
SECTION - 5

PROJECT APPRAISAL AND COST BENEFIT ANALYSIS

This Section includes

- Project appraisal
- Users of Project Reports
- Contents of Project Reports
- Means of Financing
- Investment and Return
- Investment Criteria
- What-If & Sensitivity Analysis
- Risk Analysis

Important Note:

Several aspects of this chapter have already been covered in Module 2 under 'Capital Budgeting'.

5.1. PROJECT APPRAISAL

5.1.1 Project appraisal is the last step in the project cycle which involves negotiation.

5.1.2 The aims of appraisal are to:

1. evaluate the financial, economic, and social objectives of the project;
2. verify the procedures of the project formulation team;
3. recommend the conditions which will ensure that the project objectives are met; and
4. ensure that the proposed grant/loan/expenditure is in accordance with the overall policy framework of the financing institution.
5. assess the safety and security of funds likely to be committed to the project.

5.1.3 Project appraisal is a process of verification of the situation in the field and a scrutiny of the report. The form of appraisal will vary according to the type of project. For production-oriented projects it will normally include the following aspects:

1. **Technical**, for example, engineering design and environmental matters;
2. **Financial**, for example, requirements for funds, the financial situation of the implementing agency and of project beneficiaries when appropriate;
3. **Commercial**, for example, procurement and marketing arrangements;



4. **Social**, for example, sociological factors and expected impact of the project on certain groups (such as ethnic minorities and women);
5. **Institutional**, for example, organization and management arrangements, the requirement for arrangements of technical assistance, project monitoring and evaluation;
6. **Economic**, for example, project costs to the national economy and the size and distribution of benefits.

5.1.4 The format and content of any appraisal report changes with the agency, bank, or corporation concerned, and is their internal reference document. Thus, it reflects their views and not those of the project formulation team. It is on the basis of this report that the project is formally approved. It is also the reference document for the implementation agreement and subsequent evaluation made. Though the format might change from one institution to another, the basic criteria is same. It is to assess the project's viability, profitability, repaying capability, socio-economic factors and above all the promoters' background and their commitment to the project.

5.2. USERS OF PROJECT REPORTS

5.2.1 The users of a project report are:

1. Prospective Investors / Shareholders
2. Lenders / Creditors
3. Employees
4. Suppliers
5. Government Agencies – Ministries, FIPB, RBI, Excise, Sales Tax, Income Tax, etc.

5.3. CONTENTS OF PROJECT REPORTS

5.3.1 The contents of a project report normally are:

1. Objectives of the Project
2. Market Survey
3. Location Study
4. Technology Options and Viability
5. Economic and Financial feasibility:
 - a. Project Cost Estimates
 - b. Projected Balance Sheet, Profit and Loss Account, Cash Flow Statement
 - c. Appraisal Criteria and Financial Viability

6. Promoters and Management
7. Statutory compliances required to be complied with; etc

5.3.2 Elements of Project Cost

The major elements of Project / Capital cost are:

1. Land and Site Development
2. Buildings and Civil Works
3. Plant & Machinery including Utilities and Services
4. Technical Consultancy Fees and know-how fees
5. Miscellaneous Fixed Assets
6. Preliminary and Pre-operative expenses and Interest during Construction
7. Provision for contingencies
8. Margin money for working capital

5.3.3 Elements of Operating Cost:

1. Materials
2. Power & Fuel
3. Labour - Wages & Salaries
4. Factory Overheads
5. Administration Overheads
6. Selling & Distribution Overheads
7. Depreciation (part of Overheads)
8. Interest

5.4. MEANS OF FINANCING

- 5.4.1 Project plan should address the financing mix and how funds are proposed to be raised. The normal means of financing are:

1. Equity:
 - Share capital
 - Internal accruals



2. Debt:

- Term Loans
- Debentures
- Other forms of debt. This may include suppliers' credit.

3. Other : such as subsidies, grants, interest free deferrals etc

5.5. INVESTMENT AND RETURN

5.5.1 The fundamental evaluation issue in dealing with a long-term asset is whether its future benefits justify its investment.

5.5.2 **Investment** is the monetary value of the assets the organization gives up to acquire a long-term asset.

5.5.3 **Return** is the increased future cash inflows attributable to the long-term asset.

5.5.4 *Investment* and *return* form the foundation of capital budgeting analysis, which focuses on whether the expected increased cash flows (return) will justify the investment in the long-term asset.

5.5.5 As already mentioned, investment appraisal consists of the following steps:

1. Forecast of project costs and benefits for a reasonable time frame,
2. Ascertaining the project risk wrt competition, Technology, Consumer preferences, market including international currency fluctuations.,
3. Estimating the cost of capital, weighted average cost of capital, mix of capital,
4. Application of suitable investment criteria by adopting proper means of financing
5. Analysing managerial strengths, capabilities, project and profitability sensitivity to any changes, regulations governing the project implementation etc;

5.6. INVESTMENT CRITERIA

5.6.1 The various investment criteria normally employed in project appraisal are:

- Payback period
- Accounting Rate of Return
- Net Present Value

- Internal Rate of Return
- Profitability Index
- Debt Service Coverage Ratio (DSCR)

5.6.2 Cost of Capital:

The **cost of capital** is the interest rate used for discounting future cash flows. It is also known as the **risk-adjusted discount rate**. The cost of capital is the return the organization must earn on its investment to meet its investors' return requirements.

The organization's cost of capital reflects:

- The amount and cost of debt and equity in its financial structure
- The financial market's perception of the financial risk of the organization's activities

5.6.3 In practice, capital budgeting must consider the tax effects of potential investments, and effects of inflation.

5.6.4 Capital budgeting analysis relies on estimates of future cash flows. Estimating future cash flows is an important and difficult task. This is important because many decisions are taken based on those estimates.

5.7. WHAT-IF & SENSITIVITY ANALYSIS

5.7.1 Two other approaches to handling uncertainty are what-if and sensitivity analysis. The project planner can set up a computer spreadsheet to make changes to the estimates of the decision's key parameters.

5.7.2 If the analysis explores the effect of a change in a parameter on an outcome, we call this investigation a what-if analysis. For example, the planner may ask, "What will my profits be if sales are only 90% of the plan?"

5.7.3 A planner's investigation of the effect of a change in a parameter on a decision, rather than on an outcome, is called a sensitivity analysis. For example, the planner may ask, "How low can sales fall before this investment becomes unattractive?"

5.8. RISK ANALYSIS

5.8.1 Risks relates to:

- Implementation
- Market
- Financial



5.8.2 The analyst is expected to keep the end result of the model in mind, i.e., the ability to vary the key drivers of the model results [Sensitivity Analysis].

5.8.3 The purpose is to de-risk the project through simulation of probable results:

- Sensitivity analysis: Variation in key parameters and impact on profitability
- Scenario analysis
- Simulation techniques

Break-even analysis: Minimum level of operation (Cost Behaviour – Variable, and Fixed), Break-Even Point: No Profit or Loss, and Cost - Volume - Profit Analysis.