

"Little-Mirrlees approach to social cost benefit analysis involves determining the accounting or shadow prices, particularly for foreign exchange, savings, and unskilled labour; considering the equity factor; and use of discounted cash flow analysis. It seeks to measure costs and benefits in terms of international prices, rather than domestic prices, and also in terms of uncommitted social income.

The Project Appraisal Division of the Planning Commission uses a modified version of Little-Mirrlees approach. All industrial projects are evaluated on three aspects — economic rate of return, effective rate of protection, and domestic resource cost."

INTRODUCTION

Project appraisal an exercise whereby a lending financial institution makes an independent and objective assessment of various aspects of an investment proposition to arrive at the financing decision. Appraisal exercises are basically aimed at determining the viability of a project and sometimes, also in reshaping the project so as to upgrade its viability. This is done by allocating the term finance sought by a promoter.

The factors generally considered by institutions while appraising a project included technical, financial, commercial, economic, ecological, social and managerial aspects. This makes it necessary to recognise the inter-relationship underlying the various aspects of a project. For example, the size of the initial market and the estimates for demand build-up would determine the plant capacity and production phasing; these together would have a bearing on the profitability, which, in turn, would determine the means of financing. Location also has an important bearing on project cost and cost of production. Above all, the management behind the project has a decisive influence on most of these aspects. These considerations imply that project appraisal is viewed as a composite process as against the approach of viewing each aspect individually.

This chapter will focus on the appraiser's thinking process from the viewpoint of the lending financial institutions. This will help ensure necessary preparation on the part of the borrowers-entrepreneurs/businessmen/businesswomen.

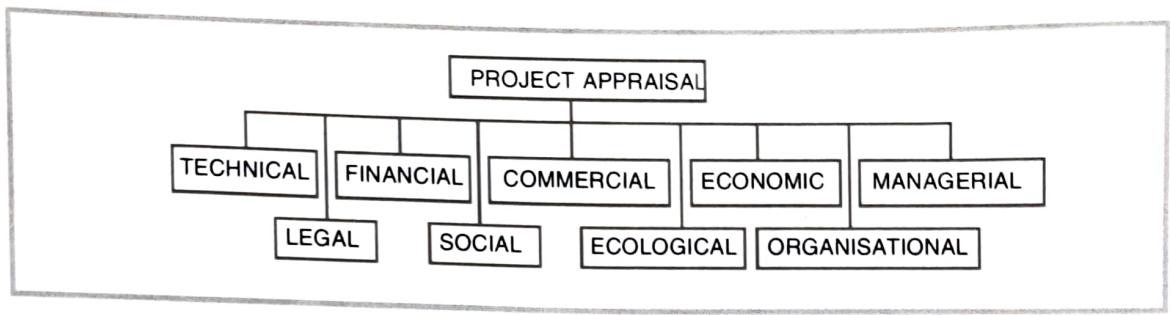
Meaning

The exercise of project appraisal simply means the assessment of a project in terms of its economic, social, and financial viability.

This exercise is critical as it calls for a multi-dimensional analysis of the project that is, a complete scanning of the project.

Financial institutions and banks make a critical appraisal of projects which are submitted to them by the entrepreneurs for getting loans. They have traditionally been accepting the data provided by the entrepreneur as valid while assessing the project. In fact, the emphasis has largely been on the cash-flow and financial viability of a project in assessing their suitability for extending the loans.

Fig. 22.1:
Aspects of Project Appraisal



Definition

Project appraisal can be defined as the promoter taking a second look critically and carefully at a project as presented by the promoter person who is in no way involved in or connected with its preparation and who is as such able to take an independent, dispassionate and objective view of the project in its totality as also in respect of its various components. The person who carries out appraisal of a project is usually an official from the financial institutions or a team of institutional officials. Since all ending activities involve risk in a smaller or larger measure, project appraisal aims at sizing up the quality of projects and their long-term profitability aims at minimising the risk of lending by rectifying their weaknesses and improving their quality by incorporating into them features / safeguards missed by the promoters either because of lack of knowledge or information.

