Project Appraisal/Term Loan Appraisal

📌 Term Loans & Project Loans Overview

✔ **Term loans** are availed for:

1 **Greenfield Ventures** 🌱 *(New business projects)*

2 **Brownfield Units** 🏭 *(Expansion, modernization, or replacement of machinery in an existing business)*

✔ **Project Loans** are categorized into:

🔹 **Infrastructure Projects** 🏗️ *(Roads, Power Plants, Airports, Railways, etc.)*

🔹 **Non-Infrastructure Projects** 🏢 *(Commercial Real Estate, Manufacturing, IT Parks, etc.)*

📌 Project Appraisal - Capital Budgeting Decisions

✔ **Capital budgeting** is the process of **evaluating and selecting investment projects**.

✔ When multiple viable projects exist, the **finance manager** must assess:

🔹 **Costs & Benefits** 📊

- **Risks & Uncertainty** ⚠️
- **Expected Returns** 📈

✔ **Key Phases of Capital Budgeting:**

📌 Phase	✅ Key Activities
1 Identification of Investment Opportunities	Analyzing market demand, competition, and industry trends.
2 Preliminary Screening	Checking financial feasibility, government regulations, and risk factors.
3 Feasibility Study	Detailed analysis of costs, financing, and project benefits.
4 Implementation	Execution of the investment plan (machinery purchase, workforce training, etc.).
5 Performance Review	Evaluating the project's success & deviations from projections.

🏦 11.3 Aspects of Project Appraisal from Lender's Perspective

Banks and financial institutions conduct **detailed project appraisals** before granting loans to ensure the **feasibility, profitability, and risk assessment** of a project. ✅ 📐 📊

📌 Key Aspects of Project Appraisal

📌 Aspect	✅ Key Areas Assessed
📝 **Prima Facie Acceptability**	Ensuring compliance with laws, funding viability, and regulatory norms.
🌍 **Environmental Compliance**	Adhering to environmental laws & protecting local communities.
⚙️ **Technical Feasibility**	Assessing infrastructure, technology, machinery, and workforce.
📊 **Economic Viability**	Analyzing market demand, pricing, and business sustainability.
👨‍💼 **Managerial Appraisal**	Evaluating promoter's experience & management skills.
💰 **Financial Appraisal**	Checking project cost, funding sources, cash flow, and profitability.
📈 **Commercial Viability**	Examining profitability, breakeven analysis, and debt service coverage ratio (DSCR).

🏦 11.3.6.2 Cost of Project and Means of Finance

✔ **A realistic assessment of project cost is crucial** for determining:

- **Funding sources** 💰
- **Financial viability** 📊
- **Profitability projections** 📈

✔ **Key Considerations:**

✅ Project cost should **account for inflation & cost escalations**.

✅ **Sources of finance must be clearly identified**.

✅ **Debt-to-equity ratio & financial structure must be optimized**.

📌 Cost of Project: Key Components

📜 Component	✅ Includes
🏗 **Land & Site Development**	Land acquisition, lease charges, site levelling, approach roads.
🏢 **Building & Civil Works**	Factory, office, warehouse, drainage, fencing.
⚙ **Plant & Machinery**	Purchase, import duty, freight, installation.
📜 **Technical Know-How**	Fees for foreign/local technical expertise, training.

🛠️ **Engineering & Consultancy Fees**	Architects, engineers, consultants.
📋 **Preliminary & Pre-Operative Expenses**	Feasibility study, legal fees, travel, marketing.
💰 **Interest During Construction (IDC)**	Interest on loans until commercial production begins.
⚠️ **Contingencies**	Cost overruns due to inflation, tax changes.
📉 **Initial Cash Losses**	Expected losses in the first few months of operation.
🏦 **Debt Service Reserve Account (DSRA)**	Reserve for loan repayment (typically for 1-4 quarters).

