Training Manual on
Financial Literacy for
Decentralised Renewable Energy Enterprises

Prepared by

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for

Clean Energy Access Network (CLEAN)

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Preface

This manual on Financial Literacy for Decentralised Renewable Energy Enterprises has been compiled by Friends of Women's World Banking.

As one of its mandates, CLEAN seeks to address financing challenges faced by energy enterprises in India. Financing (Debt, equity or grant), by far has been one of the most critical barriers to scale up for most of the DRE enterprises as most of them lack fixed assets that are considered acceptable forms of collateral by Financial Institutions (FIs). Financing to such enterprises is perceived to be risky due to the market segment they cater to (often poor and underserved).

Even where finance is available and accessible, there is a mismatch between project proposals by the DRE enterprises and the expectations of financial institutions as well as investors. This is primarily because many of them (especially new and fledgling enterprises) understand the market potential, business strategy, marketing and sales aspects etc. but face difficulty in understanding and preparing financials – financial statements, financial modelling, sensitivity analysis etc. In addition, they also do not have a holistic understanding on what kind of finance (financial instrument) would be best suited to their needs and how they should pitch their proposals/business to the investors to raise capital. A study on Debt Finance Needs of the sector, conducted by CLEAN last year, supported the above findings and recommended that financial literacy of the DRE entrepreneurs is a prerequisite to develop confidence among the financiers to consider the proposals.

This manual seeks to address some of the above knowledge gaps and provide information on fundamentals key financial concepts, fund raising sources and process, expectations and perspective of funders/financiers and assessing the financial risks and respective mitigation strategies. The objective is to enable DRE enterprises to effectively communicate and present their business proposal to banks and investors.

We hope that this manual will act as a useful reference material for DRE enterprises seeking to access funds for scaling up their businesses.

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ACRONYMS AND ABBREVIATIONS

DRE	Decentralised Renewable Energy
SPLs	Solar Portable Lanterns
SHSs	Solar Home Systems
SWPs	Solar Water Pumps
CP	Consumer products
BO	Build only
BOM	Build-own/operate-maintain
BM	Build-maintain
RRBs	Regional Rural Banks
NCEF	National Clean Energy Fund
COGS	Cost of Goods Sold
G&A	General and Administrative
EBITDA	Earnings before Interest, Tax, Depreciation, and Amortization
PP&E	Plant, Property and Equipment
FCF	Free Cash Flow
UFCF	Unlevered Free Cash Flow
CAPEX	Capital Expenditures
EPS	Earnings per Share
CAGR	Compound Annual Growth Rate
Y-o-Y	Year-on-Year
DPS	Dividend Per Share
DSCR	Debt Service Coverage Ratio
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
NPV	Net present value
IRR	Internal rate of return
GWC	Gross Working Capital
NWC	Net Working Capital
DCF	discounted cash flow
ZBB	Zero-based budgeting
EV	Enterprise Value
CGTSME	Credit Guarantee Fund Trust for Micro and Small Enterprises
REEEP	Renewable Energy and Energy Efficiency Partnership
IREDA	The Indian Renewable Energy Development Agency
MNRE	The Ministry of New and Renewable Energy
CMA	Credit Monitoring Arrangement

Session Plan

Sessions	Methodology
Fundamentals of DRE Enterprise • Overview of DRE Enterprises • Different types of DRE Enterprises • Business Models of DRE Enterprises • Major challenges faced by DRE enterprises • Financial planning and financial management for DRE enterprises	PPT + Discussions
Introduction to Financial Statements • Introduction of financial statements • Income statement • Balance sheet • Cash flow statement • Difference between fund flow and cash flow statement	PPT, Exercise, Discussions, Videos
Financial Statement Analysis • Types and techniques of financial statement analysis • Ratio Analysis	PPT, Exercise – Case-let Discussion, Discussions, Videos
Capital Budgeting • Meaning of capital budgeting, its needs and importance • Methods of evaluation of capital budgeting • Risk and uncertainly in capital budgeting • Methods of evaluation of capital budgeting risk	PPT, Exercise – Case-let Discussion , Discussions, Videos
Working capital • Concept and component of working capital • Need of working capital • Factors determining working capital requirement • Estimation of working capital	PPT, Exercise, Discussions, Videos
Financial Planning and Forecasting • What & Why - Financial Planning • Valuation of Enterprises • Meaning of Forecasting and methods of forecasting • Financial modelling using spreadsheet - Pro forma statement of P &L & Balance Sheet	PPT, Exercise, Discussions
Fundraising for a DRE Enterprise • Sources of finance • Major Schemes for energy programmes • Factors to be consideration before borrowing • Loan Application and Documents Required • Criteria considered for due-diligence	PPT + Discussions
Introduction to business and financial risk • Risk and its different types • Risk Management • Risk measurement and monitoring tool • Risk mitigation strategies	PPT, Discussions, Exercise

Chapter 1: Fundamentals of DRE Enterprise

Topics Covered	Learning Objectives
Fundamentals of DRE Enterprise • Overview of DRE Enterprises • Different types of DRE Enterprises • Business Models of DRE Enterprises • Major challenges faced by DRE enterprises • Financial planning and financial management for DRE enterprises	• Different models of DRE enterprises • Overview of challenges faced by DRE enterprises • Importance of financial management and planning

1.1 Overview of DRE Enterprises

Ensuring energy access for all in a sustainable manner is a critical prerequisite for India to be able to empower each of its citizens to transform their lives. Scaling up access to renewable energy (RE) can enable the millions of India's energy poor population to improve their livelihoods in a sustainable manner. It can help them to power lights to help keep their businesses open late, to enable women to cook in cleaner and smokeless environments, and to help farmers reap more profits from their land by decreasing their cost of irrigation. DRE enterprises, primarily Micro and Small and Medium Enterprises are those who have long been involved in this sector, and most have an exclusive focus on identifying innovative and cost-effective ways to bring energy to populations who do not have access to sustainable energy using various renewable energy sources. They do so in two ways: by setting up off-grid or decentralized renewable energy (DRE) utilities which provide power to a small community or collection of villages, or by providing consumer products such as clean cook-stoves, solar portable lanterns (SPLs), solar home systems (SHSs) or solar water pumps (SWPs) to help individuals increase their access to energy sources.

1.2 Different types of DRE enterprises

The Decentralized Renewable Energy (DRE) enterprise can be broadly categorized into two types.

1. **Off-grid or decentralized renewable energy (DRE) utilities** which provide power to a small community or collection of villages
2. **Consumer products (CP)** such as clean cook stoves, solar portable lanterns (SPLs), solar home systems (SHSs) or solar water pumps (SWPs) to help individuals increase their access to energy sources.

1.3 Business models of DRE Enterprises (Value chain)

1.3.1 Business models for DRE utilities segment

There are a number of business models that are prevalent in the market and they each have a distinct impact on the financing needs of players, particularly when paired with the technology for the source of RE. Reviewing the market, three business models emerge strongly across MSMEs in the DRE utilities segment:

Build only: these businesses are only focused on building the components or the structure of the utility that will be used, but have no role to play in the ongoing operations beyond maintenance for a limited warranty period (less than 2 years).

Build-own/operate-maintain (BOM): RE enterprises with this business model build and own the plant and are also involved in operations and maintenance over the duration of the plant's lifetime.

Build-maintain (BM): In this business model, the MSME will be involved in setting up the utility but will outsource operations to another company or individual (sometimes a village-level entrepreneur or a VLE), that will own the plant. The transfer of plant ownership can be at the time of set-up or over 3-5 years, i.e. the time required for the MSME to recoup its initial investment.

1.3.2 Business models for Consumer Products

As with DRE utilities, the type of business model has a significant impact on the type of financing required. A review of the market revealed that MSMEs follow one of three primary business models:
Design, procurement, and sales ("cross-market players"): these players, which form the majority of the cook stove and SPL (Solar Portable Lantern) market, will own the design of the product but will primarily outsource the actual manufacturing of the product to a medium/large manufacturer.8 They will then procure the finished good and work through both their own as well as partner distribution networks, micro-franchisees or VLEs to sell the product. These players work across the market (from the R&D stage at the beginning to the distributions points at the end) but are not involved in the middle manufacturing stage; as such they work across the two ends of the market chain.

Procurement and sales: these players, primarily prevalent in the SWP (Solar water pump) space (although they also exist as a small minority of SHS players), are different from the first business model in that they do not design their own products – rather they source finalized products from existing manufacturers and sell them on through distribution and sales networks of their own and through partnerships. They can also be referred to as **"system integrators".**

Distribution only: these players focus on distributing multiple RE products (SPLs, SHS, cook stoves, etc.) to rural and urban areas and supplement the work of enterprises who develop/design/assemble the products. These distributors often undertake rural marketing campaigns, educate future consumers on the benefits and use of RE products, or provide demonstrations of the products. While there are a number of large-scale distributors operating in this space, the focus here is on MSME distributors who focus exclusively on RE products.

1.3.3 Segmentation of the DRE enterprises

The two broad categories of DRE enterprises can be further segregated basis different criteria. For MSMEs who are currently involved in the off-grid DRE utilities space, three criteria were applied: (i) the RE fuel source of the plant, (ii) the size of plant1, and (iii) the business model employed. For MSMEs who are involved in the CP space, two criteria were used: (i) the primary technology that is the focus of the enterprise, and (ii) the business model of the MSME. Applying these criteria to the current landscape of players resulted in the following ten segments:

Table 1: Segmentation of DRE Enterprise

Segment Title	Description
DRE1 **Technology: Solar** **Capacity:< 2 kW (Pico)** **Business Model: BOM**	MSMEs own and operate solar-Pico plants that provide basic amount of power to households in rural areas – usually just enough to power 1-2 lights and a cell phone charger. The majority of players in this segment have been operating for less than 3 years.
DRE2 **Technology: Solar** **Capacity: 2–10kW(micro)** **Business Model: BOM**	MSMEs own and operate solar-micro plants that provide lighting and other household appliances (e.g. TV, fan) solutions to households in rural areas. MSMEs in the segment are a mix of new entrants and some established players with more than 3 years of operations.
DRE3 **Technology: Solar/wind-solar** **Capacity: 11–25 kW (mini)** **Business Model: BM**	MSMEs build and maintain micro and mini wind-solar plants to provide lighting + 'products' (e.g. TV, fan) solutions to consumers, usually in semi-urban or higher income rural areas. These MSMEs are diversified across different RE technologies. Some are early-stage enterprises, whereas some are mature, having transitioned from pure solar or wind technologies, and have some more experience in the sector. However, the technology is still not very widespread.
DRE4 **Technology: Biomass** **Capacity: 26 – 100 kW (small)** **Business Model: - BOM**	MSMEs own and operate micro biomass projects, to serve up to 250 households for part or all of the day for lighting and appliances. Players have been in the sector for some time (5-7 years).
DRE5 **Technology: Hydro** **Capacity: < 100 kW** **Business Model: – All**	MSMEs manufacture turbines and provide turnkey solutions to rural communities, along with small businesses and individuals in rural and semi-urban areas. Most actors have been active for 3-5 years, but still have a low turnover and growth rate.

Segment Title	Description
CP1 **Technology: clean cook stoves** **Role: cross-market players** **Price range: < $120**	Enterprises focused on the design, assembly, and distribution of clean cook stoves (from basic to advanced models) throughout India – there are over 15 players in this space and the majority of them are recent entrants (<3 years).
CP2 **Technology: SPLs** **Role: cross-market players** **Price range: < $120**	Enterprises that derive majority of their revenue from design, assembly, and sales of SPLs. Most MSMEs have been operational for 5-6 years, but a select few are well established at this point of time.
CP3 **Technology: SHSs** **Role: cross-market players** **Price range: $120-$600**	Enterprises that design, assemble and distribute SHSs – from basic to advanced models – to provide lighting solutions to individual homes/businesses. These MSMEs are more mature and many have been operational for 5+ years and are growing fairly quickly.
CP4 **Technology: SWPs** **Role: Procurers** **Price range: across price $1000**	Consists of 10 MSMEs involved in the procurement of SWPs; most have been around on average for 3 years and are undergoing significant growth.

Segment Title	Description
CP5 **Technology: Multiple** **Role: Distribution only** **Price range: < $120 (across price ranges)**	Comprises a limited number of RE-focused distributors who procure and distribute RE products – they focus on lighting products such as SPLs and the range of SHSs across India; a few players also distribute improved cook stoves. Players in this segment are fairly well established, and on average have been operational for over a decade.

1.4 Major challenges faced by DRE enterprises

1.4.1 Supply of and access to enterprise finance

The primary unmet need for most enterprises is debt financing to support either growth or working capital needs. There is a general lack of access to debt financing, particularly with preferred terms as one of their primary challenges. Most DRE utility players' preferred form of debt is in the form of long-term debt or soft loans to finance growth and expansion of the business. On the other hand, for CP companies and biomass utilities, primary objective of debt financing was to cover working capital and operational costs. However, debt is difficult to access because they lack fixed assets that are considered acceptable forms of collateral by FIs (such as land or property) , the tenure of loans available is often too short, most enterprises lack three-year positive cash flows, and the cost of traditional debt products is often too high for them. Financial institutions also have challenges supplying debt – in addition to the riskiness of many of the segments due to the lack of collateral and financing history, many financial institutions are wary of extending credit because there is no customized assessment framework to assess DRE enterprises effectively and they may not be equipped with the technical expertise and quality market information to be able to evaluate these investments fully. In addition, even government credit schemes designed to speed up access to unsecured loans have had limited impact because many financial institutions are wary of the lengthy repayment timeline (in the case of default) and are concerned about the availability of funds in the longer-term to support these schemes.

Equity products are in demand, but increasing access and supply depends primarily on investing in information and awareness. Equity financing – primarily through patient capital sources – was stated as a need by enterprises, but tended to be a secondary priority to debt financing. Most enterprises deprioritize equity in favour of debt primarily due to misperceptions on the role that equity can play – many believe that external investors typically look to control the business completely and do not want to cede ownership. In addition, many enterprise are unaware of the variety of hybrid financing products that are available in the market (such as convertible debt or mezzanine financing) which could be useful for their needs given their more flexible terms for investment. From the perspective of an investor, there is reluctance to play a more active role in the sector because there is a perception that many enterprises do not have well established business models, and there remain challenges in determining appropriate returns from investments given the nature of the sector and the early stage of the enterprises. For impact investors in particular, the nature of the social impact created also remains an issue as other sectors (e.g. health, education, etc.) are noted to have more direct impact on the lives of the people (in terms of health benefits, income generation potential, etc.) than the energy sector.

Enterprises in three segments – solar micro utilities, biomass utilities, and SWP procurers – continue to require subsidies to maintain their current business model as their setup and/or operational costs

can be quite capital-intensive. However, many enterprises face difficulties in accessing these subsidies because they are usually not disbursed in a timely manner. As such, this creates further constraints on their availability of working capital financing which in turns limits their operations and growth prospects. On the other hand, from the perspective of the government, maintaining timely disbursements is challenging because there is limited existing capacity to check for the eligibility and quality of the applications that are submitted.

In addition to the financial product-specific barriers noted above, there are additional challenges in the policy environment that limit greater supply of financing to the sector. For DRE utility segments, financial institutions stated their primary challenge was the uncertainty associated with understanding when and where grid extension would occur, and what opportunities there would be for existing off-grid solutions to interact with the grid if and when it did extend. This uncertainty was a key reason that many financial institutions were concerned about the long-term viability of their investment. For CP segments, the primary concern for financial institutions was a lack of clarity of what was considered to be a "quality product" – in the absence of institutional quality ratings system for many RE consumer products, financial institutions were unwilling to back a product which could potentially have a lack of uptake and mar their reputation in the sector.

1.4.2 Supply of and access to consumer finance

There is very limited access to formal consumer financing products in the market today.

The need for micro-loans and savings products is strongest across segments but there are a number of barriers limiting access and supply. Micro-loans and savings – either through microfinance institutions (MFIs), self-help groups (SHGs), or regional rural banks (RRBs) – would be welcome across market segments as a way to enhance affordability for the end consumer. However, many enterprises and their consumers face barriers in accessing this because there is a limited penetration of MFIs in some of the key geographies of operation, and RRBs – which have a stronger national presence – have a strong emphasis on credit history which many consumers cannot provide. In addition, linked to the consumer awareness challenge noted above, consumers do not believe that the cost of the loan (and of the RE product) matches the value and benefits that the RE product can bring them. However, from the supply side it is not simple either: many MFIs consider the ticket size of small RE products too small to match the transaction costs and MFIs do not wish to be involved in last mile distribution. Finally, micro-savings products are in particular not offered because many FIs are not yet aware of how to roll-out a product along those lines as they were until recently, not allowed under the standard regulations.

For two segments, subsidies and variations on the pay-as-you-go models are also in need. Subsidies are in demand from those segments that particularly benefit from consumer subsidies (e.g. under the Jawaharlal Nehru National Solar Mission scheme) today – SHSs and SWPs. For players in these segments, the major barrier is to find ways to speed up the disbursement of subsidies so it did not create constraints to growing the market. Pay as you go models are also highlighted as having potential, but there are two primary challenges in scaling up this model. The first is that they depend on the supplier or distributor having adequate working capital requirements in order to be able to extend credit to the consumer – something most MSMEs do not currently have. The second, is that some of these models, such as a mobile based payment platform, require an enabling environment (in terms of regulation and technology) which does not yet exist in the Indian context.

There are also ecosystem wide barriers that affect the supply and access to consumer finance. Most importantly is a lack of awareness which exists across stakeholders. Most products are considered to be relatively new on the market and consumers are usually not aware of the product or its benefits. From the perspective of the financial institution, many are not aware of the sector and those who are aware may not have the technical skills necessary to evaluate this newer industry. Supply of consumer financing is also hindered by a lack of consistent quality standards to rate products and inconsistent after-sales service for products. As a result, FIs are wary of engaging too deeply in the market as they may face negative reputational repercussions.

1.4.3 Other challenges:

Policy level challenges

Negative implications of GST including increased cost of improved cook-stoves and disrupted flow of business requiring reorganization of accounting systems and ensuring all input providers are also part of the system (without which input credit cannot be claimed); On a positive note, over time GST is likely to spur more organised operations and this could then improve the long-term financing prospects for the sector.

Proposed diversion of NCEEF resources and reduced resource availability for clean energy R&D and innovation

Technology related challenges

Inadequate resources to experiment with technology solutions on the field and low availability of efficient appliances, particularly for livelihood applications in the market that can be powered on DRE

Limited benefits reaped by the DRE sector from the Suryamitra programme owing to gaps in terms of training location (where the training is undertaken vs. where the trainees are required), remuneration expectations (higher than paying capacity of DRE enterprises) and inadequate demand mapping.

Information

There is a lack of strong data management systems and limited data availability in smaller enterprises, primarily owing to the organization's internal capacity and the lack of clarity on usage and value add of data sharing.

There have been limited attempts to evaluate improvements in electricity and cooking energy access, beyond connections and number of systems installed or disseminated, mainly owing to resource intensive processes for impact evaluation (particularly for the DRE sector). Multiple factors about the enabling environment also need to be considered while determining if energy access is able to bring about economic improvements.

1.5 Financial planning and financial management for DRE enterprises

Financial Management

Financial Management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. It means applying general management principles to financial resources of the enterprise.

Objectives of Financial Management

The financial management is generally concerned with procurement, allocation and control of financial resources of a concern. The objectives can be-

1. To ensure regular and adequate supply of funds to the concern.
2. To ensure adequate returns to the shareholders. This will depend upon the earning capacity, market price of the share, expectations of the shareholders.
3. To ensure optimum funds utilization. Once the funds are procured, they should be utilized in maximum possible way at least cost.
4. To ensure safety on investment, i.e., funds should be invested in safe ventures so that adequate rate of return can be achieved.
5. To plan a sound capital structure-There should be sound and fair composition of capital so that a balance is maintained between debt and equity capital.

Financial Planning

Financial planning is an important part of financial management. It is the process of determining the objectives; policies, procedures, programs and budgets to deal with the financial activities of an enterprise.

Financial planning reflects the needs of the business and is integrated with the overall business planning. Proper financial planning is necessary to enable the business enterprise to have right amount of capital to continue its operations efficiently. Financial planning involves taking certain important decisions so that funds are continuously available to the company and are used efficiently. These decisions highlight the scope of financial planning.

In the words of Gerestenbug financial planning includes:

- Determination of amount of finance needed by an enterprise to carry out its operations smoothly.
- Determination of sources of funds, i.e., the pattern of securities to be issued.
- Determination of suitable policies for proper utilization and administration of funds.

Elements of Financial Planning

- **Determination of Financial Objectives**

  For effective financial planning, it is essential to clearly lay down the financial objectives sought to be achieved. The financial objectives should be based on the overall objectives of the company. The objectives of financial management may be set up in the areas, namely, investment, financing and dividend.

- **Estimation of Capital Requirements:**

  Capital is required for various needs of the business. Separate assessment is to be made of the requirements of fixed and working capital. Fixed capital is needed for acquiring fixed assets such as land and building, plant and machinery, furniture, etc. It is blocked for a long time. Working capital is required for holding current assets like stock, bills receivable, etc. and cash for meeting day-to-day expenses in running the business.

- **Determination of the Kinds of Securities to be issued:**

  A company can issue equity shares, preference shares and debentures to raise long-term funds. The types and proportion of securities to be issued should be properly determined.

- **Formulation of Financial Policies:**

  Financial planning leads to formulation of policies relating to borrowing and lending, cash control and other financial activities. Such policies will help in taking vital decisions for the administration of capital and achieving coordination in financial activities.

- **Estimation of capital requirements:** A finance manager has to make estimation with regards to capital requirements of the company. This will depend upon expected costs and profits and future programs and policies of a concern. Estimations have to be made in an adequate manner which increases earning capacity of enterprise.

- **Determination of capital composition:** Once the estimation has been made, the capital structure have to be decided. This involves short- term and long- term debt equity analysis. This will depend upon the proportion of equity capital a company is possessing and additional funds which have to be raised from outside parties.

- **Choice of sources of funds:** For additional funds to be procured, a company has many choices like-

  a. Issue of shares and debentures
  b. Loans to be taken from banks and financial institutions
  c. Public deposits to be drawn like in form of bonds.

  Choice of factor will depend on relative merits and demerits of each source and period of financing.

- **Investment of funds:** The finance manager has to decide to allocate funds into profitable ventures so that there is safety on investment and regular returns is possible.

- **Disposal of surplus:** The net profits decisions have to be made by the finance manager. This can be done in two ways:

  d. Dividend declaration - It includes identifying the rate of dividends and other benefits like bonus.

  e. Retained profits - The volume has to be decided which will depend upon expansion, innovation, diversification plans of the company.

- **Management of cash:** Finance manager has to make decisions with regards to cash management. Cash is required for many purposes like payment of wages and salaries, payment of electricity and water bills, payment to creditors, meeting current liabilities, maintenance of enough stock, purchase of raw materials, etc.

- **Financial controls:** The finance manager has not only to plan, procure and utilize the funds but he also has to exercise control over finances. This can be done through many techniques like ratio analysis, financial forecasting, cost and profit control, etc.

Importance of Financial Planning & Management:

Sound financial planning is essential for success of any business enterprise. Its need is felt because of the following reasons:

- **It Facilitates Collection of Optimum Funds**

  The financial planning estimates the precise requirement of funds which means to avoid wastage and over-capitalization situation.

- **It Helps in Fixing the Most Appropriate Capital Structure:**

  Funds can be arranged from various sources and are used for long term, medium term and short term. Financial planning is necessary for tapping appropriate sources at appropriate time as long term funds are generally contributed by shareholders and debenture holders, medium term by financial institutions and short term by commercial banks.

- **Helps in Investing Finance in Right Projects:**

  Financial plan suggests how the funds are to be allocated for various purposes by comparing various investment proposals.

- **Helps in Operational Activities:**

  The success or failure of production and distribution function of business depends upon the financial decisions as right decision ensures smooth flow of finance and smooth operation of production and distribution.

- **Base for Financial Control:**

  Financial planning acts as basis for checking the financial activities by comparing the actual revenue with estimated revenue and actual cost with estimated cost.

- **Helps in Proper Utilization of Finance:**

  Finance is the life blood of business. So financial planning is an integral part of the corporate planning of business. All business plans depend upon the soundness of financial planning.

- **Helps in Avoiding Business Shocks and Surprises:**

  By anticipating the financial requirements financial planning helps to avoid shock or surprises which otherwise firms have to face in uncertain situations.

- **Link between Investment and Financing Decisions:**

  Financial planning helps in deciding debt/equity ratio and by deciding where to invest this fund. It creates a link between both the decisions.

- **Helps in Coordination:**

  It helps in coordinating various business functions such as production, sales function etc.

- **It Links Present with Future:**

  Financial planning relates present financial requirement with future requirement by anticipating the sales and growth plans of the company.

Chapter 2: Introduction to Financial Statements

Topics Covered	Learning Objectives
Introduction to Financial Statements • Introduction to financial statements • Income statement / Profit & loss statement • Balance sheet • Cash flow statement • Difference between fund flow and cash flow statement	• Purpose of financial statements • Types of financial statements • Components of each financial statement.

