

PRIVATIZATION IN INDIA : ISSUES AND EVIDENCE

(A doctoral dissertation proposal)

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Abstract

The proposed research is intended to survey the process of privatization in India and assess its impact on the Indian economy. The central issue we will address is the impact of privatization that has taken place so far on profitability and performance of PSUs. Going beyond this, we will attempt to understand what explains the impact of privatization on performance. Is it the use of market power by oligopolistic firms whose pricing power had been constrained under government ownership ? Is performance bought at the expense of labour through extensive lay-offs so that what we see is essentially a transfer from workers to shareholders ? Or are we confusing the impact of privatization with the more generalised impact of deregulation in the economy, which in itself could spur efficiency ?

The research output will comprise the following:

- 1. A survey of the literature on privatization, particularly with respect to less developed countries.*
- 2. A review of the role of the public sector in the Indian economy, and the process of economic liberalization and privatization in India upto this point.*
- 3. Impact of privatization on firm performance.*
- 4. Explanation for the impact of privatization*
- 5. Assessment of mechanisms of corporate governance in India.*

I. **Background: privatization in theory and practice**

A great wave of privatization 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 its basis in theory 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 privatization 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 privatization in various parts of the world, it is also true that governments have sought to justify privatization 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 organizations, 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 and uncompetitive industries 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 not 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 **agency** theory has, however, come up with a number of reasons why private ownership might be superior. One is that managers in the public sector lack incentives to perform because they are poorly monitored (Vickers and Yarrow, (1988)). Poor monitoring, 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. From the perspective of the property rights school, inefficiency in PSUs arises from because the failure to assign property rights. When everyone owns a firm, through the state, nobody does, and hence nobody has the incentive to design efficiency incentive structures.

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). Agency theory also suggests that, 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 maximize 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 maximization.

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 privatization 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 privatization- although, in practice, such an ideal government may be hard to come by.

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 privatization, 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 privatization 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 privatization, or with other firms that were not privatized, or with firms already in the private sector.

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

Foreman-Peck and Manning (1998) compared the performance (using total factor productivity) 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 than its counterpart in both

Norway (where the company was state-owned) and Denmark (where ownership was mixed) but more efficient than those in Spain and Italy (where ownership is mixed).

Bishop and Kay (1988) 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.

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 a better place, or not ? In our twelve cases, this question is answered with a surprisingly uniform and resounding, "yes".'

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 (1992). They compared factor productivity measures for five hundred international firms, many of which were state-owned. After controlling for differences in sectors and countries, the study finds that private sector performance is superior. The paper, however, noted that the results vary considerably across sectors; also, that in sectors with limited competition or where private firms are highly regulated (such as electricity and water), there is some evidence of superior efficiency in the public sector. A 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.

The broad conclusion of the Boardman and Vining study is, however, not shared by other studies. Caves and Christensen (1980) 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 - a conclusion that appears to be in accordance with the caveat expressed by the Boardman and Vining study cited above.

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.

iii. Econometric analysis of pre- and post-privatization performance: In this category of studies are those that look at a large sample of firms that have undergone privatization, 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- privatization financial and operating performance of 61 companies from 18 countries and 32 industries during the period 1961 to 1990. 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 benefits of privatization 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) or for pre-privatization restructuring. This problem has been addressed by Frydman, Gray, Hessel and Rapaczynski (1997) in their study of transition economies, part of a substantial body of work on privatization in Eastern Europe. The authors argue that it is not enough to compare pre- and post-privatization performance in selected firms. If better firms were chosen for privatization, selection bias could occur. To avoid this bias, the authors combine the two approaches- comparing state and private firms, in addition to comparing pre-and post-privatization performance. They do this by breaking up their analysis in two parts. First, they compare post-privatization performance of privatized firms with state firms; secondly, they compare the *pre-privatization* performance of the privatized firms with state firms as well. If there 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 1994 (median employment in the sample: 360 full-time employees; median sales: \$6 million). The authors report that the privatization had a dramatic impact on performance, measured by four different variables: revenue, employment, revenue per employee and cost/revenue ratio. The impact was most dramatic on revenue. The authors suggest that because revenue falls were arrested, the impact on employment was also positive, contrary to the belief that privatization could impose costs in terms of

lower employment. The authors also verified that the privatization 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 privatization were also outperforming the *same* state firms before privatization. They found that when insider-owned firms were included, there is a statistically significant pre-privatization effect as well. However, when insider-owned firms were excluded from the pre- and post-privatization comparisons, the pre-privatization effect becomes statistically insignificant. They suggest that insider-owned firms lead to a negative selection bias which masks the impact of privatization. It is noteworthy, however, in that one of the rare studies that attempts to compare state and privatized firms before and after privatization, the results are not unambiguously in favour of privatization.