Scope of Appraisal

The appraisal of a project is undertaken by the financial institutions with the twin objectives of determining the market potential of a project and selecting an optimal strategy. The methods of analysis vary from project to project. Nevertheless, certain common aspects of study from the angle of technology and engineering are with a mention:

- Choice of technical process and/or appropriate technology;
- Technical collaboration arrangements, if any;
- Size and scale of operations;
- Locational aspects of the project and availability of infrastructural facilities;
- Selection of plant, machinery and equipment together with background, competence and capability of machinery/equipment suppliers;
- Plant layout and factory buildings;
- Technical engineering services;
- Project design and network analysis for the assessment of project implementation schedule;
- Aspects relating to effluent disposal, management of entry, utilisation of by-products etc.;
- Project cost and its comparison with other similar projects, based on technology, equipment, product mix and time spread;
- Determination of project cost estimates, profitability projections, etc.;
- Sensitivity analysis.

It must be remembered that the different aspects of a project are not independent entities but are highly inter-related; and a meaningful project appraisal depends upon the appreciation of this fundamental fact. For example, the size of the total market for a product as it exists now and the year-to-year estimates of the future progressive call for expansion of demand would determine planned capacity of the proposed unit and the phasing of production over the years. These in turn would influence the project cost and profitability which would determine the means of financing. The cost of the project and profitability are influenced to a significant extent by its location. Over and above this, the management behind the project, has a decisive role to play in almost all aspects of the project.

Steps Followed in Project Appraisal

Project appraisal is a scientific tool. It follows a specific pattern. First and foremost, an analysis of a region's economy provides a general framework within which the assessment of any project is made. This analysis indicates whether the project is in a potential environment which enjoys priority for economic development of the region/state concerned. This exercise itself usually involves the investigation of six different aspects: economic, technical, organisational, managerial, operational, and financial. The relative importance of these different aspects can vary considerably according to circumstances and type of project. The main stages of the system of project appraisal are:

Step 1	— Economic	Indicates priority use.
Step 2	— Technical	Involves scale of the project and the process adopted.
Step 3	— Organisational	Suitability is examined.
Step 4	— Managerial	Adequacy and competence are critically scrutinised.
Step 5	— Operational	Capability of the project.
Step 6	— Financial	Determines the financial viability for sound implementation and efficient operation.

**Fig. 22.2:
Steps of Project
Appraisal**

Project Appraisal Format

Criteria	Project-I	Project-II	Project-III	Project-IV
1. Investment size 2. Location 3. Technology 4. Equipment 5. Marketing 6. Power & Water 7. Others' performance 8. Working capital needs 9. Labour component 10. Economic viability				
Total				

Point Scale: A = 5 points; B=4 points; C=3 points; D=2 points; E=1 point.

Economic Aspects

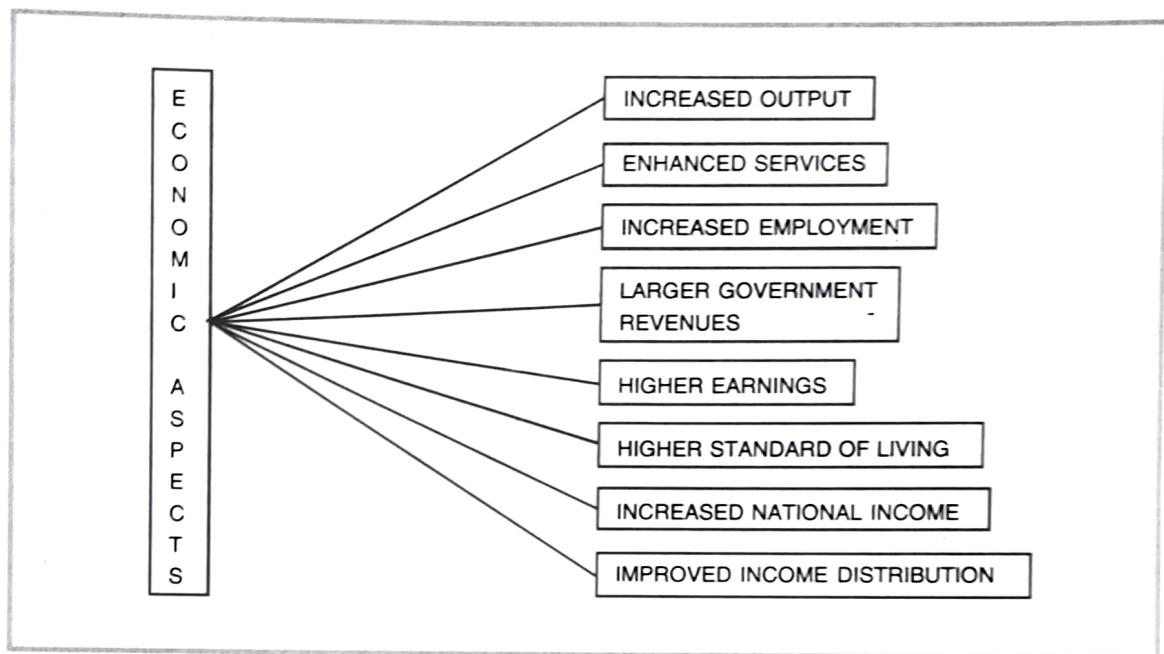
The economic aspects of appraisal are fundamental as they logically precede all other aspects — this is so because the bank will not finance a project unless it stands assured that the project represents a high-priority use of a region's resources. However, a purely financial analysis normally does not provide an adequate basis for judging a project's value to the economy, since the financial analysis looks at the project only from a limited viewpoint of the revenues entering the project's own accounts. So, an economic or social analysis looks at the project from the viewpoint of the whole economy, asking whether the latter will show benefits sufficiently greater than project costs to justify investment in it.

