AND OPERATIONAL PERFORMANCE

Both the financial crises experienced during the 1990s in East and Southeast Asia and in Latin America, and the downturn in infrastructure investment in developing countries following 1997 indicate that our results for privatised utilities may not necessarily be unexpected. However, the analysis has strongly revealed that many private enterprises, as opposed to privatised enterprises, improved performance in spite of adverse economic environments. Factor analysis is used to delve more deeply into the relationship between the various performance indicators to understand what was happening.

**Factor Analysis**

Before presenting the results of factor analysis, Table 7 shows the correlation matrices for each category of enterprises. Although a correlation matrix does not point to any direction of causality, it is indicative of the intertwined relationship between the variables. In relation to the privatised utilities during the first period immediately after privatisation, the correlations between the performance variables were rather sparse. In the second period (generally after 1998 up to 2002), however, the correlations became more evident. These correlations may suggest that higher sales are associated with higher employment and higher level of capital expenditure. However, higher employment is, in turn, related to lower sales efficiency. While the analysis in the section four indicated that the privatised utilities have improved their sales efficiency, the correlation analysis implies that the improvement was largely the consequence of the reduction in employment, not to an increase in productivity. In addition, in the second period, it can be observed that the deterioration in the level of debts identified in the section four appears to have begun to take its toll on profitability (ROA).

With respect to the privatised non-utilities, the correlation between the variables is reasonably evident in the first period, but has become much more apparent in the second period. In the second period, profitability began to be associated positively with the most variables, such as sales, sales efficiency, and capital expenditure, but interestingly the level of debts (TD) began to have a negative effect on profitability. This may indicate that the positive relationship associated with ROA might be fragile. In addition, the correlation results also imply that the source of improvement in sales efficiency for non-utilities is not necessarily achieved by a reduction in employees.

As for the private enterprises selected by the best ROA performance, the variables are moderately correlated with each other in the first period. In the second period, the correlations slightly increased through ROA, and the pattern of the correlations resembles that of the privatised non-utilities in the same period. Unlike the two categories of the privatised enterprises, private enterprises maintained the same pattern of the correlations over the periods, except for ROA. In the second period, ROA began to appear in the correlations through its positive association with sales and sales efficiency, establishing a positive relationship among the variables.

## Table 7 Correlation Matrix

**Privatised Utilities**

| | Period 1 | | | | | | Period 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **SA** | **SE** | **EMP** | **ROA** | **CE** | **TD** | **SA** | **SE** | **EMP** | **ROA** | **CE** | **TD** |
| **SA** | 1 | | | | | | 1 | | | | | |
| **SE** | -0.23 | 1 | | | | | -0.08 | 1 | | | | |
| **EMP** | 0.87*** | -0.68*** | 1 | | | | 0.85*** | -0.59*** | 1 | | | |
| **ROA** | 0.00 | 0.15 | -0.06 | 1 | | | -0.10 | -0.25 | 0.03 | 1 | | |
| **CE** | 0.39** | 0.04 | 0.26 | 0.07 | 1 | | 0.55*** | -0.10 | 0.48*** | 0.35** | 1 | |
| **TD** | -0.24 | -0.13 | -0.15 | -0.17 | 0.06 | 1 | 0.04 | 0.35** | -0.14 | -0.56*** | -0.09 | 1 |

**Privatised Non Utilities**

| | Period 1 | | | | | | Period 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **SA** | **SE** | **EMP** | **ROA** | **CE** | **TD** | **SA** | **SE** | **EMP** | **ROA** | **CE** | **TD** |
| **SA** | 1 | | | | | | 1 | | | | | |
| **SE** | 0.38** | 1 | | | | | 0.42*** | 1 | | | | |
| **EMP** | 0.75*** | -0.31** | 1 | | | | 0.75*** | -0.28** | 1 | | | |
| **ROA** | -0.02 | 0.03 | -0.09 | 1 | | | 0.36*** | 0.27** | 0.21* | 1 | | |
| **CE** | 0.19 | 0.26** | -0.03 | 0.37*** | 1 | | 0.29** | 0.11 | 0.26** | 0.56*** | 1 | |
| **TD** | 0.21* | 0.14 | 0.09 | -0.02 | 0.36*** | 1 | -0.01 | 0.24* | -0.16 | -0.23* | -0.05 | 1 |

