

Menu of Financial Indicators Used in MOUs

An Exercise in Clarification

Prajapati Trivedi

M P Vithal

Financial performance has moved to the centre-stage of MOU policy. The main issue before policy-makers is to devise ways of internalising this policy goal. The best way to do so will be to give clear and unambiguous signals to public enterprises with regard to what is expected from them in terms of financial performance.

I Introduction

THE purpose of this paper is to highlight scale issues involved in choosing financial indicators to measure managerial performance in Memorandum of Understanding (MOU). A glance at the existing MOUs makes it clear that there is a wide divergence in perceptions regarding the utility and rationale of various financial indicators included in MOUs. This is hardly surprising, because there is no unanimity on an 'ideal' financial indicator even in the literature dealing with the private sector. Be that as it may, there is a convincing case to narrow down, if not eliminate, this diversity in the public sector for the following reasons.

First, unlike the private sector, there is only one ultimate owner of the public enterprises. In fact, the more accurate comparison of public enterprises is with large business houses or multinational corporations, where one finds that there is a tendency to evaluate units under their control using same financial indicators and measures across all units.

Second, using a diverse set of indicators can have the unintended effect of measuring the same aspect of enterprise performance differently by different indicators and thus confound the performance evaluation exercise. Thus, inclusion of duplicative performance criteria can be 'unfair' to both the management as well as the owner (government) depending on the particular set of financial indicators chosen. We shall elaborate on this point later.

The rationale for using a single indicator is simple. If Birtas have invested some amount of money in cement, textiles, engineering and chemical concerns, they would want 'favourable' return from all investments. A rupee earned from cement division is no different from a rupee earned from the chemical division. Thus they would want the same indicator for all their divisions.¹

This paper is not intended to be exhaustive in its coverage. Rather, it is to be used as a basis for discussion and future refinement. The language used is also cryptic reflecting a preference for producing this paper on time to have a focused debate on this important topic. However, before we examine the various options available to us for evaluating financial performance of public enterprises signing MOUs, let us look at the concern of the High Power Committee (HPC) on MOU in this regard.²

II Concern for Financial Performance

Given the desperate financial position of the nation, one does not have to spend a great deal of effort in making a case for improving the financial performance of public enterprises, in general, and those signing MOUs, in particular. Little wonder, therefore, that the HPC issued a guideline urging the concerned parties in the MOU exercise to give 'profit related' criteria a minimum weight of 50 per cent. However, since no details have been given by the HPC, a controversy of sorts relating to the real intentions of the HPC has arisen. In particular, the interpretation of the term 'profit-related criteria' is at the heart of this controversy. To untangle the myriad of issues involved let us begin by examining the rationale behind this decision.

Table 1 summarises the thinking of the HPC on this subject. In general, the criteria included in any MOU could be divided into two broad categories—'Profit' and 'All Others'. The latter category could include as many sub-categories as may be relevant for the specific enterprise in question. Table 1 lists the sub-categories recommended in the "Guidelines on MOU" issued by the HPC. Before we go to the confusion regarding the interpretation of the first category of 'Profit', let us look at the significance behind the recommended distribution of weights among the two broad categories.

The main objective of attaching a weight of 50 per cent to the profit category is to ensure that no public enterprise achieves an overall excellent rating unless it achieves its target for profit in that particular year. To see how this is sought to be achieved, imagine that a particular public enterprise gets an excellent rating for all criteria included in the second broad category of "all others". That is, on a scale of 1-5 it gets a raw score of '1.00' and a 'weighted raw score' of .50. Since to qualify as 'excellent' the enterprise has to get a composite score of 1.50 or less, it must get a 'weighted raw score' of '1.00' or less for 'profit'. Which, in turn, implies that the enterprise must achieve a raw score of '2.00' or less for 'profit'. Further, since the budgeted target for profit is placed under '2' in the 5-point scale for criteria values, the above implies that to be rated as excellent, an enterprise must, at the very least, achieve the target for profit. This is, of course, based on the assumption that the enterprise has

received an excellent rating for 'all other' criteria. If the enterprise does not get a raw score of '1' in every other indicator besides profit, then the only way it could achieve an excellent rating is by exceeding its target for profits, that is, by getting a raw score of less than '2' for Profit.

A few points are worth noting before proceeding any further. First, in the manner described above, the MOU system is able to internalise the changing priorities of the government in a systematic way. In the absence of an objective methodology for performance evaluation, there is a danger for extreme reactions which are either difficult to enforce or justify. In contrast, the current method of mid-course adjustment appears to be both justifiable as well as quite feasible.

