

Public Enterprises in India

If Not for Profit Then for What?

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Public enterprises should not be evaluated on the basis of the same criteria as private enterprises, though, like private enterprises, they must be evaluated.

In their eagerness to see the economy take off, the Indian planners opted for the policy of the 'big push' in which the creation of a large number of varied public enterprises played a major role. However, the Indian economy failed to take off as expected, among other reasons, because of the drag-effect' caused by the inefficiency of these public enterprises. To realise their original goals, Indian planners will have to reorient their development strategies. They will have to move from a policy of 'big push' to a policy of 'big stick'. That is, from a policy that emphasises the creation of more public enterprises to one that emphasises better utilisation of existing public enterprises through performance evaluation. This paper suggests a way of doing the latter.

RECENTLY, Amartya Sen (1983) raised some important issues relating to the performance evaluation of public enterprises in India. While his diagnosis of the problem was correct, his prescriptions were too abstract to provide guidance for policy formulation.¹ This paper seeks to redress this deficiency.

There are two prerequisites for eliciting superior performance from public enterprises. First, we must have an appropriate criterion for evaluating their performance, i.e., we must be able to distinguish 'good' performance from 'bad' performance using an appropriate criterion. Second, we must devise appropriate incentive schemes so that the public enterprise managers will be willing to do their best in terms of this criterion. The focus of this paper will be on the meaning and the search for the appropriate criterion with only a brief discussion of the appropriate incentive schemes and other institutional requirements necessary for ensuring good performance.

APPROPRIATE CRITERION

The following passage from Sen (1983) is very instructive as a backdrop for the discussion in this section:

In the absence of any well-formulated alternative criterion, the public tends to judge success or failure of public enterprises by profits, and this has led in India to much cynicism about the abilities of public enterprises. This might be at least partly unjustified, but it is fairly inescapable in the absence of a different system of performance evaluation. Even in political discussions in Parliament or in Assemblies, or in newspapers, it becomes difficult to avoid using the profit criterion, since there is no other precise measure of success that is offered for discussion. Having a well-formulated system of social profits based on shadow prices, despite the possible crudity of these shadow prices may, therefore, serve the purpose of both giving the management a clear perception of interest of the respective public enterprises (and related to it, of their own self-interest), and also provide the public with a basis of evaluation other than profits.

Sen makes several good points. There exists a strong and urgent need for an alter-

native to private profit (we shall henceforth use the prefix 'private' to avoid confusion with other concepts such as the social profit). In the absence of such an alternative, private profit will continue to be in wide currency.²

There are several problems with Sen's prescription, however. Ironically, his solution is itself part of the problem. It is a big leap from private profits to social profits at shadow prices. To exhort policy makers to undertake this task without providing help on the specifics is similar to asking a person to cross the ocean without giving him the means to do so. This is perhaps the reason why fifteen years after Sen first urged the use of social profits at shadow prices³ it still remains unimplemented. It is especially surprising because Sen is fully aware of these pitfalls. In his own words:⁴

... One would like to avoid the danger of hollow purism that has made so much of modern economics unfit for actual use.

Another problem relates to the criterion of social profits suggested by Sen. While it is superior to private profits and moves us in the right direction, it does not go far enough.

In the balance of this section, we will attempt to develop an alternative to the notion of private profits that is conceptually sound and accessible for actual use.⁵

PROBLEMS WITH PRIVATE PROFIT

There are several problems with using private profit as a criterion for public enterprise performance.⁶ Before we can show what is wrong with private profit, though, we must know what is it that we expect from private profit anyway? That is, what is the criterion for judging a criterion? Or, what is the *meta-criterion*?

Public enterprises are an instrument of public policy. As with any other public policy instrument, the operation of a public enterprise ought to enhance social welfare. To determine whether a public enterprise management as enhanced or hampered social welfare, a criterion must meet the following requirements;

(1) It must be monotonically related to management's performance.⁷ Increases

and decreases in the value of the criterion should be related only to factors within the control of the enterprise manager. In other words, it must be 'fair' to the public enterprise management.

(2) It must be monotonically related to social welfare. An increase or a decrease in the value of the criterion should reflect an increase or a decrease in social welfare. In other words, it must be 'fair' to the nation.

Given these criteria, we can now evaluate private 'profit' as a measure of the public enterprise management's performance. The problems with 'private profit', in terms of its failure to satisfy the above meta-criteria, may be divided into four broad categories;⁸

(1) Accounting Problems

This category⁹ includes problems with private profit that arise because it is based on a private accounting framework. This framework looks at costs and benefits from a private stockholder's point-of-view and not from society's point-of-view. Therefore, it follows that private profit is monotonically related to private stockholders' welfare and not social welfare. There are four accounting problems with private profit that make it unsuitable for public enterprise performance evaluation.

(a) *Some Accounting Costs Are Not True Costs*: If private profit decreases due to an increase in a particular cost component, it does not imply, *ipso facto*, that social welfare will also decrease.¹⁰ Examples of such costs are:

- (i) Taxes
- (ii) Interest payments
- (iii) Transfers (e.g., donations)
- (iv) Depreciation

For instance, if tax is collected from a private enterprise, it unquestionably represents a cost to the private shareholders or owners of that enterprise because they lose money which would have gone into their pockets. Hence, the owners of a private enterprise are fully justified in treating it as a cost because they are worse off—their personal welfare decreases. But what about social welfare? From the society's point-of-view, direct taxes imply taking money from

one pocket and putting it into another. Ignoring distributional consequences, such as a transfer neither increases nor decreases the total welfare of society—it simply redistributes the given level.

It follows, therefore, that if a public enterprise manager is able to show a greater private profit by reducing the amount of taxes paid, there is no reason to reward him. This is also true for interest payments, transfers, and depreciation.¹¹

(b) *Some Accounting Benefits Are Not True Benefits*: Example of such benefits are:

- (i) Interests received
- (ii) Dividends earned
- (iii) Capital gains on the sale of financial instruments
- (iv) Transfer payments received

These items are categorised as benefits in the private accounting framework, but are not so from society's point-of-view. For instance, if a private enterprise receives interest and dividends from its investments, its shareholders or owners are better off. Their personal welfare increases because they are richer by that amount. They are justified in treating it as a benefit.

Consider a situation in which a public enterprise manager succeeds in getting a subsidised loan at five per cent and deposits it at ten per cent in another bank. This arbitrage yields him a five per cent return. Should this be considered a benefit in the social calculus? Should a public enterprise manager be rewarded for this activity? Of course not. If that was not what the public enterprise was set up for, then that activity was an unintended deviation from desirable behaviour. Also, this constitutes a transfer of surplus from one party to another and not a net increase in social welfare.