The economic benefits brought about by a successful project normally take the form of an increased output of goods or services, either directly or indirectly (as in a large class of cost-reducing projects). This increased production will also generate many different forms of additional income, such as increased wages or employment of labour, larger government revenues, higher earnings for the owners of capital, or most frequently, a combination of these income benefits.

In a large majority of cases, it is possible to quantify project costs and benefits, and to construct a rate of return or some other appropriate move. Future costs and benefits are calculated, using either market or shadow prices, as found appropriate. Further both costs and benefits are put under subsidence to initiate the projects' estimated rate of return.

The latter is then compared with the minimum earning power of capital judged appropriate for each country. While the rate of return is an important test that all projects with quantifiable cost and benefits must pass, importance and its significance is usually overestimated. The rate of return is a necessary confirming test of projects that have to be justified within a much wider frame of reference, in which basic project objectives and the nature of project benefits (e.g., foreign-exchange savings, increased employment and improved income distribution) play major roles.

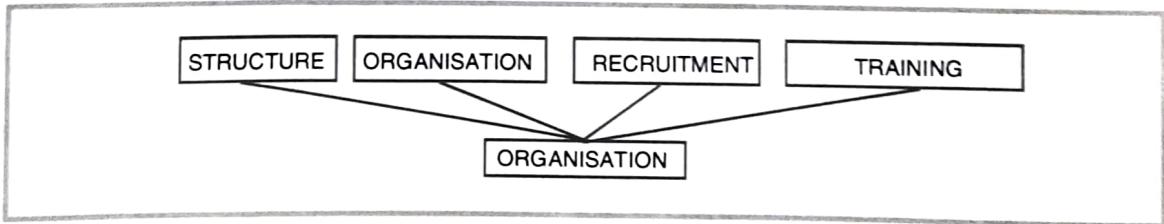
Fig. 22.3:
*Economic Aspects of
a Project*



Organisational Aspects

As a lender and a development institution, the bank places particular stress on the need for an efficient organisation and responsible management for the execution of the project. During appraisal, these two essential dimensions of a project are examined. If one or the other is found wanting, short-term remedial steps are recommended to the entrepreneur and the bank may make a clause for assistance — such as the recruitment of individuals or an organisation qualified to assist in running the enterprise, at least during the initial phase; or those for a longer term, such as a management study, reorganisation or creation of a new autonomous agency to operate the project. In either case, the need for training local staff to fill positions at all levels is examined, and training programmes may well be included as part of the project. The objective of this aspect of appraisal is to make sure that the project is adequately carried out and that a locally-staffed institution, capable of contributing effectively to the development of the sector in question, is created.

