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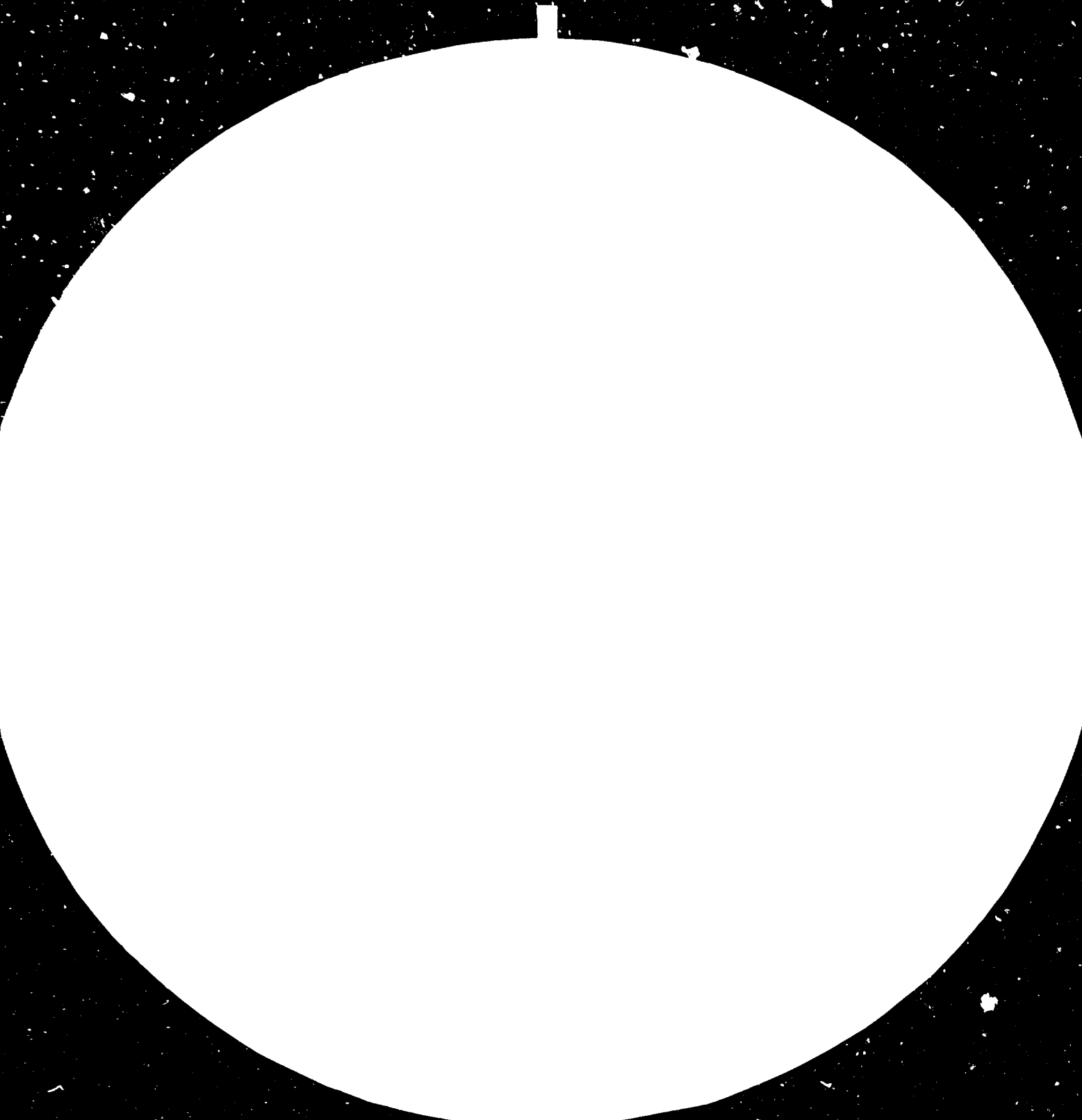

