The need for coordination and evolving a uniform approach to the common problems faced by the public sector enterprises has been increasingly felt, since the administrative control of these undertakings rests with some ministry or the other. The Bureau of Public Enterprises, issues, from time to time, based on the decisions of the Government, instructions and guidelines on various aspects of management of the public sector undertakings.

From the talks the researcher had with the various personnel of the state public sector undertakings of Assam, it has been noticed that as a general rule, all of them favoured a well organised finance division/department for the efficient management of the finances of the undertakings.

Under the existing set-up, the public sector undertakings normally have on their Board of Directors various representatives of different ministries which have a direct bearing on the undertakings concerned. The Board of Directors, invariably, include in one way or the other a financial adviser, usually a nominee of the finance ministry. Such a person normally have a long stint of service in the finance ministry, with some brief exposure, if at all, to industry. In undertakings where the investment is quite
large, it was found that the finance function was headed by a financial adviser or a chief accounts officer or a finance and accounts officer or financial adviser - cum - chief accounts officer.

MAIN FUNCTIONS / RESPONSIBILITIES OF FINANCIAL ADVISER, ETC:¹

The term "financial adviser" used in this note would refer to the Finance Director or the Financial Adviser and Chief Accounts Officer, where there is no full time Finance Director, i.e. the top post in the finance function.

1. The financial adviser has both "staff" and "line" functions. Except for exerting line authority over his own department, Financial Adviser fills a staff role with responsibilities for providing line managers and also the other staff managers with specialised services. This includes advice in the area of budgeting, controlling, pricing and special decisions. The line functions would include the organisation of his whole office to enable him to render the staff functions and also to maintain cost and financial accounts.

2. The Financial Adviser should be recognised as the principal staff officer to the Chief Executive on all financial matters. The Financial Adviser where there is no full-time Finance Director, should invariably be invited to be present at the meeting of the Board of Directors. In many cases there has been delegation of financial powers. For exercising these powers the Board of Directors may determine matters which will be reserved (i) for concurrence of the Financial Adviser, such as (a) proposals requiring sanction of the Government, (b) major proposals involving long term financial objectives, or (c) departures from approved plan ; (ii) reserved for consultation with the Financial Adviser ; and (iii) those on which the Financial Adviser need not be consulted.

3. The responsibilities of the Financial Adviser inter-alia include the following:

(i) Determine the financial resources required to meet the company's operating programme.

(ii) Forecast how much of these requirements would be met by internal generation of funds by the company and how much will have to be obtained from outside.
(iii) Develop the best plan to obtain the external funds needed.

(iv) Establish and maintain a system of financial control governing the allocation and use of funds.

(v) Formulate programme to provide most effective cost-volume-profit relationship.

(vi) Analyse the financial results of all operations, report the facts to top management and make recommendations concerning future operations.

(vii) Carry out special studies with a view to reduce costs, improve efficiency and profitability.

5. The above are dealt with in detail as follows:

(a) Feasibility Studies and Project report:
In regard to capital expenditures relating to new projects or expansions, feasibility studies and detailed project reports are to be prepared by the management and these should be examined by the Financial Adviser, inter-alia, to ensure:
(i) that the capital expenditure proposed would be in furtherance of the objectives for which the undertaking have been established;

(ii) that the expenditure proposed to be incurred is reasonable;

(iii) that the expenditure would result in ensuring reasonable profits;

(iv) the overall economic viability of the proposal;

(v) that the financial resources for meeting the expenditure would be available;

(b) Budgeting -
The Financial Adviser will be the principal coordinating officer for:

(i) long term operating budget covering a period of 10 years indicating the likely profit/loss year during the period;

(ii) preparation of long term capital expenditure budget covering a period of about ten years and advise the
management in regard to the timing of the incurrence of capital expenditure;

(iii) capital expenditure budget in regard to the capital expenditure that is to be incurred during the year;

(iv) the preparation of the annual operating budget;

(v) the budget returns that flow out of the comprehensive budgetary system operation.

For the benefits of various levels of management, the Financial Adviser would analyse variations between budget figures and expenditure incurred and comment on the causes that have led to such variations to facilitate the management to control expenditure by the application of the principle of exception.

(c) Cash Flow Statement:

Based on the long term budget the Financial Adviser would prepare a cash flow statement indicating the inflow and outflow of cash during the periods. Similarly he will also prepare a detailed monthly cash flow statement for the year based on the annual budgets.
(d) Working Capital - He will also make an assessment of the total working capital requirements for the fiscal year and advise the management regarding the sources of financing the working capital requirements.

