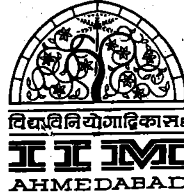

W. P.

Working Paper

PRIVATISATION: ISSUES AND EVIDENCE

By

T.T. Ram Mohan

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PRIVATISATION: ISSUES AND EVIDENCE

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ABSTRACT

Even as India's privatisation programme gathers steam, there is a perception, reflected in the pronouncements of ministers as well as in writings in the popular press, that the benefits of privatisation can be taken as axiomatic. There is little in the literature on privatisation that lends support to such dogma. The theoretical literature, while pointing to the benefits or private ownership, also underlines the conditions under which such benefits can be realised. These conditions cannot be presumed to operate everywhere. The empirical evidence is also shrouded in ambiguities, whether we look at the experience in the developed world or in developing countries. This paper surveys the literature on privatisation and highlights the conceptual issues underlying privatisation as well as the evidence from privatisation experiments in different parts of the world.

I.Background: privatisation in theory and practice

A great wave of privatisation has swept the world in the past two decades, embracing the industrial economies, the transition economies of East Europe and large parts of the less developed world, and it continues to roll on. It is interesting, however, that the basis in theory for such a vast movement was somewhat shaky to start with. Moreover, a sizable enough body of empirical evidence, on which hypotheses about its impact could be tested, became available only several years down the road. So much of the initial impetus to privatisation entailed a leap in faith, and, as happens all too often in the development of knowledge, attempts to explain its impact have followed on the heels of widespread existing practice.

Although ideological considerations - exemplified by such statements as, " governments have no business to be in business" - have often been paramount in driving privatisation in various parts of the world, it is also true that governments have sought to justify privatisation in relation to certain objectives. These objectives include one or more of the following:

1. to promote increased efficiency.
2. to raise revenues for the state (and thereby to bridge fiscal deficits).
3. to reduce government interference in the economy and promote greater private initiative.
4. to promote wider share ownership and the development of the capital market.

Of these, the first objective, the need to promote efficiency in running commercial organisations, has arguably been the dominant motivation. There is a sense that public ownership somehow leads to lower levels of efficiency than are possible under private ownership; and inefficient enterprises, in turn, are seen as creating other problems such as pre-emption of government revenues (badly needed for investment in social sectors in the less developed countries) through subsidies or recapitalization of uncompetitive firms in the economy.

All this is now virtually taken as axiomatic and is part of the conventional wisdom, but it is noteworthy that neoclassical theory dwelt does not have much to say about firm **ownership,** dwelling instead on the importance of **market structure** in generating efficient outcomes. If anything under certain conditions of market failure that cannot be entirely rectified through Pigouvian taxes or subsidies, there is a case for public, rather than private, ownership to meet overriding social objectives.

Subsequent literature, drawing on property rights and public choice theory has, however, come up with a number of reasons why private ownership might be superior. The property rights school of thought would focus on the agency problems under the two forms and argue that such problems are more acute under public ownership.

Managers will perform only if they are monitored. The property rights school contends that that managers in the public sector lack incentives to perform because they are poorly monitored. Poor monitoring in the public sector, in turn, stems from the fact that ownership is diffuse, and, moreover, the firms are not publicly traded and hence not vulnerable to the threat of takeover. Thus, from the perspective of the property rights school, inefficiency in PSUs arises from the failure to clearly assign property rights.

Or, to put it differently, politicians and bureaucrats, who are vested with the job of monitoring on behalf of the larger public are not as good at monitoring or designing incentive systems as shareholders in a private company (very often institutional shareholders who perform the monitoring role on behalf of small investors).

Another reason managers in the public sector lack incentives to perform is that they do not fear bankruptcy; thanks to the 'soft budget' constraint managers in the public sector can expect to be bailed out by public funds (Kornai, 1980).

Public choice theory complements what the property rights approach has to say about relatively inefficiency in the public sector by focusing on the behaviour of politicians and bureaucrats. Unlike their counterparts in the private sector, managers in the public sector might lack focus because they are expected to pursue a variety of objectives, not all of which are calculated to maximise profit (Shleifer and Vishny, 1996).