(c) *Some Costs Are Ignored*: Private profit not only misclassifies costs and benefits, it also ignores some of them. For example, the opportunity cost of working capital does not figure explicitly on the usual profit and loss statement. This is not major problem for private accounting. The owners of a private enterprise are usually aware of the implicit cost of excess inventories and too much idle cash on hand. However, this omission can have serious distortive effects on the public enterprise manager's behaviour. The implicit opportunity cost of working capital is very low for these managers as they get subsidised loans or outright grants to carry over large inventories.¹²

(d) *Some Costs Are Measured Incorrectly*. Measurement of cost has two aspects: 'price' and 'quantity' of the resources involved. The former is discussed under pricing problems; here we are concerned with the quantity aspect. In the private accounting framework, capital stock is measured either at book value or at acquisition (historical) cost. Unfortunately, for the purpose of public enterprise performance evaluation, both measures are in-

appropriate. What we want to measure is the amount of production capacity or the 'stuff' the manager has to work with to produce the output. Both concepts of capital stock used in the private accounting framework fail to reflect the quantity of this 'stuff'.¹³

(2) Pricing Problems

These problems may be classified into two groups:

(a) *Wrong Prices*: It is possible that both output and input prices may not reflect the true scarcity values. This distortion could be a result of government pricing policies or may arise from some other market imperfections. Private profit is calculated on the basis of current market prices. For the owner of a private enterprise, these are indeed the only relevant prices as his return depends on the actual prices paid and received. He would, therefore, exhort his manager to maximise profits given these prices.

For a public enterprise, the problem is obvious. If it is receiving an input at a subsidised rate, then an attempt to maximise profit would lead to an over-allocation of resources. This violates the second meta-criterion: an increase in the criterion (private profit at current market prices) leads to a decrease in the nation's welfare. This would also happen in the case of a private enterprise. However, a private enterprise is not in the business of maximising the national welfare.

(b) *No Prices*: There are certain benefits and costs that are totally ignored in the private profit calculus. This is conceptually equivalent to putting a price of zero on both costs and benefits. There are two major categories of this:

(i) *Non-Commercial Objectives*: More often than not, public enterprises are expected to carry out some 'non-commercial' objectives. They are so called because such objectives would not be carried out by an enterprise run on a purely 'commercial' basis, that is, run with the sole objective of maximising private profits. In fact, non-commercial objectives are considered the *raison d'être* for public enterprises. Classic examples are the setting up of a factory in a backward region of the country to develop it, providing schooling to the workers' children and decent medical and housing facilities to the workers and their families. The problem with such goals is that the costs associated with them get counted in the private profit framework whereas the benefits do not figure anywhere. This framework is obviously unfair to a public enterprise manager who may appear to be less cost effective in terms of a standard profit and loss statement.

(ii) *Externalities*: These costs and benefits are well known for being absent from the private profit calculus. This is true for both public and private enterprise alike.

Consider a public enterprise polluting the

environment. If we evaluate its performance on the basis of the private profit it will be unfair to the nation. For this enterprise will produce beyond the optimum point in order to maximise private profits.

(3) Attribution Problems

Another problem with private profit as a criterion for public enterprise performance is that often an increase or decrease in its level may not be attributable to an improvement or deterioration in managerial performance. This violates the meta-criterion of fairness to the manager. The following are some of the more important attribution problems:

(a) *Changing Prices*: Suppose, for example, in two consecutive years there is no change in the operations of the public enterprise except for an increase in the price of an input. In terms of private profit, the public enterprise manager will appear to have performed less effectively. This conclusion is obviously unfair. On the other hand, if the price of the output had increased, he would appear to have improved his performance. This is also misleading.

(b) *Changing Macro Conditions*: There could be other changes in the economy that could have either an adverse or favourable impact on the performance of the public enterprise manager. A recession in the economy is one such example. Change in private profit as a result of such factors is a misleading indicator of managerial performance.

(c) *Size of the enterprise*: A public enterprise may show very low levels of profits because of its small size. It would be unfair to compare the private profits of two public enterprises of different sizes.

(d) *Inherited Plant*: Again, a public enterprise may have low levels of private profit because of the nature of the plant and the machinery. This, however, may not be the fault of the present management.

(4) Conceptual Problems

(a) *Single Period Indicator*: The most serious problem with private profit is that it is a 'single period' indicator. It ignores many future effects of present actions. For example, a public enterprise manager may improve the level of private profits in the present by postponing or ignoring optimum maintenance schedules. This is unfair to the nation because ultimately the society will have to bear the consequences.

(b) *Average Indicator*: Private profit tells us the average performance of the entire system. Therefore, if an addition is made to the plant capacity, it is difficult to determine what the marginal contribution of this change is to the profits.

COMMON ALTERNATIVES TO PRIVATE PROFIT

It is not a recent revelation that private profit has problems as a measure of public enterprise performance. The alternative

criteria most commonly used, however, have equally serious drawbacks. All such criteria can be classified into two groups:

(a) *Partial Indicators*

These indicators¹⁴ are characterised by their emphasis on one aspect of enterprise performance to the exclusion of all others. To illustrate, let us consider the following three common indicators:

(i) *Productivity of Individual Factors*: An example of this would be labour productivity. It says nothing about the productivity of other factors of production, overall productivity, overall cost, and the appropriateness of the capital-labour ratio.

(ii) *Cost Effectiveness*: This emphasises the attainment of a goal at the minimum possible cost. The quantity or the quality of the goal, however, is never questioned.

(iii) *Partial Business Ratios*: For example, the inventory to sales ratio emphasises the importance of the optimum level of inventories to the exclusion of all other objectives. The problem with such indicators is clear. They do not include all costs and benefits associated with the enterprise operation and hence fail to measure overall performance.

(b) *Multiple Indicators*

These consist of a weighted average of several partial indicators. In fact, such indicators are more common than the simple partial indicators. By taking a weighted average of a number of partial indicators,

some evaluators feel that they have covered all aspects of an enterprise operation and have hence rectified the deficiency associated with the partial indicators. While it is true that multiple indicators do not, in general, suffer from the problem of lack of coverage of costs and benefits, it is equally true (and common) that if reasonable care is not exercised, they may suffer from the problem of uneven coverage.