2.1 Introduction to Financial statements

Why should we prepare financial statements? [1]

If you are wondering whether or not you really need to prepare financial statements when you already know your business is profitable, the answer is definitely yes. You may be convinced that your business is doing fine, but you will need proof for investors, creditors, shareholders, government agencies, and essentially you will also need it for your own peace of mind. Feeling successful is great, but seeing the facts and figures in front of you that prove your success is empowering!

- **Better Decision Making**
  Financial statements are vital for making crucial business decisions. You should be reviewing more than just your bank statements whenever you are considering whether or not you can afford to invest money back into your business. Financial statements will give you a clear and accurate visual of how your business is currently performing, so you have a means of monitoring its progress and identifying opportunities for growth.
- **More On-time Payments**
  Financial reports like accounts receivables are essential for ensuring customers pay on time and account payable reports will make sure that your vendors are paid on time. It will also give you a reference point to predict your future cash flow.
- **Prepared for Tax Time**
  Regularly updated financial statements will keep your information neatly organized for tax time. You don't want to realize that all you have is a shoebox full of receipts on April 14th. Regular financial reporting means your accounting software is also being updated regularly.
- **Provide Proof of Your Success**
  Financial statements will act as a historical record of the overall success of a business, if there is ever a decision to sell the business or obtain new investors. New clients and suppliers may also request financial statements while trying to determine if they should conduct business with your company.

[1] Video - https://www.investopedia.com/terms/f/financial-statements.asp

- **Catch Costly Mistakes**
  A set schedule for reviewing your financial statements will help catch mistakes earlier. They can also help an owner detect theft, fraud, or illegal activities within their business. You can hire a professional accountant or a bookkeeper, or an entire finance department, but that doesn't mean you still don't need to be involved. As much as you want to trust the person who is handling your finances, you need to be watchful for any discrepancies.

2.2 Income Statement / Profit and loss statement

What is the Income Statement?[2]

The Income Statement is one of a company's core financial statements that show their profit and loss over a period of time. The profit or loss is determined by taking all revenues and subtracting all expenses from operating and non-operating activities.

The income statement is one of three statements used in both corporate finance (including financial modeling) and accounting. The statement displays the company's revenue, costs, gross profit, selling and administrative expenses, other expenses and income, taxes paid and net profit in a coherent and logical manner.

Figure 1: Particulars of Income Statement

The statement is divided into time periods that logically follow the company's operations. The most common periodic division is monthly (for internal reporting), although certain companies may use a thirteen-period cycle. These periodic statements will be aggregated into total values for quarterly and full year results.

[2] Video- https://www.investopedia.com/terms/i/incomestatement.asp

This statement is a great place to begin the financial model, as it requires the least amount of information from the balance sheet and cash flow statement. Thus, in terms of information, the income statement is a predecessor to the other two core statements.

Components of an Income Statement

The income statement may have minor variations between different companies, as expenses and income will be dependent on the type of operations or business conducted. However, there are several generic line items that are commonly seen in the income statement.
The most common income statement items include:

- **Revenue/Sales:** Sales Revenue is the company's revenue from sales or service is displayed at the very top of the statement. This value will be gross of the costs associated in creating the goods sold, or in providing the service. Some companies have multiple revenue streams that add to a total revenue line.
- **Cost of Goods Sold (COGS):** Cost of Goods Sold (COGS) is a line-item that aggregates the direct costs associated with selling products to generate revenue. This line item can also be called Cost of Sales if it's a service business. Direct costs can include labor, parts, materials, an allocation of other expenses such as depreciation
- **Gross Profit:** Gross Profit Gross profit is calculated by subtracting Cost of Goods Sold (or Cost of Sales) from Sales Revenue.
- **Marketing, Advertising, and Promotion Expense:** Most businesses have some expenses related to selling good and/or services. Marketing, advertising, and promotion of often grouped together as they are similar expenses, all related to selling.
- **General and Administrative (G&A) Expense:** SG&A Expense includes the selling, general and administrative section will contain all other indirect costs associated with running the business. This includes salaries of management, rent and office expenses, insurance, travel expenses, and sometimes depreciation and amortization, among others. Entities may, however, elect to separate out depreciation and amortization in its own section.
- **Other Expenses:** Businesses often have other expenses that are unique to their industry. Other expenses that are common but not listed above include fulfillment, technology, research and development (R&D).
- **EBITDA:** EBITDA, while not present in all income statements, stands for Earnings before Interest, Tax, Depreciation, and Amortization is calculated by subtracting SG&A expenses (excluding amortization and depreciation) from gross profit.
- **Depreciation & Amortization Expense:** Depreciation and amortization are non-cash expenses that are created by accountants to spread out the cost of capital assets such as Property, Plant, and Equipment (PP&E).
- **Operating Income (or EBIT):** Operating Income represents what's earned from regular business operations. In other words, it's the profit before any non-operating income, non-operating expenses, interest or taxes. EBIT is a term commonly used in finance and stands for Earnings before Interest and Tax.
- **Interest:** Interest Expense. It is common for companies to split out interest expense and interest income as a separate line item in the income statement. This is done to be able to reconcile the difference between EBIT and EBT. Interest expense is determined by the debt schedule.
- **EBT (Pre-Tax Income):** EBT stands for Earnings before Tax, also known as pre-tax income, is found by subtracting interest expense from Operating Income. This is the final subtotal before arriving at net income.

- **Income Taxes:** Income Taxes refer to the relevant taxes charged on pre-tax income. The total tax expense can consist of both current taxes and future taxes.
- **Net Income:** Net Income is calculated by deducting income taxes from pre-tax income. This is the amount that flows into retained earnings on the balance sheet, after deductions for any dividends.

Example of an Income Statement

Below is an example of ABC Co.'s statement of operations or income statement for years ended December 31, 2017 – 2015. Take a look at the P&L and then read a break-down of it below.

Table 2: Income Statement of ABC Co.

(in '000 INR, except per share data)	**Year ended March 30,**		
	2017	**2016**	**2015**
Net product sales	70080	79268	94665
Net service sales	18908	27738	41322
Total net sales	88988	107006	135987
Operating expenses			
Cost of sales	62752	71651	88265
Fulfilment	10766	13410	17619
Marketing	4332	5254	7233
Technology and content	9275	12540	16085
General and administrative	1552	1747	2432
Other operating expenses, net	133	171	167
Total operating expenses	88810	104773	131801
Operating income	178	2233	4186
Interest income	39	50	100
Interest expense	(210)	(459)	(484)
Other income (expense), net	(118)	(256)	90
Total non-operating income (expense)	(289)	(665)	(294)
Income (loss) before income taxes	(111)	1568	3892
Provision for income taxes	(167)	(950)	(1425)
Equity-method investment activity, net of tax	37	(22)	(96)
Net income (loss)	(241)	596	2371
Basic earnings per share	(0.52)	1.28	5.01
Diluted earnings per share	(0.52)	1.25	4.9
Weighted average shared used in computation of earnings per share			
Basic	462	467	474
Diluted	462	477	484

Starting at the top we see that ABC Co. has two different revenue streams, products, and services, which combine to form total revenue. There is no gross profit subtotal, as the cost of sales is grouped will all other expenses, which include fulfillment, marketing, technology, content, general and administration (G&A), and other expenses.

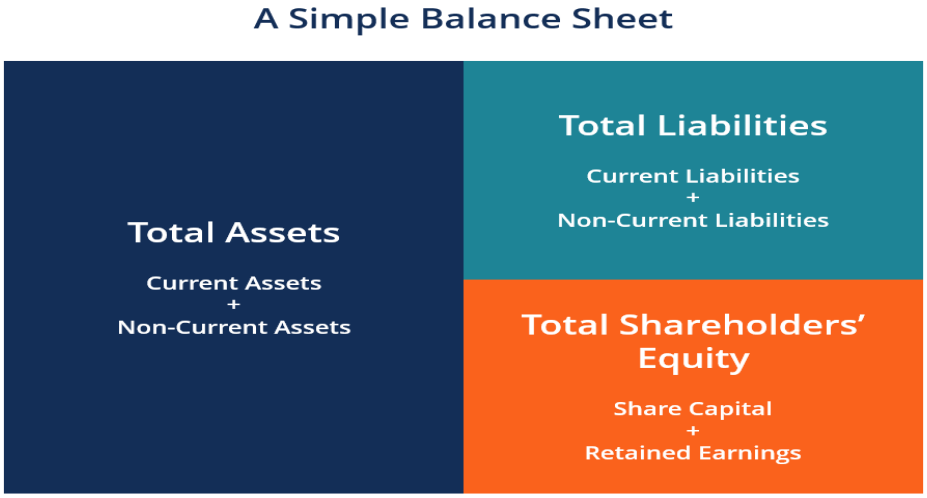
After deducting all the above expenses we finally arrive at the first subtotal on the income statement, Operating Income (also known as EBIT or Earnings before Interest and Taxes).
Everything below Operating Income is not related to the ongoing operation of the business such as non-operating expense, provision for income taxes (i.e. future taxes) and equity-method investment activity, net of tax (profits or losses from minority investments).

Finally, we arrive at the net income (or net loss) which is then divided by the weighted average shares outstanding to determine Earnings per Share (EPS).

2.3 Balance Sheet

What is a Balance Sheet?[3]
The balance sheet is one of the three fundamental financial statements and is key to both financial modelling and accounting. The balance sheet displays the company's total assets, and how these assets are financed, through either debt or equity. It can also sometimes be referred to as **a statement of net worth**, or **a statement of financial position**.
The balance sheet is based on the fundamental equation: **Assets = Liabilities + Equity**

Figure 2: Particulars of Balance Sheet



As such, the balance sheet is divided into two sides (or sections). The left side of the balance sheet outlines all a company's assets. On the right side, the balance sheet outlines the company's liabilities and shareholders' equity. On either side, the main line items are generally classified by liquidity. More liquid accounts like Inventory, Cash, and Trades Payables are placed before illiquid accounts

[3] Video- https://www.investopedia.com/terms/b/balancesheet.asp

such as Plant, Property and Equipment (PP&E) and Long-Term Debt. The asset and liabilities are also separated into two categories: current asset/liabilities and non-current (long-term) assets/liabilities.

How the Balance Sheet is structured

Balance sheets, like all financial statements, will have minor differences between organizations and industries. However, there are several "buckets" and line items that are almost always included in common balance sheets. We briefly go through commonly found line items under Current Assets, Long-Term Assets, Current Liabilities, Long-Term Liabilities and Equity.

Current Assets

- **Cash and Equivalents:** The most liquid of all assets, cash appears on the first line of the balance sheet. Cash Equivalents are also lumped under this line item, and include assets that have short-term maturities less than three months or assets that the company can liquidate on short notice, such as marketable securities. Companies will generally disclose what equivalents it includes in the footnotes to the balance sheet.
- **Accounts Receivable:** This account includes the balance of all sales revenue still on credit, net of any allowances for doubtful accounts (which generate a bad debt expense). As companies recover accounts receivables, this account decreases and cash increases by the same amount.
- **Inventory:** Inventory includes amounts for raw materials, work-in-progress goods and finished goods. The company uses this account when it makes sales of goods, generally under cost of goods sold in the income statement.
- **Pre-paid expenses:** Prepaid expenses are future expenses that have been paid in advance. You can think of prepaid expenses as costs that have been paid but have not yet been used up or have not yet expired.

  The amounts of prepaid expenses that have not yet expired are reported on a company's balance sheet as an asset. As the amount expires, the asset is reduced and an expense is recorded for the amount of the reduction. Hence, the balance sheet reports the unexpired costs and the income statement reports the expired costs. The amount reported on the income statement should be the amount that pertains to the time interval shown in the statement's heading.

  A common prepaid expense is the six-month premium for insurance on a company's vehicles. Since the insurance company requires payment in advance, the amount paid is often recorded in the current asset account Prepaid Insurance. If the company issues monthly financial statements, its income statement will report Insurance Expense that is one-sixth of the amount paid. The balance in the account Prepaid Insurance will be reduced by the amount that was debited to Insurance Expense.

Non-Current Assets

- **Plant, Property and Equipment (PP&E):** Property, Plant and Equipment (also known as PP&E) captures the company's tangible fixed assets. This line item is noted net of depreciation. Some companies will class out their PP&E by the different types of assets, such as Land, Building, and various types of Equipment. All PP&E is depreciable except for Land.
- **Intangible Assets:** This line item will include all of the company's intangible fixed assets, which may or may not be identifiable. Identifiable intangible assets include patents, licenses, and secret formulas. Unidentifiable intangible assets include brand and goodwill.

Current Liabilities

- **Accounts Payable:** Accounts Payables, or AP, is the amount a company owes suppliers for items or services purchased on credit. As the company pays off their AP, it decreases along with an equal amount decrease to the cash account.
- **Current Debt/Notes Payable:** Includes non-AP obligations that are due within one year time or within one operating cycle for the company (whichever is longest). Notes payable may also have a long-term version, which includes notes with a maturity of more than one year.
- **Current Portion of Long-Term Debt:** This account may or may not be lumped together with the above account, Current Debt. While they may seem similar, the current portion of long-term debt is specifically the portion due within this year of a piece of debt that has a maturity of more than one year. For example, if a company takes on a bank loan to be paid off in 5-years, this account will include the portion of that loan due in the next year.

Non-Current Liabilities

- **Bonds Payable:** This account includes the amortized amount of any bonds the company has issued.
- **Long-Term Debt:** This account includes the total amount of long-term debt (Excluding the current portion, if that account is present under current liabilities). This account is derived from the debt schedule, which outlines all the companies' outstanding debt, the interest expense and the principal repayment for every period.

Shareholders' Equity

- **Share Capital:** This is the value of funds a shareholder has invested in the company. When a company is born, shareholders will generally put in cash. For example, an investor starts a company and seeds it with $10M. Cash (an asset) rises by $10M, and Share Capital (an equity account) rises by $10M, balancing out the balance sheet.
- **Retained Earnings:** This is the total amount of net income the company decides to keep. Every period, a company may pay out dividends from its net income. Any amount remaining (or exceeding) is added to (deducted from) retained earnings.

Importance of the Balance Sheet

The balance sheet is a very important financial statement for many reasons. It can be looked at on its own, and in conjunction with other statements like the income statement and cash flow statement to get a full picture of a company's health.

This statement is a great way to analyse a company's financial position. An analyst can generally use the balance sheet to calculate a lot of financial ratios that can determine how well a company is performing, how liquid or solvent a company is, and how efficient it is.

Changes in balance sheet accounts are also used to calculate cash flow in the cash flow statement. For example, a positive change in plant, property, and equipment is equal to capital expenditure minus depreciation expense. If depreciation expense is known, capital expenditure can be calculated and included as a cash outflow under cash flow from investing in the cash flow statement.

Example Balance Sheet

Below is an example of ABC Co.'s 2017 balance sheet. As you will see, it starts with current assets, then non-current assets and total assets. Below that is liabilities and stockholders' equity which includes current liabilities, non-current liabilities, and finally shareholders' equity.

Table 3: Balance Sheet of ABC Co.

(In '000 INR, except per share data)	March 30,	
	2017	**2016**
ASSETS		
Current Assets:		
Cash and cash equivalents	15890	19334
Marketable securities	3918	6647
Inventories	10243	11461
Accounts receivable, net and other	5654	8339
Total current assets	35705	45781
Property and equipment, net	21838	29114
Goodwill	3759	3784
Other assets	3445	4723
Total assets	**64747**	**83402**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	20397	25309
Accrued expenses and other	10372	13739
Unearned revenue	3118	4768
Total current liabilities	33887	43816
Long term debts	8227	7694
Other long term liabilities	9249	12607
Commitment and contingencies		
Stockholders' equity :		
Preferred stock, INR 0.01 par value :		
Authorized shares - 500		
Issued and outstanding shares- None	-	-
Common stock, INR 0.01 par value :		
Authorized shares - 5000		
Issued shares- 494 and 500		
Outstanding shares- 471 and 477	5	5
Treasury stock, at cost	(1837)	(1837)
Additional paid-in capital	13394	17186
Accumulated other comprehensive loss	(723)	(985)
Retained earnings	2545	4916
Total stockholders' equity	13384	19285
Total liabilities and stockholders' equity	**64747**	**83402**

2.4 Cash flow statement

A Cash Flow Statement[4] (also called the Statement of Cash Flows) shows how much cash is generated and used during a given time period. It is one of the main financial statements analysts use in building a three statement model. The main categories found in a cash flow statement are the (1) operating activities, (2) investing activities and (3) financing activities of a company and are organized respectively as mentioned. The total cash provided from or used by each of the three activities will be summed to arrive at the total change in cash for the period, and then combined with the opening cash balance to arrive at the cash flow statement's bottom line, the closing cash balance.

Figure 3: Particulars of Cash Flow Statement

One of the primary reasons cash inflows and outflows are observed is to compare the cash from operations to net income to gauge how well a company is running its operations. The cash flow statement reflects the *actual* amount of money the company receives from its profits. The reason for the difference between cash and profit is because the income statement is prepared under the accrual basis of accounting, where it matches revenues and expenses, even though revenues may actually not have been collected and expenses may not have been paid.

How to set up the Cash Flow Statement?

Below is a breakdown of each of section in a statement of cash flows. While each company will have its own unique line items, the general setup is usually the same. This guide will give you a good overview of what to look for when analysing a company.

#1 Operating Cash Flow

The cash flow statement is commonly presented using the indirect method. It starts with net income or loss, followed by additions to or subtractions from that amount to adjust the net income to a total

[4] **Video-** https://www.investopedia.com/video/play/what-is-cash-flow/

cash flow figure. What is added or subtracted are changes in the account balances of items found in current assets and current liabilities on the balance sheet, as well as non-cash accounts (i.e. stock-based compensation). We then arrive at the cash version of a company's net income.

Net Earnings: This amount is the bottom line of an income statement. Net income or earnings shows the profitability of a company over a period of time. It is calculated by taking the revenues and subtracting from it COGS and total expenses, which includes SG&A, Depreciation and Amortization, interest, etc.

Plus: Depreciation and Amortization (D&A): The value of various assets declines over time when used in a business. As a result, D&A are expenses that allocate the cost of an asset over its useful life. Depreciation involves tangible assets such as buildings, machinery, and equipment, whereas amortization involves intangible assets such as patents, copyrights, goodwill, and software. D&A reduces net income in the income statement. However, we add this back in the cash flow statement to adjust net income, because these are non-cash expenses. In other words, no cash was involved.

Less: Changes in working capital: Working capital represents the difference between a company's current assets and current liabilities. Any changes in current assets (other than cash) and current liabilities affect the cash balance in operating activities.

For instance, when a company buys more inventories, current assets increase. This positive change in inventory is subtracted from net income, because it is seen as a cash outflow. It's the same case for accounts receivable. When it increases, it means the company sold their goods on credit. There was no cash transaction, so accounts receivable is also subtracted from net income.

On the other hand, if a current liability item such as accounts payable increases, this is considered a cash inflow, because the company has more cash to keep in its business. This is then added to the net income.

Cash from operations: When all the adjustments have been made, we arrive at the net cash provided by the company's operating activities. This is not a replacement for net income but a summary of how much cash is generated from the core business.

#2 Investing Cash Flow

This category on the statement of cash flows is referred to as investing activities and reports the changes in capital expenditures (capex) and long-term investments. Capex can be referred to as the purchase of property, plant or equipment. Long-term investments can be debt and equity instruments of other companies. Another important item found here are acquisitions of other businesses. A key to remember is that a change in the long-term assets in the balance sheet is reported in the investing activities of the cash flow statement.

Investments in Property and Equipment: In our example, these investments could mean purchases of new office equipment such as computers and printers for a growing number of employees and a purchase of a new land and a building to house the business operations and logistics of a company. These items are necessary to keep the company running. These investments are a cash outflow, and therefore will have a negative sign when we calculate the net increase in cash for all activities.

Cash from investing: This is the total amount of cash provided by (used in) investing activities. In our example, we have a net outflow for each and every year.

#3 Financing Cash Flow

This category is also called financing activities and reports any issuance or repurchases of stocks and bonds of the company, as well as the dividend payments it makes. The changes in long-term liabilities and stockholders' equity in the balance sheet are reported in financing activities.

Issuance (repayment) of debt: A company will issue debt as a way to finance its operations. The more cash it has the better, as it will be able to expand rapidly. Unlike equity, issuing debt doesn't grant any ownership in the company, so it doesn't dilute the ownership of existing shareholders. The issuance of debt is a cash inflow, because a company finds investors willing to act as lenders. However, when these investors are paid back, then a debt repayment is a cash outflow.

Issuance (repayment) of equity: This is another way of financing a company's operations. Unlike debt, equity holders will have some ownership stake in the business in exchange for money given to the company for use. Future earnings must be shared with these equity holders or investors. Issuance of equity is an additional source of cash, so it's a cash inflow. Conversely, an equity repayment is a cash outflow. This is buying back, through cash payment, the equity from its investors, and thereby increasing the stake held by existing equity holders.

Cash from financing: This is also called the net cash provided by (used in) financing activities. The cash from financing is calculated by summing up all the cash inflows and outflows related to changes in long-term liabilities and shareholder's equity accounts.

#4 Cash Balance

The last section on the statement of cash flows is a reconciliation of the total cash position, which connects to the balance sheet. This is the final piece of the puzzle when linking the three financial statements.

Net Increase (decrease) in Cash: Once we have all net cash balances for each of the three sections of the cash flow statement, we sum them all up to find the net cash increase or decrease for the given time period. We then take this amount and add it to the opening cash balance to eventually arrive at the closing cash balance.

Opening cash balance: The opening cash balance is last year's closing cash balance. We can find this amount from last year's cash flow statement and balance sheet statement.

Closing cash balance: The closing cash balance is taken by adding together net increase or decrease in cash and opening cash balance. This amount will be reported in the balance sheet statement under the current asset section.

Example of a Cash Flow Statement

Below is an example of ABC Co.'s 2017 statement of cash flows. As you can see by the orange rectangles, there are three clear sections that add to the total change and end of period cash position.

Table 4: Cash Flow Statement of ABC Co.

(In '000 INR)	Year ended March 30,		
	2017	**2016**	**2015**
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	8658	14557	15890
OPERATING ACTIVITIES:			
Net income (loss)	(241)	596	2371
Adjustment to reconcile net income (loss) to net cash from operating activities:			
Depreciation of property and equipment, including internal- use software and website development, and other amortization, including capitalized content costs	4746	6281	8116
Stock-based compensation	1497	2119	2975
Other operating expense, net	129	155	160
Other expense (income) , net	59	250	(20)
Deferred income taxes	(316)	81	(246)
Excess tax benefits from stock-based compensation	(6)	(119)	(829)
Changes in operating assets and liabilities:			
Inventories	(1193)	(2187)	(1426)
Accounts receivable, net and other	(1039)	(1755)	(3367)
Accounts payable	1759	4294	5030
Accrued expenses and other	706	913	1724
Additions to unearned revenue	4433	7401	11931
Amortization of previously unearned revenue	(3692)	(6109)	(9976)
Net cash provided by (used in) operating activities	6842	11920	16443
INVESTING ACTIVITIES:			
Purchases of property and equipment, including internal-use software and website development, net	(4893)	(4589)	(6737)
Acquisition, net of cash acquired and other	(979)	(795)	(116)
Sales and maturities of marketable securities	3349	3025	4733
Purchases of marketable securities	(2542)	(4091)	(7756)
Net cash provided by (used in) investing activities	(5065)	(6450)	(9876)
FINANCING ACTIVITIES:			
Excess tax benefits from stock-based compensation	6	119	829
Proceeds from long term debt and other	6359	353	621
Repayments of long term debt and other	(513)	(1652)	(354)
Principal repayments of capital lease obligations	(1285)	(2462)	(3860)
Principal repayments of finance lease obligations	(135)	(121)	(147)
Net cash provided by (used in) financing activities	4432	(3763)	(2911)
Foreign currency effect on cash and cash equivalents	(310)	(374)	(212)
Net increase (decrease) in cash and cash equivalents	5899	1333	3444
CASH AND CASH EQUIVALENTS, END OF PERIOD	**14557**	**15890**	**19334**

What is 'Free Cash Flow - FCF'

Free cash flow represents[5] the cash a company can generate after required investment to maintain or expand its asset base. It is a measurement of a company's financial performance and health. There are two other types of free cash flow: free cash flow for the firm and free cash flow to equity. This article focuses on the more simplified free cash flow also known as levered free cash flow.

BREAKING DOWN 'Free Cash Flow - FCF'

Free cash flow is the cash flow available to all investors in a company, including common stockholders. FCF provides a useful valuation technique investors often use to derive a firm's value or the value of a firm's common equity. Often, investors will calculate a firm's value using FCF valuation model techniques and subtract net debt to arrive at a company's equity value in a simple capital structure.

Free Cash Flow - FCF in Company Analysis

FCF measures the level of cash available to a company's investors net of all required investments in working capital and fixed capital, including plant, property and equipment, otherwise known as capital expenditures, plus any expenses required to remain a going concern. FCF is an important measure because it allows a company to pursue opportunities that enhance shareholder value. Excess cash can expand production, develop new products, make acquisitions, pay dividends and reduce debt.