Multiplicity of objectives arise from the fact that public sector managers are answerable to different constituents, such as legislators, civil servants and ministers, each with its own objective. In particular, politicians, who are answerable to constituents such as labour, would tend to push public sector managers to pursue objectives, such as an increase in employment, that militate against profit maximisation.

Broadly speaking, both the approaches suggest that behaviour and hence performance of managers will differ in the public and private sectors because the objective functions are different and also the constraints are different. Neither is good performance incentivized in the public sector nor is bad performance penalised through takeover or bankruptcy.

The proposition that agency problems are necessarily so much more acute in the public sector than in the private sector as to make a difference to performance has not gone unchallenged. Stiglitz (1997) makes the point that in all big firms, whether in the public or the private sector, managers enjoy considerable discretion. Since managers can appropriate only a small fraction of any improvement in productivity, in neither sector do managers have any incentive to design good incentive structures.

However, it is also true that the effort required to design incentives structures is not so great as to impose a major impediment in either case. As Stiglitz puts it," It seems extremely implausible to think, in either case, of managers mulling over whether to

exert the little effort to design a good incentive structure that will make the organization function better, carefully balancing the returns they will obtain with the extra effort they will have to exert." Stiglitz cites the extraordinary performance of public enterprises in certain provinces of China to make the point that economic success is possible even under conditions in which property rights are ill-defined.

The Sappington-Stiglitz theorem (1987) shows that conditions under which privatisation could fully implement public objectives of equity and efficiency are extremely restrictive. This is reflected in some of the choices societies have made for public production. It is difficult, for instance, to design Pigouvian taxes or subsidies to attain the "right" level of risk-taking or innovation or to attain objectives in public education such as "social integration". The theorem also demonstrates that an *ideal* government could do a better job of running an enterprise itself than it could through privatisation- although, in practice, such an ideal government may be hard to come by.

Martin and Parker (1997) put forward a number of other reasons why the suggestion of superior performance implied by the property rights and public choice literally need not be taken at face value. They argue that it is simplistic to suppose that public and private sector companies are two distinct categories, each with a particular organisational design and orientation.

In fact, there is a continuum of organisational types ranging from the archetypal government bureaucracy (such as the Foreign Office) through various types of agencies (such as public corporations) and private sector firms heavily dependent on government contracts (such as defence firms) to limited liability companies and small businesses. At the same time, all types of firms are subject to some degree of state influence on account of regulations, taxes and macro-economic management. It seems more plausible, therefore, that "public and private sector firms may have similarities that define their behaviour and performance more clearly than the presumed differences".

Further, the authors make the point that too much should not be made of the lack of incentives, especially pecuniary incentives, in the public sector and the effect of this on the performance of public sector managers. Managers could have broader motives than the usual self-seeking ones. They also quote a study by Fama (1980) showing that the labour market may capitalise performance in managerial remuneration creating incentives for performance quite irrespective of ownership. Further, they also cite studies that suggest that the behaviour of politicians and bureaucrats may not be as divorced from the public interest as is generally supposed.

Finally, the authors question underline the point many have made about the imperfect nature of the market for corporate control. The failure of managers to maximize shareholder wealth and, in particular, any tendency on their part to help themselves to over-generous salaries and perquisites is, in theory, disciplined by the capital market. Shareholders will sell under-performing shares, causing prices to fall and creating

conditions for a takeover by another firm. In practice, however, the market may not operate this way because of a number of factors: the transaction costs of trading shares, significant information imperfections, diffused share ownership, the failure of takeovers to deliver promised improvements in performance and profit, etc

All this has led to the contention that what matters is not ownership so much as competition. (Stiglitz (1993), Vernon-Wetzel and Wetzel (1989)). However, it has also been pointed out that, while competition undoubtedly contributes to efficiency gains, the existence of a publicly-owned firm as the incumbent, might deter other firms from entering the market, no matter that competition is permitted. Moreover, since real competition means not only freedom to enter but freedom to fail, the existence of PSUs may not conduce to meaningful competition (Sheshinski and Lopez-Calva, 1998).