(e) Purchases - He will be associated on all matters relating to purchase of equipments, raw materials etc. He would also lay down suitable procedures for purchases to ensure that adequate control is exercised over such purchases and that there are no uneconomic purchases.

(f) Pricing Policies - He will also advise the chief executive of the pricing policies to be followed in the organisation in regard to the selling prices of products, inter-department issues, charging of materials to jobs etc.

(g) Service Conditions - He will advise the management on all service conditions and matters having financial implications such as pay scale, dearness allowance, bonus, gratuity etc.

(h) Accounting Matters -

(i) General - He is the principal official in charge of accounts, budgets and internal audit of the undertaking. He shall maintain or cause to be maintained, adequate records of assets, liabilities and transactions of the company; see that adequate internal audits thereof are currently and
regularly made; and recommend and, in conjunction with other officers and departmental heads, enforce duly approved methods and procedures whereby the business of the undertaking shall be conducted with the maximum safety, efficiency and economy. He shall examine all proposed disbursements from the undertakings' funds and approved in advance payments required to be made in accordance with the prescribed administrative and accounting requirements and procedures.

(ii) Cost Accounts: He would also be responsible to ensure that a proper and adequate system of cost accounts is maintained to enable compilation and control of costs. He would also be responsible to review cost of production figures and render periodical reports to the management on such costs of production and how they compare with the standards or norms established. He would also render reports to various levels of management in regard to the items of expenditure which are under their control. These reports would indicate the actual expenditure incurred and how they compare with the budgets/standards.

(iii) Store Accounts: He would responsible for the maintenance of adequate system of store accounts. He would assist the management in determining the minimum and maximum ordering levels of various items and also be responsible for
the introduction and / or operation of ABC method of control with the view to reduce inventory holding to the optimum level.

He would also be responsible to ensure that the verification of stocks of various items of stores is carried out by ensuring:

(a) that physical stock is verified at least once in a year;

(b) that physical stock of selected items is carried out each day;

(c) that the surprise element in regard to stock verification is maintained.

(iv) Internal Audit :- He will organise an effective Internal Audit department and will process the reports submitted by the internal auditor and place the same before the Board through the Chief Executive.

(v) Annual Accounts & Audit :- He will ensure that the annual accounts are prepared in time according to the provisions of law. He will attend to all matters relating to the statutory audit and the audit by the Comptroller and Auditor General of India.
(vi) Custody of Cash & Disbursement: He will be the custodian of the cash of the Company. He will be the principal disbursing officer and in discharging this duty he will ensure that adequate control is exercised over the allocation and use of funds in accordance with approved programme and budgets and with due regard to policies and regulations laid down by the Board.

(vii) Tax Matters: He will be responsible for attending to all tax matters relating to the undertaking.

6. Special Studies:
(a) He may take up from time to time special studies particularly with reference to cost reduction, economies of scale, economics in administration and other overhead expenditure and such other areas which have a bearing on profitability of the undertaking. He may also take up for study the administrative, accounting and other procedures prescribed with a view to (i) eliminate unnecessary movement of paper and (ii) reduce clerical work.

(b) To ensure that the public sector undertakings are able to sell their products, without much difficulty it is necessary to have continuous market survey of the products manufactured and to be manufactured in the undertaking. He would ensure that such market surveys are in point to fact, being carried
out by the management. He would also furnish to the management prospective costs of the products to enable the management to determine the optimum product mix.

7. Reporting:

The following quarterly reports included in the reporting system would be the responsibility of the Financial Adviser:

(i) Resources employed;

(ii) Summary of each cash flow for the quarter;

(iii) Forecasts of cash flow for the next quarter;

(iv) Capital expenditure incurred during the quarter compared with the sanctioned amount, budget estimates etc.

(v) Profit and Loss account for the quarter;

(vi) Ratios of (a) overhead to sales; (b) Stocks to sales; (c) debtor to sales; (d) capital employed to sales.

(vii) Expenditure on specific items of overheads included therein;
(viii) Cost of production of items completed during the year with variations, if any, with standards established;

(ix) Any other report prescribed by the undertaking relating to financial and cost matters.

The above management reporting should, however, be within the undertaking and rendered to the Board of Directors through the chief executive and the Financial Adviser should rely on the tools and services available within the undertaking and a parallel system should not be developed for this purpose.

The Financial Adviser, on the other hand, should also bear in mind the fact he is a part of the management team and that he has as much responsibility in ensuring best operation of the undertaking as any other principal staff officer of the enterprise. His entire approach to problems of the undertakings should be an integrated one and his efforts should be such as to bring optimum results.