As FCF increases, balance sheet strength and health rises; however, it is important to note that negative FCF is not a bad indicator. If FCF is negative, it could be a sign a company is making significant investments. If these investments earn high returns, the strategy has the potential to add value in the long run.

Free Cash Flow - FCF Calculations

One can calculate FCF multiple ways. Most commonly, the FCF calculation begins with Cash Flow from Operating Activities, but it can also start from revenue or Net Operating Profit after Taxes.

One can calculate FCF using the following equations:

Free Cash Flow

$$= Cash\ flow\ from\ operating\ activities - Capital\ expenditures$$
$$= Net\ Operating\ Profit\ after\ Taxes - Net\ Investment\ in\ Operating\ Capital$$
$$= Revenue - Operating\ Costs\ and\ Taxes - Required\ Investments\ in\ Operating\ Capital$$

Where:

$$Net\ Operating\ Profit\ after\ Taxes = Revenue - Operating\ Costs\ and\ Taxes$$
$$Required\ Investments\ in\ Operating\ Capital = Net\ Investment\ in\ Operating\ Capital$$

[5] Video- https://www.investopedia.com/terms/f/freecashflow.asp

Net investment in operating capital

If calculated properly with all the same inputs, all three equations should produce the same result for FCF.

What is 'Unlevered Free Cash Flow - UFCF'

Unlevered free cash flow (UFCF)[6] is a company's cash flow before taking interest payments into account. Unlevered free cash flow can be reported in a company's financial statements or calculated using financial statements by analysts. Unlevered free cash flow shows how much cash is available to the firm before taking financial obligations into account.

BREAKING DOWN 'Unlevered Free Cash Flow - UFCF'

Unlevered free cash flow is the gross free cash flow generated by a company. Leverage is another name for debt, and if cash flows are levered that means they're net of interest payments. Unlevered free cash flow is the free cash flow available to pay all stakeholders in a firm including debt holders as well as equity holders.

Like levered free cash flow, unlevered free cash flow is net of capital expenditures and working capital needs – the cash needed to maintain and grow the company's asset base in order to generate revenue and earnings. Non-cash expenses such as depreciation and amortization are added back to earnings to arrive at the firm's unlevered free cash flow.

Unlevered Free Cash Flow Formula

The formula for unlevered free cash flow uses earnings before interest, taxes, depreciation and amortization (EBITDA) and capital expenditures (CAPEX), which represents the investments in buildings, machines, and equipment. It also uses working capital, which includes inventory, accounts receivable and accounts payable.

The formula for unlevered free cash flow is:

$$UFCF = EBITDA - CAPEX - Working\ Capital - Taxes$$

Investment Considerations for Unlevered Free Cash Flow

A company that has a large amount of outstanding debt, being highly leveraged, is more likely to report unlevered free cash flow because it provides a rosier picture of the company's financial health. The figure shows how assets are performing in a vacuum, because it ignores the payments made for debt incurred to obtain those assets. Investors have to make sure to consider debt obligations, since highly leveraged companies are at greater risk for bankruptcy.

Companies looking to show better numbers can manipulate unlevered free cash flow by laying off workers, delaying capital projects, liquidating inventory or delaying payments to suppliers. All of these actions have consequences, and investors should discern whether improvements in unlevered free cash flow are transitory or genuinely convey improvements in the underlying business of the company.

[6] Video- https://www.investopedia.com/terms/u/unlevered-free-cash-flow-ufcf.asp

Unlevered free cash flow is before interest payments, so viewing it in a bubble ignores the capital structure of a firm. After accounting for interest payments, the levered free cash flow of a firm may actually be negative, a possible sign of negative implications down the road. Analysts should assess both unlevered and levered free cash flow over time for trends and not give too much weighting to a single year.

2.5 Difference between Funds Flow and cash flow statement

Funds flow statement is one of the important tools, which is used in many ways. It helps to understand the changes in the financial position of a business enterprise between the beginning and ending financial statement dates. It is also called as statement of sources and uses of funds.

Institute of Cost and Works Accounts of India, funds flow statement is defined as "a statement prospective or retrospective, setting out the sources and application of the funds of an enterprise. The purpose of the statement is to indicate clearly the requirement of funds and how they are proposed to be raised and the efficient utilization and application of the same".

Difference between Funds Flow and Cash Flow Statement

Table 5: Difference between Fund Flow and Cash Flow Statement

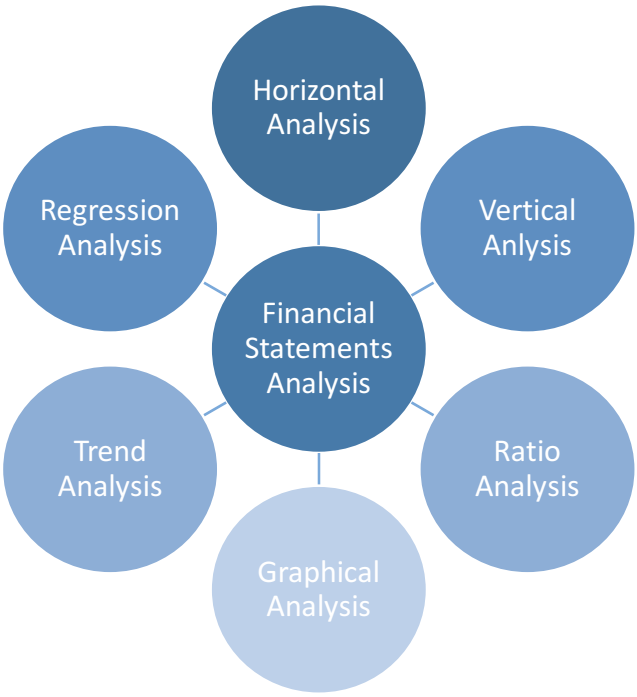
Fund Flow Statement	Cash Flow Statement
1. Fund flow statement is the report on the movement of funds or working capital 2. Funds flow statement explains how working capital is raised and used during the particular 3. The main objective of fund flow statement is to show the how the resources have been balanced mobilized and used. 4. Funds flow statement indicates the result of current financial statement. 5. In the fun flow statement increase or decrease of working capital is recorded. **6.** There is no opening and closing balances.	1. Cash flow statement is the report showing sources and uses of cash. 2. Cash flow statement explains the inflow and outflow of cash during the particular period. 3. The main objective of the cash flow statement is to show the causes of changes in cash between two balance sheet dates. 4. It indicates the factors contributing to the reduction of cash balance in spite of increase in profit and vice-versa. 5. In a cash flow statement only cash receipt and payments are recorded. 6. Cash flow statement starts with opening cash balance and ends with closing cash balances.

Chapter 3: Financial Statement Analysis

Topics Covered	Learning Objectives
Financial Statement Analysis • Tools and technique for financial statements analysis • Ratio analysis	• The nature and limitations of financial analysis. • Various tools of financial analysis. • Compute and interpret various financial ratios. • Carry out detailed analysis of financial statements of companies.

3.1 Tools for Financial statements analysis

Figure 4: Tools for Financial Statement Analysis



1. **Comparative Financial Statement Analysis (Horizontal Analysis):** As the name suggests, comparative analysis provides a year-on-year review of the various financial statements. For example, in the Income Statement, the Sales figure may be compared over a period of consecutive years to understand how the sales figures have grown (or declined) over the year. It should be noted that horizontal analysis compares the internal performance of the company.
   Below is an example of a Comparative Income Statement.
   Comparative Income Statement (All figures are in INR '000)

Table 6: Horizontal Analysis

	FY 2016-17	FY 2015-16	Change	%Change
Revenue	1224	1140	84	7.4%
Cost of Goods sold	554	519	35	6.7%
Gross Profit	**670**	**621**	**49**	**7.9%**
General, selling & administrative expenses	436	392	44	11.2%
Operating profit	**234**	**229**	**5**	**2.2%**
Interest expense	16	14	2	14.3%
Profit before Tax	218	215	3	1.4%
Provision for Tax	66	72	-6	-8.3%
Profit after Tax	**152**	**143**	**9**	**6.3%**

2. **Common-size Financial Statement Analysis (Vertical Analysis)**: Vertical analysis is applicable for internal performance review as well as for comparison to peers and bench-marking. In vertical analysis all the items in a particular statement are represented as a percentage of a particular item. For example, Operating Expenses, Depreciation, Amortization, Profit before tax, Tax, Profit after tax, etc. may be represented as a percentage of Sales in the Income Statement. Common standard base can easily reveal the internal make-up of financial statements and any proportionate increase and decrease of the same.

   Vertical analysis is also put to use for comparison across companies as financial statements are converted to common-size format, which can then be used to compare with competitor or industry averages, highlighting key differences which can then be analyzed.

   Below is an example of a Common Size Income Statement. Values are expressed as %age of Revenue.

Table 7: Vertical Analysis

Common size income statement for the year	FY 2016-17 As %	FY 2015-16 As %
Revenue	100.0	100.0
Cost of Goods sold	45.2	45.6
Gross Profit	**54.8**	**54.4**
General, selling & administrative expenses	35.6	34.4
Operating profit	**19.2**	**20.0**
Interest expense	1.1	1.2
Profit before Tax	18.1	18.8
Provision for Tax	4.7	5.6
Profit after Tax	**13.4**	**13.2**

Similar observations can be made by preparing the Indexed financial statements. In this technique, the base year figures are taken as 100 and subsequent years are expressed as a percentage thereof.

3. **Ratio Analysis:** Ratio analysis is the most widely used tool of financial statement analysis. A ratio gives relationship between two numbers, in this case items in the financial statements. Ratios are popular because they readily allow internal evaluation as well as comparison across firms. The ratios are categorized according to activities or functions they perform or the information they provide. For example, profitability ratios measure the profit making capability of the company.
   Note: Ratios are explained in detail in another module/session.

4. **Graphical Analysis:** Graphs provide visual representation of the performance that can be easily compared over time. The graphs may be line graphs, column graphs or pie charts.

Figure 5: Earnings for 2012-16

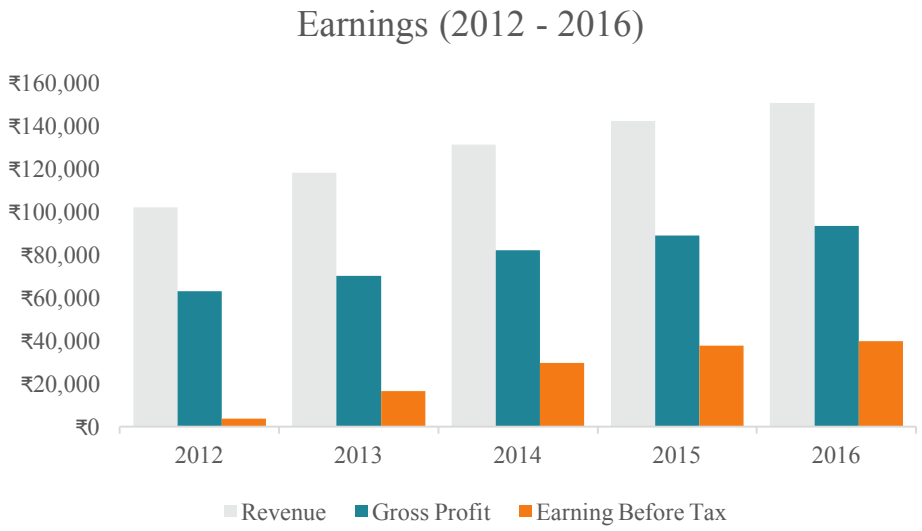
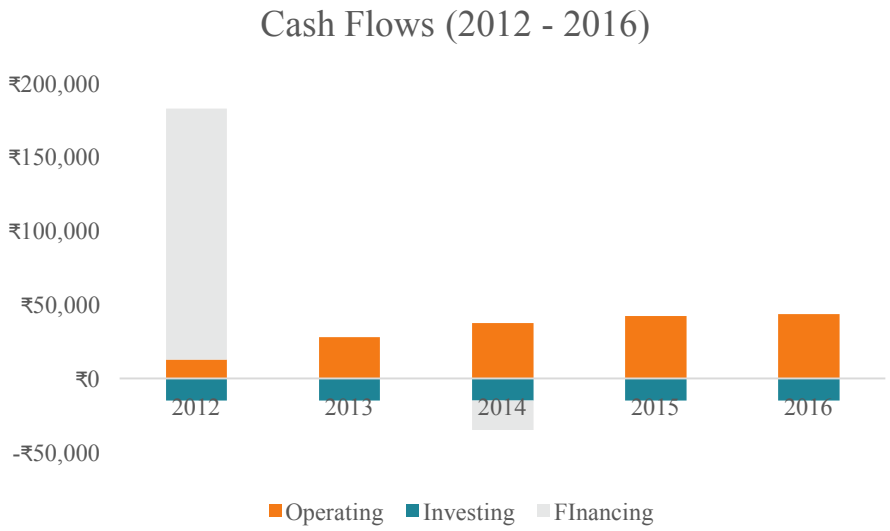


Figure 6: Cash Flows for 2012-16



5. **Trend Analysis:** Trend analysis is used to reveal the trend of items with the passage of time and is generally used as a statistical tool. Trend analysis is used in conjunction with ratio analysis,

horizontal and vertical analysis to spot a particular trend, explore the causes of the same and if required prepare future projections.

6. **Regression Analysis:** Regression analysis is a statistical tool used to establish and estimate relationship among variables. Generally, the dependent variable is related to one or more independent variables. In case of financial statement analysis, the dependent variable may be, say, sales, and it is required to estimate its relationship with the independent variable, say, a macroeconomic factor like Gross Domestic Product.

   For example, in the Top Down approach of sales forecasting, an analyst would first forecast GDP growth and then establish a relationship between GDP and industry growth rate through regression analysis. He may then estimate the future sales growth based on the industry growth. As such, regression analysis is widely used in forecasting models.

   The various tools and techniques are there to enable the decision making. It should be understood that any particular technique should not be viewed in isolation. Different companies may have different accounting methods and hence, comparison with peers has to be done carefully. Moreover, a holistic use of various techniques should be done to arrive at any conclusion.

3.2 Ratio Analysis

The ratios can be divided into various categories depending upon the focus of analysis—profitability, growth, dividend policy, efficiency, liquidity, capital structure, return and market related.

1. Profitability Ratios

> *Profitability ratios— expressing various measures of profits in relation to the sales or income for the accounting period.*

We have defined various measures of profits—gross profit, operating profit, net profit, etc. Gross Profit represents the excess of sales over cost of goods sold. From gross profit other operating expenses are deducted to arrive at earnings before interest, tax, depreciation and amortization (EBIDTA). EBITDA is often referred to as cash operating profit as non-cash expenses (depreciation and amortization) and non-operating expenses (interest and tax) are yet to be deducted. From EBITDA non-cash expenses, that is, depreciation and amortization are deducted to get another measure called EBIT or operating profit. Once we subtract interest and finance charges from EBIT, we arrive at profit before tax (PBT) or pre-tax profit. After meeting the tax expenses, the bottom line or the profit after tax is ascertained. These measures of profits for Excel Industries are given as follows:

Table 8: P & L of Excel Manufacturing Limited

Particulars	2017	2016	2015	2014
Sales	13888	14002	12546	10643
Cost of goods sold	8084	9368	7749	6967
Gross Profit	5804	4634	4797	3676
Administrative and marketing expenses	1543	1573	1307	1210
EBITDA	4261	3061	3490	2466

Particulars	2017	2016	2015	2014
Depreciation and amortization	513	405	277	321
EBIT	3748	2656	3213	2145
Interest (Net	724	523	504	346
PBT	3024	2133	2709	1799
Tax	1008	712	907	598
PAT	2016	1421	1802	1201

The expression 'profit' is a rupee term whereas profitability is a relative term, that is, profit earned in relation to the sales or operating income. Profitability ratios are always expressed in percentage terms. Accordingly, we can define various ratios measuring profitability of an enterprise.

Gross Profit Ratio

Gross profit ratio, also called gross margin, is the ratio of gross profit made by the enterprise during an accounting period to the sales. It is an indicator of the inherent profitability of the enterprise and pricing power that the enterprise enjoys in the market before considering other expenses and income. The ratio may be calculated as:

$$\frac{Sales - Cost\ of\ Goods\ sold}{Sales}$$

A decrease in gross profit margin indicates that the cost of producing goods for the enterprise has increased but it is not in a position to pass on the increased cost to the customer due to competitive pressure. Or as a strategy, the enterprise has decided to absorb the increased cost resulting in lower margin. It may also indicate that the firm has cut down the margin to capture increased market share. Trend of gross margin ratio over a period of time as well as a comparison with other similar firms may throw more light on the same.

Operating Profit Ratio

The operating profit ratio or operating margin is the ratio of operating profit to sales. Operating profit is commonly defined either as EBITDA or EBIT. Cash operating margin is the ratio of EBITDA to sales. It captures the profitability of the enterprise before charging depreciation and amortization and non-operating expenses of interest and tax, whereas operating margin, that is, the ratio of EBIT to sales, indicate the performance of the enterprise at the operating level. The operational efficiency of an enterprise can be measured at various levels.

Cash operating margin:

$$\frac{Earnings\ before\ interest, Tax, Depreciation\ and\ amortization}{Sales}$$

Operating margin:

$$\frac{Earnings\ before\ interest, Tax}{Sales}$$

Net Profit Ratio or Net Margin

The net margin is the final measure of profitability. It is the margin left for the shareholders after all the expenses—operating and non-operating, depreciation and tax has been provided for.

$$\frac{Profit\ after\ Tax}{Sales}$$

Table 9: Profitability Ratio of Excel Manufacturing Limited

Particulars	%			
	2017	**2016**	**2015**	**2014**
Gross margin	41.8	33.1	38.2	34.5
Cash operating margin	30.7	21.9	27.8	23.2
Operating margin	27.0	19.0	25.6	20.2
Pre-tax margin	21.8	15.2	21.6	16.9
Net margin	14.5	10.1	14.4	11.3

The gross margin of 41.8% for the year 2017 indicates that the cost of goods sold for Excel Industries is 58.2% of sales. The difference between gross margin (41.8%) and cash operating margin (30.7%) is due to other operating expenses. The depreciation effect is captured by the difference between cash operating margin and operating margin (27.0%). For capital-intensive industries like manufacturing, the gap between cash operating margin and operating margin is likely to be higher compared to say trading and service organization. The difference between operating margin and pre-tax margin (21.8%) is due to the presence of interest and finance charges. For a zero debt company, the operating margin and pre-tax margin will be almost the same due to absence of interest charges. For an enterprise relying heavily on borrowed funds, the gap will be larger. The gap between pre-tax margin and net margin is due to presence of tax. Enterprises enjoying tax-free income (export-oriented units or in special economic zones) will suffer relatively lower incidence of tax. For Excel Industries Limited, the gross margin has improved substantially, whereas the net margin has not gone up in the same proportion. It indicates that the indirect expenses (administrative, marketing, depreciation, interest and tax) have increased at a faster pace than the gross profit.

A high gross margin with a low net margin is indicative of higher operating expenses, interest, depreciation or tax. This stepped approach to analysis helps us to identify the major contributors to the profitability of the enterprise.

Operating Expenses Ratio

The profitability analysis, as discussed earlier, can be further supplemented by working out the ratio of various operating expenses to sales. The operating expense ratio may be calculated as follows:

$$\frac{Operating\ expenses}{Sales}$$

Table 10: Operating Expense of Excel Manufacturing Limited:

Particulars	%			
	2017	**2016**	**2015**	**2014**
Material consumed	46.3	55.3	49.6	51.8
Other manufacturing expenses	11.9	11.6	12.2	13.7
Administrative expenses	4.5	4.9	4.7	5.1
Marketing expenses	6.6	6.4	5.8	6.3
Depreciation and amortization	3.7	2.9	2.2	3.0
Interest	8.3	5.4	4.9	4.1
Tax expenses	7.3	6.1	7.9	5.6

Expense ratio helps us to identify the reasons for improvement or decline in profitability. For example, the net margin of Excel Industries Limited fell sharply during the year 20016. The expense ratio indicates that it was largely due to substantial increase in the cost of material consumed (from 49.6% in the previous year to 55.3% during 2016). During 2017, there is substantial decline in cost of material consumed (from 55.3% to 46.3%) but it has been partially offset by increase in interest cost (from 5.4% to 8.3%). There has been a gradual decline in the 'other manufacturing expenses' over the years. Interest and tax expenses though have increased over a period of time, and as a result, the gap between operating margin and net margin has gone wider.

Earnings per Share (EPS)

EPS is the most widely tracked indicator of profitability from shareholders point of view. It represents the profit made by the enterprise during an accounting period for each share. The EPS is calculated as follows:

$$\frac{Profit\ after\ Tax}{Number\ of\ Shares}$$

If the company has preference shares in its capital structure, the EPS may be calculated as follows:

$$\frac{Profit\ after\ Tax - Dividend\ on\ preference\ shares}{Number\ of\ Equity\ Shares}$$

In the denominator, we usually take the number of equity shares outstanding at the end of the accounting period. If, however, the number of shares outstanding have changed during the accounting period, a weighted average of number of shares outstanding is more appropriate.

If there is no change in the denominator over a period of time, EPS will mirror change in the net profit. If the number of shares has changed, the combined effect of change in profit and change in number of shares will be reflected in the EPS.

Table 11: EPS of Excel Manufacturing Limited

Particulars	2017	2016	2015	2014
Profit after tax (₹ million)	2016	1421	1802	1201
Number of equity shares (Weighted average)	100	75	75	75
Earnings Per share (₹)	20.2	18.9	24.0	16.0

The EPS of the company has increase from ₹ 16.0 to ₹ 20.2 in the last four years. During the year 2017, the increase in EPS is less than proportionate to increase in PAT. As the company has issued fresh capital during the year, the number of equity shares has increased. The weighted average number of shares outstanding has been computed assuming that the fresh shares were issued in the beginning of the year.

2. Growth Ratios

One of the basic purposes of financial analysis is to be able to predict the future performance. For that, understanding the growth achieved by the enterprise on the key variables is helpful. The growth rate achieved in the past can then be used to extrapolate the future.

Compound Annual Growth Rate (CAGR)

One popular measure of growth is the CAGR achieved over a period of time in respect of key financial indicators. The CAGR indicates the average annual growth rate achieved by the enterprise over a defined period of time (usually 4–5 years). The CAGR is calculated by using the compounding Formula 12.8:

$$A = P * (1 + g)^{n}$$

Where A is the current year value of the variable for which the growth rate is to be measured, P is the value in the base year and n is the number of years between the current year and the base year. Solving the above equation for 'g', the CAGR of the variable in question can be ascertained.

Excel Industries Limited achieved a sale of ₹ 10,643 million during the year 2014 which grew to ₹ 13,888 million during the year 2017. The CAGR of sales can be calculated by solving the above equation as follows:

₹ 13,888 million = ₹ 10,643 million × $(1 + g)^3$

Solving for g, the CAGR of sales comes to 9.3%. Similarly, the CAGR of net profit comes to 18.9%. As the profits have grown at a rate higher than the sales, it is an indication that the expenses have grown less than proportionately. It could be due to economies of scale or operational efficiencies. On the other hand, if the growth rate of profit is less than the sales growth, it indicates that the expenses have grown faster than the sales.

A word of caution, as CAGR just considers the base year and current year, the choice of base year may have significant impact on the computed value of CAGR. The base year chosen must be a normal year of operations and profitability.

3. Year-on-Year (Y-o-Y) Growth

The CAGR gives the long-term average rate of growth of the key financial variable. It must be supplemented by short-term trend of growth to get a better picture of the growth prospects. The Y-o-Y growth is computed by comparing the current value of variables with the immediately preceding period. The following equation can be used for computing Y-o-Y growth of sales:

$$\frac{Current\ year\ sales - Previous\ year\ sales}{Previous\ year\ sales}$$

Similarly, the Y-o-Y growth of other key variables like operating profits, net profit, etc. can be computed. Y-o-Y growth is more helpful in finding the current trend in the growth rate.

Table 12: Y-o-Y Growth Ratio

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Sales	13888	14002	12546	10643
PAT	2016	1421	1802	1201
YoY growth (sales)	-1%	12%	18%	
YoY growth (PAT)	42%	-21%	50%	

The declining growth rate of sales is a cause of concern. The profit growth is also volatile with wide fluctuations. The management needs to analyse the same and take steps to arrest the declining trend in sales growth. Also, the reasons for volatile profit growth need to be identified for taking appropriate corrective actions.

4. Dividend Policy Ratios

Dividend ratios help in understanding company's policy relating to rewarding the shareholders by way of cash dividends and also of retention of profit.

A part of the profit earned during the year is distributed to shareholders as cash dividend, whereas the balance is retained within business for funding the future needs for funds for expansion. Dividend on equity shares is a discretionary payment, that is, the board of directors recommends the dividend to be paid and the same is approved by the shareholders in the annual general meeting. By looking at the information in the financial statements, dividend policy of the enterprise can be inferred.