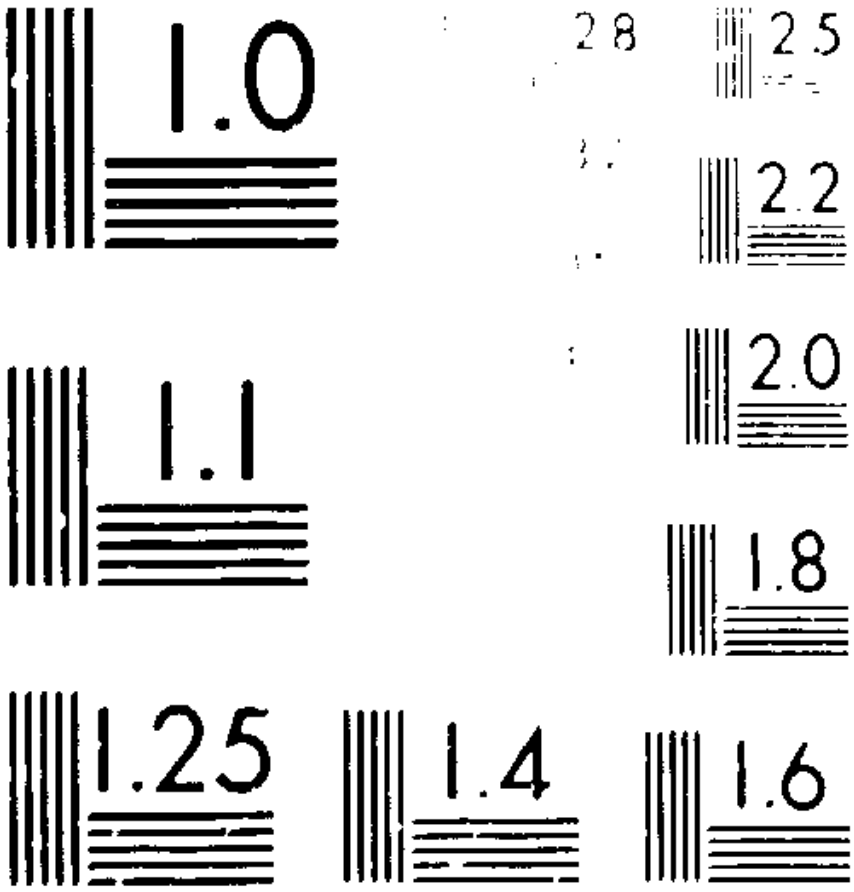
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EVALUATION OF PERFORMANCE OF INDUSTRIAL PUBLIC ENTERPRISES: CRITERIA AND POLICIES*

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PREFACE

This study was undertaken within the framework of the studies on the role of the public sector in the industrialization of developing countries conducted by the Regional and Country Studies Branch of the Division for Industrial Studies, UNIDO. Through this research programme, an attempt has been made to analyze the role and function of the public industrial sector in developing countries and to examine the crucial issues surrounding their performance and operations.

The issue of performance evaluation of public industrial enterprises has received much attention since the development and popularization of social cost benefit analysis. This study examines criteria and policies for evaluation of public industrial enterprises. It analyzes alternative methodologies for evaluating these enterprises and suggests practical guidelines for ensuring greater efficiency within the public industrial sector.

The study was carried out by Glenn P. Jenkins and Mohamed H. Lahouel,[1/] as UNIDO consultants.

1/ The views expressed in this study are those of the consultants and do not necessarily reflect the views of the Secretariat of UNIDO or of the governments of any of the countries mentioned in the study.

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I. Introduction

The industrial public enterprise sector plays an important role in the economies of developing countries. It spans a whole variety of industries from petrochemicals to textiles. It has produced over fifty percent of industrial output in countries such as Egypt, Somalia or Tanzania, and over one fourth in India and Turkey. Its share in total manufacturing investment has been as high as ninety percent in Egypt and fifty percent in Mexico. Relatively vast resources are therefore made available to this sector so that a given country's economic welfare is likely to be substantially affected by the nature and the size of the output that manufactruing PEs generate out of these resources. It is thus important to be able to assess the net contribution of PEs' operations to the country's welfare and to insure that they work toward maximizing benefits.

A PE is expected to fulfill a large number of objectives. generate a financial surplus, help reduce unemployment, develop skills, contribute to growth, technical progress and the correction of regional imbalances. The important issue that is addressed in this paper is how to evaluate PE performance in view of the multiplicity of objectives thrusted upon it.