"The Committee feel that the functions of an important executive like the Financial Adviser should not be left undefined. An indication in the delegation of powers of the
cases that would require to be referred to him, by no means, be considered as exhaustive because his functions do not end with examining what is referred to him. He had to play a positive role in helping the management to run the undertaking efficiently.

For this purpose, he has to undertake systematic study of progress reports, statistical statements, inputs and outputs, Experts Committee therefore recommend that the main functions, responsibilities and powers of the Financial Adviser should be clearly laid down.

A study and analysis of the above circular, acknowledged in page 38 of this thesis (footnote), shows that very little attention has been paid to the problem of working capital planning and management. Except for item d, of page 43 in this thesis, and some parts of the reporting systems (page 47 and 48 of this thesis), there is virtually no instruction as to how the working capital management is to be undertaken.

The above system of management of finance function is normally followed in large public sector undertakings. as the size of the undertaking decreases, the powers of the personnel incharge of the finance function also decrease, and these are assumed by the chief executive.
It can be noticed that the type of personnel required to undertake the kind of activities expected of a financial adviser are diverse and encompasses nearly the whole gamut of financial management and financial monitoring. The usual practice of placing a personnel from the finance ministry on deputation does not serve the purpose. The whole attitude of the personnel who has come on deputation from the finance ministry has been to establish an elaborate system of accounts, and then generate a number of reports which contain a lot of information which is not at all relevant or required for the purposes of assessment of performance or monitoring, and this delays the process of decision making, if not virtually bringing it to a halt.

The assessment of working capital requirements is initially visualised when the undertaking is being planned, i.e. at the time of the preparation of the feasibility report of the undertaking. This feasibility study contains the findings and results of a proposed project. These findings can broadly classified as under. We shall also see how they influence the requirements of working capital.

1. Commercial Aspects:
All feasibility studies begin with an estimate of demand. These estimates have to be as accurate as possible. To make an accurate estimate of demand, certain factors are taken
into consideration, and information on these factors must be reliable and accurate. These factors are:

(i) National Income;

(ii) Per Capita Income;

(iii) Gross National Product;

(iv) Average Wages;

(v) Import & Exports;

(vi) Population Growth.

The above list is by no means exhaustive, of course, but represents the basic pillars upon which the demand estimates are prepared. Based on this information, the feasibility study makes an estimate of price and demand, location of demand, patterns of demand, export markets, time phasing and demand. Population growth is of great help in estimating the demand for consumer products, utilities and services. This is further supplemented by market surveys and market research. Data and information are collected from more than one source and correlated. Statistics regarding present production
capacity, present capacity utilisation, probable trends in sales etc. contribute significantly in estimating the demand.

The next step is to determine the undertaking's share in the total demand of the product to be produced, or service to be made available. Here various methods are used, such as:

(i) Taking into account the last few years' figures, and establishing a trend in these figures, either increasing or decreasing. This trend is then extended into the future to have an estimate of the future. Usually, the "Time-Lag" or Sequence Theory is used to forecast the demand among other theories like "Action & Reaction Theory", "Gross-cut Analysis Theory", "Specific Historical Analogy Theory".

(ii) Evaluating the trend of the market on the basis of favourable or unfavourable terms awaiting the market of the product. Here, normally trend analysis is used to establish trends over a particular period of time, and on the basis of the trend established, the future is forecasted.

(iii) Exponential Smoothing, in which the old demand and the existing demand are correlated to the forecast future demand.
(iv) Correlation Analysis: This is used when the demand is the product of several variables. The dependent and independent variables are identified and the variations in these dependent and independent variables is related to each other to predict the movement of the dependent variable with the changes in independent variable.

The forecast of demand is of vital importance on account of the fact that the entire planning of the undertaking rests on it. For example, if the demand is overestimated, it will result in an over-sized organisation in terms of resources and facilities available, e.g., plant & machinery, manpower, inventory, buildings etc. This ultimately results in high cost of production, and when the products are not sold, the expected cash is not realised. This results in high finished goods inventory. In an effort to maintain production, the undertaking resorts to short-term loans and cash credit much above the limit anticipated in the project report. The additional interest burden lowers the profitability and net cash generation. Then, in an effort to reduce the cash outflow, the production is reduced. But the entire manpower cannot be laid off. As a result, the production is low, and the labour and wages per unit cost high. The vicious circle begins again. This leads to the ultimate mismanagement of the working capital and the undertaking has to survive on “dole” from the government given by way off “management subsidy”.
All this just happens because the demand forecast was overestimated. Quite vice-versa, if the demand is underestimated, it will mean high cost of production, loss of opportunity, and short-fall of resources and facilities to meet the high unanticipated demand. To meet the expanding demand, the undertaking resorts to over-trading, thus straining its resources beyond reasonable point. Thus, if any small/minor mishap occurs, either technical or financial, it leads to high losses.