Second, the emphasis is on achieving the 'target' for profit. That is, public enterprises are not being asked to do a miracle and produce a whopping increase in their profits. Rather, the signal that is sought to be conveyed is that any slippage on the profit front is becoming increasingly unacceptable. If an enterprise commits a certain level of profit, it must ensure that it delivers that amount to the nation.¹ However, before we examine what is it that the nation expects from our public enterprises in the area of financial performance, we must be clear about the meaning of the term 'performance' in this context.

III Concept of Performance in MOUs

In any discussion on public enterprise performance, one must keep the following distinctions in mind:

(a) *'Enterprise' Performance versus 'Managerial' Performance*: To highlight this distinction, let us illustrate it by taking an example. Suppose we have a situation in which a profit-making enterprise suddenly begins to make losses because of a reduction in the administered prices, in spite of increases in the physical efficiency parameters. In this case, we would say that the 'enterprise' performance has deteriorated even though the 'managerial' performance has improved. The reverse is an equally plausible phenomenon. For instance, a sudden windfall gain could camouflage a decline in managerial efficiency, I estimate 'managerial' performance; therefore, one has to adjust 'enterprise' performance for the effects of all factors beyond the control of the management of the enterprise.

(b) *Ex-ante Performance Evaluation versus Ex-post Performance Evaluation*: An *ex-ante* performance evaluation exercise refers to a situation in which a judgment on (enterprise or managerial) performance is made on the basis of a set of criteria which were agreed to in advance

Ex-post performance evaluation exercise, on the other 'and, consists of judgments made on the basis of criteria imposed after the fact by the evaluator. In short, in such an exercise one is simply concerned with what the enterprise has actually done on the basis of a set of criteria preferred by the evaluator, irrespective of what it was originally expected to do or what it has been asked to do all along.

When one puts these two dimensions together one gets the following public enterprise performance evaluation matrix;

	Managerial Performance	Enterprise Performance
<i>Ex-ante</i> Performance Evaluation	Cell 1	Cell 2
<i>Ex-post</i> Performance Evaluation	Cell 3	Cell 4

Most, if not all, of the performance evaluation exercise one comes across fall in Cell 4. Invariably, these studies use financial profitability to measure enterprise performance on an *ex-post* basis. Given the general lack of concrete data in other areas and difficulties in conducting rigorous studies, this would be understandable. However, what we find troublesome is the fact that the results of exercises belonging to Cell 4 have been used to pass sweeping judgments on managerial efficiency, which can only be estimated 'fairly and accurately' by performance evaluation exercises belonging to Cell 1. The MOU document belongs to Cell 1. Thus, to expect it to also provide answers for questions dealt with in other three cells is a mistake. If we load the MOU instrument with too many objectives, it may not achieve any.

IV

'Profit' or Profit-Related' Criteria

A minor confusion, if not a controversy, seems to have been arisen regarding the intentions of the HPC with regard to their expectations from public enterprises in the area of financial performance: A recent guideline issued by the Department of Public Enterprises (DPE) on behalf of the HPC suggests that 50 per cent weight ought to be given to 'profit or profit-related criteria'. It is our belief that this guideline dilutes the intentions of the HPC, at best, and may be counterproductive, at worst.

To start with, there is a big difference between 'profit' and 'profit-related' criteria. In one sense, almost every performance indicator for an enterprise is related to profits. Thus, this lax interpretation of HPC's intentions could open up the flood gates and lead to a plethora of diverse profit-related indicators being used in different MOUs.

The issue is simple. We have to ask what

is it that the country as a whole aspects from public enterprises at the end of the year. Does it want an increase in 'profits' or 'profit-related' criteria? It is analogous to asking whether India needs 'food' or 'food-related' items at the end of the harvest? Even chemical fertilisers are in some sense related to 'food' but certainly cannot be used as 'food'. Or, to take another analogy, in a competitive race you either 'win' or 'lose' depending on whether you are the 'fastest'. Further, 'fastness' is unambiguously measured by looking at the amount of time taken to run from the start to the finish line: We know of no world class race where winners are decided on any other criteria. We would like to ask the advocates of these multiple financial criteria, whether they would feel comfortable if, in addition to 'fastness', such a race was decided on the basis of 'leg span', 'total number of strides', 'average momentum' and so on? The revolutionary Fosbury flop technique for high jumping would have never been allowed by a committee concerned with 'how' to jump and not only with 'how much' to jump. Since Dick Fosbury's historic backward twisting, diving style jump in the Olympics of 1968, the traditional 'scissors' or Eastern method have become outmoded.