The first criterion that comes to one's mind and especially to the Finance minister's is that of financial profitability. Indeed, almost

all the studies on PEs are limited to this criterion. Quite often, however, manufacturing PEs are not financially profitable. Poor financial performance is usually explained away by vague references to the fulfillment of socio-economic functions.

In this paper it will be suggested that the financial surplus criterion ought not to be neglected, in spite of all its shortcomings. The main reason is the overall budget constraint of the government. It must, however, be used in conjunction with the economic surplus and the factor productivity criteria. It will be argued that these three criteria ought to be applied only to the commercial operations of the enterprise. As regards non commercial objectives, performance ought to be evaluated only on the basis of cost effectiveness.

The paper is organized as follows: the first part deals successively with financial profitability, economic profitability and factor productivity. The advantages and pitfalls of each criterion are discussed. The kinds of adjustments to the financial statements of PEs that are required to determine economic surplus are reviewed. The second part is a discussion of the problems that arise with regard to socio-economic objectives. They involve their articulation and the assessment of the costs involved.

II. INDICATORS OF PERFORMANCE

A general principle that should not draw controversy is that the performance of PE ought to be assessed on the basis of its net contribution to social welfare--properly defined--which is equal to the difference between the social value of the benefits it generates and that of the resources it uses. Thus, from a social standpoint a public enterprise is making a positive contribution to welfare if it produces social benefits that are at least as equal in value as their social costs. It is hard to question the validity of this very general principle. Problems arise, however, when trying to assess this net contribution.

Financial Profitability

Although it may take into consideration social responsibilities and constraints, a private firm generally directs its operations towards maximizing financial surplus because its owners are interested in enhancing their purchasing power. Would public enterprise serve the public interest if it pursues the same profitability target?

Financial surplus is defined as the difference between output and cost of production, both valued at market prices. Neoclassical economic theory tells us that in the absence of any market imperfections and distortions, and provided income distribution is socially optimal, the maximization of financial surplus by each firm results in the best resource allocation in the following sense: no quantity of any good can

be increased without reducing that of another good; no consumer can be made better off without making some other consumer worse off, and social welfare is maximized.

In this "ideal" world public enterprise would serve social welfare best by directing its operations toward the maximization of financial profit. Its performance ought then to be judged on the basis of the financial return per unit of capital used. Fluctuations in profitability due to factors outside the control of managers should be taken into account, but on the average a specific public enterprise ought to generate a return on capital at least as equal as the return that could be obtained in alternative uses.

In contrast to this "ideal" state economies are in fact riddled with market imperfections and distortions. First, even in developed countries many industrial sectors, such as the steel or the automobile sectors, are characterized by an oligopolistic market structure that allows a very small number of firms to control prices. In developing countries public enterprises often avail of quasi-monopoly power, especially in heavy industries so that relatively high financial surplus could be achieved by restricting output and charging high prices, thus reducing social welfare. The high tariff barriers that have been erected in most developing countries have enhanced the capacity of PE to dominate domestic markets. In view of such market structure financial profitability does not necessarily reflect the contribution to social welfare.

Secondly, market prices of inputs and produced goods often do not reflect their opportunity costs due to taxes, tariffs and quotas on imports and administratively set prices. A positive financial performance may under these conditions be consistant with negative social surplus or even negative value added, if the latter were evaluated at international prices.

Thirdly, public enterprises are often called on to undertake activities for which they do not receive financial compensation. In order to maintain or expand employment they may be asked to hire workers beyond the level warranted by maximization of financial surplus, incur higher fixed or operating cost by locating plants in disadvantaged regions of the country, bear the cost of training young workers, keep prices of their products relatively low so as to help low income groups or to reduce inflationary pressures, etc. While the financial costs of these objectives may be born by PE's the benefits generated are not reflected in their revenues, so that financial surplus will be a misleading indicator of social surplus.

Fourthly, a public enterprise cannot be expected to be financially profitable in its early life if it is engaged in manufacturing activities where a process of learning has to develop before resources could be effeciently used.

For all these reasons financial profitability may not reflect the economic

contribution of public enterprise. Furthermore, the manager of public enterprise ought not to be held accountable for poor financial performance if government representatives frequently interfere in day to day operations, or if he is instructed to pursue multiple objectives which may or may not include financial profit.