Given the many ifs and buts about the theoretical merits of privatisation, researchers have had to turn inevitably to the evidence on the ground in order to arrive at conclusions. But the empirical evidence on ownership and efficiency, contrary to impressions that might have been created in the popular press, is by no means unambiguous, least of all where less developed countries are concerned- as the next section outlines.

II. Empirical evidence

The empirical research on the subject of privatisation falls into three categories:

1. Case studies
2. Cross-sectional comparisons of public and private sector performance
3. Econometric analysis of pre- and post-divestiture performance of enterprises

1. **Case studies**: typically focus on the performance of a given firm. The firm's performance is compared with its own before privatisation, or with other firms that were not privatized, or with firms already in the private sector.

Adam, Cavendish, and Mistry (1992) used country case studies from eight developing countries and found improvements in efficiency in Malaysian firms after divestiture.

Bishop and Kay (1989) compared the performance of a number of divested enterprises in the shipping, airline, gas, telecommunications, oil and automobile industries with that of undivested enterprises in the coal, rail, steel, and postal sectors in the United Kingdom, using indicators such as revenue, employment, profits, profit margins and TFP. They found an improvement in enterprise performance in both sets of firms. They concluded that the business cycle and the very threat of divestiture could explain the improvements in performance.

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Using total factor productivity, Foreman-Peck and Manning (1998) compared the performance of British Telecom (after it was privatized) with that of five telecommunications enterprises elsewhere in Europe and came up with ambiguous results. They found that BT was apparently less efficient that its counterpart in both Norway (where the copmany was state-owned) and Denmark (where ownership was mixed) but more efficient than those in Spain and Italy (where ownership is mixed).

A more thoroughgoing set of case studies, using cost-benefit analysis, has been carried out by Galal, Jones, Tandon and Vogelsang, 1994). They studied 12 privatized firms in four different countries with a view to capturing the net change in welfare, defined as the sum of the changes in welfare of consumers, enterprise profits (including effects on buyers, the government and other shareholders), welfare of labour, and welfare of competitors. They conclude: ' Did divestiture make the world world a better place, or not ? In our twelve cases, this question is answered with a surprisingly uniform and resounding, "yes".'

Martin and Parker (1997) provide a review of several other studies of the impact of privatisation using relatively small samples of firms. The evidence is inconclusive as to whether privatisation uniformly led to better performance. The authors note that the periods chosen were often to short to determine the post-privatisation impact. Besides, in many cases, the comparison of pre-and post- privatisation performance did not control for the stage of the business cycle.

In their own study, the authors try to address these two infirmities. They examine the performance of 11 British firms that were privatized in the eighties:British Airways, British Airports Authority, Britoil, British Gas, British Steel, British Aerospace, Jaguar, Rolls-Royce, National Freight Corporation, Associated British Ports, and British Telecom.

Changes in performance are measured across six different periods: nationalisation; pre-privatisation (which is the period preceding the announcement of privatisation); post-announcement (that is, the period following the announcement of privatisation); post-privatisation; a recession period from 1998 to 1992; and a latest period, from 1992 to 1994-95. The first three periods are ones under public ownership and the latter three under private ownership. Except for the post-announcement and the latest periods, each period, in general, averages four years and the figure reported is a four-yearly average. Thus, each enterprise is tracked over a period ranging from14 to 21 years.

By using such long periods, the authors believe that performance is effectively captured over an entire business cycle and it also ensures that short-term effects from privatisation are not taken as proof of sustainable improvement. Also, they contend that their approach helps them to isolate the effects of privatisation per se from anticipation effects, as there is often considerable improvement in firm performance ahead of privatisation.

The post-announcement period for nine out of the eleven firms was relatively short (one or two years) and it usually overlapped with the pre-privatisation period. So, while reporting results for all six periods, the authors leave out this period and concentrate on comparing the nationalisation period with the four other periods.

The authors suggest that a comparison of the nationalisation period with the pre-privatisation period would capture what they term the "once-for-all shake-out effect" of privatisation. Comparing the nationalisation period with the three different periods under private ownership would bring out any "persistent differential" between private and public ownership.