2. Technical Aspects :
The objective of studying the technical aspects of a proposed undertaking is to see as to whether the undertaking is technically viable or not. Choice of technology evaluated and selected for the undertaking, selection of product design, selection of the production process and technique to achieve the desired quality of the product are evaluated.

While evaluating the technical aspects, the following factors are usually examined :

(i) The suitability of the technology for the product to be manufactured or raw material to be used ;

(ii) The type of technology chosen, is it up-to-date or obsolete?
(iii) Look around for undertakings where this technology has been successfully used;

(iv) Availability of know-how;

(v) Availability of technology;

(vi) The possibility of this technology being rendered obsolete on account of new technological developments in near future.

Apart from the above, availability of the required technical and non-technical personnel is evaluated. Supply of adequate manpower near the undertaking is always desirable. If manpower is not available, what are the alternate sources, what are the training facilities required and available, who will install, commission and supervise the project at its implementation? These are some of the searching questions which are examined at this juncture.

The problem of location of the undertaking is also examined. The decision in this respect is preceded by the examination of, among others, the following factors:

(i) Proximity to raw materials;

(ii) Proximity to markets;
(iii) Availability of infra-structural facilities;
(iv) Favourable climatic conditions;
(v) Availability of manpower;
(vi) Transportation facilities;
(vii) Taxation policy of the government;
(viii) Sewage & effluent disposal arrangements;
(ix) Safety on account of offensive fumes, smoke, noise and other pollutants, etc.
(x) Soil conditions;
(xi) Zoning & building restrictions

These are some of the factors which have to be considered at the time of deciding upon the location of the undertakings. In addition to the above, sometimes, even the sociological background have to be considered while taking the location decision, e.g. the people of Gujarat will not like to work in a piggery, and therefore selection of Gujarat to locate a piggery unit there would not be practicable.

All in all, it may be mentioned that the most favourable location of an undertaking is where the total cost of production and distribution of goods is the lowest.

While apparently it seems that working capital may not be affected by the technical aspects of the feasibility study of an undertaking, it is quite contrary to this. The choice of
technology will determine how much inventory will be blocked in goods-in-process, how much raw material and finished goods inventory will have to be kept. For example, if the technology envisages batch production, a minimum amount of inventory required by a single batch will have to be kept in readiness always. Similarly, till the whole batch comes out of the production process, individual items will have to be kept as finished goods inventory. Moreover, if the technology is obsolete, and more up-to-date technology requiring less investment in inventory is available, then naturally the cost of carrying excess inventory in addition to loss of theft, breakage and storage will ultimately raise the cost of production, and hence the working capital requirements.

Moreover, if trained, skilled and appropriate manpower is not available, the use of untrained, unskilled and inappropriate manpower will result in low labour productivity, low turnover and higher production time. This again will erode the working capital safety margin and result in utilisation of loans / cash credit to keep the undertaking from near liquidity problems.

3. Financial Aspects:
The financial aspects of feasibility study covers the following areas:
. (i) Capital Cost of the Project ;
(ii) Calculation of the profitability & evaluation of funds generated by operations ;
(iii) Evaluation of return on investment ;
(iv) Calculation of the working capital requirements ;
(v) Determining the sources of funds.

The general experience with regard to project formulation and implementation in our country has been that very few projects have been completed within the time and cost frame of the original project estimates. This has been mainly because of the following factors :

(i) Scarcity of inputs ;

(ii) Project files getting entangled in the bureaucratic process ;

(iii) Elongation of project construction period, which in turn results in cost escalations ;

(iv) Inflation.

There is hardly any doubt that these are a result of unscientific project formulation and cost estimation at the planning stage of the project. Undertakings have been known
to go about the project cost analysis without adequate information and in an amateur fashion, and in total disregard to the advice of the experts in technical & financial areas, if at all sought.

As a result of this hazardous planning, we find the following deficiencies in the projects:

(i) Construction delays renders the capital investment already made unproductive and idle;

(ii) It upsets the original capital structure envisaged;

(iii) Additional depreciation and financial charges make deep inroads into the profitability estimates and affect the cash generation estimates.

(iv) Delays in obtaining fresh government and other concurrences cause extreme inconveniences.