In spite of all these weaknesses the indicator of financial profitability should not be discarded. Public enterprise is unlikely to be run efficiently in the long-run if it does not run a surplus or at least break even. In so far as success in its operations requires relative autonomy, the ability to cover costs and run surpluses for the purpose of investment is needed. An enterprise that constantly runs deficits has to deal with bureaucratic interference that is bound to adversely affect its operations.

One may even go further to suggest that a public enterprise is unlikely to serve socio-economic goals unless it generates adequate internal funds; socio-economic activities are often the first to be cut when PE faces financial difficulties. Theoretically, the funds needed could come from government budget. The problem is that due to its limited capacity to tax government may be forced, due to the size of the subsidies involved, to run overall budget deficits that have to be financed through printing money. In view of the budget constraint of the government, manufacturing PEs' ought to take financial profitability into account, although this does not mean, as argued above, that they should seek to maximize financial

surplus. In addition, the financial target should be set over a period long enough to allow for fluctuations in the general conditions of the environment in which public enterprise operates.

Economic Profitability

Financial profitability ought not, however, be the main criterion against which performance is to be assessed, due to the market imperfections and distortions that have been previously mentioned, and to the multiplicity of objectives that are commonly demanded of PE.

The economic contribution of a PE is equal to the difference between benefits and costs, measured at accounting prices, that is at prices that reflect the opportunity costs of both output and the inputs used. Several adjustments to domestic market prices have to be made to arrive at the economic contribution. Since the economic literature on shadow pricing is well developed these adjustments will be reviewed only briefly.[1]

First, it has been argued that the wages that are paid to manufacturing workers in developing countries are above the value of their marginal product in alternative employment, which is the relevant economic cost of labor. If, for instance, the workers employed by a given PE have been hired from a pool of unemployed, then their opportunity cost is zero.[2] For unskilled labor its opportunity cost may be approximated by the wage rate prevailing in the rural labor market, provided the latter is sufficiently competitive. Another component of the economic cost of labor is

the additional cost that workers may have to incur in an industrial environment, such as transportation to factory, additional food or shelter.

The second financial cost that has to be adjusted is that of borrowed funds. PE may borrow from government-owned or controlled banks at rates below the opportunity cost of capital, or obtain loans from private domestic or foreign banks with government guarantees, which would place it at an advantage vis a vis private firms. The economic cost of borrowed funds has to be deducted from gross benefits if government is concerned with the social return to equity capital. Public enterprise borrowing from domestic financial markets entails a combination of reduced present private investment and consumption, whereas loans secured from abroad require a reduction in future consumption. The opportunity cost of credit to PE is therefore a weighted average of consumer's rate of time preference, the rate of return on capital in the private sector--properly adjusted for risk--and the foreign lending rate, with weights reflecting the three sources of credit. There is also an implicit cost born by the government in guaranteeing loans against default by PE, which should be considered as a component of the economic cost of borrowed capital.

A third correction involves the values of inputs imported or goods exported by PE. Most developing economies feature exchange regimes with overvalued exchange rates. Excess demand for foreign exchange is usually

suppressed through tariffs and quotas on imports. The overvalued official exchange rate does not reflect the opportunity cost of one unit of foreign exchange used by PE, especially if the latter receives preferential tariff or quota treatment. Use of foreign exchange by PE may entail either a reduction of imports by other economic units, a reduction of exports or a combination of both. In the simple case where the total cost is imports foregone by other units the economic cost is equal to the ratio of the domestic value of imports to their c.i.f. value; domestic value is equal to the sum of c.i.f. value, tariffs and an estimate of the premium derived from quotas. When exports are taken into account, the formula for shadow exchange rate becomes more complicated. PE exports ought also be valued not at the official but at the shadow exchange rate.

The latter adjustment also applies to government-set prices. Government may, for instance, set the price of fertilizer produced by a public enterprise relatively low so as to subsidize a given category of farmers. The economic value of PE output is not, in this case, the government-set price but the international price, converted at the shadow exchange rate.

Another type of adjustment that has to be brought to the financial accounts of PE deals with taxes it may pay the government or subsidies it may receive from it. For the purpose of economic calculation taxes paid by PE do not constitute a cost whereas subsidies received are not part of the economic benefits it generates. Both items are merely transfers that take place between government and PE.