Fig. 22.4:
*Organisational
Aspects*



Managerial Aspects

If the management is incompetent, even a good project may fail. It is rightly pointed out that if the project is weak, it can be improved upon, but if the promoters are weak and lack in business acumen, it is difficult to reverse the situation. It is, therefore, natural that financial institutions very carefully appraise the managerial aspects before sanctioning assistance for a project.

It may be relevant to recall here that there are provisions which enable financial institutions to exercise control over the assisted units. For example, they now stipulate the condition of option for conversion of loans into equity in respect of loans

aggregating to ₹ 5 crore or more generally, and in respect of sick units, irrespective of the amount of assistance and the level of shareholding in the assisted company.

Further, there is a provision for appointment by the financial institutions of nominee directors on the boards of all MRTP companies assisted by them. As regards non-MRTP companies, nominee directors are appointed on the boards on a selective basis, especially in cases where one or more of the following conditions exist, viz., (a) the unit is running into problems and is likely to become sick, (b) institutional holding is more than 26 per cent and (c) the institutional stake by way of loans/investment exceeds ₹ 5 crores.

The Companies Act, the Industries (Development and Regulation) Act, etc., empower Government to exercise powers of control over the management, including the take-over of management of industrial undertakings.

All these indicate the importance given to proper managerial strategies to prevent mismanagement.

If a proper appraisal of the managerial aspects is made in the beginning itself, future problems in this area can be avoided to a very large extent. It is, therefore, necessary that the overall background of the promoters, their academic qualifications, business and industrial experience, their past performance, etc. are looked into in greater detail to assess their capabilities for implementing the project for which financial assistance has been sought.

Technical Aspects

The importance of technical appraisal in project evaluation needs no emphasis. Technical appraisal of a project broadly involves a critical study of the following:

Location and Site

An industrial feasibility study aspect refers to the appropriate and location selection of a geographical area where the project should be located. Towards this end, the required site characteristics shall be kept in mind when selecting the location.

There are a number of important factors that influence industrial location because the site may significantly influence the cost of production and distribution, distribution efficiency, the operating environment, etc.

The problem of site selection gets complicated by the fact that at a particular location where one or a few factors are favourable, other factors may not be so. Selection of an optimum location, therefore, revolves round the combined consideration and evaluation of all the relevant factors.

The important factors that influence industrial location are the following:

1. *Raw Material Supplies:* Certain industries are located near the source of raw materials. This is particularly true of industries based on gross (weight-losing) localised material — industries with a high *Material Index* (the proportion of the localised material to the final product). For example, iron and steel mills are usually located near the ore deposits and sugar mills in the sugarcane cultivating regions. Similarly, the timber industry tend to be closer to forests or riverways leading from forests. Kallayi (near Calicut, Kerala), one of the largest timber business centres of the world, is on the banks of the Chaliyar river leading from the richly endowed Nilambur forests. In certain cases, even industries based on pure materials prefer to be located near source of raw materials. The jute industry in India, for example, is developed in the jute growing region. Similarly, the early development of the cotton textile industry was in the cotton growing region.
- Industries using perishable raw materials also tend to be located in closer proximity to the raw material sources.

2. *Proximity of Markets:* Certain categories of industries tend to be located near the market. This is particularly true of the industries with the manufacturing process that involves an increase in weight and/or bulk. In such cases, the transport and distribution costs can be minimised by being closer to the market. Bottling of drinks is a very good example. Industries with fragile and perishable output also have a tendency to be located closer to the market.

When there are large markets geographically spread, national or internationally, manufacturing units may be established in close proximity to the major markets.

3. *Transportation Facilities:* Transportation facilities including the cost of transport play an important role in industrial location. No wonder, centres connected with sea, air, rail and road transport facilities exert a strong pull on industries. It is not only the transportation of the materials and finished products that it is to be considered but also the transportation facilities for the personnel.

In a vast country like India, there may be significant variations in transportation costs between different locations.

Places with a high transport disadvantage are not likely to attract industries. It is due to this reason that the Government of India is providing transport subsidy to industrial units located in certain hill regions and islands with a view to encouraging the industrial development of these regions.

4. Power and Fuel Supply:

Power or fuel and its uninterrupted supply is an important attraction for industries, especially in the era of energy crisis. In the past, certain industries tended to be located near coal deposits. But the advent of electricity has greatly changed the industrial location patterns. Now, it is not very difficult to take power supply to the location of raw material supply so that the weight-long materials may be processed at their location.