📌 Means of Finance: Funding Sources for the Project

✔️ **Once the project cost is estimated, funding sources must be determined.**

📜 **Source**	✅ **Examples**
💰 **Owned Capital**	Share capital, retained earnings.
🏦 **Borrowed Capital**	Term loans, debentures, public deposits.

💵 **Other Long-Term Funds**	Government subsidies, venture capital, foreign investment.

📌 Categories of Project Costs: Hard Costs vs. Soft Costs

✔ **Hard Costs** = **Tangible assets** (land, building, machinery).

✔ **Soft Costs** = **Non-physical expenses** (legal fees, training, consulting).

📌 Sources of Finance: Debt vs. Equity

📜 **Source**	✅ **Details**
💰 **Equity Financing**	Promoters' capital, retained earnings, venture capital.
🏦 **Debt Financing**	Term loans from banks, debentures, foreign currency loans.
📜 **Deferred Credit**	Supplier-provided credit (Deferred Payment Guarantee - DPG).
💵 **Incentive-Based Financing**	Government capital subsidies, tax exemptions.
📈 **Miscellaneous Sources**	Public deposits, unsecured loans, leasing, hire purchase.

🏦 Estimates of Cost of Production and Profitability

✔ **Profitability analysis** ensures a project can **generate enough revenue to cover costs, repay loans, and grow**.

✔ The **borrower's ability to repay a loan** depends on its **operating surplus**, not just collateral value.

📌 Key Objectives of Cost & Profitability Estimates:

- 🔹 **Assess earning capacity of the project** 📊
- 🔹 **Determine loan repayment feasibility** 🏦
- 🔹 **Ensure shareholder value & future growth** 📈
- 🔹 **Facilitate cost control & optimization** 📉

📌 Components of Cost of Production & Profitability Analysis

✔ **Key elements in profitability estimates include:**

📜 Factor	✅ Key Considerations
🏭 **Installed Capacity**	Maximum output production capability.
🕒 **Number of Working Shifts**	Affects production volume & labor costs.
📈 **Capacity Utilization**	How efficiently resources are used.

📦 **Product Mix**	Balance between multiple products to optimize profit.
📉 **Unit Cost of Production**	Fixed + Variable costs per unit.
💰 **Labor Costs**	Salaries, wages, incentives, benefits.
⚙️ **Repairs & Maintenance**	Expenses incurred in maintaining, repairing, and servicing machinery, equipment, and infrastructure in an industrial plant
🏢 **Administrative Expenses**	Overheads like office rent, utilities.
📦 **Packing & Selling Costs**	Logistics, distribution, sales promotion.
💵 **Financial Costs**	Loan interest, bank charges.
📉 **Depreciation**	Reduction in asset value over time.
📊 **Inflation Impact**	Rising input costs affecting profitability.

Commercial Viability

✔ **Commercial viability ensures the project generates enough profit to sustain itself & repay debts.**

✔ **Must withstand economic fluctuations & market risks.**

📌 **Three Key Aspects of Commercial Viability:**

📜 **Aspect**	✅ **Definition**
💰 **Loan Repayment Ability**	Ability to generate cash flow to meet debt obligations.
📉 **Cushion for Unpaid Dues**	Availability of backup funds/assets.
⚖️ **Cost of Capital**	Ensuring return on investment is higher than financing cost.

Break-Even Analysis (BEP)

✔ **Break-even point** = The production level where **total cost = total revenue**.

✔ **At BEP, there is neither profit nor loss.**

✔ **Beyond BEP, every additional unit contributes to profit.**

📌 Importance of Break-Even Analysis:

- 🔹 **Helps in loan repayment scheduling** 💳
- 🔹 **Determines minimum sales target for survival** 📈
- 🔹 **Identifies margin of safety against market downturns** ⚠️

📌 Break-Even Point (BEP) Formula:

📉 **BEP (Units) = Fixed Cost ÷ Contribution per Unit**

📜 Component	✅ Definition
💰 **Fixed Cost (FC)**	Costs that do not change with production level (e.g., Rent, Salaries).
📦 **Variable Cost (VC)**	Costs that vary with production (e.g., Raw Materials, Packaging).
📉 **Contribution**	Sales Price – Variable Cost.
📊 **Break-Even Point (BEP)**	The level at which total revenue = total cost.