It is admitted that estimates can never be exact or 100% accurate, but substantial improvement can be made by adopting a scientific approach to the problem. Depending upon the nature of undertaking, a cushion in the form of contingencies is made. The extent of this cushion depends on various factors like:
(i) Construction Period;

(ii) The size of the import content of the project;

(iii) The thoroughness of the original planning;

(iv) The expected price increases.

This differs from project to project. But as a thumb rule, a provision of 10% to 15% of the project cost which is not covered by the firm contracts is usually adequate.

CALCULATION OF WORKING CAPITAL REQUIREMENTS

At the time of project formulation and financial evaluation, an estimate of the working capital requirement is made. This requirement is made on the basis of categorisation of the costs on the following basis:

(i) Cash:

An undertaking has always to carry adequate cash and bank balances to meet day to day expenses of operational nature. The optimum size of cash and bank balances is determined by the size of the undertaking, nature of operations, and other cash expenses such as wages and salaries, power and fuel, administrative overheads etc. An unduly large cash balance

1. BPE No. 9(28)/FI/67/Cir/Adv.(P)-3, Dt. 16.10.1967
would be idle investment and too less a cash balance, on the other hand, could lead to liquidity crisis and adversely affect the financial standing of the undertaking.

(ii) Inventory:
For the purposes of Inventory management and control the Bureau of Public Enterprises, Government of India, has given a number of guidelines. These may be enumerated as follows:

STANDARDISATION OF NOMENCLATURE

The Committee on Public Undertakings have observed that all items held in stock should be properly classified and codified and their nomenclature standardised. Each category should be given a distinctive code number so as to facilitate a quick and sure identification.

STANDARISATION OF ITEMS

There is great scope for cost reduction in public undertakings through reduction of varieties of stores. Standardisation of stores items is therefore, an urgent necessity. These will help reduce workload through bulk

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1. BPE No. 9(28)/FI/67/Cir/Adv.(P)-3, Dt. 16.10.1967
2. BPE No. 9(28)/FI/67/Cir/Adv.(P)-4, Dt. 16.10.1967
purchases of fewer items in securing economic prices, in minimising capital investment on a variety of stocks and in reducing the material costs.

A.B.C. ANALYSIS

To minimise the risk of stockouts and to reduce the investment in inventories. The stoking limits, replenishments levels, and reviews of "A" items should be done at the Head of Department level with the approval of top management.

From the above it can be seen that although there are some guidelines about the management of inventory, but how much to invest in inventories and when to reorder is left to individual managements. Thus, we find state undertaking carrying, at times, inventories to last more than six months, if not nine months. There is no scientific basis for the purchases of inventories. Purchases are made on ad-hoc basis, and virtually at the whims of the top management, or the chief executive. As the requirement of inventory is totally dependent on the judgement of the top management, or their perception of the future requirements, this discretion has been used in the most atrocious manner. As a result,

1. BPE No. 9(28)/Fl/67/Cir/Adv.(P)-5, Dt. 16.10.1967
inventories have been purchased without any cause or reason, resulting in upsetting the whole financial planning envisaged in the feasibility studies.

Apart from the above, the following factors are considered as described below:

RAW MATERIALS PURCHASE:

The raw materials purchase function in the public sector leaves much to be desired. In the private sector, the man who purchases is more important than the methods adopted by him to buy, whereas, the emphasis in the public sector is on methods adopted to buy and not on the man himself who buys; hence rules and procedures have been framed not with a view to aiding and achieving results by efficient purchasing but only to minimise the unethical practices by the purchasing personnel in the discharge of their duties, with the result that we have red-tapism, a hierarchy of various stages of approvals, routing of files to different persons as well as stringent audit checking.¹

determined by the capacity utilisation. In most cases, this is relatively easy to find out as the production capacity of the plant is already known, and the input-output ratios are predetermined, with relative degree of accuracy. Once the quantum of requirements of raw materials is known, the cost is determined as per the prevalent prices, with due consideration being given to probable price escalations, and thus the cost of raw material to be used is estimated.