5. Water:

Certain industries like the paper industry by their very nature require large quantities of water. The quality and properties of the available water is as important as the quantity of water available and the stability of its supply. A number of industries also use the water sources for effluent disposal. While selecting the location, the possibility of the pollution of water by other industries making the water unfit for industrial and domestic purposes should also be considered. The requirements of water by the employees and their families housed near the industrial unit for domestic purposes and its availability should also be considered.

6. Manpower:

The economic, social and political aspects of labour supply have an important influence on industrial regions. Not only the quantity but an assessment of skill levels of the available manpower are very important. In certain regions, abundant cheap labour may be available; but if the labour does not possess the required skill, the industry will have to incur expenditure on training the labour.

Cheap labour is particularly important for industries where labour accounts for a significant part of the total value added. On the important factors influencing the location of plants in the less developed countries by the multinationals (MNCs) is said to be the cheap labour supply.

For the assessment to be realistic, it is essential that the wage rates be compared with the level of productivity by the labour.

Certain socio-economic characteristics and political affiliations of labour are also important considerations. In certain localities and communities, labour turnover and absenteeism are high. These factors may not only tend to increase the expenses but also affect the smooth functioning of the enterprise.

Some regions may be characterised by the dominance of militant trade unions, widespread labour unrest, etc., seriously affecting the smooth functioning of industries. Industries prefer to consider other areas for their location.

It may be difficult to get professional, skilled manpower etc., if the location is very remote and deprived of civic amenities.

7. Labour Laws and Government Policy:

Labour laws and the government's attitude and policy toward strikes and other labour problems and employee-employer relations, etc., may also influence location decision-making.

8. Natural and Climatic Factor:

Natural and climatic factors also play an important role in the location of certain industries, as the absence of these conditions will necessitate additional expenditure to create favourable conditions artificially. For instance, humid climate is conducive to cotton textile industry. Favourable climatic conditions and other environmental factors played a major role in the location of these industries.

9. Strategic Considerations: They also influence the location of industries. It is not likely that major industries will be located in strategically sensitive areas even if all economic factors favour such a location. Especially in the case of strategic industries, special care is taken to assure that the location chosen is not easily accessible to the military forces of other countries. For defence industries, strategic location may be the sole criterion.

10. Taxes and Fees:

Variations in taxes, fees and charges may also influence industrial location.

11. Incentives and Disincentives:

There are also certain incentives and disincentives which also may affect industrial location. For instance, in India, the Union and State Governments offer a number of fiscal, monetary and physical incentives for industries in the notified backward regions.

Certain disincentives like higher taxes may discourage industries in certain regions. Government may even ban new industrial units in congested areas, large urban areas or developed regions.

12. Site and Services: Some industries require a large area of land which may not be available in a locality where all other factors are favourable. Availability of the required type and quantity of land at reasonable prices is, thus, an important factor.

With a view to developing industries in certain regions, Government has been providing developed sites and necessary facilities and services. Certain such locations like Hosur (Tamil Nadu) have been very successful in luring industries.

Similarly, industrial estates have been established in different parts of the country to encourage the development of industries.

13. Socio-economic and Political Factors: Socio-economic and political factors are also sometimes very important, especially in respect of location of public sector units. Some large-scale public sector units are located in backward regions on such considerations. Social and political considerations sometimes favour industrial location in certain sensitive regions.

14. Miscellaneous Factors: There are also a number of other factors that may influence industrial location — the attitude of the local community, proximity of complementary industries, prospects of development of the region, service facilities required by the industry, recreational and social facilities, proximity to important centres like metropolitan centres, personal factors, historical factors, etc.

Site

There are a number of important factors to be considered in the selection of the site. These include the load bearing capacity of the site, towards flood and earthquake hazards, access to transport facilities, facilities for water supply and effluent discharge, ecological factors, etc.

The nature of the industry has a bearing on the site selection. For example, some industries like the paper industry need abundant supply of water. For some industries, effluent discharge is a major problem. Environmental pollution is a serious problem that certain industries have to confront with. All these factors influence the selection of site.