Four performance indicators are reported: labour productivity growth; total factor productivity growth; the growth in value-added per employee; and the rate of profit (defined as profit before interest and tax divided by capital employed).

Except for the rate of profit, every indicator is calculated by subtracting from its value for a given firm the corresponding indicator for the economy as a whole or for manufacturing, thus adjusting for business cycle effects. The results are summarised in the table below.

TABLE 1: SUMMARY OF ALL COMPARISONS WITH THE RESULTS FOR THE NATIONALISATION PERIOD

Comparing the results for the nationalisation period with all others	Up	Down
(a) By performance indicator		
i. LP growth	19	20
ii. TFP growth	12	28
iii. VA growth	23	17
iv. Rate of profit	28	12
(b) By comparative period		
i. Pre-privatisation	24	15
ii. Post-privatisation	20	24
iii. Recession	17	23
iv. Latest period	21	15
(c) Total	82	77

As can be seen from the table, there are a total of 159 observations, which can be grouped either by indicator or by comparative period. Relative to nationalisation, value added growth and rate of profit showed more increases than declines. Labour productivity showed no change while declines in total factor productivity outnumbered gains by a wide margin. The authors, however, believe the TFP results may be less reliable than the rest.

Comparing by periods, performance in the nationalisation period is seen to be better than either the post-privatisation or recession periods. However, the pre-privatisation and the latest periods saw better performance than the nationalisation period. Overall, 82 observations showed improvement while 77 deteriorated following privatisation. The authors found, using the non-parametric sign test, that the null hypothesis that there is no difference between the performance of publicly and privately owned companies could not be rejected.

It is worth adding that, if we took away the pre-privatisation period when firms were still under public ownership and compared only the post-privatisation period with the nationalisation period, then we would get 62 declines compared to 58 improvements.

The authors conclude that there is "little evidence of any systematic improvement in performance". They add, "Generally, the great expectations for privatisation evident in ministerial speeches have not been borne out".

2. **Cross-sectional comparisons of public and private enterprises:**

As Galal et al (1994) have noted, "the most striking characteristic of this body of work is its almost laughable diversity of results."

The largest study of this kind was done by Boardman and Vining (1989). They compared performance measures for 500 non-US international firms. Of the 489 firms for which they obtained complete data, 409 were private corporations, 57 state-owned enterprises, and 23 were mixed enterprises having both public and private control. The analysis was done for the year 1983 and was based on *Fortune 500* data.

The performance measures used were: four profitability measures (return on equity, return on assets, return on sales and net income); two productivity measures (sales per employee and sales per asset); and assets per employee.

These dependent variables were regressed against several independent variables, such as sales, assets, and number of employees. Dummy variables were used for market concentration, industry, country, and ownership form.

The study found that private sector performance is superior. The average return on equity was 4.3 per cent for private corporations (PCs), minus 10 per cent of state owned enterprises (SOEs) and minus 14 per cent for mixed enterprises (MEs). There was less difference among the three corporate types in return on assets and return on sales, although the order here too was the same as with return on equity. Net income again was highest in PCs as well as sales per employee and sales per asset. Assets per employee were lower in PC s than in SOEs but higher than in MEs.

The paper, however, noted that, while PCs were represented in all industries, SOEs were found most frequently in petroleum, metal manufacturing and transportation. Also, it is hard to explain why MEs fare worse than SOEs on key indicators, given that they have some private ownership. Another problem with this study is that it does not avoid selection bias; this could occur, for instance, if some of the state-owned firms happened to have been firms taken over by the state because they could not compete.

A similar study was carried out by Picot and Kaufman (1989), using Fortune 500 data for six countries (Britain, Canada, France, Germany, Italy and Sweden) and fifteen industries. They too concluded that SOEs had lower rates of return and productivity than PCs.

But, for all the attempts to control for industry, the question whether we are comparing like and like remains. The issue is especially difficult to ignore because of the evidence from several studies that, at least in some industries, public sector performance compares favourably with that of the private sector.

Caves and Christensen (1980), for instance, found that two railroads, one in the public sector and the other in the private sector, had almost the same levels of total factor productivity. This does lend some credence to the view that, in some industries at least, public sector performance may not be inferior to the private sector.