In other words, one must make a distinction between 'ends' and 'means'. In a performance evaluation exercise, the focus is always on 'ends' and not the means *per se*. Unless, of course, there is a particular 'means' which is preferable for some other reason. In that case, using that particular 'means' itself becomes an 'end'. Unfortunately, it is not clear that the HPC wants to increase 'profits' in any particular fashion. As far as we can see, HPC wants to increase overall profits and does not (should not) care about the means employed so long as they are legal and ethical. In fact, this interpretation of HPC's intentions would be more consistent with the overall MOU philosophy of 'management by objectives' as opposed to the traditional bureaucratic practice of 'management by producers'.

This issue is also closely related to the important distinction made by the Jha Commission and Iyer (1990) between 'evaluation' and 'monitoring'. Unlike the former, the primary objective of a monitoring system is not to make a judgment on the enterprise but to invoke a managerial response on the part of both the enterprise and the government by way of identification of the immediate problems and their resolution. As distinct from a monitoring instrument, MOUs in India are primarily for performance evaluation. While it is only common sense that each enterprise should tailor-make the monitoring system so that it dovetails with the MOU, it would be patently wrong to confuse the two. Much of the alleged back seat driving in public enterprises is a result of mixing the 'evaluation' and 'monitoring' systems.⁴ MOUs have provided us the proverbial golden opportunity to make a clean break from the past. To miss this opportunity would be suicidal for the MOU system. We would, in other words, lose the *unique setting proposition* of MOUs and MOUs will

begin to resemble the old system we are trying to replace.

Let us examine why a group of reasonable persons is bent upon using this set of multiple and duplicative financial criteria. We believe that the tendency to include 'profit-related' criteria in addition to the criterion for 'profit' is a reflection of a tendency to doubly insure that financial performance improves at the end of the year. Paradoxically, however, this concern can often lead to exactly the opposite result. To illustrate this point, let us look at hypothetical financial statements for a public enterprise for two years in Table 2. In addition, the MOU signed at the beginning of year two is given in Table 3. Finally, the composite score for the public enterprise in question at the end of year two is given in Table 4.

To look at the absurdity of using a menu of five financial indicators to measure public enterprise performance, let us begin by asking what was the contribution of the public enterprise to the national welfare, Table 2 gives an unequivocal answer to this question: *compared to year one, the contribution of the public enterprise in question has declined*. This is clear from a decline in Gross Margin from 60 in year one to 47 in year two. In addition, both the Debtor Turnover and Inventory Turnover ratios have worsened.

TABLE 1: RATIONALE FOR GIVING 50 PER CENT WEIGHT TO PROFIT

Sl No	Criteria	Criteria Weights (A)	Raw Score (B)	Weighted Raw Score C = A*B
(1)	Profit	.50	2.00	1.00
(2)	All other criteria			
(a)	Static			
(b)	Dynamic			
(c)	Project implementation	.50	1.00	.50
(d)	Non-commercial, etc			
				1.50

TABLE 2: FINANCIAL STATEMENTS OF A PUBLIC ENTERPRISE FOR TWO YEARS

(Figures in Rupees)			
Items		Year One	Year Two
	Sales	150	160
less	Intermediate inputs	60	80
less	Labour costs	20	22
less	Rental costs	10	11
equals	Gross margin	60	47
less	Depreciation	25	20
less	Previous years' expenses	15	0
equals	Gross profit (GP)	20	27
less	Interest charges	5	5
equals	Profit before tax	15	22
less	Tax	10	5
equals	Net profit	5	17

Item	Year One	Year Two
Debtor turnover	31.00 days	32.50 days
Inventory turnover	21.00 days	21.25 days
Capital employed	400.00	400.00
Net worth	360.00	360.00

However, "Table 4 shows that it is possible to draft a MOU (such as that given in Table 3) that enables the enterprise to get a composite score of '1.5' which is considered to be 'excellent' in the MOU parlance. Let us examine the reasons for this apparently conflicting situation.