Galal et al (1994) attempt an explanation as to why studies on privatization 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. Privatization 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 privatization.

In its review of privatization programs, the World Bank (1992) noted, "Most privatization success stories come from high- or middle-income countries. It is harder to privatize 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 privatizations 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-privatization, found increases in efficiency only in companies headquartered in OECD countries. One of the earlier surveys done by Millard (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 privatization 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 this 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 privatization of the remaining enterprises on efficiency grounds.”

The findings of LaPorta and Lopez-De-Silanes (1998) are diametrically opposite. Their study covered 218 firms in 26 different sectors, privatized between 1983 and 1991. They found that profitability, measured by the ratio of operating income to sales, increased by 24 percentage points. The authors decomposed the gains into three components: increase in prices, reduction in workers, and productivity gains. They found that 57% of the gains were on account of productivity increases. The authors also compared competitive and non-competitive markets and found that the former had higher gains in profitability than the latter.

Boubakri and Cosset (1998) looked at the impact of privatization 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 privatization 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 privatization. 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 privatization 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 privatization in LDCs point to one or other of these factors to explain why privatization has not quite produced the expected results.

IV. Privatization in India

In many ways, India provides an excellent testing ground for hypotheses about privatization and its impact, except that so far privatization has not been attempted on a scale that researchers would like to see. The country has a large, well-diversified public sector. Unlike many of the transition economies, it also has a long tradition of private enterprise, including big companies in the private sector, although there are certain sectors in which private sector participation is quite new, these sectors having been reserved until recently for the public sector.

Privatization in India generally goes by the name of 'disinvestment' or 'divestment' of equity. This is because privatization has thus far not meant transfer of control or even of controlling interest from government to anybody else. The government has sold stakes ranging from one per cent to 40% in 40 PSUs, but in no company has its stake fallen below the magic figure of 51% which is seen as conferring controlling interest.

The privatization program is itself relatively new to the country. It is part of an ambitious process of economic reforms covering industry, trade, the financial sector and agriculture and also involving a program of macro-economic stabilization focused on the federal budget, which commenced in 1991. Privatization is seen as a necessary concomitant of deregulation of industry, necessary in order to enable firms in the public sector to compete and survive in the new environment.

The major element in industrial deregulation has been the Industrial Policy Statement of June 1991 which, among other things, drastically reduced the number of sectors of industry reserved for the public sector from 17 to eight. This list has since been truncated to four: defence, atomic energy, specified minerals and railway transport. Moreover, all the areas earlier reserved for the public sector have also been exempted from the system of industrial licensing under which the private sector was required to obtain a license from the government in order to start a business. This has naturally exposed the hitherto cossetted public sector to competition on a scale to which it has not been accustomed. Disinvestment, while raising revenues for the government, has been perceived as necessary in order to subject PSUs to market discipline and to ensure that they raise their standards of performance.

Disinvestment of equity in 40 PSUs has raised about Rs12 billion (\$ 2.8 bn) so far. Only profit-making enterprises have been offered for sale. In the first round of disinvestment, the government offered "bundles" of shares of various PSUs (each bundle carrying a notional reserve price) to local institutions. Later, the bidding process was opened to foreign institutional investors and the public at large. The overwhelming chunk of funds raised through disinvestment (Rs9.9 bn) has been through the auction route. The method of disinvestment was widened in 1996-97

when disinvestment was effected through both the GDR (Global depository receipts) route and public issue in the domestic market.

There have been several criticisms of the disinvestment process. One is that valuations processes were unsound and that the government gave away its stakes too cheaply; two, disinvestment has been merely a revenue-raising affair for the government, with little thought being given to the requirements of the firms concerned; thirdly, it is contended that the government's reluctance to disinvest more than 51% and relinquish control over PSUs has meant that the government has been unable to attract suitably priced bids, as bidders do not believe the firms' performance would improve significantly with small government stakes being offloaded.

After the initial round of disinvestment in 1991-92, the process was guided by recommendations made by a Committee on Disinvestment set up in 1993. Later, realizing the sensitivity in political terms of the whole process, the government constituted in 1996 an independent body, the Disinvestment Commission (note the reluctance to use the dreaded P-word), to draw up a comprehensive programme of disinvestment over a 5-10 year period for public sector undertakings (PSUs) referred to the Commission by a Core Group of government secretaries. The Commission was asked to advise on such matters as the extent of disinvestment, the mode of disinvestment, selection of financial advisors to facilitate the process etc.