Consider the following simple multiple indicator:¹⁵

$$\begin{aligned} \text{Performance} &= (.5) \text{ labour productivity} \\ &+ (.5) \text{ Ratio of production to its capacity} \\ &= (.5) \text{ Production record/} \\ &\quad \text{number of employees} \\ &+ (.5) \text{ Production record/} \\ &\quad \text{production capacity} \end{aligned}$$

Suppose in a given year the public enterprise performance is same as its performance in the previous year except for the following: its output increases by Rs 100 and its consumption of the intermediate inputs goes up by Rs 100. Clearly, the society is neither better off nor worse off. However, if we were using the above performance criterion, it would show an improvement in the performance of the public enterprise. This is because the numerators of both partial indicators within the multiple indicator have gone up.

The problem lies in the uneven coverage of benefits and costs. The enterprise in the above example gets credited for increased output twice

Out is not penalised for increased consumption of intermediate inputs. In general, whenever these multiple indicators involve asymmetric counting of benefits and costs they become unreliable measures of public enterprise performance.

FUNDAMENTAL PRINCIPLE OF PERFORMANCE EVALUATION

It follows from the above discussion that if a criterion is to measure the "true" performance of a public enterprise, it must satisfy the following fundamental condition: "Each benefit and each cost should be counted at least once and at most once" (Jones, 1981).

This is merely a necessary condition. However, any criterion that meets this condition as well as the two meta-criteria mentioned earlier may be said to satisfy both the necessary and the sufficient conditions for a criterion for public enterprise performance evaluation. In the next section we begin our search for just such a criterion.

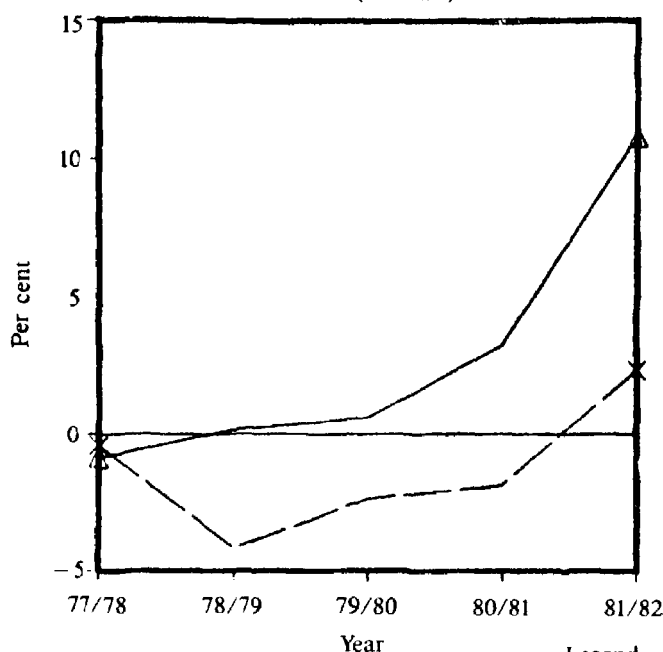
Intuition suggests that if we could find ways of correcting various problems with private profit we should have a sound criterion. In the balance of this section we will examine various ways to correct the problems with private profit and in the next section we will examine institutional requirements and the feasibility of a public enterprise performance evaluation system in India.¹⁶

Table 1 summarises the main thrust of the

TABLE 1: STEPS INVOLVED IN A PERFORMANCE EVALUATION EXERCISE

		CRITERION						CRITERION VALUE	
		STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7	STEP 8
		PUBLIC PROFIT	PUBLIC PROFIT-ABILITY AT CURR. MKT PRICE	PUBLIC PROFIT-ABILITY AT CNST. MKT. PRICE	PUBLIC PROFIT-ABILITY AT CNST. SHD. PRICE	STEP 4 + SOCIAL ADJUSTMENT ACCOUNTING	COMPOSITE INDICATOR-STEP 5 + SUPPLEMENT INDICATORS	EX-ANTE VALUE BASED ON AGREEMENT AT THE BEGINNING	EX-POST VALUE DECIDED AT THE REVIEW MEETING
PROBLEMS WITH PRIVATE PROFIT									
ACCOUNTING PROBLEMS	TAXES	////////	////////	////////	////////	////////	////////	////////	////////
	INTEREST	////////	////////	////////	////////	////////	////////	////////	////////
	FINANCIAL EARNINGS	////////	////////	////////	////////	////////	////////	////////	////////
	WORKING CAP. COST	////////	////////	////////	////////	////////	////////	////////	////////
	DEPRECIATION	////////	////////	////////	////////	////////	////////	////////	////////
	OTHERS	////////	////////	////////	////////	////////	////////	////////	////////
PRICING PROBLEMS	WRONG OUTPUT PRICE				////////	////////	////////	////////	////////
	WRONG INPUT PRICES				////////	////////	////////	////////	////////
	N O NON-COM. EX.	////////	////////	////////	////////	////////	////////	////////	////////
	P NON-COM. MON.					////////	////////	////////	////////
	R NON-COM. N-M						////////	////////	////////
ATTRIBUTION PROBLEMS	E EXTERNALITIES						////////	////////	////////
	CHANGING PRICES			////////	////////	////////			////////
	CHANGED MACRO-COMD								////////
	SIZE OF ENTERPRISE		////////	////////	////////		////////	////////	////////
CONCEPTUAL PROBLEMS	INHERITED PLANT							////////	////////
	SINGLE PD. IND.						////////	////////	////////
	AVERAGE INDICATOR							////////	////////

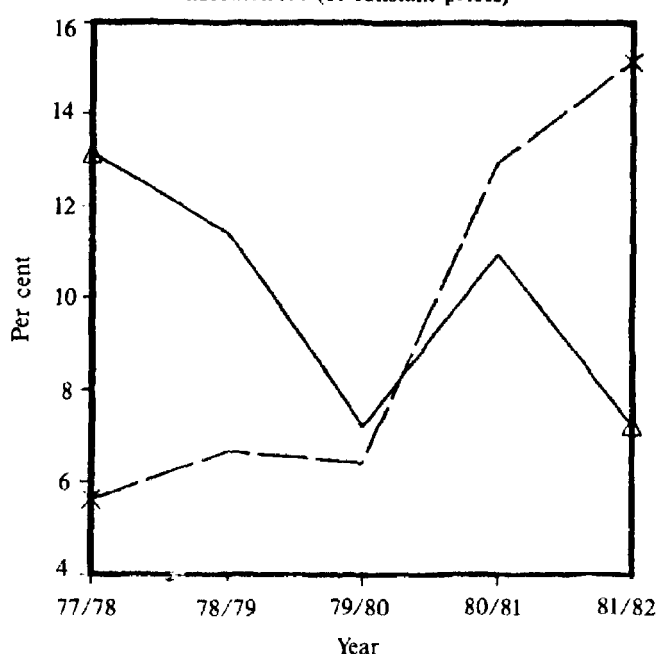
FIGURE 1 (a): PUBLIC VS PRIVATE SECTOR PERFORMANCE—PRIVATE PROFITABILITY (after tax)



Legend
 △ Private sector mean
 × Public sector mean

- Opportunity cost of Working capital

FIGURE 1 (b): PUBLIC VS PRIVATE SECTOR PERFORMANCE—PRIVATE PROFITABILITY (of constant prices)



arguments presented below. The rows of the table represent the various problems with private profit as a criterion for public enterprise performance evaluation. The columns represent the solutions for these problems. The shaded areas tell us which problem or problems are solved by a particular solution. Each column represents a cumulative solution incorporating all the solutions represented by the preceding columns. By the time we come to the last column, we overcome the alleged problems with private profit.