First, the main reason for this dichotomy is the lack of correlation between the three major financial indicators. While the GM/CE decreases, the other two—GP/CE and PBT/NW—decrease. This 'happens because there is a decline in 'Depreciation' as well as 'Previous Year's Expenses'. The important issue is that, in general, both these items do not have any relationship to managerial efficiency in the year in which the MOU is signed. If one is using the accelerated depreciation method, the figures for depreciation will decline automatically, *ceteris paribus*. Similarly, 'Previous Year's Expenses' is a highly flexible item and one of the major instruments of cosmetic surgery for enterprise accounts. We surely do not want to reward 'public' enterprises for 'creative' accounting.

Some have argued that by measuring performance after netting out depreciation charges, we will force the public enterprises to take better investment decisions. This betrays a lack of understanding regarding the purpose of the MOU policy. We have to, in fact, make a distinction between investment efficiency and 'operational' efficiency. MOU's focus is on the latter. It is concerned with the investment efficiency only to the extent of insuring that investment decisions are efficiently executed. Any major investment decision takes several years to plan and implement. The final verdict on the wisdom of that decision can only be made only after the project has become operational, which takes even longer. The MOU document, therefore, concentrates on the efficiency of executing the important milestones of a project. Clearly, depreciation charges in a particular year have very little to do with the efficiency or inefficiency in this area. Most of the depreciation charges for a particular year are a result of the investment in the past.

Another reason for the anomalous outcome of Table 4 is the relative weights given to different criteria. Since the earlier circular did not mention any particular distribution of weights, this example is a valid possibility. Those who are familiar with the science and art of conceptualisation would agree that a valid possibility is enough to warn us of the potential dangers.

Unfortunately, the response to this eventuality has been equally misplaced. It is being suggested by some that we must specify fixed relative weights for each of these criteria. There are two problems with this approach. First, a particular distribution of weight will not eliminate the possibility we have mentioned earlier. It might make it a bit difficult but certainly not impossible. With another set of numbers one can demonstrate the point.

Further, this penchant for highly detailed, uniform and dictated evaluation system is contrary to the MOU philosophy as we

understand it. By keeping the evaluation criteria unambiguous and simple, we will be improving the quality of signals being sent. By increasing the number of duplicative and contradictory indicators with sonic arbitrary distribution of relative weights, we will be falling in the Same trap from which we are trying to salvage our public enterprises. That is, to correct for one error we should make another error and make the situation even worse.

As a final argument against the proposed evaluation system one has to ask the advocates of that system as to how they wish to evaluate the performance of the MOU system on the financial front in, say, five years' time. We will be leaving a large leeway for subjective judgments, if at the end of five years we find ourselves in a situation that for the entire set of MOU signing enterprises, some financial indicators have gone up and others have come down. Critics of public enterprise will pick up indicators that have gone down and the supporters will try to focus on the ones that have increased. That is, at the macro level, there will still remain the age-old confusion in thinking with regard to public enterprises. For us, this is one good definition of the 'failure' for the MOU system.

Thus, we propose that the 50 per cent of weight should be allocated to 'one particular' definition of profit. This would be consistent with the thinking of the HPC and help us judge the effectiveness of the MOU system more objectively in this very important area of concern. To see which particular definition will be most appropriate, we examine the following most commonly used indicators.

OPTION 1: RETURN ON INVESTMENT (ROI)

To start with there is no one standard definition of Return on Investment (ROI).

TABLE 3: MEMORANDUM OF UNDERSTANDING SIGNED AT THE BEGINNING OF THE YEAR

Sl No	Criteria	Weights	Criteria Values				
			1	2	3	4	5
1	Gross margin (GM)/capital employed	.10	.160	.155	.118	.100	.080
2	Gross profit/capital employed	.20	.063	.055	.048	.040	.033
3	Profit before tax/net worth	.16	.055	.047	.039	.025	.020
4	Debtors turnover (no of days)	.02	20	30	40	50	60
5	Inventory turnover (no of days)	.02	15	20	25	30	35
	Subtotal	.50					
6	Customer satisfaction (per cent)	.10	75	65	55	50	45
7	Quality of corporate planning	.20	1	2	3	4	5
8	Quality of HRD	.15	1	2	3	4	5
9	Preventive maintenance	.05	1	2	3	4	5
	Subtotal	.50					