**Private Enterprises**

| | Period 1 | | | | | | Period 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **SA** | **SE** | **EMP** | **ROA** | **CE** | **TD** | **SA** | **SE** | **EMP** | **ROA** | **CE** | **TD** |
| **SA** | 1 | | | | | | 1 | | | | | |
| **SE** | 0.63*** | 1 | | | | | 0.58*** | 1 | | | | |
| **EMP** | 0.72*** | -0.09 | 1 | | | | 0.69*** | -0.18 | 1 | | | |
| **ROA** | 0.20 | 0.17 | 0.10 | 1 | | | 0.29** | 0.30** | 0.10 | 1 | | |
| **CE** | 0.25* | -0.16 | 0.44*** | -0.02 | 1 | | 0.45*** | 0.12 | 0.45*** | 0.10 | 1 | |
| **TD** | 0.02 | 0.24* | -0.19 | -0.15 | -0.14 | 1 | 0.06 | 0.22* | -0.12 | -0.13 | 0.05 | 1 |

Overall, the results of the correlation analysis indicate that the performance indicators are significantly correlated with each other, particularly in the second period. Below factor analysis is used to examine the structure of performance for the six indicators, and to judge performance by data-driven criteria rather than to simply rely on an arbitrary set of criteria.

Table 8 presents the results of the factor analysis of performance for each category of the enterprises in the two periods. The factors with an eigenvalue of more than 1.0 were retained in the analysis, and the varimax rotation was used to determine the loadings (i.e. correlations). With respect to the privatised utilities, the first, second, and third factors explain 39, 22, and 17 percent respectively, of the variance in the correlation matrix in the first period. Confining the analysis to loadings of more than 0.60, the first factor consists of sales (SA), sales efficiency (SE), and employment (EMP), in which SE shows a negative correlation. In contrast, the second factor is negatively loaded with the level of debt (TD) and positively with profitability (ROA). The third factor appears to be correlated with only one variable, the level of capital expenditure (CE). In the second period, the first factor explains 42 percent of the variance and constitutes SA and EMP, and CE. The second factor, which explains 28 percent of the variance, has the same loading pattern as the second

factor in the first period, but the signs are reversed. The third factor consists of SE and EMP explains 17 percent of the variance. In this EMP and is negatively correlated.

## Table 8 Results of Factor Analysis

**Privatised Utilities**

| | Rotated Component Matrix | | | | | |
|---|---|---|---|---|---|---|
| | Period 1 | | | Period 2 | | |
| | **Factor 1** | **Factor 2** | **Factor 3** | **Factor 1** | **Factor 2** | **Factor 3** |
| **SA** | **0.77** | 0.27 | 0.43 | **0.93** | 0.16 | -0.13 |
| **SE** | **-0.78** | 0.30 | 0.28 | -0.09 | 0.19 | **0.92** |
| **EMP** | **0.98** | 0.08 | 0.17 | **0.79** | 0.05 | **-0.60** |
| **ROA** | -0.20 | **0.61** | 0.23 | 0.04 | **-0.93** | -0.04 |
| **CE** | 0.15 | -0.09 | **0.93** | **0.82** | -0.38 | 0.18 |
| **TD** | -0.14 | **-0.87** | 0.14 | 0.08 | **0.76** | 0.38 |
| **Eigenvalue** | 2.35 | 1.33 | 1.04 | 2.52 | 1.70 | 1.01 |
| **Var Explained** | 0.39 | 0.22 | 0.17 | 0.42 | 0.28 | 0.17 |