In addition, the pricing policies of PE may be directed by government towards improving income distribution. Welfare economics tells us that pricing in accordance with Pareto optimality is desirable only if government can achieve the desirable income distribution through non distortive taxes and transfers. The latter tools do not, however, exist. Furthermore, government's capacity to tax and effect transfers at reasonable administrative costs may be limited. An alternative way of improving income distribution would then be to underprice PE produced goods that take up larger shares in the budget of the poor than in that of the better-to-do. The distributional benefits ought to be credited to the PE involved. These benefits may be difficult to assess but they must be equal at least to the difference between the domestic value of PE's output under competitive conditions and its actual value.

PE may carry out other activities of social value but for which it may not receive any pecuniary compensation. It may, for instance, be asked by government to locate some of its plants in an economically disadvantaged region of the country. Such location is likely to increase both capital and operating costs. Whereas these costs are born directly by the PE involved the benefits accruing to the region would not show up in its financial accounts. Ideally, these benefits should be estimated and added to PE gross revenue, adjusted at shadow prices as previously indicated. This is likely to be a difficult task. In addition, the location decision may be imposed by the government on PE even if the latter has doubts about the benefits that the former argues would accrue

to the region. It may therefore be more reasonable to exclude both the positive externalities that may accrue to the region and the incremental cost of locating plants in poor areas from the calculation of social surplus. This does not, however, mean--as it will be later explained--that PE cost-efficiency performance with regard to the objective of correcting regional imbalances and other non-commercial objectives should not be assessed.

Other non-commercial activities that may be undertaken by PE may involve the provision of social and economic services to the community in the midst of which it operates, such as free or subsidized electric power, free access to its own health facilities, the building of roads, etc. PE may also provide its own employees with free or subsidized social services such as housing, summer camps for children, etc., which are not part of operating cost and should therefore be costed out of net social surplus.

There are other tasks which government may thrust upon PE, which lie outside its commercial activities; such as training workers and maintaining or expanding employment beyond the level warranted by some minimum financial profitability or even economic profitability, the latter assessed at shadow prices. These costs should also be assessed and separated, to the extent possible, from those of purely commercial operations. Methods to assess them will be explained later.

The preceding section has been an overview of the types of adjustments to the PE financial accounts that are necessary in order to measure social profitability. Carrying them out is not, however, a straight forward task. There are difficulties, for instance, in estimating the true economic cost of labor, even though there is some agreement among economists that it is lower than the actual wage rate in estimating the shadow price of foreign exchange when quantitative restrictions loom large in the trade regime, or in estimating the costs of non-commercial objectives. The types of adjustments that could be made with some degree of confidence would therefore vary from country to country depending on the availability and reliability of data. However, a meaningful evaluation of PE economic performance requires a minimum of three adjustments be made: reevaluation of traded inputs and finished goods at the shadow price of foreign exchange, estimation of costs of non-commercial objectives and of the true opportunity cost of borrowed funds.

Starting with the financial accounts and after making, to the extent possible, the corrections mentioned above, the economic surplus generated by PE could be calculated. It is supposed to reflect the efficiency with which it has used productive resources. As an indicator of performance it must, however, be used in conjunction with other indicators. It has already been pointed out that financial profitability must also be taken into account due to government budget constraint, even if it is not likely to be highly correlated with the economic surplus indicator.

It is also important to recognize the wide margin of error estimates of shadow prices are subject to. PE may show a much higher economic performance at one set of shadow prices than at another set. Furthermore, the PE contribution to growth in income per capita, to the process of learning and technical progress may be more directly captured by measures of factor productivity than by the economic surplus criterion.

In a comparative study of performance of Asian fertilizer plants, Leroy Jones[3] suggested the use of the rate of capacity utilization as a complement to that of economic profitability. He argues that the correlation between these two indicators is likely to be high for the following reasons: fertilizer output is homogeneous so that technically it is difficult to raise capacity utilization at quality's expense; average fixed cost and even variable cost decline where output is raised. This criterion is not however free of pitfalls. First, determining productive capacity may be a difficult task, as Jones himself has pointed out and suggested ways of doing it in the specific case of fertilizer plants.