Other studies on regulated industries have also cast doubts on the supposed superiority of the private sector. Finsinger (1984) found public insurers had lower costs than private insurers. Yunker (1975) and Meyer (1975) found that in the US electric power industry, public sector companies had lower costs per unit of output than private sector utilities. This finding was confirmed by Fare, Grosskopf and Logan (1985), who found a higher level of technical efficiency in publicly-owned utilities.

Martin and Parker (1997) review a number of other international studies that compared state and private sector enterprises and find that the evidence is mixed; there are at least some studies that point to superior efficiency in the public sector. They conclude: "In sum, the international studies do not provide unequivocal support for privatisation programmes".

The authors also look at comparisons made in the UK between public and private sector companies. Here again, the diversity of results is striking. It must be added, though, that

in many of the studies cited seem not to have to come to grips with the problem of comparing like with like; the public and private sector firms often belong to different (and not comparable) sectors.

Galal et al (1994) attempt an explanation as to why studies on privatisation come to contradictory conclusions. One reason is that some of the studies compare competitive enterprises in the private sector with monopoly enterprises in the public sector, and, not surprisingly, find superior performance in the former category. Secondly, some find private sector performance legitimately superior because they are comparing reasonably competitive enterprises, and small public enterprises in a competitive situation cannot be expected to do better than private enterprises. Thirdly, some of the studies compare public and private monopolies, and this is an area where, as the authors put it, "the results are all over the map".

iii. **Econometric analysis of pre- and post-privatisation performance:** In this category of studies are those that look at a large sample of firms that have undergone privatisation, whether in a given country or across several countries.

Among the most detailed studies to date is by Megginson et al (1994). They compared the pre- and post- privatisation financial and operating performance of 61 companies from 18 countries and 32 industries during the period 1961 to 1990. The comparison was done between performance three years before privatisation and three years after for each company with the mean of each parameter being compared. They found increases in profitability, efficiency, capital spending, employment (which they admit is a surprising result) and real sales after divestiture.

It is worth pointing out, however, that their study found the increase in profitability (measured by return on sales) to be insignificant for regulated industries, such as utilities and banking which would appear to reinforce the doubts raised by some of the other studies mentioned earlier about the superior performance of the private sector in such industries.

One shortcoming of this study is that it does not control for changes in the economic environment (which in itself could contribute to improved performance in the post-divestiture period). Another is that it does not factor in pre-privatisation restructuring which again could result in improvement in performance consequent to privatisation. The problem of selection bias in public sector firms that underwent privatisation also remains unaddressed.

These problems have been addressed by Frydman, Gray, Hessel and Rapaczynski (1997) in their study of transition economies, part of a substantial body of work on privatisation in Eastern Europe. This study is, therefore, more appealing in methodological terms.

The authors state upfront that if better firms were chosen for privatisation, selection bias could occur and this would vitiate any conclusion arrived at by comparing privatised and non-privatised firms. To avoid this bias, the authors use the non-privatized state firms as a control group. They break up their analysis in two parts. First, they compare post-privatisation performance of privatized firms with state firms; secondly, they compare the *pre-privatisation* performance of the privatized firms with the same set of state firms. If there is a difference in performance only in the first case, then it is possible to infer that ownership has made a difference.

The authors' analysis is based on a sample of about 190 mid-sized companies in the Czech Republic, Hungary and Poland and covers the period 1990 to mid- 1994 (median 1993 employment in the sample: 360 full-time employees; median 1993 sales: $6 million). The authors looked at performance measured by four different variables: revenue, employment, revenue per employee and cost/revenue ratio.

They regressed the growth of each performance variable against the initial performance value and a dummy variable that represented the ownership form (one if the firm was privatised, zero otherwise). This equation, the authors suggest, captures two effects: the effect of the transition to a market economy, and the privatisation effect. The two effects are shown in the table below.