**Privatised Non Utilities**

| | Rotated Component Matrix | | | | | |
|---|---|---|---|---|---|---|
| | Period 1 | | | Period 2 | | |
| | **Factor 1** | **Factor 2** | **Factor 3** | **Factor 1** | **Factor 2** | **Factor 3** |
| **SA** | **0.89** | 0.36 | 0.03 | **0.89** | 0.34 | -0.23 |
| **SE** | -0.07 | **0.91** | 0.01 | -0.02 | **0.88** | -0.27 |
| **EMP** | **0.96** | -0.28 | -0.04 | **0.96** | -0.27 | -0.06 |
| **ROA** | -0.10 | -0.16 | **0.86** | 0.17 | 0.10 | **-0.88** |
| **CE** | 0.09 | 0.39 | **0.76** | 0.20 | 0.07 | **-0.74** |
| **TD** | 0.27 | 0.48 | 0.25 | -0.01 | **0.68** | 0.43 |
| **Eigenvalue** | 1.92 | 1.62 | 1.09 | 2.28 | 1.43 | 1.12 |
| **Var Explained** | 0.32 | 0.27 | 0.18 | 0.38 | 0.24 | 0.19 |

**Private Enterprises**

| | Rotated Component Matrix | | | | | |
|---|---|---|---|---|---|---|
| | Period 1 | | | Period 2 | | |
| | **Factor 1** | **Factor 2** | **Factor 3** | **Factor 1** | **Factor 2** | **Factor 3** |
| **SA** | **0.69** | **0.69** | -0.12 | **0.77** | 0.56 | 0.04 |
| **SE** | -0.04 | **0.92** | -0.06 | 0.01 | **0.90** | 0.26 |
| **EMP** | **0.91** | 0.07 | -0.11 | **0.92** | -0.12 | -0.16 |
| **ROA** | -0.01 | 0.25 | **-0.83** | 0.07 | **0.67** | -0.52 |
| **CE** | **0.75** | -0.24 | 0.11 | **0.74** | 0.08 | 0.14 |
| **TD** | -0.23 | 0.47 | **0.64** | -0.04 | 0.17 | **0.88** |
| **Eigenvalue** | 2.11 | 1.56 | 1.08 | 2.27 | 1.40 | 1.10 |
| **Var Explained** | 0.35 | 0.26 | 0.18 | 0.38 | 0.23 | 0.18 |

In relation to the privatised non-utilities in the first period, the first factor is associated with SA and EMP, the second factor with SE and the third is related to ROA and CE. These factors explain 32, 27, and 18 percent of the variance, respectively. In the second period, the first factor explains 38 percent of the variance with the same loadings (SA and EMP) as in the previous period. The second factor, accounts for 24 percent of the variance, and is loaded with SE and TD. The third explains 19 percent of the variance and has the same loadings of ROA and CE as revealed in the previous period, but this time the signs are negative. Similarly, private enterprises exhibit the same loading pattern for each period in terms of the first factor. The loadings of SA, EMP, and CE explain 35 percent of the variance in the first period and 38 percent in the second period. The second factor explains 26 percent of the variance and is associated with SA and SE in the first period. In the second period, this

factor has loadings of SE and ROA, which account for 23 percent of the variance. Finally, the third factor in the first period explains 18 percent of the variance and is correlated with ROA and TD. In this case, ROA is negatively correlated. In the second period, the third factor is almost exclusively associated with TD and explains 18 percent of the variance.

Not surprisingly, therefore, all performance indicators appear to be correlated with one of the three factors in one way or another. Depending on the loadings of the performance indicators in each factor, these factors could be categorized into four groups, namely operational performance, financial performance, efficiency, and an unspecified (factor that is difficult to categorise). Applying this to the three broad sectoral categories, it can be seen that for the privatised utilities, operational performance (factor 1) is the most significant. Specifically, the size of an enterprise measured by sales and employment and the level of capital expenditure appear to be underlying features of performance. Financial performance (factor 2) is also significant, but the underlying features of this factor are characterized by a higher level of debt and a lower level of profitability in the second period. Notably, however, the reverse was the case in the first period. The change in the second period suggests that financial performance among the privatized utilities significantly deteriorated after privatization. Furthermore, efficiency (factor 3 in the second period) becomes more important, although the reduction in employment appears to be the source of improvement.

With respect to the privatised non-utilities, operational and financial aspects of performance also appear to be significant. The operational performance (factor 1) consists of sales and employment, and therefore the size of an enterprise is associated with the performance of the non-utilities. Efficiency (factor 2) was a significant characteristic of their performance in the first period, and this continued into the second, even though it is difficult to characterize factor 2 owing to its loadings not only with SE but also TD. In contrast, the underlying features of financial performance (factor 3) reveal the extent of the deterioration in performance. In the first period, profitability and the level of capital expenditure were positively correlated with factor 3, but in the second, the correlations became negative. Thus, the financial performance of privatized non-utilities is characterized by lower levels of profitability and capital expenditure in the second period.