Secondly, a high degree of capacity utilization may not be associated with an output of a high social value, so that government may have to accept large inventories of finished goods or market them at subsidized prices. Finally, it may be achieved in some manufacturing sectors at a large cost of input wastage. For all these reasons capacity utilization remains

a partial indicator of performance. It may nevertheless be useful particularly in assessing the performance of PE's involved in highly capital intensive industries.

Factor Productivity as a Performance Indicator

Changes in factor productivity ought to be reflected in the economic surplus PE generates. If PE uses inputs with greater efficiency, its economic surplus would be larger. That does not, however, mean that the factor productivity indicator is redundant. First, the two indicators are calculated with two different methods; factor productivity is traditionally measured by the ratio of physical output to labor, capital or a combination of both, whereas economic surplus is measured by the value of net benefit, estimated at accounting prices. The former criterion is therefore a way of checking the robustness of economic surplus calculations. Secondly, productivity is a more direct criterion to assess PE contribution to growth and learning to use resources more and more effeciently, especially when the total factor productivity measure is adopted. If a PE operates in an infant industry or is expected to contribute to the expansion of the country's manufactured exports, an undertaking that requires it to become competitive in international markets, then it is important to assess its factor productivity growth. As will be shortly seen this criterion is not however without any problem.

Single Factor Productivity

The best known measure of factor productivity is the ratio of gross output or value added to labor employed. It is often used when comparing performance between PE and private firms operating in the same industry, or in assessing the progress made by a given PE over time. It is a straight forward measure when output is homogeneous in nature and quality and labor in skills. This is rarely the case; in general, the value of output has to be converted into real terms at appropriate deflators, and labor categories of different skills have to be aggregated into a total labor input. In addition, a number of the employees may have been imposed by government on PE in order to reach some employment objective. Unless corrected for such externally imposed overmanning, the productivity measure would then be distorted since it may show relatively poor performance even though PE may not be at fault. Finally, improvements in labor productivity are not always associated with greater efficiency in resource utilization. Productivity may indeed be raised by adopting more capital-intensive techniques. Account must therefore be taken of the capital used per unit of output.

An alternative measure of factor cost efficiency is the capital-output ratio. It requires knowledge of PE capital stock with all the problems of estimation involved: calculation of true economic depreciation, aggregation of different capital goods. This measure also remains a partial indicator since it does not take account of labor use. In

addition, it may be misleading to assess a PE performance by comparing its capital-output ratio to that of private firms in the same industry if government reduces the cost of capital to it below the market cost through loan guarantees, subsidies and low return to equity requirements.

Meaningful conclusions can be based on single factor productivity measures only if both ratios of labor and capital to output move in the same direction in time series or across private and public enterprises of the same industry. Otherwise, total factor productivity is a superior criterion of performance.

The change in total factor productivity over a given period can be measured by the difference between the rate of growth of output or value added and a weighted average of the rates of growth of labor and capital stock, the weights reflecting roughly the shares of the two inputs in the value of output. The difficulties involved in determining the real quantities of output, labor, and capital that are required for the partial productivity measures are also at play when measuring total productivity. Nevertheless, the latter is a more correct measure of productivity performance. So far it has been rarely used in practice, especially at the enterprise level. The French program contracts that have been negotiated between the government and some of its own enterprises have included specific target rates of total factor productivity growth to be achieved.[4] In Eastern Europe national plans have also specified TFPG objectives at the sector but not at the enterprise level. In developing countries, studies of TFPG even at the industry's level

have been sparse. Data quality and the difficulties involved in measuring output and inputs could have been the responsible factors. Some resources ought therefore to be allocated toward remedying these deficiencies.

It has been argued in the preceding sections that three criteria ought to be applied in assessing PE performance: financial profitability which addresses government concern over budgetary limits, even though it may not reflect the net economic contribution of the enterprise; economic surplus which corrects for major distortions in actual prices and for costs of non commercial objectives. thus reflecting the true economic contribution of PE commercial operations; finally, the rate of change in total factor productivity which measures the degree to which resources are used with greater efficiency.