Dividend Rate

The rate at which the dividend is paid to the equity shareholders is called the dividend rate. It is always applied to the paid up capital of the company. The dividend per share (DPS) can be calculated as follows:

$$\frac{Total\ dividends}{Number\ of\ equity\ shares}$$

Alternatively DPS can be calculated as:

$$DPS = Face\ value\ per\ share \times Dividend\ rate$$

The dividend rate can also be ascertained as follows:

$$\frac{Total\ dividends}{Paid\ up\ capital}$$

Dividend Pay-out Ratio

The dividend pay-out ratio indicates the proportion of the profit after tax that has been used to pay cash dividends to the shareholders. As dividends in India attract a distribution tax, the total pay-out on account of dividends will also include the corporate tax on dividends. The ratio can be expressed as follows:

$$\frac{Dividends + Dividend\ distribution\ tax}{Profit\ after\ tax}$$

If there is no tax on dividend distribution, this ratio may also be computed as follows:

$$\frac{Dividend\ per\ Share\ (DPS)}{Earnings\ per\ Share\ (EPS)}$$

A supplementary ratio to the pay-out ratio is *Retention Ratio***.** The retention ratio indicates the proportion of the net profit retained and ploughed back in the business. It can simply be calculated as follows:

$$Retention\ ratio = 1 - Dividend\ pay\text{-}out\ ratio$$

The growing companies with aggressive expansion plans usually have a lower pay-out ratio and conversely a high retention ratio. The management of such enterprises will be keen to conserve resources rather than distributing as dividends. On the other hand, cash-rich companies without any immediate need of cash for investments will adopt a more liberal dividend pay-out and lower retention. Likewise, companies with high borrowed funds will keep the pay-out ratio low and use the cash so conserved to repay the borrowings.

Table 13: Dividend Policy ratios

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Profit after tax	2016	1421	1802	1201
Dividends	150	75	75	75
Dividend distribution tax	23	11	11	11
Dividend Per share (₹)	1.5	1	1	1
Dividend rate	15%	10%	10%	10%
Dividend Pay-out ratio	9%	6%	5%	7%
Retention ratio	91%	94%	95%	93%

The company is following a conservative dividend policy with a pay-out ratio of less than 10% and a retention ratio of over 90%. As the company is growing by investing in fixed assets and long-term investments, such a dividend policy is justified.

Dividend Yield

The return for an investor in equity shares is made up of two components—dividend and capital appreciation. The return by way of dividends is measured by dividend yield. Dividend yield measures the return to the investor on his investment by way of dividend. The ratio is calculated as:

$$\frac{Dividend\ per\ Share\ (DPS)}{Current\ Market\ price}$$

In the denominator, we take the current market price rather than the price actually paid by the investor. The current market price is the opportunity cost of investing in the shares of the enterprise—the money that could be invested elsewhere.

At the current market price per share of Excel Industries Limited at ₹ 240, the dividend yield works out to be 0.54%. It clearly indicates that primarily the investors in shares of the company are expecting most of the return by way of capital appreciation.

5. Short-term Liquidity Ratios

> *Short term liquidity ratios indicate measure adequacy of company's current assets to meet its current obligations.*

The suppliers of short-term credit to an enterprise are interested in assessing the ability of the enterprise to repay their dues. The central question that they seek to find an answer is, whether the enterprise has sufficient liquidity to pay them off. Obviously, the enterprise will pay its current obligations out of its liquid assets. The current ratio and quick ratios described below, are used to assess the short-term solvency of the enterprise.

Current Ratio

The current ratio measures the adequacy of short-term assets to meet the short-term obligation of the enterprise. By definition, the current assets are expected to be converted into cash shortly—within a period of 12 months. Likewise, current liabilities are expected to be paid within a short time. The current ratio is the ratio of current assets to current liabilities and is computed as:

$$\frac{Current\ assets}{Current\ liabilities}$$

Current assets includes cash in hand, balance with banks, inventories, sundry debtors and other current assets. Short-term investments often called marketable securities are also classified as current assets. Current liabilities include all short-term obligations, for example, sundry creditors, outstanding expenses, provisions and short-term loans. The instalments for repayment of long-term loans falling due within next 12 months, should also be included in the current liabilities.

A high current ratio, though, may be desirable from liquidity point of view but also indicates inefficient use of resources. So, a balance needs to be achieved—the current ratio should neither be too high nor too low. The implementation of modern inventory management techniques, for example, just-in-time inventory management system and supply chain management have resulted in decline in current ratio.

Quick Ratio

Quick ratio is often used as a supplementary measure of short-term liquidity. Out of the current assets, inventories are not considered to be liquid enough. Somewhat more strict measure of liquidity called quick ratio or acid test ratio is often used. For the purpose of quick ratio, we exclude inventories from the current assets to arrive at liquid assets and compare the same with current liabilities. The quick ratio can be calculated as follows:

$$\frac{Current\ assets - Inventories}{Current\ liabilities}$$

For enterprises in the service sector, the current ratio and quick ratio will almost be identical due to negligible inventory, whereas enterprises engaged in construction, manufacturing or trading activities, these ratios will significantly differ depending upon the level of inventories they carry.

Table 14: Liquidity Ratios of Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Current assets	8741	7640	6406	3999
Current liabilities	5341	5074	3957	3337
Inventories	1299	1522	1487	1021
Current ratio (Times)	1.64	1.51	1.62	1.20
Liquid ratio (Times)	1.39	1.21	1.24	0.89

Both the current ratio and quick ratio for Excel Industries Limited have improved over a period of time. In the year 2017, the current ratio is at 1.64 times and the quick ratio is at 1.39 times indicating that the company has sufficient liquidity to meet its short-term obligations.

6. Capital Structure Ratios

Capital structure refers to the proportion of borrowed funds and shareholders' funds in the total capital employed.

An enterprise may finance its operations either by using owners' capital (shareholders' funds) or borrowed funds. The composition of funds raised, is referred to as the capital structure. On shareholders' funds, there is neither any obligation to pay any fixed return nor to repay the principal. On the other hand, the providers of loan funds are entitled to get a fixed return and also repayment of capital upon maturity. The capital structure, therefore, has significant implication upon the ability of the firm to meet its long-term obligations. The focus of analysis is on the proportions of long-term funds—debt and equity and adequacy of enterprise's profit to meet its obligations associated with debt funds.

Debt-Equity Ratio

It is the ratio of long-term borrowings to shareholders' funds. An enterprise relying more on borrowed funds is more prone to defaults in debt servicing compared to an enterprise with higher shareholders' funds. The debt-equity ratio is calculated as follows:

$$\frac{Long\ term\ debts}{Shareholders'fund}$$

While arriving at shareholders' funds any fictitious assets, for example, miscellaneous expenditure to the extent not written-off or adjusted and profit and loss account (Debit Balance) should be deducted. From long-term debts, if the information is available, the loan repayment falling due within next one year should be deducted. A high debt equity ratio signifies a higher obligation to pay interest and repay the principal. The firms operating in volatile environment often rely less on borrowed funds, whereas firms confident of stable operating results can afford to take more debts. There is no ideal debt-equity ratio though a ratio in excess of 2:1 is usually considered aggressive. On the other hand, a firm operating with no debt or low debt is not taking benefits of financial leverage which has a positive effect on the return on equity. This aspect has been considered later in the chapter.

Table 15: Debt Equity Ratio of Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Long term debts	5987	4312	2980	2014
Shareholders' funds	11924	8831	7496	5780
Debt equity ratio (Times)	0.50	0.49	0.40	0.35

From the above, it is clear that the Excel Industries Limited is taking advantage of borrowed funds but at the same time, is not very comfortable with a large debt-equity ratio. The debt-equity ratio for the firm has gradually increased to 0.50 times signifying that for financing its expansion plans the firm has relied more on borrowed funds in the recent past.

Fixed Assets to Long-term Debts

This is ratio which is often calculated for the safety of the long-term lenders. As the term loans are often secured against security of fixed assets, it is an indication of the cushion available to the debt providers. Higher the ratio, more secured the lenders will feel. As the ratio approaches one (or below) the degree of safety for lenders goes down. The ratio can be calculated as follows:

$$\frac{Fixed\ assets}{Long\ term\ debts}$$

Table 16: Fixed Assets to Long-term Debts of Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Fixed assets	10761	8841	6881	6357
Long term debts	5987	4312	2980	2014
Fixed assets to long term debt ratio	1.78	2.05	2.31	3.16

The ratio for the company at 1.78 times indicates that the fixed assets are 1.78 times the long-term loans. Though the ratio has declined over the years, but still the fixed assets are adequately covering the long-term loans. A word of caution though—the ratio is being calculated using the book value of the fixed assets, which may be significantly higher or lower than the realizable value of the assets. Likewise, certain assets included in fixed assets may be worthless on a stand-alone basis, for example, goodwill and therefore may have to be excluded from the fixed assets. The lenders will do better to keep this aspect in mind while interpreting this ratio. If the liquidation value of the fixed assets is used in the numerator, it will give a better idea as to the adequacy of security available to the lenders of long-term loans.

Interest Coverage Ratio

As discussed earlier, borrowed funds have a fixed obligation attached to them in the form of paying interest at a fixed rate. The lender will be concerned about the borrower's ability to pay interest on the borrowings. One of the most commonly used measures for the same is interest coverage ratio. It measures the adequacy of enterprise's profits to cover its interest obligations. As interest is a tax deductible expense and is paid before payment of tax, EBIT is used as an appropriate measure of profit. The ratio is calculated as follows:

$$\frac{Earnings\ before\ interest\ and\ tax\ (EBIT)}{Interest}$$

Higher the ratio, better is the ability of the enterprise to meet its interest obligation. If the ratio falls towards one, it is clearly an indication that the enterprise is not earning enough at the operating level to meet its interest obligations and may need to bring its level of debt down.

Table 17: Interest Coverage Ratio of Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Earnings before interest and tax	3748	2656	3213	2145
Interest	724	523	504	346
Interest coverage ratio (Times)	5.18	5.08	6.38	6.20

The ICR is always expressed as 'number of times'. Excel Industries Limited's EBIT covers the interest expenses 5.18 times which is a healthy sign. It can also be interpreted as that even if EBIT of Excel Industries Limited falls to one-fifth, it still will be able to meet its interest obligation.

An alternate way to compute ICR is to use EBITDA as a denominator. The argument in favour of this treatment is that depreciation and amortization are not cash expenses and to the extent the cash is available to meet the interest obligation.

Debt Service Coverage Ratio (DSCR)

DSCR—ability of the enterprise to meet its obligation relating to borrowed funds – both interest and principal.

In addition to payment of interest, there is an obligation to repay the principal on borrowed funds as well. The interest coverage ratio described above does not consider the latter. To incorporate both the obligation for debt servicing—interest and principal repayment—an alternate measure may be needed. The debt service coverage ratio (DSCR) assesses the adequacy of cash flow generated by the enterprise to meet its debt obligations. The DSCR is computed as follows:

$$\frac{Earnings\ before\ interest\ and\ tax\ (EBIT) + Depreciation + other\ noncash\ expenses}{Interest + \frac{Loan\ installment}{(1-tax\ rate)}}$$

In the numerator, we have operating cash profit, that is, EBITDA. In the denominator, both interest as well as repayment of loan has been considered. As loan repayment is not a tax deductible, it needs to be grossed up by dividing by (1 − Tax rate). For example, an enterprise has an obligation to pay interest amounting to ₹ 100 million and principal repayment of ₹ 140 million. The applicable tax rate for the enterprise is 30%. To repay principal of ₹ 140 million, the enterprise need to earn ₹ 200 million as EBITDA, that is, ₹ 140 million/(1 − 0.3). Accordingly, the denominator for DSCR will be ₹ 300 million.

As the information for principal repayment is not directly available in the financial statements, it is often difficult to compute DSCR. But an insider or someone having access to this information, for

example, bank or other lenders can use this ratio to assess the debt servicing capacity of the enterprise.

Example:

Table 18: Debt Service Coverage Ratio

Particulars	**INR (In million)**
Net Income	490 million
Interest Expense	50 million
Non-cash Expenses	40 million
Tax rate	30 %
Principal Repayments	20 million
Lease Repayments	5 million

Tax = 490 million x 30% =147 million

Net Operating Income = Net Income + Interest + Non-cash Expense + Tax

Net Operating Income = 490 million + 50 million + 40 million + 147 million = 727 million

Total Debt Service = Interest + Principal + Lease Payments

Total Debt Service = 50 + 20 + 5 = 75 million

DSCR = Net Operating Income/Total Debt Service = 727 million/75 million = 9.69

7. Assets Utilization Ratios

Assets utilization ratios relate the sales or income generated in a given period to the funds deployed in various types of assets.

By careful analysis of the financial statements, it is possible to comment upon the efficiency in assets utilization. If an enterprise is able to generate higher revenue with the same amount of assets, or same revenue with lower amount of assets, it is an indication of efficiency in assets utilization. This set of ratios relates the output (usually sales) with the assets base. These ratios are called assets utilization ratios or efficiency ratios or simply turnover ratios and are expressed as 'number of times'. The analysis generally starts with the total assets turnover and gradually breaks it down to various components of the total assets.

In these ratios, the sales figure is for the period, whereas the asset base is on a particular day. If there has been a substantial change in the assets base, it is possible to take average assets {(Opening Balance of Assets + Closing Balance of Assets)/2} in the denominator. If, however, only year-end statements are available, it is possible to work with those numbers as well.

Total Assets Turnover Ratio

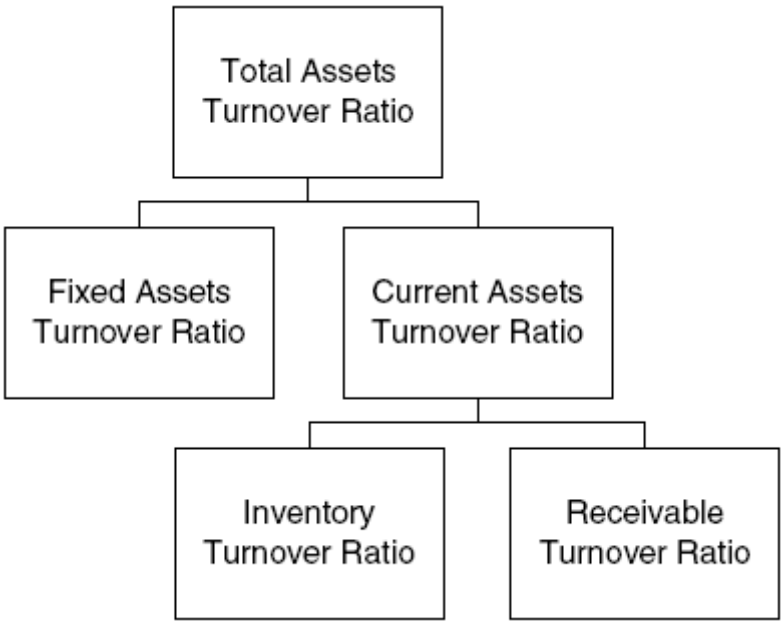
This ratio relates the sales achieved by an enterprise during a period to the total assets deployed. A higher ratio indicates that the enterprise is able to generate more sales relative to the total assets deployed in the business. The ratio may be calculated as follow:

$$\frac{Sales}{Total\ assets}$$

As the total assets of an enterprise may also include investments and loans and advances given which are not directly deployed in the business, they should be excluded while computing this ratio. Various sub-ratios that will be useful are shown in the Figure below.

Constituents of Total Assets Turnover Ratio:

Figure 7: Components of Total Assets Turnover ratio



Fixed Assets Turnover Ratio

This is the ratio of sales achieved during an accounting period to fixed assets deployed. A higher ratio indicates better utilization of the long-term assets, whereas a lower ratio is an indication of inefficiencies in the utilization of fixed assets. The fixed assets turnover ratio may be calculated as follows:

$$\frac{Sales}{Fixed\ assets}$$

The fixed assets turnover ratio can be improved by an enterprise in a variety of ways. For example, a manufacturing entity operating on a double shift basis or reducing the down time for scheduled maintenance of plant, improvement is room occupancy in a hotel or bed utilization in a hospital are some of the measures that will result in improved fixed assets' utilization. Outsourcing some of the non-core activities to third party vendors may also improve this ratio. A word of caution—a higher ratio than the industry norms may also indicates that the enterprise in not investing enough in

capacity expansion and modernization. As there is a time lag between the investment and the resultant sales, underinvestment in the current period will adversely affect the growth of the enterprise in future.

A lower or declining ratio may be an indication of wastages in the utilization of fixed assets. It may be due to excess capacity or underutilization of certain facilities due to slack demand. The same needs to be investigated to take corrective steps to either improve utilization or dispose-off the assets not needed. A recent large scale capacity expansion or large amounts incurred towards capital work-in-progress are also possible reasons for a decline in fixed assets turnover ratio.

Current Assets Turnover Ratio

In addition to the fixed assets, large amounts are blocked in current assets particularly inventories and debtors. An enterprise may be highly efficient in utilizing its fixed assets but due to poor working capital management, it may be experiencing undue blockage of funds. The current assets turnover ratio aim at assessing the management of short-term assets by the enterprise. The ratio is calculated as follows:

$$\frac{Sales}{Current\ assets}$$

A decline in the ratio will indicate proportionately large amounts blocked in inventories or debtors or large cash and cash equivalents being kept. On the other hand, an improvement in the ratio is an indication of more efficient working capital management.

As a part of the current assets is often financed by current liabilities, the net current assets may be compared with sales. The excess of current assets over current liabilities is often referred to as net current assets, or simply, the working capital. The working capital turnover ratio may be calculated as follows:

$$\frac{Sales}{Net\ current\ assets}$$

Table 19: Turnover Ratios of Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Sales	13888	14002	12546	10643
Total assets	24020	18771	14856	11434
Fixed assets	10671	8841	6881	6357
Current assets	8741	7640	6406	3999
Total assets turnover ratio (Times)	0.58	0.75	0.84	0.93
Fixed assets turnover ratio (Times)	1.30	1.58	1.82	1.67
Current assets turnover ratio (Times)	1.59	1.83	1.96	2.66

It can be observed that the total asset turnover ratio for Excel Industries Limited has declined from a high of 0.93 times to 0.58 times in the year 2017. It is an indication that the asset base of the company has grown more than proportionately compared to its sales. A break-up of the ratio between fixed assets and current assets indicates that both fixed assets turnover ratio as well as

current assets turnover ratio has declined though the decline in the latter has been sharper. The current assets turnover ratio can be further investigated by computing inventory turnover ratio and debtor turnover ratio.

Inventory Turnover Ratio and Average Holding Period

Inventory turnover indicates ability of the enterprise to rotate its inventories faster.

In certain businesses, inventory constitutes a major portion of the assets. Inventories, for this purpose, include raw material, consumable stores, work-in-progress and finished goods. Ability to rotate the inventory faster helps the enterprise in keeping blockage of funds low. How well the inventory is being managed can be ascertained by using the inventory turnover ratio. The ratio is calculated as follows:

$$\frac{Cost\ of\ goods\ sold}{Inventories}$$

In the numerator, instead of using sales, it is preferable to use cost of goods sold to ensure that both the numerator and denominator are at cost. The above ratio indicates the efficiency of inventory management on an overall basis. Similar ratio can be computed for each component of inventory. Higher the ratio, more efficient the inventory management is considered to be. Higher turnover ensures lower blockage of funds as well as reduced probability of obsolescence. However, a higher turnover may also indicate that the enterprise is not maintaining sufficient stock of raw material, or finished goods leading to possible production stoppage or loss of potential sale.

The inventory turnover ratio is presented as the 'number of times', that is, how many times inventory got rotated during the year. This ratio can be converted into 'number of days' to arrive at *Average Holding Period* as follows:

$$\frac{365}{Inventory\ turnover\ ratio}$$

Higher the inventory turnover ratio, lower will be the average holding period. The average holding period may also be calculated as:

$$\frac{365 * Inventory}{Cost\ of\ goods\ sold}$$

Table 20: The inventory turnover ratio and average holding period for Excel Manufacturing Limited.

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Cost of goods sold	8084	9368	7749	6967
Inventory	1299	1522	1487	1021
Inventory turnover ratio (Times)	6.22	6.16	5.21	6.82
Average holding Period (Days)	59	59	70	53

During 2017, the inventory turnover ratio is 6.22 times and consequently the average holding period is at 59 days. Business units are using inventory management techniques like just-in-time (JIT) inventory and supply chain management to improve their inventory turnover and consequent reduction in average holding period.

Trade Receivable Turnover Ratio and Days' Sales Outstanding

Receivable turnover indicates efficiency of the enterprise in collecting its receivables.

In today's competitive environment, most of the enterprises are forced to sell goods on credit basis. They allow a certain number of days called the 'credit period' to their customers to pay the amounts due. Sundry debtors or trade receivable represent the amount due from the customers in respect of sales made. How efficiently the enterprise is able to collect its receivables can be measured by receivable turnover ratio. The ratio relates to the sales made during a particular period with the trade receivables outstanding at the end of the period. As these receivables arise out of credit sales, it is preferable to use the credit sales figure for the computation of this ratio. If, however, the break-up of the sales is not available, total sales figure can be used. The ratio is calculated as follows:

$$\frac{Sales}{Trade\ receivables}$$

The numerator should be net of sales returns and trade discount but inclusive of excise duty and any other amount recoverable from the customer as a part of the invoice value. Obviously, higher the turnover, faster is the collection of receivables. The ratio is expressed as 'number of times' and can be converted into an alternate measure called days' sales outstanding (DSO) or average collection period'. The DSO is calculated as follows:

$$\frac{365}{Receivable\ turnover\ ratio}$$

The DSO is expressed in number of days. It expresses the number of days' sales that is outstanding to be collected at the end of the accounting period. The DSO so computed, can be compared over a period of time to analyze the trend and also with the DSO of other competing enterprises. It can also be compared with the credit period actually granted to the customers. For example, if the computed DSO is say 69 days, whereas the firm only allows 45 days to its customers to pay, it is an indication of slackness in collection. Any such delay has opportunity cost of funds blocked and may also indicate some dispute with the customer resulting in delayed payments.

Table 21: The Receivable Turnover Ratio and Days' Sales Outstanding for Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Sales	13888	14002	12546	10643
Trade receivables	5004	4786	3449	1785
Receivables turnover ratio (Times)	2.78	2.93	3.64	5.96
Days sales outstanding (Days)	132	125	100	61

The turnover ratio has declined substantially in the last four years resulting in the DSO going up from 61 days to 132 days. It may be due to deliberate policy of the management to give extended credit period to meet competition and to acquire new customers. On the other hand, it may also reflect poor collection efforts on the part of the company.

Average Payment Period

As the enterprise sells goods on credit, the same way it also may be enjoying credit terms on its purchases. To that extent, the blockage of its own funds by the enterprise goes down. By relating the purchases made by the enterprise during a given accounting period with the trade payables for purchases, it is possible to ascertain the average credit period enjoyed by the enterprise. The average payment period can be calculated as follows:

$$\frac{365 * Trade\ payables}{Purchases}$$

A higher ratio may indicate favourable credit terms enjoyed by the enterprise, and to that extent, lower blockage of its own funds in the current assets. On the negative side, a higher and increasing ratio also may mean that the firm is delaying payments to its suppliers. It may not be availing the cash discount being offered by its suppliers for prompt payment. It will eventually lead to higher price being demanded by the suppliers or decline of credit terms to the enterprise.

Table 22: The average payment period of Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Material consumed	6434	7745	6218	5512
Trade Payables	1587	1615	1447	1225
Average Payment Period (Days)	90	76	85	81

It can be observed that the company is consistent in making payments to its suppliers. In the year 2017, the payment period has gone up which needs to be analysed further as to the reasons thereof.

Length of Cash Cycle

By comparing the average holding period of inventories, average collection period for receivables and average payment period for payables, the length of cash cycle for the enterprise may be ascertained. The length of cash cycle indicates the average time taken by the enterprise to convert the cash to cash again. The cash cycle may be calculated by using the following equation:

$$Average\ Holding\ Period + Average\ Collection\ Period - Average\ Payment\ Period$$

Table 23: Length of Cash Cycle of Excel Manufacturing Limited

Particulars	(Number of days)			
	2017	**2016**	**2015**	**2014**
Average holding Period	59	59	70	53
Average collection Period	132	125	100	61
Average Payment Period	90	76	85	81
Cash cycle	100	108	85	34

The cash cycle for the company has gone up from 34 days to 100 days in the last four years largely due to an increase in the average collection period. It signifies that the company is taking a longer period for cash conversion, and therefore, higher blockage of funds. This will necessitate arrangement of additional financing, either by using long-term or short-term sources of funds.

8. Return Ratios

Return ratios express profit earned as a percentage to funds deployed to earn that profit.

In addition to comparing the profit earned during an accounting period with the revenue earned (profitability ratios), an analyst may also like to compare the profit with the funds deployed to earn that profit. More specifically, computation of profits earned as a percentage of funds deployed, is a useful way to understand efficiency in funds utilization. It is possible to define funds deployed in a variety of ways. It may mean the total assets used or the long-term capital employed in the business. Alternatively, it is possible to look at the return from shareholders' funds point of view. As these ratios compare profit for the year (a profit and loss account number) with funds deployed (a balance sheet number), it is possible to take average for the latter {(Opening Balance + Closing Balance)/2}. If, however, only year-end statements are available, it is possible to work with those numbers as well.