As for private enterprises, the operational performance (factor 1), consisting of sales, employment, and the level of capital expenditure, is the most significant feature of their performance in both periods. Factor 2 in the second period features a mixture of efficiency

and profitability, which is difficult to categorize, although it suggests that higher efficiency and profitability are the underlying structure of their performance. Finally, financial performance is characterized by lower profitability and a higher level of debt in the first period. In the second period, the negative correlation for ROA is weaker, but a high level of debt continues to be a significant feature of performance.

In summary, the results have shown that the privatised utilities exhibited a deteriorating trend with respect to profitability, employment, capital expenditure, and debts and a stagnant one for sales. Only sales efficiency improved, and this appears to be related to the reduction in employment. The privatised non-utilities also exhibited deteriorating (capital expenditure) or stagnant (profitability, sales, sales efficiency, employment, and debts) trends. The underlying features of performance derived from the factor analysis for the non-utilities suggest that they more or less maintained their level of performance, although the lower levels of capital expenditure and profitability did begin to feature in their performance. Thus, the positive relationships among the variables identified by the correlation analysis may indeed be fragile. As far as private enterprises are concerned, profitability (ROA) improved, but other indicators show either deteriorating (sales efficiency, capital expenditure, and debts) or stagnant (sales and employment) trends. However, the characteristics of performance derived from the factor analysis for these enterprises do not necessarily coincide with these trends, except for the increase in the level of debt. This may suggest that performance varies considerably between enterprises, which makes it difficult to interpret the results. Although, unlike the privatised utilities, and to a lesser extent the privatised non-utilities, the correlation and factor analysis for private enterprises did not indicate a deterioration in performance, except with respect to the level of debt. As a consequence, it appears that the underlying features of performance among private enterprises have been more stable over time in comparison to privatised enterprises.

## 6. CONCLUSION

The analysis has compared the financial performance of a wide range of privatised enterprises immediately following privatisation with the most recent period. Enterprises in the sample have been drawn from developing countries, and in particular those privatised as regulated utilities and those entering the private sector (referred to in our case as non-utilities). The sample contains some privatised utilities which have been subjected to more competition following privatisation. In the case of privatised non-utilities, the degree of

competition they have faced has varied considerably, as levels of concentration have continued to remain high in manufacturing in developing countries, despite privatisation. The performance of the sample of privatised enterprises was also compared to the average performance of private enterprises that had not previously been publicly-owned, and with a group of best performing enterprises drawn from the private sector. This mixture of enterprises permitted an examination of the performance of a range of enterprises that faced a similar business environment, but whose performance may nevertheless vary. In this way the sample selection has acted as a form of control for the influence of external conditions.

The findings permit us to say something about the current situation with respect to the performance of privatised enterprises, and to compare our results with earlier studies conducted with samples drawn from enterprise level data for the 1980s and 1990s. Unlike the earlier studies our results do not suggest that privatised enterprises are generally working well. The performance of privatised enterprises across the sample countries has been mixed, and in many cases there appears to be significant differences between the performance of privatised utilities and non-utilities. There have also been significant differences between the performance of privatised enterprises and private enterprises, particularly when compared to the top performers.

Compared to earlier studies the picture that emerges in relation to those enterprises that have been privatised is that operational efficiency and financial performance can just as easily deteriorate as it can improve in the years immediately after privatisation. Clearly, the trends for performance indicators for a significant number of privatised enterprises, particularly those in the regulated utilities sector have deteriorated and are less than healthy. Efficiency and output levels in many have fallen, capital investment has declined, and a significant number of enterprises have an increasing level of indebtedness.

Whether or not the results indicate a common theme that can explain the deteriorating performance of privatised utilities is more difficult to determine. The conclusion of the World Bank's more recent research into the privatisation of public utilities attributes the decline in investment after 1997 to the unrealistic expectations of investors and governments. This reasoning echoes much of their previous research that argued that unrealistic expectations result from the difficulties of moving from a pre-privatisation situation, in which public enterprises received large subsidies and priced services below costs, to one of sustainable

profitability and growth. The mixed results obtained for all categories of enterprises analysed from our study suggest that the explanation is more complex.