As has been previously pointed out, the difficulties involved in measuring these indicators are by no means negligible; but even if they could be resolved, the question remains how to judge whether PE operations have been successful or not. One of two methods could be used. The first is to compare PE's performance to that of private firms which operate in the same industry. This method is not however valid with regard to financial profitability since PE is not supposed to behave as a financial profit maximizer, nor with regard to economic profitability due to lack of information on private forms' performance. This method could therefore be applied only to the factor productivity criterion. The second method consists in evaluating PE against its own pervious

record. It is a better method in so far as it takes account of the specificity of each enterprise with regard to its learning and growth experience. Regardless of the method used, performance evaluation is however worthless unless it serves to induce improvements. This could be achieved only if the objectives thrusted upon PE are unambiguously stipulated, the criteria involved are internalized by it, and if both government and enterprise have an understanding of the costs involved.

III. TREATMENT OF SOCIO-ECONOMIC OBJECTIVES

One important ingredient of good performance is an unambiguous definition by the government of the objectives PE is expected to pursue. Managers frequently complain of the lack of consistency and of vagueness with which objectives are formulated by government. This vagueness may account for the frequent interference of various central government departments, regional and local authorities in PE's day to day operations. In the absence of clear guidelines, set by the government after consultation with the enterprise involved, the manager may yield to various external demands. The labor department may pressure it to expand employment, local authorities to expand its operations in their respective regions, etc. Large costs may be incurred in satisfying these demands, which makes it difficult to evaluate the performance of PE with regard to its commercial operations. If subsidies are required to cover shortfalls in financial profit from some normal level or more often deficits, it would then not be clear to what extent they are justified by the cost of external demands and to what extent they result from inefficient operations.

In order to induce good performance it is therefore important that PE not be continuously subjected to external demands. The government must define ex ante, and as clearly as possible, the targets to be reached, and the amount of resources it is willing to allocate towards attaining them. This task requires of course the collaboration of the enterprise managers since they hold most of the needed information. Failure would most likely ensue if the government defines targets unilaterally, with no prior consultation with managers, and then hands them down to them hierarchically. The negotiation process ought to lead to some consistency in the formulation of objectives and help the government define its desired trade offs.

It is during this process that the performance record of the enterprise ought to be the most valuable. The government must of course first set its overall objectives and assess its financial needs and resources. Based on its own previous record, each PE is then assigned some given targets of both commercial and socio-economic nature. The enterprise concerned should then try to assess both the feasibility and the costs of achieving these targets and report them back to the appropriate government agency or department. The costs may cover capital needs, operating deficits and non commercially warranted undertakings. Costs of the latter ought to be assessed separately from those of commercial operations. As previously argued, this is needed to measure the impact of fulfilling social targets on the enterprise's financial state and also to assess the net economic contribution of its commercial activities.

Based on the costs submitted and their impact on the government's budget, the targets would then be revised and recommunicated to PE managers. This iterative process should go on until agreements on targets and required costs are reached. Through this process and given its limited financial resources, the government would be faced with the choice among trade offs. If, for instance, its cost of maintaining employment in a PE that is faced with structural problems is too high, then it may reorient its policy toward job creation in another PE or in the private sector; if the incremental cost of locating a plant in a backward area is too high, then it may opt for a more favorable location. These kinds of improvements in project selection and in decision making are possible only if a process similar to the iterative process described above is applied.

There are however some difficulties that have to be resolved for such a process to lead to some kind of optimum. First, the government may not be able to quantify the social benefits that are attached to a given socio-economic undertaking. Take the example of locating a plant in a backward region. The positive externalities that the new plant may generate in this region may be uncertain although it is very important for the government[5] to try to assess these benefits, they should not be included in the assessment of economic surplus. Other benefits such as maintaining a relatively high level of employment or training workers may be reflected in economic evaluation, carried out at accounting prices. Their financial costs ought, however, to be treated

separately in order to determine their impact on the enterprise's financial position.

Performance with regard to non commercial goals ought therefore to be evaluated on a cost efficiency basis. Problems arise, however, when trying to assess these costs.