TABLE 2: TRANSITION AND PRIVATIZATION EFFECTS OVER 1990-93 PERIOD

Performance measure	Transition effect (%)		Privatization effect (%)
	Mean component	Initial value component	
Revenue	-15.82*	-0.25*	19.01*
Employment	-7.47*	-0.40**	5.88**
Revenue per employee	-5.21*	-0.28**	11.17*
Cost/revenue	30.06*	-0.31*	-3.00

*P < 0.05 **P < 0.10

The impact of privatisation was most dramatic on revenue and also statistically significant in respect of employment and revenue per employee. The effect was not statistically significant in the case of cost/revenue. What is striking about the findings is that the transition and privatisation effects work in opposite directions: while performance indicators are adversely impacted by transition, privatisation seems to serve as a sort of an antidote by boosting these variables.

The authors suggest that because revenue falls were arrested, the impact on employment was also positive, contrary to the belief that privatisation could impose costs in terms of lower employment. The authors also verified that the privatisation effect is not limited to a particular country, industrial sector or a particular vintage of privatized firm.

As mentioned earlier, in order to eliminate selection bias, the authors attempted to ascertain whether the *same* privatized firms that were outperforming state firms after privatisation were also outperforming the *same* state firms before privatisation. They found that when insider-owned firms were included, there is a statistically significant pre-privatisation effect as well. In other words, the sample of privatised firms was doing better than the non-privatised firms even before the former were privatised.

However, when insider-owned firms are excluded from the pre- and post-privatisation comparisons, the pre-privatisation difference between the two sets of firms, privatised and state-owned, becomes statistically insignificant. In contrast, the post-privatisation difference increases between the two sets when insider-owned firms are excluded. This suggests that "insider-owned firms tend to dissipate any initial advantages they may have and do not perform significantly better than state companies after privatisation".

The inclusion of insider-owned firms thus seems to lead to a negative selection bias that masks the impact of privatisation. Without these firms, the impact of privatisation would be seen to be even greater. The authors conclude that there is "strong empirical evidence that private ownership dramatically improves the most essential aspects of corporate performance in the countries undergoing post-communist transition:

III. Privatisation in less developed countries

Many of the studies cited above have been carried out in the developed world. When it comes to less developed countries (a category that, in the World Bank's classification, excludes the transition economies of Eastern Europe), it becomes even more difficult to come by unambiguous evidence in favour of privatisation.

In its review of privatisation programs, the World Bank (1992) noted, "Most privatisation success stories come from high- or middle-income countries. It is harder to privatise in low-income settings, where the process is more difficult to launch", although

the study was quick to add, " But even in low-income the results of some privatisation experiments have been highly positive."

It is interesting to note that the study by Megginson et al (1994), cited above, while finding improvements in profitability in developing countries post-privatisation, found increases in efficiency only in companies headquartered in OECD countries. One of the earlier surveys done by Millward (1988) noted quite emphatically: " There is no evidence of a statistically satisfactory kind to suggest that public enterprises in LDCs have a lower level of technical efficiency than private firms operating at the same level of operation."

In its assessment of privatisation in sub-Saharan Africa, the World Bank (1994) concluded that "such limited privatisation has had little impact on efficiency and economic growth".

On Mexico, we have two studies with differing conclusions. John Weiss (1995) looked at the 500 largest enterprises in Mexico over the period 1985-90, and compared measures such as sales at constant prices, sales per worker at constant prices and sales per unit of total assets at constant prices. His conclusion: "In terms of the influence of ownership, which is the main focus of ths analysis, there is no support for the view that state ownership per se implies poor performance.... What is clear.. is that the results give no support for privatisation of the remaining enterprises on efficiency grounds."

The findings of LaPorta and Lopez-De-Silanes (1998) are diametrically opposite to the above. Their study covered 218 firms in 26 different sectors, privatized between 1983 and 1991. The authors examined seven broad indicators of performance: profitability; operating efficiency; employment and wages; capital investment; total output; prices and taxes.

For each firm, they measured the change in any given indicator of performance by comparing its value in 1993 (which falls in the post-privatisation period) to its average value over the four years preceding the privatisation of the firm. The mean (median) firm in their sample had been privatized 4.25(4) years prior to 1993.