As stated earlier, the Government provides 'site and service' in specified locations. However, some of the facilities needed for certain industries may not be available on these sites.

Size of the Plant/Scale of Operation

The size of the plant or scale of operations is an important factor that determines the economic and financial viability of a project.

In many industries, there are certain technological plant capacities which are economical. If the size is sub-optimal, there will be diseconomies of scale.

This is one of the important reasons for poor performance of many industrial units in India. Diseconomies of scale result in high cost and make survival in a competitive market, particularly in the international market, very difficult. The Government of India in this context, has emphasised that the plants or scale of operations should be of economic size.

An important aspect of technological size is that the available process technology and equipment are often standardised at specific capacities in production sectors. Operative capacities in such sectors are, therefore, available only in certain multiples.

There are, however, certain factors that may come in the way of optimal scale. For example, there may be demand constraints, i.e., the market demand may be too low that it cannot absorb the output of the large plant. In some cases there may be resource and input constraints. For example, the available raw material in a region may not be sufficient to feed a large plant. When there is important control, non-availability of economic size plants or equipments domestically makes the adoption of optimal scale impossible. Sometimes, there will also be scarcity of finance.

Another factor that may discourage the establishment of large-scale facilities is the risk of rapid obsolescence of technology or the product.

Technical Feasibility

Appraisal of ethnical aspects of a project involves scrutiny of such aspects of the project as:

- Manufacturing processes/technology selected.
- Technical collaboration arrangements made, if any.

— Capacity/size of the project and the scale of operations.

— Location of the project.

— Availability of physical and social infrastructural facilities.

— Availability of various inputs covering raw materials as well as utilities, selection of plant, machinery and equipment together with background, competence and capability of machinery/equipment suppliers.

— Plant layout/and factory building.

— Technical engineering services.

— Project design and network analysis for assessing the project's implementation schedules, etc.

The technical feasibility study should consider the adequacy and suitability of the plant, the equipments and their specifications, plant layout, balancing of different sections of the plant, proposed arrangements for procurement of the plant and equipments, reputation of the machinery suppliers, etc.

The feasibility study should also consider the technology required for a particular project, evaluate technological alternatives and select the most appropriate technology in terms of optimum combination of project components. The various implications of the acquisition of such technology should be assessed, including contractual aspects of technology licensing where applicable, etc.

Government of India's policy in this respect clearly states that while evaluating applications for industrial licensing, the following factors will be specifically considered:

- (i) Whether the proposed capacity is of economic size.
- (ii) Whether the processes proposed to be adopted are efficient from a techno-economic point of view.
- (iii) The extent to which diversification and expansion proposals will result in fuller utilisation of capacity and economies of scale.

Besides, proper evolution of alternative technologies is essential for selection of the appropriate one. This evaluation should be related to plant capacity and should commence with a quantitative assessment of output, production build-up and gestation period and qualitative assessment of product quality and marketability.

The selection of technology has to be related to the nature of the principal inputs that may be available for a project and to an appropriate combination of factor resources for both short and long periods.

Financial Aspects

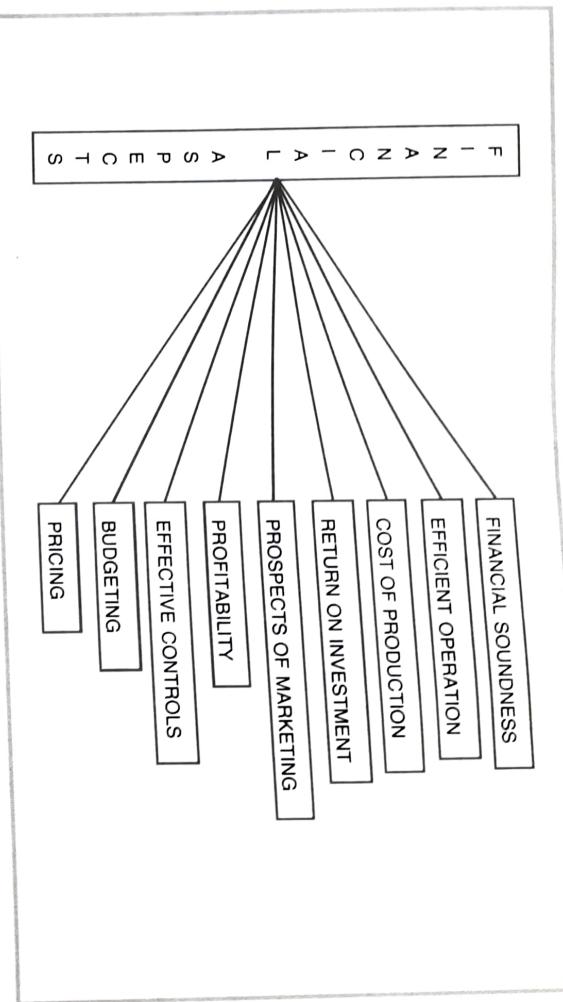
The purpose of the appraisal of financial aspects of a project is generally to ensure its initiation of financial conditions for the sound implementation and efficient operation. The scope of this aspect of appraisal varies, of course, considerably with the nature of the project and whether it is revenue-producing (e.g., industry, utilities, agriculture) or not (e.g., education, most highway projects).