First, there is the problem of joint costs. A large share of administrative costs is likely to be of this nature. Some machinery may also be used both to produce manufactured goods and to train young workers who may later leave the PE involved to work in other firms. The allocation of these joint costs between commercial activities and specific socially oriented operations is likely to be a difficult task for PE, let alone government. But, as R. Mallon argued, comprehensive performance evaluation may induce the enterprise to partition these costs objectively and reveal its best estimate of the share of social objectives to the government. The reason is that it would look cost-ineffecient with regard to these objectives if it overstates their share in joint costs, whereas it would show poorer financial or economic profitability if it understates it.

The second problem is how to assess the cost of a given socio-economic objective in such a way as not to distort true performance with regard to other objectives. The government should not of course base its decision making exclusively on the information conveyed to it

by PE. Some independent source of information would be useful.

Consider employment for instance. The government may want a PE to employ a number of workers that is larger than warranted by commercial or even economic calculations. The problem is how to assess the cost of such overmanning. If the enterprise operates in an industry where there are private profit motivated firms, information on their labor coefficients could be used to estimate size of overmanning in PE. The industry's average unit labor requirement could be applied to the enterprise's output. This yields the size of the labor force that is technically required to produce this output. The difference between this number and the actual level of employment requested by government would be considered as overmanning.

These calculations, though useful, should not be taken as a rigid basis on which to assess the cost of overmanning. It is rare that firms produce identical products which require the same input coefficients so that the PE involved may not have used other firms' labor-output ratios, even if its hiring policy were motivated strictly by profit maximization. Furthermore, the comparison may be distorted if the cost of capital is made cheaper to PE, through government subsidies and loan guarantees, than to private firms. Based on the average ratio for the industry, the cost of overmanning would be in this case underestimated since PE's labor coefficient would look low, due to the use of more capital intensive techniques, relative to the coefficients of the private sector.

Comparisions with private firms may thus be useful in assessing the incremental costs of social constraints. Ultimately, however, estimates must be arrived at only after a process of negotiations between government and enterprise is completed.

Apart from assessing the costs of social objectives there is the issue of whether PEs ought to be compensated for the costs incurred in achieving them. Most economists have argued that actual compensation is needed if any meaning is to be attached to the evaluation of financial or even economic performance with regard to commerical operations. This compensation could be effected either through the provision of subsidies to cover the incremental costs involved or through the allocation of an "endowment fund" that would serve as a separate capital to be used for socio-economic objectives.

Compensation arrangements may be part of a contract that government and enterprise agree on. This has been the case of the "contracts de programme" that the French government included in the past with some of its own companies. The best known is the one arrived at EDF, the electric power company. EDF committed itself to fulfill a number of targets over the period 1971 through 1975. This set included, among other targets, an eight percent rate of return on investment, a five percent increase in total factor productivity, and defined social obligations. The government took up specific commitments such as loan guarantees and actual compensation for socio-economic ofjectives. In Britian, similar contracts called corporate plans also stipulated actual

compensation for cost of non commercial objectives.

Under these contractual arrangements, the government deals with each PE separately. This implies that it has dealt with trade-offs among objectives in the background. An interesting system that has evolved in Canada over the last year has the purpose of confronting both government departments and PEs with trade-offs. This system revolves around the so called envelopes which are cash limits imposed on broad expenditure categories.[6] Capital or operating funds going to all PEs have to be drawn from the so called Economic Development Envelope. Each envelope comprises operating reserves which may be used only to cover cost overruns and policy reserves that are allocated to new programs or to the expansion of old ones. Each envelope is run by an interdepartment committee called the policy committee.

Each demand on the envelope has to be debated and approved by this committee. Subsidies and loans by a PE reduce the size of the envelope. Even the suggestion that the implicit cost of a loan guarantee ought to be taken out of the envelope is being seriously considered. The short experience with this system has not been yet systematically reviewed but casual observation suggests that it has helped rationalize government outlays by forcing various government departments and agencies to be confronted with trade-offs among projects and objectives and to be cost conscious.

NOTES

1) See for instance Squire, Lyn and Van Der Tak, Herman, G., "Economic Anlaysis of Projects", John Hopkins University Press, Baltimore, 1975.

2) The opportunity cost is, however, positive if more employment in manufacturing induces people to migrate to urban areas.

3) See Jones, Leroy, 1979.

4) See Keysen, 1978.

5) See Mallon, R., 1981.

6) See Government of Canada (1980) for a detailed description of the system.

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