Step One: Public Profit at Current Prices

The first thing to do is to take the private accounts and rearrange them using the 'national income accounting' methodology to obtain a 'publically' relevant concept of profit; this may be referred to as 'public profit' as opposed to 'private profit'. The former refers to the difference between economic benefits and economic costs and is known to economists as 'quasi-rents' generated by the given stock of capital owned by the enterprise.¹⁷

Using the 'national wealth accounting' concepts, we can calculate the amount of capital stock owned by the enterprise. This takes care of all the accounting problems.

At a simple level, public profit may be obtained as follows from a standard profit-loss statement:¹⁸

$$\begin{aligned} \text{Public Profit} &= \text{Sales} \\ &+ \text{Inventory changes} \\ &- \text{Manufacturing costs} \\ &- \text{Administrative costs} \\ &- \text{Total employee costs} \\ &+ \text{Depreciation and amortisation} \end{aligned}$$

Step Two: Public Profitability at Current Prices

This consists of simply normalising the public profits with respect to the size of the enterprise. It is achieved by dividing public profits by the size of the capital stock. This ratio may be called "public profitability" and is analogous to the private profitability ratio. This takes care of the attribution problem associated with the size of the enterprise.

Step Three: Public Profitability at Constant Prices¹⁹

We need to measure public profitability at constant prices to eliminate the effect of changes in the price that are beyond the control of the public enterprise managers.

Let us examine the following case in order to demonstrate the cumulative effect of the three steps suggested thus far. Figures 1 (a) and (b) show the comparison of public and private sector performance in the Indian cement industry.²⁰ On the basis of the private profitability, one might conclude that the public sector has a hopelessly inferior performance compared to the private sector. Indeed, this is precisely what fosters the common perception that the public sector is inefficient.²¹

However, there is a dramatic turn around in the picture in terms of public profitability at constant prices. The point here is not whether one sector is better or worse compared to the other. The reason for addressing it is to illustrate the potential for error based on the criterion of private profitability.

Step Four: From Public Profitability at Constant Market Prices to Public Profitability at Constant Shadow Prices:

This step takes care of the wrong prices. Shadow prices are supposed to reflect the true scarcity values of the output and inputs. Hence, using them instead of the market prices transforms public profits into what Amartya Sen calls—'Social Profits'. The procedure for doing so is straightforward; we simply replace market prices with shadow prices and recalculate public profitability.

Two caveats are in order. First, the choice between public profitability at current shadow prices and public profitability at constant shadow prices depends on the substitution possibilities in the production process. If an enterprise is characterised by Leontief technology, then constant shadow prices are appropriate. On the other hand, if the production process is characterised by a smooth production function, current shadow pricing is more desirable.²²

Second, we must be sensitive to the practicality of using shadow prices. Shadow prices are considered by many as a subterfuge or a rhetorical ruse to confound the general public. It would indeed be very difficult to fire the chairman of a large public enterprise in any country because the shadow multiplier for labour is .3 and not .6.

However, the situation is not as grim as it appears to be. There are ways out of this dilemma. In most cases the trend of public profitability at constant shadow prices is likely to be similar to the trend of public profitability at constant market prices.²³

We will see in Step Five that there is another way to incorporate the divergence

between market prices and shadow prices into performance evaluation system.

Step Five: From Public Profitability at Shadow Prices to Adjusted Public Profitability at Shadow Prices Using a Social Adjustment Account:

This step incorporates the non-commercial objectives of the public enterprise into the performance evaluation criterion. Noncommercial objectives are of three broad types, (a) Those that can be valued in monetary terms. For example, providing subsidised food to workers in the canteens, (b) Those that cannot be measured in monetary units, such as promoting better industrial relations, (c) Those non-commercial objectives that are achieved as soon as the public enterprise is set up. For instance, providing employment in a backward region of a country. *Ceteris paribus*, such non-commercial objectives do not affect operational efficiency and hence do not require special adjustment. In table 1, they have been referred to as 'existential' noncommercial objectives. At this stage only (a) will be incorporated while taking care of (b) in the next step.²⁴

From this point onward, we leave Amartya Sen behind. His idea of social profit is, as far as one can make out, roughly equivalent to our criterion in Step Four. He may have had the adjustments involved in this step in mind but it is not apparent. In any case, there is no question that he did not imply the adjustments involved in the next few steps.

The idea behind adjusting for non-commercial objectives that can be measured in monetary units is simple. What the enterprise needs to do is to prepare a separate schedule as part of its financial statements, in which it lists the expenditures it incurred in the pursuit of the non-commercial objectives. Once this is done, the numerator and

the denominator of public profitability should be adjusted appropriately. Therefore, if Rs 100 was the incremental cost of achieving a non-commercial objective then the cost should be reduced by that amount. Similarly, if part of the capital stock was utilised for achieving non-commercial objectives, the denominator should be adjusted.

This is neither an abstract proposition nor is it a difficult thing to do in practice. The Cement Corporation of India prepares a schedule as part of their balance sheet which comes very close to what has been discussed above. It is called: "Details of Investment and Expenditure on Social Overheads" Table 2 shows a sample of an actual schedule.²⁵

Non-commercial objectives are the most popular smoke screen used by inefficient managers to camouflage their poor performance. Unless a performance evaluation system deals with this head on, it is bound to be a non-starter.²⁶

It should be noted that this procedure of social adjustment accounting can be used for adjusting public profitability for externalities as well as divergence between market and shadow prices. The advantage of adjusting public profitability via this method lies in the fact that it appears less esoteric than the one involving shadow prices and is likely to be more readily understood by most non-economists.