The Disinvestment Commission has formulated a broad approach to disinvestment and also made specific recommendations in respect of 19 out of 50 PSUs referred to it by the Core Group. The Commission has broadly distinguished between a "core" group and "non-core" group of industries. In the "core" group are industries such as telecommunications, power, petroleum etc that are capital-intensive and where the market structure could be an oligopoly. The "core" group also includes basic industries in which PSUs have a considerable market presence and in which private sector presence is still limited. For the "core" group, the Commission advocates selling government equity upto 49%, that is, the government would retain 51% of equity. In the "non-core" group, the Commission advocates sale of upto 74% of government equity. As for the 19 PSUs for which the Commission has made specific recommendations, these include strategic sale of a large chunk of equity to a private party (domestic or foreign), offer of shares to the public, outright sale and deferment of disinvestment.

Although the value of disinvestment in the last two or three years has tended to flag and realizations have fallen short of targets proposed in the annual budgets, there are signs that political parties are willing to give a major push to privatization in the coming years, which would include reduction in the government's stake in some PSUs to below 51%. One sign is the recent offer of 26% of equity in Indian

Petrochemicals Ltd (IPCL) through an advertisement placed in the *London Economist*; another is the equally bold move to sell of 76% equity in the loss-making Modern Foods India Limited to a private party; a third is the government's recent announcement that it is willing to sell 51% of its stake in Indian Airlines. These are all moves announced by the current ruling coalition, whose most important constituent had been implacable opposed to reforms while in the opposition.

However, even as privatization gathers steam, there has been no attempt so far to assess the impact on PSUs of different degrees of disinvestment and to arrive at a judgement on the relative merits of full and partial privatization. There are also unanswered questions about how control over managers would be exercised in instances where no dominant private owner emerges.

The question of governance has considerable relevance in the Indian context. The Indian corporate sector falls into three broad categories: state firms, MNCs and family-managed Indian businesses. Government-owned financial institutions and banks hold equity in companies, but they have thus far played a passive role in companies except in extreme instances of mis-management. Questions have been raised in the context of privatization about the accountability of professional managers at state firms, once the government's stake falls below 51 per cent, given that large, private institutional player that are crucial to governance in the industrial economies are absent in the Indian context.

This question has not been widely addressed in the literature, presumably because in the developed countries a certain acceptable level of governance can be presumed. One of the interesting findings of Frydman et al (1997), cited earlier, is that the privatization effect is best manifested when there is one dominant owner after privatization, whether it is a foreign owner, a privatization fund, an individual owner or the state itself. Where ownership is diffuse, as when ownership is distributed among workers, the privatization impact is much weaker. This aspect needs to be addressed in planning for future privatization.

We expect that our research will address this crucial aspect based on the experience so far in the Indian context and also in other contexts. All in all, the findings of our proposed study would be timely and could conceivably make a valuable contribution to the formulation of policy on future privatization.

V. Proposed research

The proposed research is intended to survey the process of privatization in India and assess its impact on the Indian economy. The central issue we will address is

the impact of privatization that has taken place so far on profitability and performance of PSUs.

Going beyond this, we will attempt to understand what explains the impact of privatization on performance. Is it the use of market power by oligopolistic firms whose pricing power had been constrained under government ownership ? Is performance bought at the expense of labour through extensive lay-offs so that what we see is essentially a transfer from workers to shareholders ? Or are we confusing the impact of privatization with the more generalised impact of deregulation in the economy, which in itself could spur efficiency ?

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3. Impact of privatization on firm performance.
4. Explanation for the impact of privatization
5. Assessment of mechanisms of corporate governance in India

Details of the research agenda under each of the above are spelt out below:

1.Literature survey: Expanding on the brief review outlined in this proposal, the proposed study will string together the evidence on privatization the world over, paying particular attention to studies on privatization in less developed countries.

2.Review of privatization: The review will detail the privatization program undertaken by the government of India, set against the backdrop of the overall programme of economic liberalization. It will list the companies privatized, the extent of divestment, the amounts raised through divestment, the methods adopted for divestment of the government's equity, and the criticisms of the privatization programme.