TABLE 4: PERFORMANCE EVALUATION AT THE END OF THE YEAR

Sl No	Criteria	Weights	Achievement	Raw Score	Weighted Raw Score
1	Gross margin (GM)/capital employed (CE)	.05	.118	3.00	.150
2	Gross profit/capital employed (CE)	.20	.068	1.00	.200
3	Profit before tax/net worth	.21	.061	1.00	.210
4	Debtors turnover	.02	32.5 days	2.25	.045
5	Inventory turnover	.02	21.25 days	2.25	.045
6	Customer satisfaction	.10	55 per cent	3.00	.300
7	Quality of corporate planning	.20	1	1	.20
8	Quality of HRD	.15	1	1	.15
9	Preventive maintenance	.05	4	4	.20
	Composite score				1.50

As per the most widely used 'Du Pom Control Chart', ROI can be defined as:⁵

$$= \frac{\text{Profit before Interest and Tax (PBIT)}}{\text{Total Assets (Net Block + Current Assets)}}$$

The problems associated with this indicator are as follows:

- (1) Assume that from year 1 to year 2 there is no change in any aspect of the 'real' performance of the enterprises that is, it uses the same amount of inputs to produce identical output in both years. Therefore, we would like to have an indicator that also reflects this reality of unchanged financial performance. However, if ROI is included as the sole indicator in the MOU it would show an improvement because the denominator will decrease automatically by the amount of 'depreciation'.

It is possible to argue that, indeed, performance has improved because the manager is producing the same amount with an older plant and machinery. However, since depreciation rates do not reflect true 'deterioration', the percentage increase in ROI may not be an accurate measure of managerial performance.

Further, depreciation rates depend on accounting policies and can change over time and across enterprises both as a result of a change in policy as well as due to cosmetic, though legal, surgery on accounts.

- (2) Another problem with ROI is that it implicitly discriminates between different ways of 'cost-reduction'. This assumes serious proportions in the current context where cost reduction is a major thrust area for MOUs.

As an illustration, let us take the following example: Suppose in year 1

$$\text{ROI} = \text{PBIT/TA} = 50/100;$$

In year 2, let us see the implication of

two alternative ways of reducing cost;
Alternative V: Energy saving of Rs 10. This will make ROI in year 2 = $60/1QP = .60$
Alternative 2: Reduction in stock of spares by this amount will make ROI in year 2 - $50/90 = .55$

Thus, the first alternative will give a better ROI for same amount of cost savings. In other words, the management of an enterprise is being given a signal that cost savings via reduction in energy consumption are more valuable than cost savings by other means. Now if this is done consciously, it may be acceptable. Otherwise; use of ROI has the risk of sending confusing signals.

The foregoing is not a general indictment of ROI. Our only point is that it may not be an appropriate indicator for performance evaluation in MOUs. Indeed, even in the private sector ROI is used more for 'diagnostic' purpose as in the case of the famous Du Pont analysis rather than for performance evaluation, in the management control literature, 'Residual Income' is advocated as a measure of performance evaluation [Anthony, 1989].

OPTION 2; GROSS PROFIT

According to DPE's *Public Enterprise Survey*, Gross Profit is defined as:

Excess of income over expenditure after providing for depreciation and charges pertaining to previous years but before providing for interest on loans, taxes and appropriations to reserves.

The difficulties associated with the use of gross profit as an indicator in the MOU are as follows:

- (1) It is subject to variation on account of changes in depreciation policy which has no correlation with changes in managerial performance. For example, if there is no change in inputs used and output generated from year 1 to year 2, one would want an MOU indicator that would also not change. However, Gross Profit will change automatically because current depreciation calculated on written down value of assets (the most common accounting method of depreciation) will be lower in year 2. As discussed in an earlier section, this situation may lead to rewarding a manager when his marginal contribution to the national welfare is nil. The basic problem is that depreciation is a function of time, accounting and taxation policies, rather than use. In theory, it is supposed to be a proxy for economic rate of deterioration which is a function of use and is a true economic cost.
- (2) Another concern with Gross Profit relates to the absence of a denominator or numerator. It is possible that an enterprise may increase its gross profit from year 1 to year 2. However, if there has been a major increase in investment then a mere increase in gross profit may not be truly reflective of any managerial achievements. Thus, we need a denominator to normalise the performance in the two years. This explains the preference for ratios in the performance evaluation literature, (DPE circular sug-

gests GP/CE; the problems pertaining to CE are explained earlier.)

- (3) Net profit has the above problems in addition to several more. For example, change in the tax policy or practice can change net profit in an arbitrary fashion. This would make a manager look good or bad without any correlation with his contribution or true efforts made.

OPTION 3: GROSS MARGIN

Gross margin is defined as excess of income over expenditure before providing for depreciation, deferred revenue expenditure, interest on loans, taxes and appropriations to reserves.