Return on Assets (ROA)

ROA is the ratio of profits to the assets deployed in the business. As in the denominator we are using the total assets, the corresponding figure of profit taken is, therefore, before interest. The following formula may be used for computing the ratio:

$$\frac{EBIT\ (1 - tax\ rate)}{Total\ assets}$$

The numerator may be referred to as net operating profit after tax (NOPAT) and can also be calculated as follows:

$$Profit\ after\ tax + Interest\ (1 - Tax\ rate)$$

NOPAT is the after tax profit attributable to the assets deployed in the business. The ratio may be compared over a period of time, with competitors and with industry aggregates, to understand the relative efficiency in use of assets for generating returns. Assuming a tax rate of 33%, the ROA for Excel Industries is depicted as follows:

Table 24: Return on Asset of Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Earnings before interest and tax	3748	2656	3213	2145
EBIT (1 - tax rate)	2511	1780	2153	1437
Total assets	24020	18771	14856	11434
ROA (%)	10.45%	9.48%	14.49%	12.57%

The ratio improves if the increase in NOPAT is more that proportionate than the increase in assets deployed.

Return on Capital Employed (ROCE)

ROCE is the ratio of profits to the capital employed or funds invested in the business. The funds invested here means the long-term sources—both debt and equity used in the business. The following formula may be used for computing the ratio:

$$\frac{EBIT\ (1 - tax\ rate)}{Capital\ employed}$$

Table 25: The ROCE for Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Earnings before interest and tax	3748	2656	3213	2145
EBIT (1 - tax rate)	2511	1780	2153	1437
Capital employed	17911	13143	10476	7794
ROCE (%)	14.02%	13.54%	20.55%	18.44%

The ratio improves if the increase in NOPAT is more that proportionate than the increase in capital employed. A declining ROCE is an indication of inefficient use of capital.

Return on Equity (ROE)

ROE[7] is the most important ratio from shareholders' perspective. It indicates the profits earned as a percentage of shareholders' funds. The ratio may be expressed as follows:

$$\frac{Profit\ after\ tax}{Shareholders'fund}$$

Table 26: The ROE for Excel Manufacturing Limited

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
Profit after tax	2016	1421	1802	1201
Shareholders fund	11924	8831	7496	5780
ROE (%)	16.9%	16.1%	24.0%	20.8%

The ROE for the company declined from 20.8% to 16.1% during the year 2016 due to decline in PAT and increase in shareholders' funds. During the year 2017, both PAT and shareholders' funds have gone up, though the increase in PAT is more than the increase in shareholders' funds. As a result, ROE improved from 16.1% to 16.9%. It may also be noted that PAT for the year 2017 is higher than that of 2015 but due to much sharper increase in equity, i.e. shareholders' funds, the ROE for the year 2017 is much lower than that of 2015.

[7] https://www.investopedia.com/terms/r/returnonequity.asp

DuPont Analysis

Return on equity is expressed as a multiple of profitability, assets turnover and leverage.

DuPont Analysis is a useful technique to break down the ROE into its constituent elements. It helps to understand the reasons for an increase or decrease in ROE by identifying the underlying variables. The ROE as defined above may be broken down as follows:

$$\frac{Profit\ after\ tax}{Sales} * \frac{Sales}{Total\ assets} * \frac{Total\ Assets}{Shareholder'sFund}$$

The above equation indicates that the ROE is a function of three important ratios—net margin ratio (PAT/Sales), total assets turnover ratio (Sales/Total Assets) and Financial Leverage (Total Assets/Shareholders' Funds). The third component depends upon the presence of debt in the capital structure of an enterprise. For a zero debt company, the financial leverage will be one as all the assets have been funded by shareholders' funds, and therefore, the numerator and denominator for the third component will be the same. ROE can be increased by increasing the net margin by controlling costs and offering high margin value added products and services to the customers. The assets turnover can be improved by using the assets more efficiently, faster collection of receivables, efficient turnover of inventories, etc. The benefit of financial leverage can be taken by a judicious mix of debt (borrowed funds) and equity (shareholders' funds) in the capital structure of the enterprise.

The three components discussed earlier, multiply with each other to generate ROE. For example, an enterprise in a low margin business with a net margin of 4%, asset turnover of two times and financial leverage of three times will return a ROE of 24% (4% × 2 × 3). The break-up of ROE for Excel Industries Limited using DuPont Analysis is given as follows:

Table 27:Du-Pont Analysis

Particulars	(₹ million)			
	2017	**2016**	**2015**	**2014**
PAT/Sales (%)	14.5%	10.1%	14.4%	11.3%
Sales/ Assets (Times)	0.58	0.75	0.84	0.93
Assets / Shareholders fund (Times)	2.31	2.30	2.24	3.96

From the above analysis, it is clear that the ROE of the company has declined between 2015 and 2017 largely due to decline in the assets turnover ratio. The net margin has marginally improved and financially leverage has declined but the assets turnover ratio has significantly declined from 0.93 times to 0.58 times. This can be analysed further by using the other turnover ratios as discussed earlier.

9. Market Ratios

As the equity shares of a company are traded in the stock market, the investors both existing and prospective would be interested in assessing the performance of the stock in the market. For this purpose, the market price of the share may be combined with some variables from the financial statements in a meaningful manner.

Market Capitalization

The market capitalization of a company represents the total market value of all the shares of the company. It can be calculated as follows:

$$Current\ market\ price\ X\ Number\ of\ equity\ shares$$

As the current market price of a company keeps on fluctuating, the market capitalization also fluctuates many times a day. A higher market capitalization is an effective defence mechanism against any type of takeover bid, as the acquirer will be required to pay a larger sum to acquire the controlling stake.

10. Price to Book Value Ratio

The book value[8] of a company can be calculated by dividing the shareholders' funds by the number of equity shares. The book value per share can be compared with the market price per share to calculate price to book value ratio:

$$\frac{Current\ market\ price}{Book\ value\ per\ share}$$

A higher ratio indicates that the market is paying a higher premium for the shares over the book value. It may be due to higher profitability or better future prospects. A high ratio may also be taken as an indicator of overpricing of the stock.

Price Earnings Ratio[9]

The price earnings ratio or P/E multiple is one of the most widely used indicator of the relative pricing of a stock. The current market price of the stock is compared with the earning per share to arrive at the ratio. The ratio indicates prevailing market price of the stock as a multiple of the earning per share. The ratio is calculated as follows:

$$\frac{Current\ market\ price}{Earnings\ per\ share}$$

The P/E ratio is expressed as number of times. A higher ratio means that the investors are willing to pay a higher price in relation to the earnings of the company. It may be due to better future prospects of the company.

Price Earnings to Growth (PEG) Ratio

The PEG ratio[10] is an attempt to relate the P/E ratio of a company with its growth. Often firms with higher growth ratio enjoy higher P/E multiple and vice versa. The variation in the P/E ratio may be justified by different growth rates. The ratio may be calculated as follows:

$$\frac{Price\ earnings\ ratio}{Growth\ rate}$$

[8] https://www.investopedia.com/terms/p/price-to-bookratio.asp
[9] https://www.investopedia.com/terms/p/price-earningsratio.asp
[10] https://www.investopedia.com/terms/p/pegratio.asp

A PEG ratio of one is an indication of fair pricing. A ratio higher than one is an indication that the stock is overvalued, whereas a ratio less than one indicates that the growth prospects of the firm have not been fully factored in the current market price and consequently the stock is undervalued.

Table 28: The market ratios for Excel Manufacturing Limited

Particulars	(₹ million)
Profit after tax	2016
Shareholders fund	11924
Number of shares (million)	100
Market Price (₹)	280
Book value Per share (₹)	119.2
Market capitalisation	28000
Market price to book value ratio (Times)	2.3
Earnings Per share	20.2
Price earnings ratio (Times)	13.9

The company has market capitalization of ₹ 28,000 million with a price to book value ratio of 2.3 times. It indicates that the market capitalization of the company is 2.3 times the shareholders' funds. The company's shares are trading at a P/E multiple of 13.9 times. The price to book value ratio and P/E multiple of the company can be compared with other companies in the same industry to assess the extent of overvaluation or undervaluation.

Example 1:

Table 29: Summarized figures relate to Tulla Ltd, a business operating in the retail sector

	2017	2016
Revenue	35,000	32,000
Gross Profit	6,000	5,800
Operating expenses	(2,850)	(2,300)
Interest on debenture debt	(500)	(500)
Taxation	(1,100)	(1,400)
Profit after tax	1,550	1,600
Equity capital plus reserves at year end	17,500	17,000
Debentures in issue throughout the period	6,250	6,250

Note: Some equipment was sold in 2017 at a loss of INR 300. This loss was included in operating expenses. No such transaction occurred in 2016.

Required: Analyse the profitability of the above business in as much detail as the information permits.

Commentary:

It is recommended to read the requirement first, then reading the information with the requirement in mind. As you read, try and notice the key points. Some of these might be as follows:

- Revenue has increased from 2016 to 2017.

- Gross profit has also increased, probably by a smaller percentage.
- Net profit has reduced. This is unusual as we normally expect more profit if we sell more goods.
- Operating expenses have increased significantly.

Check if there is any additional information that might affect your analysis. Let's take the increase in operating expenses. A simple analysis might suggest that the company was less efficient in 2017 than in 2016. But consider the effect of the disposal of equipment in 2017, with a material loss on disposal included in expenses. It would be useful to recalculate the figures without the one-off item to see if underlying performance was actually that different.

Then calculate some appropriate ratios to assist your analysis. Finally, proceed to analyse the profitability of the company in accordance with the requirement.

There is no "correct" figure for Gross Margin or Net Margin. Usually, the higher the better. The normal levels vary from one industry to another. Useful comparisons can be made from one period to the next or against the industry average. Pay particular attention to trends. It is important to know the difference between margin and mark-up. Mark-up is always based on cost prices whereas margin is based on selling prices.

ROCE is a very powerful ratio when used correctly. In general, investing in a business is riskier than bank deposits, so the business should earn a ROCE sufficiently in excess of the return available from deposit accounts to compensate for the risk being taken. In addition, if a business has borrowings, the ROCE should exceed the cost of borrowing.

ROE is a narrower way of assessing profitability. It takes profit attributable to equity shareholders divided by the equity investment in the firm. This excludes preference shares and interest bearing debt (which is why the top line excludes interest and preference dividends), therefore it is more relevant for shareholders. We often take closing equity as the denominator, whereas an average equity figure could be more accurate. However as long as the formula is consistent, comparisons and trends should remain valid.

Suggested solution:

Ratio calculation	**2017**	**2016**
Gross margin	6,000/35,000 =17.1%	5,800/32,000 =18.1%
Net margin	(1,550 + 1,100 + 500) 35,000 =9.0%	(1,600 + 1,400 + 500) 32,000 =10.9%
Return on Capital Employed	(1,550 + 1,100 + 500) (17,500 + 6,250) =13.3%	(1,600 + 1,400 + 500) (17,000 + 6,250) =15.1%
Return on Equity	1,550 17,500 =8.9%	1,600 17,000 =9.4%

Weak analysis of profitability ratios (not adequate for professional level)

- Gross margin and net margin have both declined, although not by much. The company should watch out in case these ratios decline further.
- ROCE and ROE have also declined. Again, the decline is not massive but if it continues the company will find itself unable to continue in business.
- Overall the company is quite profitable, although profitability according to every measure is declining marginally.
- It is recommend the company look at improving cost control to improve profits.

[This answer is typical of what is presented at professional level, but offers almost no value added. The ratio calculation, if correct, would win the bulk of marks awarded here. The last point is the best, as it offers some concrete analysis of the reason for the profit decline (costs have risen disproportionately) and a potential solution (control costs well).]

Better analysis of profitability (professional level)

- Overall it appears the profitability of this business has declined year on year, despite a 9.4% sales increase from INR 32,000 to INR 35,000. To ascertain the likely cause of this let us examine some popular profitability ratios.

- Gross margin has declined from 18.1% to 17.1% while gross profit itself increased by 3.4%. As gross profit is made up of sales less cost of sales, this must mean either that sales prices fell or cost of sales (essentially purchase prices) increased relative to each other from 2016 to 2017. It seems highly possible that the company's management engaged in price cutting strategies to increase sales. If so, they succeeded in increasing sales (by 9.4%), but the additional margin contributed by the extra sales was almost outweighed by the lost margin over the total goods sold, resulting in a much smaller increase in gross profit (3.4%).

- This could still be good business strategy, as it is the total profit that counts at the end of the day. However we need to consider if the increased activity level (higher sales) caused any other costs (e.g. overheads). If the extra sales caused no extra overheads, then we are INR 200 better off.

- The net margin analyses the net profit from operations only (excluding interest and tax). Here we see the net profit % has declined from 10.9% to 9%, and the actual expenses figure is up from INR 2,300 to INR 2,850. This suggests that the extra sales activity may have cost INR 550 in extra overheads. The INR 200 in extra gross profit does not compensate for this, therefore the strategy would appear to have failed. Note that we do not know what the operating costs would have been in 2014 had sales remained unchanged. We are assuming they would have been similar to 2016.

- However, we are informed that the expenses figure in 2017 was increased by a loss on disposal of INR 300. This distorts the comparison with 2016. Recalculating the net margin excluding the one-off loss gives a figure of 9.9%, and a PBIT of INR 3,450. This is still a dis improvement on 2016 but not as bad as superficial analysis suggests. Crucially, the operating expenses would have been INR 2,550 in 2017 had this loss not occurred. Hence the decision to cut prices and increased volume (if indeed this was the case) nearly broke even.

- ROCE declined marginally from 15.1% to 13.3%. If the one-off loss on disposal were excluded the ROCE in 2017 would have been 14.5% (3,450 / 23,750), a much lesser decline.
- ROCE should be adequate to reward the investor for investing their money in a risky business over playing it safer with bonds or deposits. On this basis, 14.5% is still a respectable pre-tax return on money invested. However this should be judged in the context of the riskiness of the business. There is little means of assessing this risk given in the question.
- ROE is an alternative, narrower, measure of return. It focuses on equity holders only, and gives an after-tax return on equity. The decline from 9.4% to 8.9% is within normal business fluctuations, and would not be considered alarming. However the longer term trend in both ratios should be observed and if the decline has persisted for a few years, remedial action should be considered.
- The exclusion of the one-off expense in 2017 would affect the ROE ratio, but it is difficult to quantify this. The reason for the difficulty is that the loss on disposal is likely to have had an effect on the tax charge. It is not possible to assess this from the information given. As ROE is an after-tax calculation, it is meaningless to adjust the expenses figure without also adjusting the tax figure. ROCE is based on profit before tax, therefore this issue does not arise.
- It is relevant to note that the cost of debt appears to be 8% (500/6,250). It is important that the ROCE exceeds the cost of debt. There is, after all, little sense in borrowing money at 8% if the return on capital is only 6%. In this case, the ROCE comfortably exceeds the cost of debt. Both are assessed on a pre-tax basis so are comparable.

[The above answer contains several points of analysis, explained beyond exam standard in many cases. It would not be possible to give them all in an examination setting, and it should not be assumed that all these would be required to gain full marks. However, they do give a flavour of the depth of analysis expected. It is important to demonstrate a thorough understanding of the information presented in the accounts, the information given by the ratios, and the limitations of this information. Note also the use of terms like “it appears” and “It is likely that” rather than statements of fact. The use of reasonable hypothesis and opinion is acceptable, but do not present a statement as fact unless it is fact. It is important to acknowledge that financial analysis is an imperfect science, and not to claim otherwise.]

Example 2:

Table 30: Summarized figures relate to ABC Ltd., a business operating in the retail sector.

	2017	2016
Revenue	45,000	32,000
Profit after tax	1,550	1,600
Current assets (total)	5,600	4,400
Current liabilities (total)	5,100	2,900
Inventories	5,100	2,750
Receivables	200	100
Cash	0	1,550
Payables	3,500	1,500
Tax due	1,100	1,400
Overdraft	500	0

Note: The Company opened a third store during 2017.

Required: Analyse the liquidity of the above business in as much detail as the information permits.

Commentary:

- Some key points worth noting at first glance:
- Revenue has increased substantially.
- Profit has declined.
- Cash position has deteriorated significantly.

Inventory shows an increase higher than would be justified by the increased revenue.

The ideal level for the current ratio is often said to be in the region of 2:1. A ratio between 1.5 and 2.5 would be considered normal. At this level current assets are around twice current liabilities. This gives good assurance that the cash will be there to meet current liabilities as they fall due. Any lower and we run the risk of not being able to pay our debts on time with the consequent loss of goodwill.

An excessive current ratio means that money is sitting in current assets (receivables, inventory or cash) earning very poor returns. This is an inefficient use of capital. It may be better invested in more productive assets, used to pay down debt, or returned to shareholders.

If the current ratio appears to be problematic we should analyse the situation further to ascertain the reason for the problem. Possible causes could be excessive inventory levels (poor policy, slow moving goods, obsolete stock etc.), poor trade receivable control (leading to increased bad debt risk), or excessive cash levels.

The acid test ratio (also called the quick ratio) is a stricter test of liquidity as in excludes the effect of inventory from current assets. This is because inventory is the least liquid of current assets. An ideal level for this ratio is 1:1 or thereabouts. This level means short term assets are sufficient to meet short term liabilities without needing to sell any more inventory. Inventory is the least liquid current asset as there are two steps required to turn it into cash: (1) sell it, and (2) get paid.

Adverse liquidity ratios may indicate **overtrading**. This is where a firm is carrying on a volume of business for which it doesn't have the capital. Requirement to purchase inventory is increasing faster than cash is coming in from sales. Trade payables and bank overdrafts are bridging the gap. This cannot continue, as lenders and suppliers will call a halt. At that stage the firm will not be able to meet its payments and so will collapse.

Suggested solution:

Ratio calculation	**2017**	**2016**
Current Ratio	5,600/5,100 1.1:1	4,400/2,900 1.52:1
Acid Test Ratio	(5,600 – 5,100)/ 5,100 0.098:1	(4,400-2,750)/2,900 0.57:1

Weak analysis might contain the following points:

- Current ratio has declined from 1.52:1 to 1.1:1 from 2016 to 2017. This figure should be 2:1.
- Therefore it is inadequate in both years.
- Acid test ratio has declined from 0.57:1 to 0.098:1. This is extremely poor as it should be 1:1.
- Overall the liquidity of this company is terrible.

Better analysis might consider the following:

- It is clear that both liquidity ratios have declined significantly year on year.
- As the company is in the retail trade, and trade receivables are insignificant, it would appear that most of its sales are for cash, with little sales on credit.
- This would normally mean liquidity ratios could be maintained more tightly than the normal 2:1 for the current ratio and 1:1 for the acid test.
- However the present levels of 1.1:1 and 0.098:1 respectively are at crisis levels and are indicative of a severe liquidity problem with this company.
- In addition to the ratios, the actual cash position has deteriorated from positive INR 1,550 to negative INR 500.
- The questions are: what is the cause and what needs to be done to rectify it.
- We are informed that the company opened a third retail outlet during the year 2017. This is likely to be the cause of the revenue increasing by 41% from INR 32,000 to INR 45,000.
- However profitability has actually declined by INR 50 after tax. This indicates that there are problems turning the extra revenues into profits. This may be due to one-off costs in opening the new store. Further investigation may reveal if this is the case.
- The most obvious symptom of the trouble is the increase in inventory levels from INR 2,750 to INR 5,100, an increase of 85%. Normally an increase in line with turnover would be reasonable or even 50% increase as the number of outlets increased by 50%. An 85% inventory increase on a revenue increase of 41% indicates a problem.
- The cause of this could be inventory obsolescence. In other words we may be experiencing difficulty selling the inventory we are carrying. If this is the case, a large write-down could be required in the future. This would cause a large loss, plus it would have a detrimental effect on the already poor current ratio (it would of course have no effect on the acid test ratio).
- Alternatively the build-up could be caused by bulk buying at a discount. If this is the case, the excess inventory should unwind over time.
- Meanwhile, current liabilities need to be paid, and it seems unlikely that the inventory can be sold quickly enough to achieve this.
- It is possible that we may be able to negotiate longer credit terms with our suppliers. However there is usually a hidden cost to this in terms of higher purchase prices. In any case, tax creditors will not countenance extensions to payment dates without hefty interest charges.
- Hence, it would seem that the company needs to raise some longer term finance, either through bank loans or additional equity.

Chapter 4: Capital Budgeting

Topics Covered	Learning Objectives
Capital Budgeting • Meaning of capital budgeting • Needs and importance (Video: capital budgeting[11]) • Methods of evaluation of capital budgeting • Risk and uncertainly in capital budgeting (Video: sensitivity[12] and break-even analysis[13]) • Methods of evaluation of capital budgeting risk	• Learn about capital budgeting and the importance of careful capital budgeting • Different considerations that are needed to be taken for investment decision • Identifying the risk associated with capital budgeting and how to analyse the involved risk as a risk mitigation measure

4.1 Meaning of Capital Budgeting

When one plan in advance for the capital expenditures like purchase of machineries, land etc. it is called capital budgeting. In other words:

"Capital budgeting is a long-term planning for making and financing proposed capital out lays. It is concerned with the allocation of the firms' source financial resources among the available opportunities. The consideration of investment opportunities involves the comparison of the expected future streams of earnings from a project with the immediate and subsequent streams of earning from a project, with the immediate and subsequent streams of expenditure."

4.2 Needs and Importance

Since for capital expenditures firms' resources are being allocated which is scarce in nature so there is a need to understand the criticality that is being involved in capital budgeting.

1. **Huge investments:** Capital budgeting requires huge investments of funds, but the available funds are limited, therefore the firm before investing projects, plan are control its capital expenditure.
2. **Long-term:** Capital expenditure is long-term in nature or permanent in nature. Therefore financial risks involved in the investment decision are more. If higher risks are involved, it needs careful planning of capital budgeting.
3. **Irreversible:** The capital investment decisions are irreversible, are not changed back. Once the decision is taken for purchasing a permanent asset, it is very difficult to dispose off those assets without involving huge losses.

[11] Video Link: https://www.investopedia.com/video/play/capital-budgeting/
[12] Video Link: https://www.investopedia.com/terms/b/breakevenpoint.asp
[13] Video Link: https://www.investopedia.com/video/play/sensitivity-analysis/

4. **Long-term effect:** Capital budgeting not only reduces the cost but also increases the revenue in long-term and will bring significant changes in the profit of the company by avoiding over or more investment or under investment. Over investments leads to be unable to utilize assets or over utilization of fixed assets.

Following points must be concluded from the shown video:

- Before making the investment, it is required carefully planning and analysis of the project thoroughly.
- If an organization has more than one capital expenditure options then capital budgeting helps to evaluate the options and how to finance them.
- Cost and revenue associated with each option must be calculated for better return.

4.3 Methods of Evaluation of Capital Budgeting

There are two methods of evaluation of capital budgeting that are:

1. **Traditional methods: -** It is also called Non-Discounted method. It includes Pay-back period method, Post pay-back method and Accounts rate of return.
2. **Modern methods: -** It is also called Discounted methods. It includes Net present value method (NPV), Internal rate of return method (IRR) and Profitability index methods.

Since most commonly adopted methods under traditional and modern approach is Pay-back period method, Net present value (NPV) and Internal rate of return (IRR) respectively so trainer's further discussion will be focused on the below listed three evaluation methods only.

4.3.1 Payback Period Method

Pay-back period is the time required to recover the initial investment in a project. Merits and demerits of this method are:
Merits:

- It is easy to calculate and simple to understand.
- Pay-back method provides further improvement over the accounting rate return.
- Pay-back method reduces the possibility of loss on account of obsolescence

Demerits:

- It ignores the time value of money.
- It ignores all cash inflows after the pay-back period.
- It is one of the misleading evaluations of capital budgeting.

$$Payback\ period = \frac{Initial\ investment}{Annual\ cash\ inflows}$$

Problems:

1. Project cost is ₹. 30,000 and the cash inflows are ₹. 10,000, the life of the project is 5 years. Calculate the pay-back period.

Solution= $\frac{INR\ 30{,}000}{INR\ 10{,}000}$

= 3 Years

Note: The annual cash inflow is calculated by considering the amount of net income on the amount of depreciation project (Asset) before taxation but after taxation. The income precision earned is expressed as a percentage of initial investment, is called unadjusted rate of return.

The above problem will be calculated as below:

Unadjusted rate of return = $\frac{Annual\ Return}{Investment} * 100$

$= \frac{INR\ 10{,}000}{INR\ 30{,}000} * 100$

= 33.33%

2. Certain projects require an initial cash outflow of ₹. 25,000. The cash inflows for 6 years are ₹. 5,000, ₹. 8,000, ₹. 10,000, ₹. 12,000, ₹. 7,000 and ₹. 3,000.

Table 31: Payback Period Calculation

Years	Cash inflows (₹.)	Cumulative cash inflows (₹.)
1	5,000	5,000
2	8,000	13,000
3	10,000	23,000
4	12,000	35,000
5	7,000	42,000
6	3,000	45,000

The above calculation shows that in 3 years ₹. 23,000 has been recovered ₹. 2,000, is balance out of cash outflow. In the 4th year the cash inflow is ₹. 12,000. It means the pay-back period is three to four years, calculated as follows:

$$Pay - back\ period = 3\ years + \frac{2000}{12000} * 12\ months$$

= 3 years 2 months.