Step Six: From Adjusted Public Profitability at Shadow Prices to a Composite Indicator:

At this step, we introduce a set of supplementary indicators which measure a number of aspects that were left out by public profitability at shadow prices, our primary indicator. Before producing further, let us note the difference between these two groups of indicators. *Primary indicators* measure static operational efficiency²⁷ and those non-commercial objectives that can be valued in

monetary terms. *Supplementary indicators*, on the other hand, measure three things: (a) Dynamic effects, such as corporate planning, repair and maintenance and development of new products, (b) Those non-commercial objectives that cannot be valued in monetary terms, (c) Other objectives of the firm that are difficult to value in monetary terms, such as the efficiency in project implementation.

The critical point here is that the supplementary indicators should be *non-duplicative*. This is, they should not overlap with the things already covered under the primary indicator.

The main problem relates to the measurement issue. If these supplementary indicators cannot be valued in monetary terms then how are they to be valued? The answer to this is that they should be evaluated on a discrete scale which ranges from very low to very high. Who is to decide what is low and what is high? That is, who is to set the 'criterion value'?²⁸

Step Seven: Setting the Criterion Value:

The issues involved in setting the criterion values for the primary and secondary indicators are slightly different, and hence we will discuss them separately.²⁹

Setting criterion value is not purely mechanical exercise. It requires an enormous amount of good judgment. There are two major questions with regard to supplementary indicators: (a) Which supplementary indicators to choose? (b) How to evaluate them?

The best way to answer these questions is to look at how these issues are being handled by countries that are in the process of adopting the kind of system being discussed. In Korea, they have formed small committees for various public enterprises. These committees consist of executives from the public enterprise, academicians, professionals from the private sector and civil servants. These individuals decide on what the relevant supplementary indicators are for the enterprise and also on a method to evaluate them. The public enterprise management is, of course, informed of the criteria in advance.³⁰

Setting the criterion value for the primary indicator is also difficult. It is important to know what level of public profitability is 'good' or 'bad'. The answer to this will not be the same from one industry or enterprise to another. For instance, if a public enterprise has an old, dilapidated plant and machinery, the level of public profitability that will be considered "good" for it will be lower compared to another public enterprise similar in all respects except that it has a later vintage factory.

There are several sources of information that can be used to set the criterion value. The most promising ones are:

- (a) Comparison with similar enterprises elsewhere.

TABLE 2: EXHIBIT OF SOCIAL COST IN PUBLIC ENTERPRISES; CEMENT CORPORATION OF INDIA LIMITED, BOKAJAN CEMENT FACTORY
(Details of Investments and Expenditures on Social Overheads for the Year Ended 31-3-82 at Bokajan)

	1981-82	1980-81
Capital investment		
Township	78,80,614.61	75,37,742.20
Vehicles, furniture and misc equipment	5,07,578.39	4,79,262.75
	83,88,193.00	80,17,004.75
Expenditure on social overheads		
Upkeep and maintenance of township	2,01,485.28	3,27,629.83
Depreciation	2,86,186.12	2,85,381.40
Subsidy canteen	85,108.62	67,600.91
Subsidised education	18,000.00	16,000.00
Subsidised social and cultural activities	19,468.49	20,820.50
Other expenses	70,680.50	53,859.24
	6,80,929.01	7,71,291.89
Deduct		
Receipt from township	1,90,992.93	2,11,839.28
Total net expenditure on social overheads	4,89,936.08	5,59,452.61

Source: Annual Report of Bokajan Cement Factory, Cement Corporation of India, 1981-82.

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MODVAT, MMTC style, has meant a sea change for the ports at Vizag, Madras. By helping in deepening and modernising the facilities in these ports, MMTC has increased their capacity many times over.

MODVAT, MMTC style, has meant new employment opportunities to people in economically underdeveloped regions. For example, the proposed deepening of Paradip port would also spur the growth of related facilities including the railway lines. Generating employment for an additional 30,000 people in the mining regions of Orissa and Bihar.

MODVAT, MMTC style, has meant a dazzling future for the diamond industry. Like the setting up of India's first diamond exchange—helping the importers, processors, craftsmen and exporters—to meet under one roof. Boosting export possibilities, preserving a traditional skill and creating employment opportunities.

MODVAT, MMTC style, has meant a new sense of pride and a promise of prosperity to the Indian farmer. MMTC has secured export orders for over 1,50,000 tonnes of wheat—for the first time, foodgrains are being exported to countries like Jordan and Democratic People's Republic of Korea.

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- (b) Comparison with the same firm in the previous year.
- (c) Professional judgment by third parties.
- (d) Professional judgment by the evaluating agency.
- (e) Project report prepared at the time of the investment decision.
- (f) Professional judgment of the enterprise managers.

The most feasible way to go about it is to take the performance of a given public enterprise in year 't - 1' and determine how much improvement over that would constitute superior performance in year 't'. To determine this, the various sources of information mentioned above should be utilised. In doing so, though, one must be aware of the many pitfalls. For instance, the enterprises which are already performing at peak efficiency may have very little scope for improvement. Therefore, even a small improvement may constitute superior performance. Also, one must be aware that public enterprise managers would naturally paint a bleak picture of the potential increases to force the evaluating agency to set low criterion values. The experience of the Expert Advisory Cell in the Ministry of Production in Pakistan is very illuminating. Pakistan is one of three countries in which this system is in the process of being adopted.³¹

Step Eight: Limits of Quantification—The Review Meeting:

In a world without uncertainty, there would be no need for this step. By choosing the appropriate primary and supplementary indicators we would have made the system 'fair' to the nation. And, by choosing an appropriate 'criterion value' for these indicators we would have made the system 'fair' to the managers.

Unfortunately, we must reckon with uncertainty, which is the rule rather than the exception in the 'real' world. There is always a possibility for something going wrong which is not the fault of the public enterprise managers nor foreseen at the time of setting the criterion value. For instance, late monsoons may affect the power supply and hence production. For such unforeseen circumstances, there must be a recourse if the system is to work.

This recourse is provided in the form of an end-of-the-year review meeting between the evaluators and the public enterprise managers. This is one final opportunity to adjust the criterion value to make the evaluation process fair to the managers.

To Sum Up:

These eight steps constitute the alternative to private profit as a criterion for public enterprise performance evaluation. It is neither an abstract agenda nor a theoretical proposition. As this paper is being written,

public enterprise performance evaluation systems based on this framework are being tried in at least three countries. If Korea, Pakistan, and Venezuela can attempt to utilise this system why can't India?