LABOUR AND WAGES:
To determine the estimated cost on account of labour and wages costs the quantum requirement of various types of work-force is determined. Normally, three types of work-force is considered, viz. supervisory, skilled and unskilled. At times, a forth category is added, i.e. semi-skilled. The supervisory staff requirements are based on the organisation chart, showing the level of supervision to be achieved. The requirements of skilled, semi-skilled, and unskilled work-force is based on the number of machines, types of machines, and the number of shifts to be operated, types of production processes involved, etc. Once the physical requirements of work-force is established, labour costs are calculated on the basis of prevalent wage rates, with suitable escalation factors on account of increments etc.
Inspite of all this planning, all the public sector undertakings are plagued by surplus-manpower, which ultimately leads to low productivity. This has also been reflected in Bureau of Public Enterprises circular No. BPE.NO.1(7)/DAP(R), dated 11th March, 1971\(^1\), which quotes recommendation No. 37 Para No. 8.24 of the 67th Report of the Committee on Public Undertakings (IV Lok Sabha) on Production Management, as under:

"The Committee are of the opinion that existence of surplus staff adversely affects productivity and profitability on an enterprise. They recommend that the staff strength in the initial stages should be determined most carefully after carrying out scientific manpower studies and a thorough assessment of work-load. Such studies should be entrusted to independent bodies like the Management Institutes or Institutions like the National Productivity Council for making an objective assessment."

SELLING PRICE:

In the case of state undertakings, it is not very difficult for them to estimate their sale prices as they operate in

monopolistic or near monopolistic conditions and environments. However, the market is always willing to pay a certain price and it is impossible to estimate prospects without first determining the maximum possible price that the market will be able to bear.

Pricing Policy of Public enterprises:¹
The pricing policy for public sector undertakings lays the basic objective that the public undertakings should be economically viable units and efforts should be made to increase their efficiency and establish their profitability. The opinion has been that it would not be necessary or advantageous to lay down guidelines in regard to pricing policies to be followed by undertakings which produce goods in respect of which prices are subject to regulations of a binding type either voluntarily by mutual arrangements or due to domestic or international regulations. It has also not been felt necessary to prescribe any guidelines for trading organisations.

So far as the undertakings producing goods and services in competition with other domestic producers, the normal market forces of demand and supply will operate and their

products will be governed, by & large, by the competitive prices prevailing in the market.

It was, however, felt that it would be useful to have suitable guidelines for those undertakings which operate under monopolistic or semi-monopolistic conditions. In this regard to pricing policies to be adopted by such undertakings the following guidelines will be useful for the considerations of their respective Board of Directors:

i. The pricing of the products should be within the basis of the landed cost of comparable goods imported from a foreign source, which would be the normal ceiling, and not on the basis of c.i.f. prices. In calculating the landed cost, the normal price of such goods in the country of their origin should be taken into account in cases where exports of such goods are subsidised in any appreciable scale either directly or indirectly.

ii. Within the ceiling of the landed cost, it would be open to the undertaking to have price negotiations and fix price at suitable levels for their products which would give them a reasonable return on capital invested. It was also desired that the prices fixed should be operative for a period of two or three years.
iii. Ordinarily, the landed cost should be regarded as the absolute ceiling. If, however, in assessing the landed cost, there are reasons to believe that the imported FOB / CIF prices are artificially low, or in other exceptional circumstances, where our own cost of production is higher than the landed cost, in such circumstances the matter should be referred to the administrative ministry concerned and for examination in depth consultations with the Ministry of Finance etc.

Pricing - Delegation of Powers to Undertakings:

The policy with regard to the pricing in so far as they relate to delegation of powers to undertakings within the multi-unit undertaking are as under:

i. Where a line of production is fully established, the undertakings should be given sufficient delegation to operate within the margin prescribed by the Boards; and

ii. In regard to production lines, which are being developed, the undertakings may be given the latitude to lower the margin suitably and even effect sales without any such margin should the need for competition so warrant.

COST OF PRODUCTION:

Very often the cost of production is underestimated so as to make the proposal appear more lucrative and attractive. The normal method adopted here is, apart from under estimating the costs, the inflation of selling price and inflation of prospective demand. As a result, projects of doubtful commercial viability appear to be alluring and enticing. The right way would be to estimate the various components of cost as correctly as possible, in a systemic manner and analyse the same. In case of vagueness, or more than one answer coming up, the higher should be considered.

Value & Cost:

In the manufacture of industrial products, costs are incurred to create a set values. Cost and values have an input-output relation. The scope to optimise the input of costs in order to produce a given set of values is always there. Value is dependent on what the product does, while cost is dependent on what the product is.

The excess of value or market price over the costs incurred in producing the product represents the margin of profit of the manufacturer. In order to make the manufacturing

operations more profitable, the manufacturer should be making a constant search for reducing the manufacturing costs. Reduced manufacturing costs could give him one or more of the following advantages:

i. Increase in margin of profit:
ii. Reduce loss:
iii. Enable a reduction in selling price and thus achieve a greater demand for the product:
iv. Increase net cash generation.