4.3.2 Net Present Value (NPV)

Net present value method is one of the modern methods for evaluating the project proposals. In this method cash inflows are considered with the time value of the money. Net present value describes as the summation of the present value of cash inflow and present value of cash outflow.

Merits:

- It recognizes the time value of money.
- It considers the total benefits arising out of the proposal.
- It is the best method for the selection of mutually exclusive projects.
- It helps to achieve the maximization of shareholders' wealth.

Demerits:

- It is difficult to understand and calculate.
- It needs the discount factors for calculation of present values.
- It is not suitable for the projects having different effective lives.

Problems:

1. From the following information, calculate the net present value of the two project and suggest which of the two projects should be accepted a discount rate of the two.

	Project X	Project Y
Initial investment	₹. 20,000	₹. 30,000
Estimated life	5 years	5 years
Scrap value	₹. 1,000	₹. 2,000

The profits before depreciation and after taxation (cash flows) are as follows:

	Year 1	Year 2	Year 3	Year 4	Year 5
Project X	5,000	10,000	10,000	3,000	2,000
Project Y	20,000	10,000	5,000	3,000	2,000

Note: The following are the present value factors @ 10% p.a.

Year	1	2	3	4	5	6
Factor	0.909	0.826	0.751	0.683	0.621	0.564

Table 32: Net present Value Calculation

Year	**Cash Inflows (₹.)**		**Present value of ₹. 1 @ 10%**	**Present Value of Net Cash Value of ₹. Inflow**	
	Project X	Project Y		Project X	Project Y
1	5,000	20,000	0.909	4,545	18,180
2	10,000	10,000	0.826	8,260	8,260
3	10,000	5,000	0.751	7,510	3,755
4	3,000	3,000	0.683	2,049	2,049
5	2,000	2,000	0.621	1,242	1,242
Scrap value	1,000	2,000	0.564	621	1,245
Total present value				24,227	34,728
Initial investment				20,000	30,000
Net present value				4,227	4,728

Project Y should be selected as net present value of project Y is higher.

4.3.3 Internal Rate of Return

Internal rate of return is time adjusted technique and covers the disadvantages of the traditional techniques. In other words it is a rate at which discount cash flows to zero.

Merits:

- It consider the time value of money.
- It takes into account the total cash inflow and outflow.
- It does not use the concept of the required rate of return.
- It gives the approximate/nearest rate of return.

Demerits:

- It involves complicated computational method.
- It produces multiple rates which may be confusing for taking decisions.
- It is assume that all intermediate cash flows are reinvested at the internal rate of return.

At IRR, NPV equals to zero. So,

$$PV\ of\ future\ cash\ flows - initial\ investment = 0\ or;$$

$$\left[\frac{CF1}{(1+r)^1} + \frac{CF2}{(1+r)^2} + \frac{CF3}{(1+r)^3} + \cdots\right] - initial\ investment = 0$$

r = IRR

CF1 = period one net cash inflow

CF2 = period two net cash inflow

Table 33: Internal Rate of Return Calculation

Years	Cash Flows
0	-100000
1	20000
2	30000
3	40000
4	50000
5	30000

Solution:

NPV at 18% discount rate = 1750

NPV at 19% discount rate = -780

Hence IRR =

$$18\% + \frac{1750}{2530} * 1\% = 18.69\%$$

4.4 Risk and Uncertainty in Capital Budgeting

Capital budgeting requires the projection of cash inflow and outflow of the future. The future is always uncertain, estimate of demand, production, selling price, cost etc., cannot be exact. For example: The product at any time it become obsolete therefore, the future in unexpected. So various evaluation methods are used for risk and uncertainty in capital budgeting. These are:

- Sensitivity Analysis
- Break-even analysis

4.4.1 Sensitivity Technique

Take away from the video played are:

- This technique help us to understand how change in one inputs (whether change in cost of raw material, change in finance cost etc.) can affect the overall revenue of the organization.
- It helps in making prediction a more appropriate.

When cash inflows are sensitive under different circumstances more than one forecast of the future cash inflows may be made. These inflows may be regarded on 'Optimistic', 'most likely' and 'pessimistic'. Further cash inflows may be discounted to find out the net present values under these three different situations. If the net present values under the three situations differ widely it implies that there is a great risk in the project and the investor's is decision to accept or reject a project will depend upon his risk bearing activities.

Problem:

Mr Selva is considering two mutually exclusive project 'X' and 'Y'. You are required to advise him about the acceptability of the projects from the following information.

	Project X (In ₹.)	Project Y (In ₹.)
Cost of the investment	1,0,0000	1,0,0000
Forecast cash inflows per annum for 5 years		
Optimistic	60,000	55,000
Expected	35,000	30,000
Pessimistic	20,000	20,000

(The cut-off rate may be assumed to be 15%).

Solution:

Calculation of net present value of cash inflows at a discount rate of 15%.

(Annuity of Re. 1 for 5 years).

Project X

Event	Annual cash inflows (₹.)	Discount factor @15%	Present Value ₹.	Net Present Value ₹.
Optimistic	60,000	3.3522	2,01,132	1,01,132
Most likely	35,000	3.3522	1,17,327	17,327
Pessimistic	20,000	3.3522	67,105	(32,895)

Project Y

Event	Annual cash inflows (₹.)	Discount factor @15%	Present Value ₹.	Net Present Value ₹.
Optimistic	55,000	3.3522	1,84,371	84,371
Most likely	30,000	3.3522	1,00,566	566
Pessimistic	20,000	3.3522	67,105	(32,895)

The net present values on calculated above indicate that project Y is more risky as compared to project X. But at the same time during favourable condition, it is more profitable also. The acceptability of the project will depend upon Mr Selva's attitude towards risk. If he could afford to take higher risk, project Y may be more profitable.

4.4.2 Break-even Analysis

Take away from the video titled as 'Sensitivity Analysis' are:

- The break-even analysis lets you determine what you need to sell, monthly or annually, to cover your costs of doing business—your break-even point.
- It is frequently mistaken for the payback period, the time it takes to recover an investment.

The basic idea behind break-even point is to calculate the point at which revenues begin to exceed costs. Break-even point does not allow for an income for the business, it does mean the company is able to pay all of the expenses without going in debt or having to close its doors.

$$Break-even\ point\ in\ units = \frac{Fixed\ cost}{Price\ of\ the\ product - variable\ cost\ per\ unit}$$

$$Break-even\ point\ in\ INR = Sales\ price\ per\ unit * Break-even\ unit$$

Problem:

1. Jane has just opened her own shop and is looking at her projected costs for the end of the first fiscal quarter, trying to determine what her break-even point is. Let's say her fixed costs for this first quarter, which include vats, delivery trucks, ingredients and the rent for the storefront, total out to 20,000, and her variable costs have been calculated to be 1.50 per unit. She plans on charging approximately 2.00 per unit. How many units will she have to sell to break even?

Solution:

$$Break-even\ point\ in\ unit = \frac{20{,}000}{(2.00 - 1.50)} = 40{,}000\ units$$

$$Break-even\ sales = 2 * 40{,}000 = INR\ 80{,}000$$

- Budgeting of the capital requirement is important because it is huge investment, irreversible and for a longer period of time.
- Since it is huge investment so some kind of risk must be associated with it which need to be analysed for mitigation of the risk.
- Payback period, Net present value and Internal rate of return (IRR) is the most commonly method that is being adopted for evaluation of capital budgeting.

- Sensitivity analysis usually shows how sensitive the cash flows are with respect change in different circumstance.
- Every firm must be operate at break-even point, if not then firm will be shut down within a short span of time.

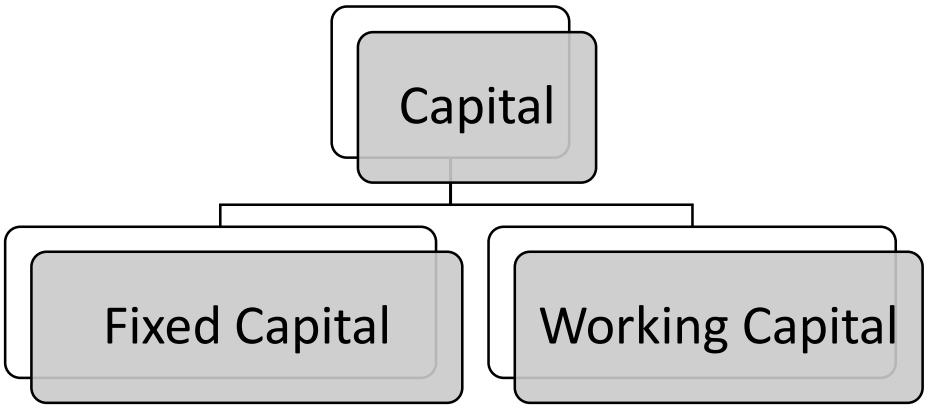
Chapter 5: Working Capital

Topics Covered	Learning Objectives
Working Capital • Concept and component of working capital • Need of working capital (Video: Working capital management[14]) • Effects of excessive and inadequate working capital • Factors determining working capital requirement • Estimation of working capital	• The meaning of working capital and why it is important to get the clear understanding of the working capital concept. • Different items that constitute working capital and their effects on working capital requirement. • How the requirement of the working capital is being estimated.

5.1 Concept and Component of Working Capital

Capital are of two types. They are:

Figure 8: Types of Capital



[14] Video Link: https://www.youtube.com/watch?v=bHK77lbdyWA

Fixed capital means that capital, which is used for long-term investment of the business concern. For example, purchase of permanent assets. Normally it consists of non-recurring in nature.

Working Capital is another part of the capital which is needed for meeting day to day requirement of the business concern. For example, payment to creditors, salary paid to workers, purchase of raw materials etc., normally it consists of recurring in nature. It can be easily converted into cash. Hence, it is also known as short-term capital.

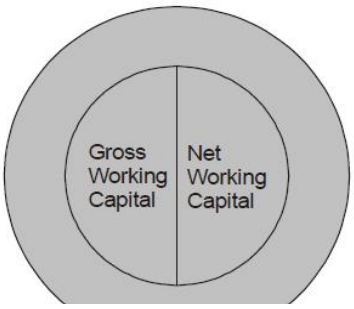


Figure 9: Concept of Working Capital

5.1.1 Concept of Working Capital

Take away from the video titled as, 'Working Capital Management' are:

- Efficient working capital management optimizes the liquidity of the organization
- Enhances the profitability
- It explains how businesses can successfully use it to leverage hidden liquidity reserves within the value chain.

Working capital can be classified or understood with the help of the following two important concepts.

Gross Working Capital: - Gross Working Capital is the general concept which determines the working capital concept. Thus, the gross working capital is the capital invested in total current assets of the business concern. Gross Working Capital is simply called as the total current assets of the concern.

$$GWC = CA$$

Net Working Capital: - Net Working Capital is the specific concept, which, considers both current assets and current liability of the concern.Net Working Capital is the excess of current assets over the current liability of the concern during a particular period. If the current assets exceed the current liabilities it is said to be positive working capital; it is reverse, it is said to be Negative working capital.

$$NWC = CA - CL$$

5.1.2 Components of Working Capital

Working capital constitutes various current assets and current liabilities. This can be illustrated by the following chart.

Figure 10: Components of Working Capital

Current Assets	Current Liabilities
• Cash in hand • Cash at bank • Bills receivable • Sundry debtors • Short term loan and advances • Inventories • Prepaid expenses • Accrued Income	• Bills Payable • Sundry creditors • O/s Expenses • Dividend • Short term loan and advances • Bank O/D • Provision for taxation

5.2 Needs of Working Capital

Working Capital is an essential part of the business concern. Every business concern must maintain certain amount of Working Capital for their day-to-day requirements and meet the short-term obligations.

Working Capital is needed for the following purposes.

a) Purchase of raw materials and spares: **-** The basic part of manufacturing process is, raw materials. It should purchase frequently according to the needs of the business concern. Hence, every business concern maintains certain amount as Working Capital to purchase raw materials, components, spares, etc.

b) Payment of wages and salary: - The next part of Working Capital is payment of wages and salaries to labour and employees. Periodical payment facilities make employees perfect in their work. So a business concern maintains adequate the amount of working capital to make the payment of wages and salaries.

c) Day-to-day expenses: A business concern has to meet various expenditures regarding the operations at daily basis like fuel, power, office expenses, etc.

d) Provide credit obligations: A business concern responsible to provide credit facilities to the customer and meet the short-term obligation. So the concern must provide adequate Working Capital.

5.3 Effects of Excessive and Inadequate Working Capital

A. Effects of excessive working capital.

i. Excessive Working Capital leads to unnecessary accumulation of raw materials, components and spares.
ii. Excessive Working Capital results in locking up of excess Working Capital.
iii. It creates bad debts, reduces collection periods, etc.
iv. It leads to reduce the profits.

B. Effects of inadequate working capital

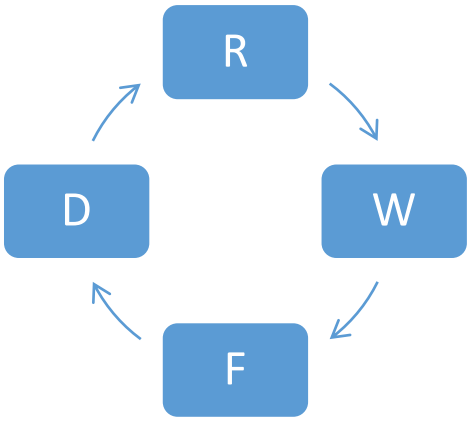
i. Inadequate working capital cannot buy its requirements in bulk order.
ii. It becomes difficult to implement operating plans and activate the firm's profit target.
iii. It becomes impossible to utilize efficiently the fixed assets.

iv. The rate of return on investments also falls with the shortage of Working Capital.
v. It reduces the overall operation of the business.

5.4 Factors Determining the Working Capital Requirement

Working Capital requirements depends upon various factors. There are no set of rules or formula to determine the Working Capital needs of the business concern. The following are the major factors which are determining the Working Capital requirements.

Figure 11: Operating Cycle



i. Nature of business: Working Capital of the business concerns largely depend upon the nature of the business. If the business concerns follow rigid credit policy and sell goods only for cash, they can maintain lesser amount of Working Capital. A transport company maintains lesser amount of Working Capital while Construction Company maintains larger amount of Working Capital.
ii. Production cycle: Amount of Working Capital depends upon the length of the production cycle. If the production cycle length is small, they need to maintain lesser amount of Working Capital. If it is not, they have to maintain large amount of Working Capital.
iii. Business cycle: Business fluctuations lead to cyclical and seasonal changes in the business condition and it will affect the requirements of the Working Capital.
In the booming conditions, the Working Capital requirement is larger and in the depression condition, requirement of Working Capital will reduce. Better business results lead to increase the Working Capital requirements.
iv. Production policy: It is also one of the factors which affects the Working Capital requirement of the business concern. If the company maintains the continue production policy, there is a need of regular Working Capital. If the production policy of the company depends upon the situation or conditions, Working Capital requirement will depend upon the conditions laid down by the company.
v. Credit policy: Credit policy of sales and purchase also affect the Working Capital requirements of the business concern. If the company maintains liberal credit policy to collect the payments from its customers, they have to maintain more Working Capital. If the company pays the dues on the last date it will create the cash maintenance in hand and bank.
vi. Growth and expansion: During the growth and expansion of the business concern, Working Capital requirements are higher, because it needs some additional Working Capital and incurs some extra expenses at the initial stages.
vii. Availability of raw materials: Major part of the Working Capital requirements are largely depend on the availability of raw materials. Raw materials are the basic components of the production process. If the raw material is not readily available, it leads to production stoppage. So, the concern must maintain adequate raw material; for that purpose, they have to spend some amount of Working Capital.
viii. Earning capacity: If the business concern consists of high level of earning capacity, they can generate more Working Capital, with the help of cash from operation. Earning capacity is also

one of the factors which determines the Working Capital requirements of the business concern.

5.5 Estimation of Working Capital Requirement

Working Capital requirement depends upon number of factors, which are already discussed in the previous parts. Now the discussion is on how to calculate the Working Capital needs of the business concern. It may also depend upon various factors but some of the common methods are used to estimate the Working Capital.

A. Estimation of components of working capital method

Working capital consists of various current assets and current liabilities. Hence, we have to estimate how much current assets as inventories required and how much cash required to meet the short term obligations. Finance Manager first estimates the assets and required Working Capital for particular period.

B. Percent of sales method

Based on the past experience between Sales and Working Capital requirements, a ratio can be determined for estimating the Working Capital requirement in future. It is the simple and tradition method to estimate the Working Capital requirements. Under this method, first we have to find out the sales to Working Capital ratio and based on that we have to estimate Working Capital requirements. This method also expresses the relationship between the Sales and Working Capital.

C. Operating cycle

Working Capital requirements depend upon the operating cycle of the business. The operating cycle begins with the acquisition of raw material and ends with the collection of receivables.

Operating cycle consists of the following important stages:

- Raw Material and Storage Stage, (R)
- Work in Process Stage, (W)
- Finished Goods Stage, (F)
- Debtors Collection Stage, (D)
- Creditors Payment Period Stage. (C)

$$Operating\ Cycle = R + W + F + D - C$$

Where,

$$R = \frac{Average\ stock\ of\ raw\ material}{Average\ raw\ material\ consumption\ per\ day}$$

$$W = \frac{Average\ work\ in\ progress\ inventories}{Average\ cost\ of\ production\ per\ day}$$

$$F = \frac{Average\ finished\ stock\ inventory}{Average\ cost\ of\ goods\ sold\ per\ day}$$

$$D = \frac{Average\ book\ debts}{Average\ credit\ sales\ per\ day}$$

$$C = \frac{Average\ trade\ creditors}{Average\ credit\ purchase\ per\ day}$$

Problem:

From the following information extracted from the books of a manufacturing company, compute the operating cycle in days and the amount of working capital required:

Table 34: Working Capital Calculation

Period covered	365 days
Average period of credit allowed by suppliers	16 days
Average Total of Debtors Outstanding	48,000
Raw Material Consumption	4,40,000
Total Production Cost	10,00,000
Total Cost of Sales	10,50,000
Sales for the year	16,00,000
Value of Average Stock maintained:	
Raw Material	32,000
Work-in-progress	35,000
Finished Goods	26,000

Solution:

Computation of operating cycle:

i. Raw material held in stock:

$$= \frac{32000}{440000/365}$$
$$= \frac{32 * 365}{440}$$
$$= 26.5 = 27\ days$$

ii. Work-in-progress:

$$= \frac{35000}{10,00000/365}$$
$$\frac{35 * 365}{1000}$$
$$= 13\ days$$

iii. Finished good held in stock:

$$= \frac{26000}{1050000/365}$$
$$= \frac{26 * 365}{1050}$$
$$= 9\ days$$

iv. Credit period allowed to debtors:

$$= \frac{48000}{1600000/365}$$
$$= \frac{48 * 365}{1600}$$
$$= 11\ days$$

Total operating cycle period: (i) + (ii) + (iii) + (iv) - 16 = 44 days

Number of Operating cycles in a year = $\frac{365}{44} = 8.30$

Amount of Working Capital required $= \frac{Total\ operating\ cost}{No.of\ operating\ cycles\ in\ a\ year}$

$$= \frac{10{,}500}{8.3}$$

$$= 1{,}265\ INR$$

- A well understanding about the working capital of the organization will reduce lead to efficient inventory management, receivables management and cash management.
- Knowledge about working capital cycle will help in further forecasting and projections.
- Finances of working capital can be done through long term sources (like share capital, debentures, bonds, retained earnings, venture capital) and short term sources (like transaction credit, advances from customers, overdrafts, commercial papers etc.)

Chapter 6: Financial Planning and Forecasting

Topics Covered	Learning Objectives
Financial Planning and Forecasting • What is financial planning and why there is a need for financial planning (video: 'what is financial planning? How can you start?'[15]) • Valuation of enterprise • Meaning of Forecasting • Methods of forecasting (video: forecasting[16]) - Financial modelling using spreadsheet Pro forma statement of P &L and balance sheet	• Describe certain common elements of financial plans • Calculate the amount of additional fund needed • Explain the meaning of sustainable growth rate

6.1 What is Financial Planning and Need of Financial Planning

A financial plan represents a blueprint of what a firm proposes to do in the future. Typically it covers a period of three to ten years – most commonly it spans a period of five years. Most financial plans have certain common elements. These are:

- Economic assumptions – the financial plan is based on certain assumptions about the economic environment like interest rate, tax rate, inflation, growth rate etc.
- Sales forecast – it is the starting point of financial forecasting exercise. Most financial variables are related to sales figures.
- Pro forma statements – the heart of a financial plan are the pro forma (forecast) statement of profit & Loss and balance sheet.
- Asset requirements – firms need to invest in plant & equipment and working capital. The financial plans spells out the projected capital investments and working capital requirements over time.
- Financial plans – suitable sources of financing have to be though for supporting investment. The financial plans delineates the proposed means of financing.

The benefits of financial planning are:

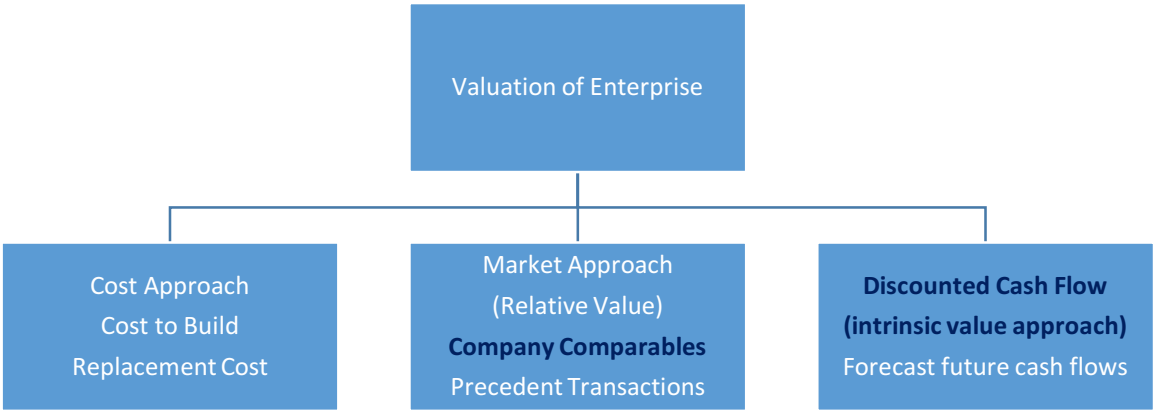
- Identifies advance actions to be taken in various areas
- Seeks to develop a number of options in various areas that can be exercised under different conditions
- Facilitates a systematic exploration of interaction between investment and financing decision.
- Clarifies the link between present and future decision.
- Forecasts what is likely to happen in future and hence helps in avoiding surprises.
- Ensure that the strategic plan of the firm is financially viable.

[15] Video Link: https://www.youtube.com/watch?v=HMmZEgVpAK0
[16] Video Link: https://www.youtube.com/watch?v=2OUtRu7jb6M

- Provides benchmark against which future performance may be measured.

6.2 Valuation of Enterprise

Figure 12: Valuation of Enterprise



6.2.1 Comparable Company Analysis

Comparable company analysis is a valuation methodology that looks at ratios of similar companies and uses them to derive the value of another business. Comparable company analysis is a relative form of valuation, unlike a discounted cash flow (DCF) analysis, which is an intrinsic form of valuation.

Steps in performing comparable company analysis

#1 Find the right comparable companies

This is the first and probably the hardest (or most subjective) step in performing ratio analysis of companies.

The next step is to search either of those databases for companies that operate in the same industry and that have similar characteristics.

The criteria would include the following:

1. Industry classification
2. Geography
3. Size (revenue, assets, employees)
4. Growth rate
5. Margins and profitability

#2 Gather financial information

The information will vary widely by industry and the company's stage in the business lifecycle. For mature businesses, you will look at metrics like EBITDA and EPS, but for earlier stage companies you may look at Gross Profit or Revenue.

The information can be gather through any paid portals or manually gather this information from annual and quarterly reports.

#3 Setup the comparable company analysis table

In Excel, you now need to create a table that lists all the relevant information about the companies to be analysed.
The main information in comparable company analysis includes:

- Company name
- Share price
- Market capitalization
- Net debt
- Enterprise value
- Revenue
- EBITDA
- EPS
- Analyst estimates

The above information can be organized as shown in our example comparable companies analysis shown below.

#4 Calculate the comparable ratios

With a combination of historical financials and analyst estimates populated in the comparable company analysis table, the various ratios needs to be calculated that will be used to value the company.
The main ratios included in a comparable company analysis are:

- EV/Revenue
- EV/Gross Profit
- EV/EBITDA
- P/E
- P/NAV
- P/B

6.2.2 DCF Model

A DCF model is a specific type of financial model is used to value a business. DCF stands for Discounted Cash Flow, so a DCF model is simply a forecast of a company's free cash flow discounted back to todays /current value, which is called the Net Present Value (NPV).