For projects which involve the marketing of a product or service by an entity, the appraisal includes in investigation of the availability and cost of raw materials power, labour, and services needed for production, and the prospects for marketing the product or service profitably.

In every case, it is necessary to ensure that satisfactory accounts are maintained for effective control over expenditure and revenue, and to disclose the project and entity carrying it out. Also, since the banks finance only a part of the investment cost of a project, it is necessary to ensure that funds from other sources are available on acceptable terms to meet the balance of the cost. This may be relatively simple where the government is able, without difficulty, to provide the rest of the necessary funds from budgetary sources; or it may be complicated, as in a project to expand or modernise a revenue-earning concern, where all the financial requirements of the concern during the construction of the project must be considered.

Financial appraisal also evaluates capacity of revenue-producing investments from the standpoint of the entity. Industrial sponsor or other investor who would make them, in order to ascertain whether it is sufficiently attractive to warrant their participation. Establishing that the entity carrying out the project is in a position to manage its business in a cost-effective fashion, is another important aspect.

Fig. 22.5:
**Financial Aspects of
Project Appraisal**



The financial aspect of project appraisal covers the following areas:

- (i) *Cost analysis*: In the case of cost analysis it is to be decided or to be worked out what would be the cost of production. There are different methods of finding out cost.
- (ii) *Pricing*: This strategy concerns the fixing up of the product's price. Price fixation is a very tedious job. The price must be fixed very judiciously, because the price is the cause of demand. If the price is high, the demand may be low and vice versa and a low price may mean a lower rate of profit also.
- (iii) *Financing*: The funds needed to finance the project is an important aspect of project appraisal. It is concerned with raising the funds and making their most efficient use. The funds must be raised from places where the rate of interest is lower.
- (iv) *Income and Expenditure*: The income and expenditure profile is concerned with the estimates regarding the income expected and expenditure involved in the project. This helps in ascertaining the cost involved in production and profit expected therefrom. Detailed proposed accounts should be made for future reference to know whether the plans are working out properly or not.

Financial institutions examine the project to ensure economic justification of investment details. They study the marketing scope of the project and also its worth to the national economy by analysing the consumption pattern and the potential demand for the project.

Market/Commercial Aspects

In setting up an industrial project, estimation of demand for the product/group of products proposed to be manufactured by a promoter is the first important step. Ideally, the market analysis should give a comprehensive account of the market opportunity, as well as of the marketing strategy appropriate for converting the opportunity into a reality. Marketing strategy in this context could be defined as an ever-evolving design or blueprint consisting of a set of inputs like product quality, price, design, dealer/agency discounts, distribution network/channels, packaging, etc.

To be of maximum benefit to a promoter, whether new or already established, market analysis should cover the following major aspects:

- (i) Analysis of market opportunity and specifying marketing objectives. This involves a scientific assessment of (a) total size of the market for a product; and (b) the share that could be secured by a firm, existing or new.
- (ii) Planning the process of marketing the product.

(iii) Organisation of the marketing process.

(iv) Control of the implementation of the marketing plan which facilitates taking corrective action when the actual results deviate from the estimates or expectations.