INSTITUTIONAL REQUIREMENTS

Choosing the correct 'criterion' and setting the appropriate 'criterion values' is merely a necessary condition. We must also have the following for the performance evaluation system to have any beneficial effects:

- (a) An appropriate institutional arrangement for performance evaluation.
- (b) An appropriate incentive scheme linking performance to a system of rewards and punishments.

These two conditions, together with the appropriate criterion, constitute a set of sufficient conditions for a successful performance evaluation system.

It is ironic that in a country such as India where potential benefits from improved public enterprise performance are so enormous, all three conditions are missing. In general, we find that the Indian public enterprises are characterised by multiple principals imposing multiple objectives on the public enterprises and often these objectives are mutually conflicting. No wonder this provides an opportunity for some public enterprise managers to pick and choose the objectives that coincide with their interests. Only by chance will their objectives happen to coincide with the national interest and, therefore, only by chance can we expect Indian public enterprises to deliver.

This situation is not acceptable because of the massive amount of capital that is sunk in this sector. It is significant that the present wave for the 'private' initiative in India has taken such a hold over the minds of the majority of opinion makers. Before wrapping up this discussion, let us examine the major institutional problems in the way of an effective performance evaluation of the Indian public enterprises and explore some solutions.

LACK OF APPROPRIATE CRITERIA

The confusion with respect to the selection of appropriate criteria is best reflected in the works of the Bureau of Public Enterprises (BPE). It is required to present an annual report on the working of all public enterprises and also periodic reports to the finance minister and to the various committees of the cabinet on the performance of public enterprises. In addition, it has started putting out a document entitled "Performance Aims and Financial Targets of Central Government Enterprises".³² This document represents the BPE's effort to define the criteria and the criteria values for all public enterprises under the central government.³³

The approach suggested by the BPE con-

sists of evaluating public enterprises on the basis of the following: (a) The rate of capacity utilisation and (b) The rate of return on capital employed. This approach is riddled with many problems. It is a complete non-starter that violates every principle of public enterprise performance evaluation outlined earlier. The problems with it include the following:³⁴

- (i) It does not indicate the relative weights of these two criteria. Are they equally important or is there a trade off?
- (ii) The two criteria are duplicative. They count benefits and costs asymmetrically. Consider the following example: A public enterprise increases its output by Rs 100 and increases its consumption of intermediate inputs by Rs 100. Clearly, the society is neither better off nor worse off as a result of the public enterprise operation. *Ceteris paribus* the financial performance will not be affected. However, the rate of capacity utilisation has gone up. If we were judging the performance of the public enterprise on the basis of the BPE's criteria, we would be forced to conclude that the enterprise's performance has improved. This may lead to rewarding an enterprise for activities which do not increase national welfare or, are even detrimental to it.³⁵
- (iii) It ignores all dynamic considerations mentioned earlier. A public enterprise manager could jack up the rate of capacity utilisation as well as rate of financial returns on the capital employed by postponing necessary maintenance,
- (iv) The indicator is in current market prices and hence has all the problems discussed above in Step Three. BPE's approach is at best unhelpful and at worst may lead to a serious misallocation of resources. The performance for 'outcomes over procedures' in the public enterprises expressed by the Indian prime minister is a move in the right direction. However, in the absence of the BPE's inability to measure 'outcomes', India may land up in a situation which has neither the discipline of the 'rules and procedures'³⁶ nor the pressure to perform.

LACK OF APPROPRIATE INSTITUTIONAL ARRANGEMENTS

Even if the BPE were able to come up with a set of criteria which meet fundamental principles of performance evaluation outlined earlier, there is no guarantee that its problems will be over. Unfortunately, the real problem is that what the BPE does is not taken seriously by public enterprises.

The problem lies in the multiplicity of principals. It is one of the paradoxes of performance evaluation that the effectiveness of performance evaluation of an agent decreases with the increase in the number of

principals. Different principals evaluate performance from different perspectives and hence overwhelm the agent (public enterprise in our case) with a huge list of requirements which are often inconsistent with one another. This can have two possible consequences. By reducing the feasibility set to a minimum, it can stifle initiative and lead to poor performance. Or, it can provide the public enterprise manager the opportunity to pursue his preferred objectives by playing one principal against another.³⁷

In India, there are too many controlling agencies and yet there is very little control. First, there is the planning commission, which decides on the overall priorities in the public and private sectors and monitors the performance of certain core industries. Second, the parliament acts as a trustee of the public interest and also monitors the performance of public enterprises. This is achieved by vesting the legal authority for supervision and control of public enterprise in the cabinet ministers, and parliamentary control is exercised via questions and debates in the parliament and committee on public undertakings. Third, the auditor general of India puts forth an audit report for each enterprise every year. Fourth the Bureau of Public Enterprises (BPE) publishes its annual reports on the performance of public enterprises. Finally, each public enterprise is required to publish its financial statements annually under the Indian Companies Act,

which is enforced by the Registrar of Company Affairs.

Each of the above monitoring agencies has a slightly different concern. While the Planning Commission may be concerned with overall social welfare, the auditor general emphasises propriety, and the annual reports look at conventional financial measures of performance. Given this chaotic state of the control structure, it seems that there is little hope for salvation no matter how sophisticated India were to get in devising appropriate performance evaluation criteria.

There are several alternatives; each has its strengths and weaknesses.³⁸ In view of the above discussion the arrangement which appears to be best suited for India may be described as follows:

- (1) The Bureau of Public Enterprises should be detached from the finance ministry and brought under the prime minister's secretariat. The director general of the BPE, should be directly responsible to the prime minister.
- (2) BPE should then develop an appropriate set of criteria and criteria values for the various public enterprises and monitor their performance.
- (3) The ministry and its minister, under whom the public enterprise falls, should be equally responsible for the enterprise performance. In other words, the minister of the concerned ministry should have

to do all the explaining to the prime minister.

This system has many advantages. Unlike the present, the concerned ministers will no longer have merely an adversarial relationship with the public enterprises under them but will have to act as their partners. For instance, public enterprises producing cement fall under the minister of industries. If these enterprises are having difficulty procuring coal and are in the danger of performing poorly because of it then it will be upto the minister of industries to take up this matter with his counterpart in the ministry of energy.

This will also help the prime minister monitor the performance of his cabinet. At present, the prime minister has to rely on what the cabinet members tell him about the performance of public enterprises under them. Obviously, it is in the interest of the cabinet members to downplay poor performance (unless it has already generated too much outcry). With a professionally staffed BPE, the prime minister can truly begin to emphasise 'outcomes' over 'procedures', his professed policy.