📌 Risk Categorization Based on BEP

📉 BEP %	✅ Risk Level
≤ 50%	**Low Risk (Healthy Business)** ✅
51%-65%	**Moderate Risk** ⚠️
66%-70%	**High Risk** 🚨

71%-85%	Very High Risk ❌
> 85%	Extreme Risk (Business at Loss) ❌

Debt Service Coverage Ratio (DSCR)

✔ **DSCR measures the ability of a business to repay its debt comfortably**.

✔ It ensures **loan repayment is a strain-free experience** for the business.

✔ **Ideal DSCR:**

- **Gross DSCR (GDSCR): 1.50 – 1.75** ✅
- **Net DSCR (NDSCR): ~2.0** ✅ ✔ **Higher DSCR (>2)** indicates **strong repayment capacity** 💰 .

📌 **How is DSCR Calculated?**

📉 **Formula:**

📊 **Gross DSCR (GDSCR) = (Cash Accruals + Interest on Term Loans) / (EMI Installments + Interest on Term Loans)**

📊 **Net DSCR (NDSCR) = Cash Accruals / EMI Installments**

📌 **Strategies to Maintain DSCR**

✔ **Repayment structuring:**

- Lower initial EMI, increasing later 📈
- Longer repayment tenure 🏦
- Balloon payments towards the end 💰

✔ **Loan Agreement Clarity:**

- Clearly defined **repayment schedule & due dates** 📅
- Moratorium period considerations (when applicable)

Internal Rate of Return (IRR)

✔ **IRR is the discount rate at which the project's Net Present Value (NPV) = 0**.

✔ It represents the **project's annualized rate of return** 📈.

✔ **A project is viable if IRR > Cost of Capital** ✅

📉 **Formula:**

$$IRR = r_1 + \left[\frac{NPV_1}{|NPV_1 - NPV_2|} \times (r_2 - r_1)\right]$$

📌 IRR vs. NPV

📜 Factor	📉 IRR	📊 NPV

Definition	Discount rate where NPV = 0	Difference between the present value of cash inflows and the present value of cash outflows
Interpretation	Represents project's % return per year	Absolute profit/loss in ₹
Decision Criteria	IRR > Cost of Capital = Accept	NPV > 0 = Accept
Limitations	Assumes reinvestment at IRR	Sensitive to discount rate changes

📌 11.3.7.4 Modified Internal Rate of Return (MIRR)

✔ **The Modified Internal Rate of Return (MIRR) is an improved version of IRR that considers the reinvestment of cash inflows at a specified rate**

✔ **More realistic & accurate profitability measure 📈.**

📉 **Formula:**

$$MIRR = \left(\frac{FV_{\text{positive cashflows}}}{PV_{\text{negative cashflows}}} \right)^{\frac{1}{n}} - 1$$

🔍 **Example:** An **IT project** has:

✔ **IRR = 18%** , ✔ **MIRR = 12%** , ✔ **Cost of Capital = 10%**

📊 **MIRR provides a more conservative & realistic return estimate** ✅ 💻

📌 11.3.7.5 Sensitivity Analysis (Cost-Volume-Price Analysis)

Sensitivity Analysis is a financial tool used to assess how changes in key variables (such as costs, revenues, interest rates, or inflation) **impact a project's profitability or financial viability.** ✔ **Key factors tested:**

- Rising input costs 📈
- Declining product prices 📉
- Sales volume fluctuations ⚠️

📌 **Risk Scenarios:**

📉 **Scenario**	✅ **Impact on BEP, DSCR, IRR**
Raw Material Cost Increases by 10%	Higher production costs → Lower margins → Higher BEP
Sales Price Drops by 5%	Lower revenue → Higher BEP → Reduced DSCR
Loan Interest Rate Increases by 1%	Higher finance costs → Lower IRR