This is a particularly important concept and also a popular one. Of the 23 enterprises that signed MOU for 1990-91 10 included gross margin as a criteria for performance evaluation in one way or another.

As opposed to the previous two indicators this has only one major problem—it gives absolute value rather than a ratio of performance. It is, without question, 'fair' to the managers and the nation. However, it gives an indication of the absolute amount of surplus generated.

Only if the surplus generated increases can an enterprise have greater capacity to pay dividend, taxes, interest, etc. That is we need to make a distinction between 'surplus generated' and 'surplus distributed'.

One must remember that if gross margin increases, other things remaining constant, ROI, gross profit and internal resource generation will necessarily go up. However, if ROI, gross profit and internal resource generation go up, there is no guarantee that the gross margin will necessarily go up.

MODIFYING GROSS MARGIN

The remaining problems associated with the gross margin can be modified easily as follows:

Problem 1: It is affected by changes in administered prices which are beyond the control of managers.

Solution: Fix it at a given year's price, i.e., at constant prices.

Problem 2: It ignores problems associated with current asset management. This is, even if there is an increase in the level of inventories, the gross margin will not be affected. However, the nation is clearly worse off as a result of accumulation of excess inventories.

Solution: Include Inventory Turnover and Debtor Turnover ratios in addition to 'Gross Margin'.

Problem 3: It represents an absolute value.
Solution: Divide by gross block. As argued earlier. Capital Employed can change simply with the passage of time and, therefore, using CE as a denominator has the potential of giving a wrong signal.

V

Conclusion

It is clear that financial performance has moved to the centre-stage of the MOU policy. The main issue before policy-makers is to devise ways of internalising this policy goal. The above discussion reveals that the

best way to do so will be to give clear and unambiguous signals to public enterprises with regard to what is expected from them in terms of financial performance. The current thinking of including a menu of profit and profit-related criteria may not be the best way to achieve this. It is our belief that we can achieve the avowed policy objective more effectively by choosing Gross Margin/Gross Block as the primary indicator for financial performance and attaching a weight of 50 per cent to it. Gross Margin is, indeed, just one variant of the profit concept. In fact, we can use PBITD instead of Gross Margin since both are nearly synonymous. In addition, we think the Debtors' Turnover and Inventory Turnover should also be included in each MOU. The weights for the latter ought to be in addition to the 50 per cent for PBITD but left to the judgment of the MOU signing parties.

Notes

(We would like to thank the participants of the Workshop on Memorandum of Understanding, Hyderabad, February 11-13, 1992 for their valuable inputs. While the conclusions of this paper reflect the broad consensus among the 40 participants in the workshop, all errors of omission and commission remain our sole responsibility. Part of the work on this paper was supported by the Centre for Studies in Public Enterprise Management, Indian Institute of Management, Calcutta.)

- 1 In fact, in the *Porta Control System*, the Daily Cash Flow report is the significant unique report used for performance evaluation. See Sharma (1988) for further details on this system.
- 2 For details regarding the design and implementation of the MOU system, see Trivedi (1990 and 1992).
- 3 It goes without saying that targeted profit implies targeted 'profit or loss'.
- 4 The distinction between 'performance evaluation' and 'performance explanation' is also worth keeping in mind. The former deals with 'what' happened while the latter with 'why' it happened. MOUs are supposed to deal with 'what' happened. Therefore, to include parameters which will also tell us 'why' it happened can, at best, dilute the evaluation exercise and, at worst, affect performance by sending fuzzy signals to the public enterprise managements.
- 5 Some people define ROI as PBT/NW . For more details regarding the Du Pont Control Chart, see: Sharma and Vithal (1989).

References

- Anthony, R N et al, *Management Control Systems*, Sixth Edition, Richard D Irwin, Illinois, 1989.
- Iyer, Rantawamy R. 'Past Experience with Public Enterprise Evaluation Systems in India' in Prajapati Trivedi (ed). *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance 1990*, International Management Publishers, New Delhi.
- Sharma, Subhash, *Management Control Systems: Text and Cases*. 1988. Tata-McGraw Hill, New Delhi.
- Sharma, Subhash and Vithal, M P, *Financial Accounting for Management: Text and Cases*, 1989, Macmillan, New Delhi.
- Trivedi, Prajapati (ed). *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance, 1990*, International Management Publishers, New Delhi.
- A Critique of Public Enterprise Policy, 1992, International Management Publishers, New Delhi.