Finally, the importance of having a uniform accounting system for all public enterprises under the BPE should not be minimised. At present, public enterprises present their financial accounts just like their counterparts in the private sector. The wide variety of formats make the comparison and

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monitoring of public enterprise performance difficult.³⁹

LACK OF APPROPRIATE INCENTIVE STRUCTURES

Amartya Sen (1983) correctly suggested that this problem can be broken "into two distinct, though interrelated parts. There is, first, the problem of perception by the management of the *interest of the public enterprise* and second, there is the perception of *self-interest* by managers". The key to success in this area is to design an incentive structure so that there is a monotonic relationship between the two. That is, we must have an incentive scheme such that public enterprise managers acting in their own perceived self-interest behave in a fashion that leads to an improved performance on the basis of the appropriate criteria.

The critical ingredient in the design of such a system is the 'perception' of the managers. It does little good to have a sophisticated performance criteria and an incentive scheme if they do not figure as important arguments in the welfare functions of the public enterprise managers.⁴⁰ In fact this has been a major reason for the failure of several incentive schemes attempted in the Indian public sector.⁴¹

There are several issues that need to be addressed if these incentive schemes are to succeed. For instance:

- (1) What should the relative share of monetary and non-monetary incentives be?
- (2) Should it be a group incentive scheme or an individual incentive scheme?
- (3) Should it cover only the direct production workers or various levels of employees, inclusive of supervisory, executive and managerial personnel?

A complete treatment of these issues is beyond the scope of this paper. It is, however, worth noting that this is as important an element of performance evaluation system as any other. And, thus, careful thought needs to be given to these issues. The solution may lie in a system where a bonus is given to the chief executive of a public enterprise and it is then upto him how he decides to distribute it among his subordinates to elicit the best possible performance from them (Jones, 1981).

CONCLUDING COMMENTS

From the above discussion it is clear that public enterprises should not be evaluated on the basis of the same criteria as private enterprises. However, it is equally clear that, like private enterprises, they must be evaluated. It is important that developing nations with large public sectors do so.

In their eagerness to see the economy take off, the Indian planners opted for the famous policy of the 'big push' in which the creation of a large number of varied public

enterprises played a major role. However, the Indian economy failed to take off as expected because of the 'drag-effect' caused by the inefficiency of these public enterprises. To realise the original goals of the planners, India, as well as many other LDCs, will have to re-orient their development strategies. They will have to move from a policy of 'big push' to a policy of 'big stick'. That is, from a policy that emphasises creation of more public enterprises to one that emphasises better utilisation of existing public enterprises through performance evaluation. This paper suggests a way of doing the latter.

Notes

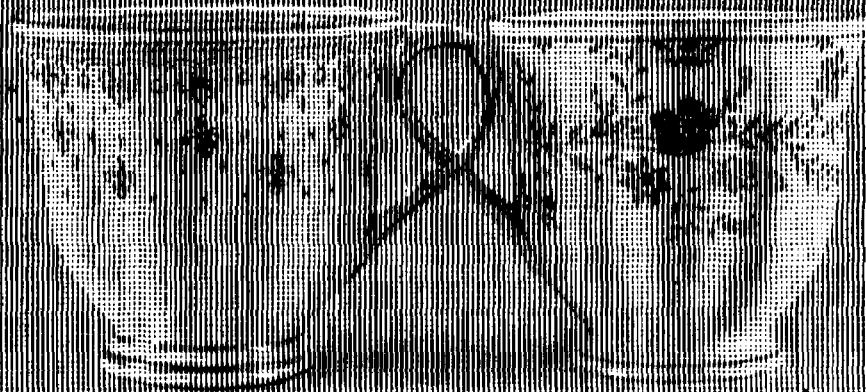
I am grateful to Leroy P Jones for helpful discussions. Thanks are also due to members of the Boston Area Public Enterprise Group (BAPEG) and the participants of the workshop on Policy for Public Enterprise in Developing Countries held at the Harvard Institute for International Development (HMD) in 1984, for their comments. However, all errors remain my sole responsibility. Earlier versions of this paper were presented at the Association of Indian Economic Studies Meeting, Washington, D C, August 1985; Canada-India: Conference on Public Economy, Ottawa, 1986; World Bank-ICPE Seminar, Ljubljana, 1986.]

- 1 The performance of public enterprises in developing countries has become one of the top priorities of policy makers all over the world. No longer simply a matter of domestic policy; it has become an international concern. For an elaboration of these themes, see Trivedi (1985c and 1985d).
- 2 There is little doubt that studies using profitability as their main criteria continue to be in overwhelming majority. Typical examples of such studies include: Ahmed, 1981; Bhoothalingam, 1979; Business Standard Research Bureau, 1980; Dutt, 1981; Gupta, 1981; and Satyanarayan, 1971. For a comprehensive analysis of this phenomenon see: Ramamurti, 1984.
- 3 See Sen (1970).
- 4 Ibid.
- 5 In recent times there has been a virtual population explosion in the number of models and methodologies for evaluating public enterprise performance. To appreciate the full range of ideas involved see: Cabral, 1981; Ahroni, 1983; Chatterjee, N, 1978; Chatterjee, P, 1979; Chattopadhyay, 1978, 1981; Dholakia and Khurana, 1976; Om Prakash, 1981; Morarka, 1981; Fernandes, 1981; Finsinger and Vogelsang, 1982; Gupta M, 1981; Jenkins, 1979; Nove, 1973; Sastry, 1980. No attempt will be made to review all the approaches as it has been done elsewhere (Trivedi, 1984, 1985a).
- 6 Also see Jones (1981) and Lieberman (1984) for a critique of profit as a criterion for public enterprise performance.
- 7 It is important to distinguish 'management's performance from the 'enterprise' performance. Former is obtained by adjusting

'enterprise' performance for all factors beyond the control of public enterprise management.