Even though the concept is simple, there is actually quite a bit of technical background required for each of the components described above. The basic building block of a DCF model is the 3 statement financial model, which links the financials together.

How to build a cash flow forecast in a DCF model

In simple terms, it is about making most informed prediction about how each of the drivers of a business will impact its results in the future.

Typically, a forecast for a DCF model will go out approximately 5 years, except for resource or long-life industries such as mining, oil and gas, and infrastructure where engineering reports will be used

to build a long-term "life of resource" forecast. For an example of this, please see our mining financial modelling course.

#1 Forecasting revenue

There are several ways to build a revenue forecast, but broadly speaking they fall into two main categories: growth based and driver based.

A growth-based forecast is simpler and makes sense for stable, and possibly mature business, where a basic year over year growth rate can be used. For many DCF models, this will be sufficient.

A driver-based forecast is more detailed and challenging to develop. It requires disaggregating revenue into its various drivers, such as price, volume, products, customers, market share, and external factors. Regression analysis is often used as part of a driver-based forecast to determine the relationship between underlying drivers, and top-line revenue growth.

#2 Forecasting expenses

Building an expense forecast can be a very detailed and granular process, or it can also be a simple year-over-year comparison.

The most detailed approach is called a Zero-Based Budget and requires building up the expenses from scratch, without giving any consideration to what was spent last year. Typically, each department in the company is asked to justify every expense they have, based on activity. This approach is often used in a cost-cutting environment, or when financial controls are being imposed.

Zero-based budgeting (ZBB) is a budgeting technique that allocates funding based on efficiency and necessity rather than on budget history. Management starts from scratch and develops a budget that only includes operations and expenses essential to running the business; there are no expenses that are automatically added to the budget.

#3 Forecasting capital assets

This typically include balance sheet items such as property plant and equipment (PP&E), technology, research and development (R&D) and working capital including accounts receivable and inventory.

PP&E is often the largest balance sheet item and capital expenditures (capex), as well as depreciation, need to be modelled in a separate schedule. The most detailed approach is to have a separate schedule in the DCF model for each of the major capital assets, and then consolidate them into a total schedule. Each capital asset schedule will have several lines: opening balance, capex, depreciation, dispositions, and closing balance.

#5 Terminal Value

The terminal value is a very important part of a DCF model. It often makes up more than 50% of the net present value of the business, especially if the forecast period is 5 years or less. There are two ways to calculate the terminal value: the perpetual growth rate approach and the exit multiple approaches.

The perpetual growth rate assumes that the cash flow generated at the end of the forecast period grows at a constant rate forever. So, for example, the cash flow of the business is ₹. 10 million and grows at 2% forever, with a cost of capital of 15%. The terminal value is ₹. 10 million / (15% – 2%) = ₹. 77 million.

With the exit multiple approach, the business is assumed to be sold for what a "reasonable buyer" would pay for it. This typically means an EV/EBITDA multiple at or near current trading values for comparable companies. As you can see in the example below, if the business has ₹. 6.3 million of EBITDA and similar companies are trading at 8x then the terminal value is ₹. 6.3 million x 8 = ₹. 50 million. That value is then discounted back to the present to get the NPV of the terminal value.

#6 Timing of cash flow

It's important to pay close attention to the timing of cash flow in a DCF model as not all the time periods are necessarily equal. There is often a "stub period" at the beginning of the model where only a portion of the year's cash flow is received by the investor. Additionally, the cash outflow (making the actual investment) is typically a spate time period before the stub is received.

NPV and IRR are easy ways to be very specific with the timing of cash flow when building a DCF model.

#7 DCF Enterprise value

When building a DCF model using unlevered free cash flow, the NPV that you arrive at is always the enterprise value (EV) of the business. This is what you need if you're looking to value the entire business or compare it with other companies without taking into account their capital structures (i.e. an apples-to-apples comparison). For most investment banking transactions, the focus will be on enterprise value.

#8 DCF Equity value

If you're looking for the equity value of the business, you take the net present value (NPV) of the unlevered free cash flow and adjust it for cash and equivalents, debt, and any minority interest. This will give you the equity value, which you can divide by the number of shares and arrive at the share price. This approach is more common for institutional investors or equity research analysts, both of whom are looking through the lens of buying or selling shares.

6.3 Meaning of Forecasting

A planning tool that helps management in its attempts to cope with the uncertainty of the future, relying mainly on data from the past and present and analysis of trends. Forecasting starts with certain assumptions based on the management's experience, knowledge, and judgment. These estimates are projected into the coming months or years.

Note: *Forecasting and Budgeting are not the same. A budget is an outline of where management wants to take the company. A financial forecast is a report showing whether the company is getting to its budget or not, and where the company is heading.*

Budgeting represents a company's financial position, cash flows and goals. It is re-evaluated periodically whereas forecasting estimates the company's future financial outcomes by examining historical data.

Forecasting and budgeting should work in tandem with each other.

6.4 Methods of Forecasting

There are commonly two methods that are used for forecasting. They are:

1. **Percentage sales methods –** The Percentage of Sales Method is a Financial Forecasting approach which is based on the premise that most Balance Sheet and Income Statement Accounts vary with sales. Therefore, the key driver of this method is the Sales Forecast and based upon this, Pro-Forma Financial Statements (*i.e.*, forecasted) can be constructed and the firms needs for external financing can be identified.

2. **Budgeted expense method –** It calls for estimating the value of each item on the basis of expected developments in the future period for which the pro forma profit & loss a/c is being prepared.

XYZ India Case Study:

XYZ India is a for profit organization which is involve in the distribution of solar house system in the two states namely Manipur and Assam. Now the organization is planning to expand its work area in the next year i.e. 2019. The strategic committee wanted to know what would be the effect of their this plan on the operating variable like amount of extra fund that will be required, how that fund will be raised, operative expenses effect and income etc. Since organization is not well equipped with the techniques that would help in financial forecast, hires you as a consultant of the organization for 2 months and have been asked to project the effects in the next strategic meeting. Now Being a Consultant prepare the Financial Projection of XYZ India on the basis of the last two years historical data of profit and loss a/c and balance sheet that you have retrieved from finance department.

XYZ India-Statement of Profit and Loss

Particulars	March 31, 2017	March 31, 2018
Revenue from operations (Net)	1,200.00	1,280.00
Other Income	8	10
Total Revenue	1,208.00	1,290.00
Expenses:		
Material expenses	547.00	590.00
Employee benefits expense	274	295
Finance costs	60	65
Depreciation and amortisation expense	75	80
Other expenses	98	103
Total expenses	1,054.00	1,133.00
Profit before exceptional items and other income	154.00	157.00
Exceptional items	30.00	32.00

profit before extraordinary items and tax	184.00	189.00
extraordinary items	0	0
profit before tax	184	189.00
tax expenses	82	90
profit (Loss) for the period	102.00	99.00
Particulars	**March 31, 2017**	**March 31, 2018**
Dividends	60.00	63.00
Retained earnings	42.00	36.00

XYZ India-Balance Sheet

Particulars	**March 31, 2017**	**March 31, 2018**
Revenue from operation	1200	1280
Equity and Liabilities		
Shareholders' funds		
Share Capital (per value INR 10)	300	300
Reserves and Surplus	250.00	286.00
	550.00	586.00
Non-current Liabilities		
Long term borrowing	500	505
Deferred tax liability (net)	45	50
Long-term Provisions	55	50
	600	605
Current Liabilities		
short term borrowings	200	200
Trade Payables	100.00	112.00
Other Current Liabilities	20	30
Short-term Provisions	30	17
	350.00	359.00
TOTAL	1,500.00	1,550.00
Assets		
Non-current Assets		
Fixed Assets		
Tangible Assets	750.00	775
Intangible Assets	0	0
Capital Work-in-progress	0	0
Deferred Tax Assets (Net)	0	0
Non-current investment	40	40
Long-term Loans and Advances	60.00	60.00
	850.00	875.00
Current Assets		
current investment	30	33
Inventories	375.00	380
Trade Receivables	200.00	212.00
Cash and Bank Balances	25.00	28.00
Short-term Loans and Advances	20	22

Other Current Assets	0	0
	650.00	675.00
TOTAL	1,500.00	1,550.00

Case Study Solution: E:\Work_office\CLEAN Project\Financial modelling using spreadsheet.xlsx

- For the accomplishment of future goals it is necessary to do the planning in advance especially the financial planning.
- Financial planning will help to know the pre-defined activities/ actions that must be taken in advance.
- Risks are uncertain but one can make an attempt to minimize the risk and forecasting is a tool which helps to foresee the financial effects and help to minimize the uncertainty of risks.

Chapter 7: Fundraising for a DRE Enterprise

Topics Covered	Learning Objectives
Fundraising for a DRE Enterprise • Sources of finance • Major Schemes for energy programmes • Factors to be consideration before borrowing • Application and Documents Required • Criteria considered for due-diligence	• Understanding the major sources of raising finance and major schemes the DRE Enterprise could explore • Essential factors that need to be considered before applying for loan, application process and documents to be submitted. • Preparing for the due-diligence process

7.1 Sources of finance[17]

Table 35: Sources of Finance

Type of finance	Key features	Challenges in accessing
Grants by bilateral/multilateral donor agencies, philanthropic organisations	- Signifies one of the most sought after source of financing for enterprises in this sector - Financed early-stage enterprises technology development and projects	- Interviews indicated that enterprises/grassroots organisations cited lack of grant proposal writing skills and networking opportunities as a hindrance to accessing grant funding
Grants channelled through competitions	- Enterprises have benefitted from competitions organised by state government or private entities	- Only a handful enterprises can access grants through such competitions - Often, small scale regional enterprises do not have the bandwidth to gain from such events
Debt finance through banks (public sector banks, regional rural banks, commercial banks)	- Debt financing echoed as the primary financing need across enterprises - Off-grid RE falls under RBI's priority sector lending norms - Banks charge 80%-100% collateral;	- Lack of sufficient collateral and 3 years of proven track record is a major challenge regardless of the technology and enterprise age. - Administrative delays in loan disbursal (enterprises have reported delays of up to 2 years and more) - Lending rates of 12.5% - 14% and above considered unaffordable by enterprises

[17] Source: Unlocking Access To Finance For Decentralised Energy Solutionsunlocking, Clean Energy Access Network, 2015)

		- Difficult for small scale enterprises to avail loans above ₹. 50 lakhs (insufficient collateral) - Prior connection with bank/branch manager holds the key which may not always be the case - Uncertain revenue inflow and reliance on subsidies (which again is a dicey proposition) deters banks' confidence - Branch manager is the final decision maker when it comes to giving loans
Venture debt	- Offers customised loans to small and medium scale businesses that lack access to sufficient debt finance for working capital needs - Interest rates at a premium to commercial bank rates - Lending ranges from 18%-20% - Can offer collateral-free loans; lending rates increase with risk.	- Few enterprises pointed out high cost of debt (high lending rates) of 18%-20% (+ risk of 5% or so) as the key problem
Debt finance under the CGTMSE scheme	- Not specific for off-grid RE enterprises, meant for MSMEs - Administered by SIDBI - Offers collateral free loans - Loans are availed through PSUs and the banks have to take a 25% risk and the government takes 75% risk - The upper limit of loan size is ₹. 2 crore	- Accessing loan under the scheme is a lengthy process with administrative hurdles
Equity finance/venture capital/social impact investment	- Various equity investors interested in this space primarily include social impact investors Accessing equity investment through social impact investors requires strong networks which several enterprises lack	- Equity investors have high return expectations.
Debt/equity raised through project call facilities organised by various investment enablers	- Annual project call facilities provide early stage support to shortlisted enterprises - Can also cover soft costs - The project call facilities may not focus solely on Indian enterprises or on off-grid RE technologies - The project call facilities are backed by financiers such as such as ADB, international governments, etc.	- As few of these investment-enabling organisations or events spend on advertising, enterprises/start-ups are often unaware of the existing opportunities that such initiatives have to offer.

Capital subsidies	- Provided under MNRE's JNNSM scheme for a gamut of decentralised RE solutions such as solar lighting (lanterns, SHLS) solutions, 14 micro/mini grids (solar, biomass and small wind), wind watermills, biogas installations (National Biogas and Manure Management Programme, NMBPP), solar water pumps, and improved biomass cook stoves (Unnat Chulha Abhiyan) have been instrumental in diffusion of these technologies.	- Untimely disbursal of subsidies has proved to be a huge setback for solar lighting enterprises.
Central subsidies	- Capital subsidy offered by MNRE on various technologies under different programmes.	- Uncertain disbursal of subsidies, huge backlog with MNRE - Subsidies stifle product innovation due to which costs don't come down
Project finance through grants (project aggregation model)	- Enterprises find it difficult to source finance for setting up capital intensive micro/mini grids - Most micro/mini grids use grants to cover capital costs - Aggregating projects can spread risk over multiple projects	
Crowd funding	- Crowd funding is yet to pick up in country's off-grid RE space - Online crowd funding platform/agencies help raise finance - Regular repayments (with interest) needs to be returned to the crowd funding agency	- Interviews pointed out that enterprises were unaware of crowd funds as a source of finance
CSR	- CSR funds used not just for the more established off-grid RE technologies but also nascent applications - CSR funds from corporates, PSUs, public sector banks have been mobilised thus far.	- Insufficient awareness amongst enterprises on how CSR funds can be used for energy access initiatives; lack of knowledge about technologies, their applications, sustainability and impact.
Carbon financing (CDM)	- Organisations received carbon price for per ton reduction in GHG emissions	- Marred by uncertainty around Kyoto Protocol and decline in carbon prices

Source: (Clean Energy Access Network, 2015)

End-user Finance Providers[18]

Table 36: End User Finance

End-user Finance Providers	Details
Microfinance Institutions	Financial players likely to have high levels of engagement in the short-term. These includes financial players who presently provide consumer financing for RE products and have the potential to increase their footprint in the sector in the short-term.
Regional Rural Banks	
NABARD loans	
CSR donations	
Philanthropic Foundations	
RE product Supplier	Financial players expected to have higher levels of engagement in the medium-long term. This category includes two actors who could be leveraged,
Mobile service Providers	
Public sector bank	
Private sector bank	Financial players expected to have little or no engagement even in the long term. This category includes players who do not have a footprint in the sector and are unlikely to engage even in the long term.
Foreign bank	

7.2 Major Schemes for energy programmes

Applicable limit & purpose for loans for RE under priority sector

- Bank loans up to a limit of ₹ 15 crore to borrowers for purposes like solar based power generators, biomass based power generators, wind mills, micro-hydel plants and for non-conventional energy based public utilities *viz*. street lighting systems, and remote village electrification.
- For individual households, the loan limit will be ₹ 10 lakh per borrower.
- Source: https://rbi.org.in/scripts/bs_viewmascirculardetails.aspx?id=9857#C7

Category	Manufacturing	Services
	Investment in P&M	Cost of Equipment
Micro	Up to INR 25 Lakhs	Up to INR 10 Lakhs
Small	> INR 25 Lakhs up to INR 5 Crores	> INR 10 Lakhs up to INR 2 Crores
Medium	> INR 5 Crores up to INR 10 Crores	> INR 2 Crores up to INR 5 Crores

Pradhan Mantri Mudra Yojana (PMMY), MUDRA

Within the framework and overall objective of development and growth of micro enterprises sector under Shishu, Kishor and Tarun, the products being offered by MUDRA are so designed, to meet requirements of different sectors / business activities as well as business / entrepreneur segments. This signify the stage of growth / development and funding needs of the beneficiary micro unit / entrepreneur and also provide a reference point for the next phase of graduation / growth to look forward to :

[18] Access to Finance for MSMEs in the Renewable Energy Sector in India, The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Under the aegis of has created products / schemes.

- Shishu : covering loans upto 50,000/-
- Kishor : covering loans above 50,000/- and upto 5 lakh
- Tarun : covering loans above 5 lakh and upto 10 lakh

The funding support from MUDRA are of four types:

- Refinance Scheme for Commercial Banks / Regional Rural Banks (RRBs) / Scheduled Co-operative Banks
- Women Enterprise programme
- Securitization of loan portfolio

Security

- Assets created out of the Bank's finance.
- No collateral security

Eligibility

- All "Non farm enterprises"
- under "Micro Enterprises" and "Small Enterprises" segment
- engaged in "income generating activities"
- engaged in "manufacturing, trading and services" and
- whose "credit needs are up to Rs.10.00 lacs"
- Now allied agriculture activities have also been included under PMMY scheme w.e.f. 01.04.2016.

Prime Minister Employment Generation Programme (PMEGP)

- At the National level, Implemented by Khadi and Village Industries Commission (KVIC), as the nodal agency.
- At the State level, the Scheme is implemented through State KVIC Directorates, State Khadi and Village Industries Boards (KVIBs) and District Industries Centres (DICs) and banks.
- The Government subsidy under the Scheme is routed by KVIC through the identified Banks for eventual distribution to the beneficiaries / entrepreneurs in their Bank accounts.
- Objective: To generate employment opportunities in rural as well as urban areas of the country through setting up of new self-employment ventures/projects/micro enterprises.
- Quantum of Margin Money Subsidy is given as follows:

The maximum cost of the project/unit admissible (https://my.msme.gov.in/MyMsme/Reg/COM_PMEGPForm.aspx)	
manufacturing sector	INR. 25 lakh
business/service sector	INR.10 lakh
Per capita investment should not exceed ₹ 1.00 lakh in plain areas and ₹ 1.50 lakhs in Hilly areas.	

Categories of beneficiaries under PMEGP	Beneficiary's own contribution (of project cost)	Rate of Subsidy	
Area (location of project /unit)		Urban	Rural
General Category	10%	15%	25%
Special (including SC/ ST/ OBC/ Minorities/ Women, Physically handicapped, Ex-Servicemen, NER, Hill and Border areas etc.	05%	25%	35%

Stand up India

Title of the Scheme - Stand-Up India Scheme for financing SC/ST and/or Women Entrepreneurs.

Objective

- Facilitate bank loans (term loans & working capital) between 10 lakh and 1 Crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up a greenfield enterprise.
- This enterprise may be in manufacturing, services or the trading sector.
- In case of non-individual enterprises at least 51% of the shareholding and controlling stake should be held by either an SC/ST or Woman entrepreneur.

Eligibility

- SC/ST and/or woman entrepreneurs, above 18 years of age.
- Loans under the scheme is available for only green field project. Green field signifies, in this context, the first time venture of the beneficiary in the manufacturing or services or trading sector.
- In case of non-individual enterprises, 51% of the shareholding and controlling stake should be held by either SC/ST and/or Women Entrepreneur.
- Borrower should not be in default to any bank/financial institution.

Security

Besides primary security, the loan may be secured by collateral security or guarantee of Credit Guarantee Fund Scheme for Stand-Up India Loans (CGFSIL) as decided by the banks.

Repayment - The loan is repayable in 7 years with a maximum moratorium period of 18 months.

Operated by all the branches of scheduled commercial banks in India

Source: https://www.standupmitra.in/Home/SUISchemes

Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)

- It is administered by SIDBI and offers collateral free loans
- ME & SE are eligible
- Credit guarantee cover up to INR 2 Crores for MSE loans without collateral security and third party guarantee
- Both manufacturing and service sector are eligible

Category	Maximum extent of Guarantee where credit facility is		
	Upto 5 lakh	Above 5 lakh upto 50 lakh	Above 50 lakh upto 200 lakh
Micro Enterprises	85% of the amount in default subject to a maximum	75% of the amount in default subject to a maximum of 37.50 lakh	75% of the amount in default subject to a maximum of 150 lakh

	of 4.25 lakh	
Women entrepreneurs/ Units located in North East Region (incl. Sikkim) (other than credit facility upto 5 lakh to micro enterprises)	80% of the amount in default subject to a maximum of 40 lakh	
All other category of borrowers	75% of the amount in default subject to a maximum of 37.50 lakh	

PUBLIC SECTOR BANKS (21 nos.)	PRIVATE SECTOR BANKS (20 nos.)	FOREIGN BANK (5 nos.)	FINANCIAL INSTITUTIONS (9 nos.)	REGIONAL RURAL BANKS * (51 nos.)
Allahabad Bank	Catholic Syrian Bank	Bank of Bahrain and Kuwait	Andhra Pradesh State Financial Corporation	Allahabad UP Gramin Bank
Andhra Bank	City Union Bank.	Barclays Bank PLC	Delhi Financial Corporation	Andhra Pradesh Grameena Vikas Bank
Bank of Baroda	Development Credit Bank Ltd.	DBS Bank	Export Import Bank of India	Andhra Pragathi Grameena Bank
Bank of India	HDFC Bank Ltd.	Deutsche Bank	Jammu & Kashmir Development Finance Corporation Ltd	Assam Gramin Vikash Bank
Bank of Maharashtra	ICICI Bank Ltd.*	Standard Chartered Bank	Kerala Financial Corporation	Bangiya Gramin Vikash Bank
Canara Bank	IDFC Bank Ltd.		National Small Industries Corporation Ltd.	Baroda Gujarat Gramin Bank
Central Bank of India	IndusInd Bank Ltd.		North Eastern Development Finance Corporation Ltd.	Baroda Rajasthan Kshetriya Gramin Bank
Corporation Bank	Karnataka Bank Ltd.		Small Industries Development Bank of India	Baroda Uttar Pradesh Gramin Bank
Dena Bank	Kotak Mahindra Bank Ltd.*		The Tamil Nadu Industrial Investment Corporation Ltd.	Bihar Gramin Bank
IDBI Bank Limited	Lakshmi Vilas Bank			Central Madhya Pradesh Gramin Bank
Indian Bank	Tamilnad Mercantile Bank Ltd.			Chaitanya Godavari Grameena Bank
Indian Overseas Bank	The Dhanalakshmi			Chhattisgarh Rajya Gramin Bank

PUBLIC SECTOR BANKS (21 nos.)	PRIVATE SECTOR BANKS (20 nos.)	FOREIGN BANK (5 nos.)	FINANCIAL INSTITUTIONS (9 nos.)	REGIONAL RURAL BANKS * (51 nos.)
	Bank Ltd.			
Oriental Bank of Commerce	The Federal Bank Ltd.			Dena Gujarat Gramin Bank
Punjab & Sind Bank	The Jammu & Kashmir Bank Ltd.			Gramin Bank Of Aryavart
Punjab National Bank	The Karur Vysya Bank Ltd			Himachal Pradesh Gramin Bank
State Bank of India*	The Nainital Bank Ltd.			J & K Grameen Bank
Syndicate Bank	The Ratnakar Bank Ltd.			Jharkhand Gramin Bank
UCO Bank	The South Indian Bank Ltd.			Karnataka Vikas Grameena Bank
Union Bank of India	YES Bank Limited			Kashi Gomti Samyut Gramin Bank
United Bank of India				Kaveri Grameena Bank
Vijaya Bank				Kerala Gramin Bank
				Langpi Dehangi Rural Bank
				Madhya Bihar Gramin Bank
				Madhyanchal Gramin Bank
				Maharashtra Gramin Bank
				Malwa Gramin Bank
				Meghalaya Rural Bank
				Mizoram Rural Bank
				Narmada Jhabua Gramin Bank
				Odisha Gramya Bank
				Pallavan Grama Bank
				Pandyan Grama Bank

PUBLIC SECTOR BANKS (21 nos.)	PRIVATE SECTOR BANKS (20 nos.)	FOREIGN BANK (5 nos.)	FINANCIAL INSTITUTIONS (9 nos.)	REGIONAL RURAL BANKS * (51 nos.)
				Pragathi Krishna Gramin Bank
				Prathama Bank
				Puduvai Bharathiyar Grama Bank
				Punjab Gramin Bank
				Purvanchal Bank
				Rajasthan Marudhara Gramin Bank
				Saptagiri Grameena Bank
				Sarva Haryana Gramin Bank
				Sarva U.P. Gramin Bank
				Saurashtra Gramin Bank
				Sutlej Gramin Bank
				Telangana Grameena Bank
				Tripura Gramin Bank
				Utkal Grameen Bank
				Uttar Banga Kshetriya Gramin Bank
				Uttar Bihar Gramin Bank
				Uttarakhand Gramin Bank
				Vananchal Gramin Bank
				Vidharbha Konkan Gramin Bank

*Note: 1. Consequent upon amalgamation of number of Regional Rural banks (RRBs) beginning FY 2012-13 at the instance of Ministry of Finance, Govt. of India, the total number of RRBs reduced from 66 to 56 by the end of current FY

2. All six Associate banks of State bank of India have merged with it.(Bharatiya Mahila Bank Ltd.,

PUBLIC SECTOR BANKS (21 nos.)	PRIVATE SECTOR BANKS (20 nos.)	FOREIGN BANK (5 nos.)	FINANCIAL INSTITUTIONS (9 nos.)	REGIONAL RURAL BANKS * (51 nos.)
SBBJ,SBP,SBM,SBH,SBT)				
3. ING Vysya Bank Ltd. merged with Kotak Mahindra Bank Ltd.				
4. The Bank of Rajasthan Ltd. merged with ICICI Bank Ltd				

Differential Rate of Interest (DRI) Scheme Bank Loan

Provides bank loan at a concessional rate of interest of 4% per annum for productive / self employment ventures. SC/ST, minorities and physically handicapped persons are targeted under this scheme to boost financial inclusion.