In the eyes of the customers or users, value is the allimportant consideration. He pays the assigned price for the product because he considers that satisfaction derived from its use worth that price. He is generally quite unconcerned about what it costs the manufacturer to produce the product. In other words, with the use of value analysis, it is possible not only to reduce the cost of production, but also the investment in inventories. This is so because there is rarely a product which is completely free from constraints as far as its manufacture is concerned, specially the time constraints. There is always a definite need to meet definite time targets and this makes it difficult that the design, manufacture and finishing of the product can be in the best and most economical manner. The designer must invariably fall back on existing materials, mechanisms and tests,
manufacturer must invariably depend on the tooling, handling and processes at his disposal. Product designs made under such constraints are invariably never the optimal ones. In fact the most carefully designed and engineered product would, in the course of time, reveal scope for change for the better because of changed industrial environments and technological levels.

Experts say that a value analysis team should set for its objective of achievement between 5% to 20% cost reduction in all the products it takes up for examination.\(^1\)

Apart from the above, the feasibility study also studies the break-even point of the proposed undertaking, by using the popular method of break-even analysis. This analysis shows the level of activity or capacity utilisation at which the undertaking will operate on a no-profit-no-loss basis, i.e. the sales revenue will be equal to the costs. Any operation below this capacity utilisation level will result in losses and vice-versa. To calculate the breakeven point, the following formula is used:

In this analysis, the lower the breakeven point, the better the profitability of the undertaking operating at higher and higher levels of capacity utilisations.

Apart from the break-even analysis, the feasibility study also uses the Sensitivity Analysis.

The estimates of revenue and costs are normally worked out on the basis of the assumption that the factors of revenue and costs remain the same. They are also based on the predetermined product mix. But in real life this rarely happens. There is every chance that the project which appears attractive on paper turns out to be disastrous as a result of:

1. Slump in the sale price of the product;
2. Rise in costs of inputs, without a corresponding rise in sales revenue.

It is also possible that the response to the products of the undertaking changes in the market due to its dynamic nature.
Sensitivity Analysis is carried out to determine the extent of safety margin available in the project to act as a cushion against adverse conditions and environment, other than those set out in the feasibility study itself. Hence, certain major components of cost and their behaviour are analysed in the light of past trends and foreseeable future indicators are incorporated in the analysis, thus seeing the sensitivity of the earnings of the undertaking to such unforeseeable circumstances. As such, in such an analysis, we basically study the sensitivity of the rate of return to changes not anticipated at the time of the preparation of the feasibility study report.

This view is also reflected in the guidelines that have been prepared by the Project Appraisal Division of the Planning Commission, Govt. of India, New Delhi. Section 7 of the above guidelines, referring to Financial Analysis of the proposed undertakings, Para. 7.13, 7.14 and 7.15, are reproduced below for reference.

7.13. The comparison of the rate of return on alternate assumptions about sales realisation, capital costs and operating costs is called "Sensitivity Analysis". Such

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sensitivity analysis helps us to assess the importance of the uncertainties surrounding a project. Apart from the type of sensitivity analysis, presented in Table F-5, (reproduced on page 76) every feasibility report must also include a more detailed analysis of the sensitivity of the rate of return to variations in the assumptions underlying the estimates of sales realisation, capital costs and operating costs.

7.14. Every feasibility report must analyse the sensitivity of the rate of return to changes in the level and pattern of product prices. To some extent such analysis would necessarily be presented in Table F-5 when the rate of return is calculated after allowing for increases in prices. But what is required is a more detailed analysis in terms of what prices should be if the project is to earn a given rate of return and how such calculated prices compare with the prevailing selling prices and the C.I.F. prices, (F.O.B. prices in case of exports). This is particularly important for projects which involve products whose prices are controlled by the Government. It is also important for projects in which the undertaking can itself determine and control product prices, because it will be the dominant supplier. This type of sensitivity analysis should be done not merely for different levels of product prices but also for the variations in the structure of prices.
7.15. The analysis of variations in the rate of alternative levels of capital costs and operating costs should be supplemented by a detailed analysis of the sensitivity of the rate of return to variations in the assumptions underlying the costs estimates for every project. The assumptions that are most critical to project performance and which are uncertain should be identified. This could be done on the basis of projects in operation elsewhere. This may involve elements like:

- Raw materials conversion rates;
- Productivity of different items of equipment;
- Input prices;
- The phasing of capital expenditure and generation;
- The build up of production to full capacity;
- The degree of capacity utilisation; etc.