- 8 It is interesting to note that even the usefulness of private profit as a measure of private enterprise performance has also been questioned (Anthony, 1960; Dean, 1951).
- 9 It is referred to as 'Accounting Problems' because these problems are due to the arrangement of accounts in a particular way and the meaning will become more clear when we discuss the solutions.
- 10 Even the accounting profession has become aware of this issue. For one of the earliest recognitions of this issue see: Anthony, (1970).
- 11 The deduction made for depreciation is an artifact dependent on tax laws and does not reflect the rate of 'deterioration' of productive assets (Curran, 1968).
- 12 There are many other costs and benefits which are ignored by private profit, such as the externalities associated with the production process. They are discussed under other categories due to their conceptual proximity to those categories.
- 13 For more details on the various concepts of capital stocks and their relevance to public enterprise performance evaluation, see: Jones, 1979.
- 14 Zeilinsky refers to them as 'Specialised Indicators' (Nove, 1973).
- 15 For a detailed illustration of this point with the help of an actual multiple indicator used by the Korean Development Bank for public enterprise performance evaluation, see: Trivedi, P, (1985).
- 16 The discussion in this paper relates primarily to public enterprises in the manufacturing sector.
- 17 See: Solomons (1961) for a discussion of these issues from an accountant's perspective.
- 18 Another way of understanding the derivation of the public profit from the traditional financial statements is as follows:
Private Profit (after tax)
+ Returns to non shareholders
direct taxes
interest payments
other distributions
dividends in kind
- Non operational returns
financial income and rent
capital gains and transfer
+ Depreciation and amortisation
- Op cost of working capital
- Adjustments from future years
- Subsidies (less direct taxes)
= Public profit (at market cost)
There exists a computer software, developed in Boston for Korea and Pakistan which takes the traditional financial statements produced by accountants as its input and rearranges them into economically relevant categories. It is called Public Enterprise Performance Information System (PEPIS). For details see: Jones, L P, and Trivedi, P, "Performance Information System for Public Enterprise in Korea", Korea Development Institute, Seoul, Korea, 1983. Also see: Jones, L P, and Sakong, I, (1976).

660,000 meeting points with the consumer



It's not just a matter of outlets: 430,000 dealers and 230,000 catering points. It's a matter of total presence in the market. For instance, all the catering points are regularly serviced by Lipton's sales force. This, then, constitutes Lipton's 'Bazaar Power'.

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And the results are showing. These have been achieved through astute management actions: sales and export drives, full deployment of Lipton's 'Bazaar Power', launch of new brands, team work and higher productivity. There is an inviting future ahead.



An inviting future beyond tea

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- 19 On the other hand if a public enterprise is operating in a market where the objective is to obtain the best price for the output and pay the smallest possible price for the inputs then we may want to skip this step. In this case the public enterprise manager ought to be judged in current prices. For details relating to this issue see: Jones, L P, "Notes on Performance Evaluation of Public Corporations in Korea". Seoul: Korea Development Institute, July 1982.
- 20 This is based on the detailed data at the plant level for six public sector plants and eight private sector plants. PEPIS was used for obtaining public profitability at constant prices. For the details regarding the sample and the procedure, see: Trivedi (1985). Also see Mehdi (1984) for an application of this methodology to the Pakistani public enterprises.
- 21 A typical comment runs something like this: "...the performance of the public sector units has been poor on the whole compared to that of the private sector... The question is, will a managerially and financially weak public sector... be capable of the sustained effort necessary to build a viable and socially relevant position in the cement industry? The public sector will have to be performance oriented, which would mean, also profit-orientation..." Quoted from: Silighania, V K, and Balakrishnan, K, "Cement Industry", Birla Institute of Scientific Research, New Delhi, 1982.
- 22 At an intuitive level the argument is clear. By measuring performance at constant prices we are in fact saying that changes in price do not matter. However, we know that changes in price matter a great deal for allocative efficiency. Only when the possibility for allocative efficiency does not exist, as in the case with Leontief production functions, prices do not matter. For further details see, Trivedi (1985).
- 23 For empirical evidence on this see: Jones, L P, "Public Enterprise Performance Evaluation: A Methodology and an Application to Asian Fertiliser Plants", Boston (mimeo), 1979.
- 24 For a general discussion of some of the issues involved in this step, see: Sexty, 1983.
- 25 Recalculating public profitability after adjusting for these non-commercial objectives is not a major enterprise in this age of computers. See: Jones, L P, and Trivedi, P, (1983), for details of how it is done by a computer using PEPIS.
- 26 There are other variants of this adjustment process that have been tried and/or suggested. See: Mallon, R D, 'Performance Evaluation and Compensation of the Social Burdens of Public Enterprises in Less Developed Countries', *Annals of Public and Cooperative Economy*, Vol 52, No 3, July-September, 1981, pp 281-301.
- 27 It refers to the capacity of the enterprise to maximise surplus from the fixed capital stock at a given point in time. It ignores the impact of the present actions on the surplus generated in the future, called the dynamic effects.
- 28 To understand the distinction between 'criterion' and 'criterion value' consider the following: We know that miles per gallon of petrol is a criterion for measuring the efficiency of motor vehicles. Whether 20 miles per gallon is a 'good' level or a 'bad' level of efficiency depends on the vehicle in question. It is a 'good' level for a truck but a 'bad' level for a three-wheeler. Thus the level of miles per gallon that determines whether the efficiency of a particular vehicle is good or bad is called the 'criterion value'.
- 29 For a very detailed discussion of issues involved in this step see: Chambers, 1983.
- 30 A similar system has been independently developed in Taiwan. They have developed an evaluation manual which actually lists things like the attributes of a good "corporate plan" in the context of public enterprises.
- 31 For details, see: Mehdi, I, Target-Setting for Public Enterprises in Pakistan; unpublished paper presented to the World Bank, 1984. The other two countries are Korea and Venezuela. Also see: Nawab, 1985; Jones, 1983.
- 32 Bureau of Public Enterprises, "Performance Aims and Financial Targets of Central Government Public Enterprises: 1982-83 and 1983-84", Ministry of Finance, New Delhi, April 1982.
- 33 For a detailed critique of BPE's approach see Trivedi (1985b).
- 34 This is not an exhaustive criticism of the approach but an illustration of some of the important classes of problems.
- 35 Note that the only changes are in the output and the intermediate inputs. Labour is assumed to remain constant. If employment had increased we might have some justification for saying that the performance has improved.
- 36 However dubious their effectiveness.
- 37 For a general discussion of issues involved see: Pelicon (1982) and Boneo (1981). For a discussion regarding these issues in a particular country see: Bell (1979) and Abtan (1979).
- 38 For a discussion of some of these, see, Ramanadham, V V, (1984).
- 39 See: Pretrovic (1978), Tang and Lin (1985) and Ministry of Economic Affairs, Republic of China (1971) for an analysis of the merits of uniform accounting in public enterprises. See: Riise (1982) for an example of this system in a more developed nation.
- 40 Sen (1983) brings out the importance of perception very effectively in his article.
- 41 For a detailed analysis of these schemes, see, J Satyanarayana: "Incentives and Productivity in Public Enterprises", Popular Prakashan, Bombay: 1974. Also see, V V Ramanadham (ed), "Incentives in Public Enterprise".

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