What the results more significantly point to are the differences that emerge between the performance of enterprises in different sectors and across countries, which very strongly indicates that performance is influenced by the institutional and structural context. This intuitively confirms our view that legal institutions and practice, market structure, and systems of regulation do vary and operate with different degrees of effectiveness, in different economies, and specifically with respect to regulation, between different sectors.

More fundamentally, the analysis, for all its limitations with respect to methods and data, does underline the point that it is very easy to draw premature conclusions concerning the efficacy of privatisation. The risk of doing this is far higher when conclusions are derived from relatively small samples and a limited set of performance indicators. By using a much broader based sample and a comparative perspective it is hoped that the results of our analysis have indicated that assessing post-privatisation performance is quite complex, and the underlying answers to why performance may vary over time and between institutional contexts must inevitably be reinforced by a more specific and detailed examination of particular cases.

## References


Boubakri, N. and Cosset, J. (1998) 'The Financial and Operating Performance of Newly, Privatised Firms: Evidence from Developing Countries, *Journal of Finance*, 53 (3), 1081-1110.

Carlin, W., Fries, S. Schaffer, M. and Seabright, P. (2001) 'Competition and Enterprise Performance in Transitional Economies: Evidence from a Cross-country Survey', mimeo, CEPR.

Cook, P. and Kirkpatrick, C. (1988) *Privatisation in Less Developed Countries*, Hemel Hempstead, Harvester Wheatsheaf.

Cook, P. and Kirkpatrick, C. (1995) *Privatisation Policy and Performance: International Perspectives,* Hemel Hempstead, Prentice Hall.

Cook, P. and Minogue, M. (1990) 'Waiting for Privatisation in Developing Countries: Towards the Integration of Economic and Non-economic Explanations', *Public Administration and Development*, 10 (4), 389-403.

D'Souza, J. and Megginson, W. (1999) 'The Financial and Operating Performance of Privatised Firms During the 1990s', *Journal of Finance*, 54 (4), 1397-1438.

Dewenter, K. and Malatesta, P. (2001) 'State-Owned and Privately Owned Firms: An Empirical Analysis of Profitability, Leverage and Labor Intensity', *American Economic Review*, 91 (1), 320-334.

Dewenter, K. and Malatesta, P. (1997) 'Public offerings of state-owned and privately-owned enterprises: An international comparison', *Journal of Finance*, 52, 1659-1679.

Galal, A., Jones, L., Tandon, P. and Vogelsang, I. (1992) 'Welfare Consequences of Selling Public Enterprises', Washington DC, World Bank.

Harris, C. (2003) 'Private Participation in Infrastructure in Developing Countries: Trends, Impacts, and Policy Lessons', *World Bank Working Paper*, No.5, Washington DC, World Bank.

Megginson, W., Nash, R. and van Randenborgh, M. (1994) 'The Financial and Operating Performance of Newly, Privatised Firms: An International Empirical Analysis', *Journal of Finance*, XLIX (2), 403-452.

Megginson, W. and Netter, J. (1998) 'From state to market: A survey of empirical studies on Privatisation'. Paper presented at SBF Bourge de Paris/New York Stock Exchange Joint Conference on Global Equity Markets, 10-11 December.

Parker, D. and Kirkpatrick, C. (2004) 'Privatisation in Developing Countries: A Review of the Evidence and the Policy Lessons', Centre on Regulation and Competition Working Paper No. 55, University of Manchester.

Shirley, M. and Walsh, P. (2000) 'Public versus Private Ownership: The Current Debate', mimeo, Washington DC, World Bank.

Shleifer, A. (1998) 'State Versus Private Ownership', *Journal of Economic Perspectives*, 12 (4), 133-150.

Shleifer, A. and Vishny, R. (1997) 'A Survey of Corporate Governance', *Journal of Finance*, 52 (2), 737-83.

World Bank (1995) *Bureaucrats in Business*, Washington DC, World Bank/Oxford University Press.