They found that profitability, measured by the ratio of operating income to sales, increased by 24 percentage points. Operating efficiency improved significantly. The employment levels nearly halved which points to transfers from workers to shareholders. Investment rose moderately. Real sales recorded a spectacular rise (the authors suggest some of this might reflect redistribution away from customers who obtained firms' output at low prices on account of incompetence or corruption (for example, theft was rampant at utilities). The tax to sales ratio also rose significantly. The results are presented in Table 3 below.

Table 3: INDUSTRY- ADJUSTED CHANGES IN PERFORMANCE FOR THE SAMPLE OF PRIVATIZED FIRMS

Variable	N	Mean before Median before	Mean after Median after	T-statistic for change in mean	Z-statistic for change in median
I. Profitability					
Operating income/sales	168	-0.2975 -0.1353	0.0289 0.0178	4.35[a]	7.15[a]
Operating income/PPE	168	-0.2336 -0.1471	0.0914 0.0021	4.12[a]	4.87[a]
Net income/sales	168	-0.4036 -0.1720	0.0108 0.0401	4.69[a]	6.99[a]
Net income/PPE	168	-0.2686 -0.1494	-0.0162 0.0242	2.41[a]	5.76[a]
II.Operating efficiency					
Cost per unit	168	0.1827 0.1423	-0.0021 -0.0105	-5.68[a]	-5.63[a]
Log (sales/employees)	166	-1.1836 -1.3133	-0.2679 -0.4299	6.47[a]	6.85[a]
Log (sales/PPE)	168	-0.2850 -0.1640	0.1834 0.0374	3.11[a]	2.35[b]
III. Labour					
Index of total employees	169	100 100	64.65 65.63	-12.48[a]	-9.29[a]
Index of blue collar workers	168	100 100	63.22 67.39	-11.73[a]	-9.08[a]
Index of white collar workers	169	100 100	67.79 68.41	-11.12[a]	-7.05[a]
IV. Assets and investment					
Investment/sales	168	0.0116 -0.0085	-0.0358 -0.0580	-5.41[a]	-10.26[a]
Investment/PPE	168	-0.0037 -0.0127	-0.0365 -0.0630	-2.89[a]	-7.76[a]
V.Output					
Log (sales)	170	-2.1189 -2.2166	-1.6865 -1.7275	1.91	2.70[a]
VI. Net taxes					
Net taxes/sales	168	-0.0944 -0.0168	0.0665 0.0589	4.08[a]	10.18[a]
Net Taxes	168	-766.70 -8.5112	25,522.28 2,079.71	2.19[b]	10.53[a]

[a] Significant at 1 percent. [b] Significant at 5 percent. [c] Significant at 10 percent

The authors decomposed the gains into three components: increase in prices, reduction in workers, and productivity gains. They found that price increases accounted for a mere 5% of the increase in profitability while transfers from laid-off workers contributed 31% of the increase; the remainder was on account of productivity increases. Unlike many other studies, the authors tested for business cycle effects by adjusting the ratios for overall industrial or sectoral growth. The conclusions remained unaffected.

The authors also tested for the effects of deregulation, which was taking place along with privatisation, using dummy variables for various measures of deregulation. They found that deregulation was associated with much better post-privatisation performance. The authors suggest that the large improvements in performance owed to a great extent to the fact that control was transferred to outsiders through auction sales that were carried out in a transparent manner.

Boubakri and Cosset (1998) looked at the impact of privatisation using data of 79 companies from 21 developing countries. They found significant improvements in return on sales, real sales, and capital expenditure/sales, but not in employment.

There are, of course, good reasons why privatisation may not yield quite the same impact in LDCs as in the developed world. It is by now well recognized that, broadly, two conditions need to be satisfied for successful outcomes to result from privatisation.

One, the prior existence of a market-friendly macroeconomic environment, supported by institutional and regulatory capacity. Two, the existence of competitive enterprises in sectors in which privatisation takes place. In many LDCs, neither of these conditions may be adequately met, and, in addition, there are adverse factors such as weak law enforcement, thin capital markets, and the absence of mechanisms that spur private sector performance such as takeovers and monitoring by institutional shareholders.

Under these circumstances, private ownership cannot be expected to produce high standards of performance, and indeed many of the studies on privatisation in LDCs point to one or other of these factors to explain why privatisation has not quite produced the expected results.

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