3.Impact on performance: We propose to test a number of hypotheses relating to the public sector and privatization. Our principal sources of data will be: company annual reports, the annual reports of the Bureau of Public Enterprises, and the database on listed companies, *Prowess*, supplied by an independent agency, the Centre for Monitoring Indian Economy, based in Mumbai. The hypotheses to be tested are listed below.

Hypothesis 1: PSUs in India are less profitable compared to the private sector

Test: The above hypothesis is generally based on a comparison of profitability of the public sector in the aggregate with that in the private sector. Such comparisons often do not control for factors such as size, industrial sector, etc. We will test the hypothesis, controlling for such factors, for the period since economic liberalization began (1991-99), for a comparable period before liberalization, and for the two periods combined as well.

Hypothesis 2: PSUs are less efficient compared to the private sector

Test: We will compare measures of efficiency in the public and private sectors. This comparison will again be made for the pre- and post- liberalization periods.

Hypothesis 3: Privatization has improved profitability, efficiency, employment, capital spending, output and net taxes in the privatized firms

Tests: As this hypothesis is central to the study, we propose three different tests.

(i) First, we will examine whether key parameters (outlined below) under each of the heads- profitability, efficiency, employment, capital spending and net taxes- have changed significantly following privatization for our sample.

(ii) The above test is open to the criticism of selection bias: it is possible that firms best likely to benefit from privatization were chosen in the first place. Moreover, other factors such as deregulation in the economy might have contributed to superior performance in the post-privatization period. To deal with these issues, we will first compare the performance of privatized firms with PSUs not privatized; next, the performance *before privatization* of the privatized firms will be compared with PSUs not privatized. We will test to see if there are any significant differences in performance post-privatization that *were not there* before privatization.

(iii) We will also compare performance adjusted for industries. We will do this by using a control group of listed companies in the private sector in the same industry for each privatized firm. We will estimate the difference in parameters for the PSU and the control group before privatization and after privatization and see if the industry-adjusted ratios show any difference.

Hypothesis 4: Improvement in performance after privatization depends on the degree of divestment

Test: Improvement in performance post-privatization will be compared, at different levels of divestment, with performance before privatization see whether the degree of divestment contributes to a statistically significant improvement in performance post-privatization

Performance measures to be tested are :

- (i) Profitability: operating income/sales, operating income/fixed assets, net income/sales, net income/fixed assets
- (ii) Operating efficiency: cost per unit, log (sales/fixed assets), log (sales/employees), operating income/employees
- (iii) Employment: log (employees)
- (iv) Capital spending: log (fixed assets), investment/sales, investment/employees, investment/fixed assets, log (fixed assets/ employees)
- (v) Output: log (real sales)
- (vi) Net taxes: net taxes/sales, net taxes

4.Explaining the impact of privatization: In attempting to explain the impact of privatization, we propose to test the following hypotheses:

Hypothesis 1: Changes in performance are to be explained by use of market power by firms.

Test: We propose to compare performance in competitive sectors with those in non-competitive sectors. One view about privatization is that it is the non-competitive sectors that stand to register large gains in profitability; also that growth in output, employment and investment in these sectors is lower than in competitive sectors because the former lack the incentive to restructure aggressively.

Hypothesis 2: Privatization transfers wealth from workers to shareholders

- Tests: (i) : Compare real wages of workers before and after privatization
(ii): Evaluate contributoin of savings from worker layoffs to profitability

Hypothesis 3: Deregulation explains changes in performance after privatization

Test: We will test this hypothesis by running regressions whose dependent variables would be the *change*, following privatization, in the industry- adjusted parameters defined above. As independent variables, we use dummy variables for indicators of regulation (such as price/quantity controls for a given industry and barriers to trade in that industry)

and also for nature of the industry (oligopolistic or competitive). The coefficients of the dummy variables for regulation should tell us whether the degree of deregulation is a material factor. The coefficient for the dummy variable for industry structure should help us cross-check the conclusion regarding hypothesis (1) above.

5. Mechanisms of corporate governance : In the industrial economies, mechanisms of governance, such as takeovers and institutional monitoring, can be safely assumed. This is not true of a context such as India's. Indeed, one comment heard from foreign investors is that, whatever their other shortcomings, PSUs demonstrate superior governance to the private sector. Leaving aside corporate governance, a more fundamental requisite for private sector performance, law enforcement, is quite lax in India. In taking a view on privatization in India, it is necessary, therefore, to be clear about matters related to the structure of ownership in the private sector, the structure and role of domestic financial institutions as monitors, and mechanisms for governance developed for privatization elsewhere and those proposed in India. These will be reviewed in our study.

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