An intensive scanning and analysis of the proposed environment in which the industrial unit has to function should form the basis for analysing market opportunities as well as for specifying the marketing strategy. This is because the ever-changing environment in which the industry sector functions, restricts or expands the opportunities available to and the threats to be faced by an industrial unit.

Market opportunities expressed in terms of demand forecasts and market shares are based on a host of factors outside the control of the promoter, whereas marketing strategy and marketing process are largely under his control. Hence, the formulation of a detailed marketing plan, specification of a proper marketing strategy, and the manner in which the marketing process should be undertaken would enable the promoter to cope with the uncertainties in the market place more effectively than otherwise. It is also a fact that the estimated market share of a promoter and his marketing strategy influence and reinforce each other and should never be viewed in isolation.

Answers to the following questions would indicate the safeguards that may be necessary to take in the likely weak areas in the project:

- (i) What is the management culture in which the entrepreneur has been brought up?
- (ii) Is the entrepreneur's approach to project planning scientific and consistent with the requirements of the proposed project?
- (iii) In the initial stages of project planning, is the entrepreneur enlisting the support of mere helpers or of professional managers?
- (iv) How has the entrepreneur drawn the organisational structure of the unit? Does it show ad hocism or indicate that he has tried to merely fulfil certain legal/other obligations or is it purposeful and does it indicate a good deal of foresight on his part?

The difference between an entrepreneur and manager has been dealt with earlier.

Political and Labour Considerations

Financial institutions also pay attention to political environment and labour conditions of the area where the project is to be located. Strikes, lockouts, industrial peace and communal harmony in the area play a decisive role in examining success or failure of the project.

The lending institutions examine the project to study its soundness on technical, economic, commercial and managerial grounds. If the appraisal report is found satisfactory, the loan application will be favourably considered. The manager then communicates his decision to the borrower and terms and conditions will be negotiated. The most important areas for the borrower and lender to negotiate are: timing in relation to negotiations method of financing based on certificates of work done, repayment schedule, rates of interest, commitment fees, security options, and monitoring and control requirements.

Technical Collaboration Arrangements

The Government of India has issued an illustrative list of industries where no foreign collaboration, financial or technical, is to be allowed in view of indigenous technology base having been well-established. However, looking to the need for constant upgradation of production technology in line with that of developed countries, the Administrative Ministries and Foreign Investment Promotion Board (FIPB) may permit import of technology in those field where:

- indigenous technology developed for items in the list is too closely held and is not available for use by new entrepreneurs on competitive terms;
- technology is required for updating of existing technology in India to meet domestic requirements efficiently or to be competitive in the export market; and
- such import is required for the manufacture of items with substantial exports, backed by buy-back guarantees.

The terms in the collaboration agreement are examined in detail by the appraising institutions with reference to the technical know-how, engineering services, procurement of imported equipment, price comparison with indigenously available equipment, performance guarantee by the collaborators, penalties for non-performance specified in the agreement, deputation of foreign exports during construction, initial and post-operation period, provision for training of Indian technicians etc. The reputation of the collaborators and past experience concerning tie-up arrangements with them, the competitiveness of the terms of collaboration in relation to the requirements of the project, the reasonability of financial collaborations and other costs by way of down-payment and royalties as also restrictive clauses in regard to marketing areas etc., are also looked into and worked upon by the appraiser.

In the case of financial collaborations, the terms relating to the right of participation of foreign collaborator in management and future issues of share capital are also critically examined and considered. The financial standing and reputation of collaborators, where necessary, are checked through the Indian Consulates/Missions abroad as also through the India Investment Centre.

Research and development is also studied in depth and it is ensured that during the validity of the collaboration period, the borrower is allowed free access to the latest developments that may take place at the collaborators' end. The collaborators are also required to agree for providing facilities to the borrower in establishing his own upto-date R & D organisation, both in terms of equipment and manpower.

CONCLUSION

To sum up, project appraisal is a science as well as an art. While the basic principles of appraisal could be mastered in a short time span, the successful practice of the art of carrying out appraisal requires keen observation, a knack for details, objectivity, decision-making. It is also necessary to look ahead of the project. Project appraisal is a key to broad-based, balanced industrial growth of the country. In a way, it calls for a judicious judgement and perspective outlook. It is, therefore, amply viewed as a composite process of development.