Inter-dependent assumptions should be identified simultaneously, e.g. for a steel plant, in a sensitivity analysis of the rate of return to coke oven productivity, the impact of variations in the productivity of raw materials availability in other parts of the plant should be accounted for. The assumptions underlying such sensitivity analysis should be presented. It is not possible to develop standard formats to present the results of such sensitivity analyses.
The nature of analysis that is required will vary from project to project.

**TABLE F-5 = SUMMARY OF FINANCIAL PERFORMANCE**

*(At full capacity utilisation)*

<table>
<thead>
<tr>
<th></th>
<th>Case 1</th>
<th>Case 2 etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minus 2. Operating Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equals 3. Gross Margin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minus 4. Depreciation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equals 5. Net Margin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minus 6. Interest paid to non-Government sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equals 7. Net Return</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minus 8. Interest paid to Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minus 9. Tax paid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equals 10. Net Profit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Capital Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minus 12. Borrowing from non-Government sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equals 13. Capital expenditure out of public funds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minus 14. Borrowing from Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equals 15. Equity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Net return on capital expenditure from public funds (7/13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Net profit on Equity (10/15)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
19. Internal Rate of Return
(based on cash inflow net)

20. Prices required to earn an Internal Rate of return of

8%
11%
12%
14%

Cash Flow Statement:
In addition to the sensitivity analysis, the cash flow statement is also drawn up. It is not just enough for an undertaking to have a good profitability. It has also to be ascertained that whether sufficient cash resources are generated by the operations of the undertaking to meet the financial obligations of the undertaking, i.e. interest and repayment of installments of loans as and when they mature. For this purpose, a cash flow statement is drawn up, mostly separately for construction and operating periods.

In this statement, we take into account all the cash inflows and cash outflows. At no point of time there has to be an excess of outflow of cash over the inflow of cash, taking into account the opening balances for the period for which the cash flow statement is being prepared. An excess of

outflow over inflow can give rise to liquidity problems.

Return on Investment:

Return on investment is a technique which compares the earnings of a project to the level of investment made. Earnings in this case usually refers to the net profit after tax plus depreciation, i.e. net cash generation. It is very difficult to lay down an absolute standard in this regard, but it is quite reasonable to expect that the return on investment should be at least equal to the cost of capital invested in the undertaking.

Normally three methods are used in calculating the return on investment, viz.

i. Pay-Back Period;
ii. Internal Rate of Return;
iii. Net Present Value.

We shall briefly discuss these three methods as under:

i. Pay-Back Period:
This is the simplest of the techniques for evaluation of investment proposals. The decision to accept or reject a proposal is based on the number of years the project requires to recover the funds invested in the undertaking. These funds refer to the net cash generation. The lower the time limit of
recovery, the better the proposal, under this technique. Occasionally, undertakings employ different cutoff points for different investment proposals varying the limits according to the risks perceived by the management of the undertaking. The selection or rejection of a proposal under this technique is solely based on the repayment period.

ii. Internal Rate of Return:

The internal rate of return is the rate of discount that makes the present value of future cash inflows equal to the (present value of) net cash investment. This is usually calculated by trial and error method to locate the exact internal rate of return. Though it is time consuming in application, this technique employs discounted cash flows and lends itself well to assisting the management in pursuing a wealth maximising goal. Normally, the minimum rate of return acceptable is the cost of capital, and among the various options available, proposal with the highest internal rate of return is chosen under this technique.

iii. Net Present Value:

Net present value method is another method which utilises the discounted cash flows for the purposes of assessment of investment proposals. Under this method, the future cash inflows are discounted at a particular rate of return, usually the cost of capital, and then compared with the cash
outlay. This comparison of the present value of the future cash inflows with the cash outlay of the undertaking gives us the profitability index. The higher the profitability index, the better the project. This profitability index is calculated as under:

\[
\text{Profitability Index} = \frac{\text{Present Value of Cash Inflows}}{\text{Present Value of Cash Outflow}}
\]

Under this method, the minimum acceptable rate is first drawn up, and the inflows are discounted. Any proposal where the present value of the future inflows is less than the present value of the outflows is automatically rejected.

The use of these two methods of discounted cash flow, i.e., internal rate of return and net present value has also been recommended by the Planning Commission, Government of India, New Delhi, in their Guidelines for the preparation of feasibility Reports, prepared by the Project Appraisal Division. 1

With this overall view of the planning of the finance function in public sector undertakings, we shall now study the sample undertakings, their history in brief, their set-

up, operations, nature of activities, and try to identify as to whether they face any working capital problems or not.

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