Categories of persons eligible:

- Scheduled Cases/Scheduled Tribes and others engaged on a very modest scale in Agriculture and / or allied agricultural activities.
- People who themselves collect or do elementary processing of forest products and people who themselves collect fodder in difficult areas and sell them to farmers and traders.
- People physically engaged on a modest scale in the fields of cottage and rural industries
- Physically handicapped persons pursuing gainful occupation.

In addition to the above, the applicant must meet the following eligibility criteria:

- Family income not exceeding Rs.18, 000/- p.a. in rural areas and Rs.24, 000/- p.a. urban / semi urban areas.
- Land holding does not exceed 1 acre irrigated or 2.5 acres in case of un-irrigated land.
- SCs/STs are eligible for loan irrespective of their land holding, provided they satisfy other eligibility criteria.
- The beneficiary largely works on his own and with such help as other members of his family.
- The beneficiary should not have another source of finance while DRI loan exists.

7.3 Factors to be consideration before borrowing

Bank's Lending Criteria

Banks and other lenders tend to set their own internal rules. Nevertheless, all financial institutions are bound by general regulations and guidelines established by their national financial authorities (for instance, the central bank).

- **Good Cash Flow :** As a borrower, you must show that your performance is positive and that operation are not only profitable but also generate sufficient cash to cover all commitments.
- **Adequate Shareholders' Funds:** In other words, you must not be already over-committed to other lenders, but have a reasonable proportion of your own capital in the business.
- **Adequate Security:** You will not obtain credit from a bank if all your assets are already pledged to other lenders.
- **Experience in Trading:** Most institution likes to know that you have a good record of successful trading. It is difficult to convince a banker to lend you money if you are complete beginner, or if

you are starting a completely new trading activity with untried products and unknown customers or suppliers in countries you have never dealt with before.

- **Good Reputation:** Your references and credentials must be acceptable to lenders. They would no doubt find it difficult to convince their loans committee or board to approve an advance to a bankrupt company or a known crook! But, even assuming that your past is without blemish, it is helpful to have the backing of a reputable sponsor. This could be a well-known person in business, your trade association or even your customer or supplier.
- **Specific Purpose:** Although some lenders grant overdraft facilities on the basis of the security you offer, most institutions prefer to link their loans to specific transactions. Transactions must be explained in full detail and shown to be profitable and self-liquidating (money borrowed will be repaid from proceed of transactions to be financed).

Rating Parameters

The lenders (Banks/ Venture Capitalists, etc.) carefully assess your credit worthiness and assign ratings by analysing your business information with respect to various parameters. The main parameters that are generally used to rate business entities are provided below

Management	Financial	Operational	Industry	Past Loan Performance
Background	Current ratio	Proximity to branch	Nature of industry – cyclical/ seasonal	Prepayments
Industry experience and knowledge	Debt equity ratio	Location of unit	Eligibility under assistance scheme, if any	Re-payment history
Past conduct of borrower with banks	Average turnover	Borrowers proximity to market	Competitive advantage	Missed installments
Qualifications	Net profits	Type of technology	Branding of product	Revision in interest rates/ period
Background and Capability of the Promoters	Income growth	Equipment supplier	Number of applications of product/ machinery	Defaults Month of default Amount of default Reason of default, if provided Security re-sale value Capital loss to bank
Organisation's Preparedness for meeting Challenges	Net cash accruals	Quality certifications		
Combined net worth of promoters	Financial Projects and Debt Servicing Capabilities			
Associate concerns	Provision of security for proposed assistance/ Quality of collateral security			

1. Liquidity

The term 'liquidity' implies the ability to produce cash on demand. A bank mainly utilizes ' its deposits for the purpose of granting advances.

These deposits are repayable on demand or on the expiry of a specified period. To meet the demand of the depositors in time, banks should keep their funds in the liquid state.

Money locked up in long-term loans cannot be received back in time and so are less liquid.

2. Profitability

Like all other commercial institutions, banks are run for profit. Even government-owned 'banks are no exception to this.

Banks earn profit to pay interest to depositors, declare a dividend to shareholders, meet establishment charges and other expenses, provide for reserve and for bad and doubtful debts, depreciation, maintenance and improvements of property owned by the bank and sufficient resources to meet contingent loss.

So profit is an essential consideration. A banker employs his/her funds in such a way that they will bring him/her adequate return.

3. Safety and Security

The banker would ensure that the borrower has the ability and the willingness to repay the advances as par agreement.

Closely allied to this point is that before granting a secured advance, he should carefully consider the margin of safety offered by the security and possibilities of fluctuations in value.

If it is an unsecured advance, its repayment depends on the creditworthiness of the borrower, and that of the guarantor.

As such, the cardinal principles which the banker should consider in case of unsecured advances are a character, capacity, and capital (popularly known as the 3 C's) or reliability, responsibility, and resources (popularly known as the 3 R's) of the borrower and the guarantor.

4. Purpose

The banker carefully examines the purpose for which the advance has been applied for.

In case the advance is intended for productive purposes, it could be reasonably anticipated that cash flows arising for productive activities will result in prompt repayment. The banker is careful to monitor the exact purpose for which the advance is actually utilized.

5. Sources of Repayment

Before giving financial accommodation, a banker considers the source from which repayment is promised. In some instances, debentures which are to be redeemed in few months' time or a life insurance policy which is to mature in near future may be offered as security.

Advances against such security give no trouble.

Sometimes customers may apply for loans for additional working capital for their business and undertake to repay out of the profits over a period.

In such cases, the rate at which the customer can reasonably hope to repay should be ascertained.

A lender will look at whether the business is making any money or whether you have other means to pay the bank back. If this is a new business, then you will need to provide information to the bank on whether collateral, or some other means, will be used the repay the loan.

6. Diversification of Risk

The security consciousness of a banker and the integrity of the borrower are 'not adequate factors to keep the banker on the safe side. What is also important is the diversification of risk.

This means the banker should not lend a major portion of his/her loan-able fund to any single borrower or to an industry or to one particular region. Otherwise, an adverse change in the economy may affect the entire business.

In such a case repayment will be highly difficult and the survival of the bank becomes questionable. Therefore a bank should follow the wise policy of "do not put all the eggs in a single basket."

The bank must advance moderate sums to a large number of customers spread over a wide area and belonging to different industries.

7. Social Responsibility

While admitting that banks are essentially commercial ventures, a bank should not forget the fact that it is not enough that only people of means are given bank finance.

Through productive effort, bank finance should make people creditworthy, and turn them into people of means.

Technical competence of the borrower, operational flexibility, and economic viability of the project, rather than the security which the borrower can offer, should be considered in evaluating a loan proposal.

The identification of priority sectors for the purpose of extending bank credit should be considered as a positive development in the banking system, aimed at effectively discharging its responsibility towards society.

7.4 Loan Application and Documents Required

A good business plan (annexure I) is built on solid information *(a specimen of loan application is showed in annexure II)*. That information can be organized in many different ways but the essential ingredients remain the same:

- Location and Technology
- Agreements
- Sponsors and Advisors
- Market
- Implementation
- Finance
- Impacts
- Risks

- **Location and technology**

In this section of a business plan the project is introduced by its location and the proposed technology to be employed. This description includes the inputs (fuels, labour, etc.), the process (equipment configuration) and the outputs (steam, electricity, etc.) of the project.

- **Agreements**

This section of the business plan describes all of the legal agreements, including permits, required to construct and operate the proposed project.

- **Sponsors and advisors**

This section describes the project's sponsors, their commitment to the project, the form of the proposed Project Company and the advisors assisting in the project's planning and implementation.

- **Market**

This section describes the country, its legal and regulatory structure and the customers to whom the output of the project will be sold, including their capacity and willingness to pay.

- **Implementation**

This section describes the specific steps and schedule to progress the project from its present status to completion and operation.

- **Finance**

In this section all of the financial features of the project are presented. The most important financial assumptions of the project are shown, the proposed financial plan is described and an analysis is made of the impact of various changes to the basic financial assumptions.

- **Impacts**

Social and environmental benefits, and any other special features regarding the project are presented here.

- **Risks**

This section describes the risks that the project faces and how the project plans to deal with these risks.

- In addition to these elements, a business plan contains:
    - CLOSING, which describes the project's proposed capitalization plan and what is being requested from lenders and investors;
    - COVER, which provides simple but crucial information to help readers understand the document and locate the entrepreneur;
    - An executive SUMMARY, which tries to tell the project's " story" in one or two pages;
    - A set of ATTACHMENTS, which provide details concerning some of the points made in the business plan.

Kindly refer to the **Annexure - I**, wherein have shared the specimen of **loan application form** and CMA sheet of IDBI Bank which is more relevant for SMEs.

Documents Required - CHECK LIST of Documents required along with the proposal

1. Proof of Identity: Voter's ID Card / Passport / Driving License / PAN Card / Signature identification from present bankers of proprietor, partner of director (if a company)
2. Proof of residence: Recent telephone bills, electricity bill, property tax receipt /Passport / voter's ID Card of Proprietor, partner of Director (if a company)
3. Proof of business Address
4. Applicant should not be defaulter in any Bank/F.I.
5. Last three years balance sheets of the units along with income tax / sales tax returns etc. (Applicable for all cases from ₹. 2 lakh and above) However, for cases below fund based

limits of ₹. 25 lakh if audited balance sheets are not available, then un audited balance sheets are also acceptable as per extant instructions of the bank.

6. Memorandum and articles of association of the Company / Partnership Deed of partners etc.
7. Assets and liabilities statement of promoters and guarantors along with latest income tax returns.
8. Rent Agreement (if business premises on rent) and clearance from pollution control board if applicable.
9. SSI / MSME registration if applicable.
10. Projected balance sheets for the next two years in case of working capital limits and for the period of the loan in case of term loan (For all cases of ₹. 2 lakh and above).
11. In case of takeover of advances, sanction letters of facilities being availed from existing bankers/ Financial Institutions along with detailed terms and conditions.
12. Photocopies of lease deeds/ title deeds of all the properties being offered as primary and collateral securities.
13. Position of accounts from the existing bankers and confirmation about the asset being standard with them. (in case of takeover).

For Cases With Exposure above ₹ . 25 Lakh (Additional documents)

14. The audited balance sheets are necessary.
15. Profile of the unit (includes names of promoters, other directors in the company, the activity being undertaken addresses of all offices and plants, shareholding pattern etc.
16. Last three years balance sheets of the Associate / Group Companies (if any).
17. Project report (for the proposed project if term funding is required) containing details of the machinery to be acquired, from whom to be acquired, price, names of suppliers, financial details like capacity of machines, capacity of utilization assumed, production, sales, projected profit and loss and balance sheets for the next 7 to 8 years till the proposed loan is to be paid, the details of labour, staff to be hired, basis of assumption of such financial details etc.
18. Review of account containing month wise sales (quantity and value both), production (quantity and value), imported raw material (quantity and value), indigenous raw material (quantity and value), value of stocks in process, finished good (quantity and value), debtors, creditors, bank's outstanding for working capital limits, term loan limits, bills discounted.
19. Manufacturing process if applicable, major profile of executives in the company, any tie-ups, details about raw material used and their suppliers, details about the buyers, details about major-competitors and the company's strength and weaknesses as compared to their competitors etc.

(The check list is only indicative and not exhaustive and depending upon the local requirements at different places addition could be made as per (necessity).

7.5 Criteria considered for due-diligence

Lenders look at the following five areas in determining whether or not a loan applicant qualifies for a loan:

1. Can you repay the loan?
2. What does the credit history look like?
3. Do you have any equity in the business?

4. What is securing the loan?
5. How much experience do you have in running this business?

1. Can you repay the loan?

Yes, banks do want to know that they aren't just giving money away. So what can you do to demonstrate that you pay them back? A lender will look at whether the business is making any money or whether you have other means to pay the bank back. If it is a new business, then you will need to provide information to the bank on whether collateral, or some other means, will be used the repay the loan.

2. What does the credit history look like?

It is important to know what the credit score is. Request a copy of the credit report well in advance of submitting the loan application, so that it can be reviewed and any errors may be corrected. If the business has also established credit, both the personal and business credit score.

3. Do you have any equity in the business?

The amount of equity will be reflected in the company's balance sheet, and is usually due to either an investment of funds or through earnings that have not been re-invested. The lenders generally prefer that a business debt not exceed four times the amount of equity. Should the balance sheet not reflect this standard, it may be necessary to seek out additional sources of funding.

4. What is securing the loan?

Collateral are assets that can be sold to pay back the loan, and can be pledged by the borrower or a co-signor to the loan. The value of the collateral is generally discounted.

5. How much experience do you have in running this business?

It will be difficult to obtain a loan without any experience in the line of business for which the loan applicant is seeking a loan. The loan applicant should be able to demonstrate that she or he has experience, or that they are hiring or partnering with people that have experience.

It is essential that the organisation has adequately prepared a business plan, as well as the loan application. Also the weaknesses should be identified and addressed.

Chapter 8: Introduction to Business and Financial Risk

Topics	Learning Objectives
Introduction to Business and Financial Risk • Risk and its different types • Risk Management • Risk Measurement and monitoring tool • Risk Mitigation strategies	• Participants will understand about the meaning of risk and its different types. • They will learn the importance of management of risk in the sector and different ways to mitigate and monitor risk.

8.1 Risk and its different types

Meaning of Risk: Risk implies future uncertainty, a probability of threat or loss that is caused by external or internal vulnerabilities and that may be avoided through pre-emptive action.
Different types of Risk prevailing in the sector

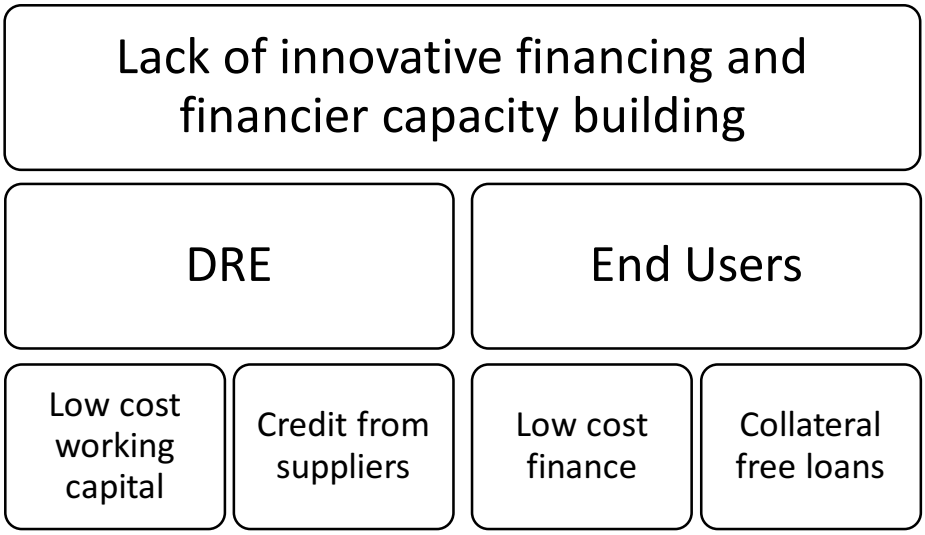
1. Product/ Technology Risk
2. Management/Governance Risk
3. Operational Risk
4. Client Related Risk
5. Financial Risk
6. Policy and Regulatory environment Risk
7. Human Resource

These risk are further divided into two categories i.e. external and internal risk. Some risks may be unpredictable and linked to large-scale structural causes beyond a specific activity (for instance, financial risks). Others may have existed for a long time or may be foreseen to occur in the future. Thus, to achieve a structured and manageable overview of all risks facing an organization, it helps to classify them in categories. The following is one possible categorization system

- **Risks linked to the internal environment**, e.g. operational risks. These risks will largely be within the sphere of influence of the organization, and need to be proactively managed
- **Risks linked to the external environment**, e.g. political risks associated with Member States' home agendas. These risks will largely be outside the sphere of influence of the organization, and may require robust contingency planning
- **Risks linked to the interface between one or more organizations** (internal and external risks), e.g. Relationships and partnership. Managing these risks require close cooperation with partner organizations.

Figure 13: Types of Risk

1. Product and Technology Risk:
    a. Products are not of good quality and there are complains of break down and requirement of aftersales service
    b. New technologies are developed and clients feel dissatisfied with energy product provided to them
    c. Aftersales support and services not adequate
    d. Reliability of design, installation and maintenance of energy products may be problem areas for DRE enterprises and the customers
2. Management & Governance Risk
    a. Board/investors/lenders/senior management is not fully committed or not have consensus on road map of energy lending program.
    b. Energy lead leaves
3. Operational Risk
    a. Inventory management
    b. Client declining the order at the time of delivery of the products
    c. Information flow, reporting template, structure and process are not designed carefully and therefore difficult to track status of the program.
4. Client Related Risk
    a. Clients are not using products properly or not using products at all
    b. Clients have misplaced expectations about product performance and aftersales support
    c. Clients do not know how to register for and use after sales services
    d. Clients unwilling to invest in technical products that require a high initial investment such as solar
5. Financial Risk



a. Cash flow management between streams of cash inflows (advance payment from clients, loan repayment, processing fees, cash sales proceed) and cash outflow
b. Financial institutions other than bank have higher rate of interest.

6. Policy & Regulatory Environment Risk
   a. Sudden change in the central government policies
   b. Lack of clarity on the subsidy application and approval process
7. Human Resource
   a. Staff inability to market energy products
   b. Lack of internal organizational capacity and incentives to market RE products and recommend appropriate product to clients.

8.2 Risk Management

Definition: Risk management is a systematic approach to managing risks throughout the whole organization by identifying, assessing, understanding, acting on and communicating risk issues.

Systematic management of risk at all levels of the Organization and at each stage of programming will improve planning efficiency and service delivery, and will allow better and more reliable decision-making.

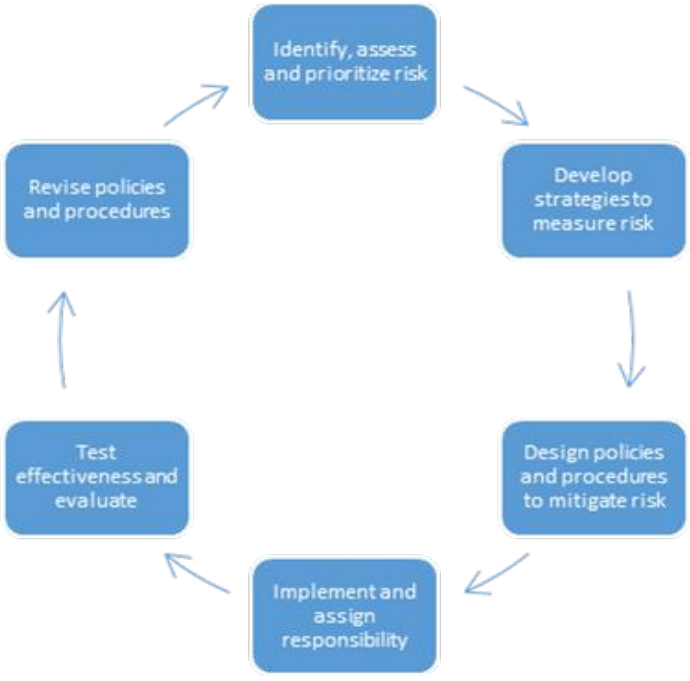


Figure 14: Risk Management process

Importance of Risk management: In the process it is an integral part of strategic planning and results-based management.

I. **It helps the management**: Risk management will help senior management to plan strategically, allocate resources more wisely, and reform. It enables more responsible decision-making and helps to constrain threats to the organization. Monitoring the results of risk management will become a part of performance auditing ensuring a closer link between expected outcomes, results and evaluation. Existing management and reporting mechanisms will be used in order not to increase staff workload.

II. **It increases efficiency**: To maximize its impact, an organization has to take risks. Managing risk enables organization to take the lead in its fields of competence and achieve better results especially working in adverse or unreliable environments. Risk management facilitates decision making and priority-setting and thus contributes to achieving the organization's goals more efficiently.

III. **It facilitates innovation**: To be innovative implies taking risks. Risk management encourages staff to take risks wisely, which means it supports innovation while insuring prudent decision making and maintaining stakeholder trust.

IV. **It fosters a supportive work environment for self-reliance**: Risk management serves as a tool for analysing causes and consequences of difficult situations rationally and systematically. This enables staff to account for risk management decisions by explaining reasons and evidence on which they are based and thus increases confidence and self-reliance. It is a tool for proactive thinking, learning from experience and for improving teamwork. It leads to improved stewardship and accountability.

V. **It increases the credibility of the organization:** Risk management improves results and gives assurance to member states and other stakeholders that goals will be met and thus improves the organization's credibility and reputation. Effective risk management enables us to avoid costly surprises both in terms of spending and credibility or reputation. (GIZ, 2016)

8.3 Risk Measurement and Monitoring tool

Need of Measuring Risk

- It is not possible to know the gravity of risks unless we measure and quantify them.
- The criticality of a risk is the factor that obliges resource units and forces costs to be spent on it.
- A tool is created based on the potential and features of a risk in an organization. It helps in reviewing success, failure or developments, and analyse the efficiency of risk control measures.
- Measuring risks provides clarity on the choice of actions and decisions that should enforce balance in the risk-reward trade-off (wherein the degree of risk, high or low, is directly proportional to the return).

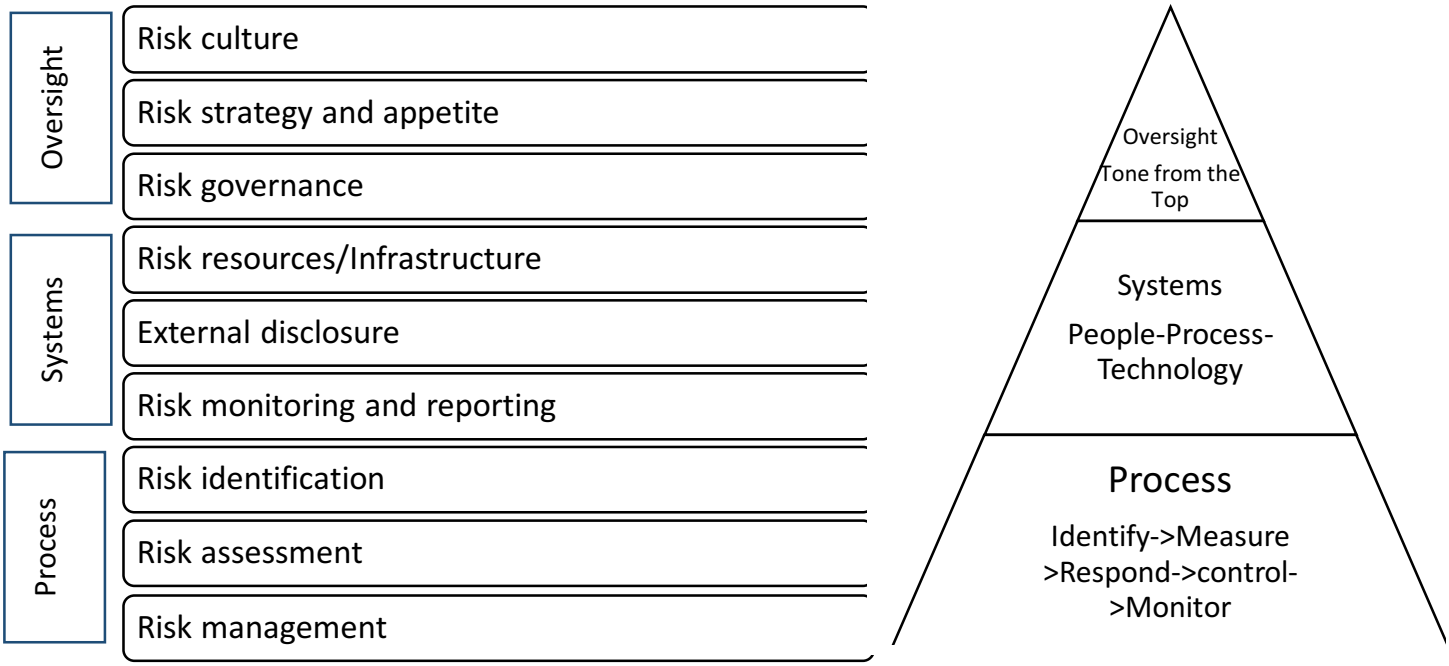
Ways to measure risk

There are two ways to measure risk

1. Qualitative risk assessment through SWOT analysis, Historical data analysis
2. Quantitative risk assessment: It is a detailed amount/number based analysis on the top risks found during the Qualitative assessment. The top risks from the Qualitative assessments are picked and then the assessment is done on them in terms of Cost,

Schedule based hits etc. Once the assessment is completed, the risks are then registered in the system and then monitored throughout the project span. If they occur in real time, corrective/necessary actions have to be taken.

Figure 15: System to measure risk in the organisation



i. At the apex lies the responsibilities for risk governance, including strategic guidance and risk oversight, which rests with the board of directors.
ii. In the middle lies the responsibility for risk infrastructure and management including designing, implementing and maintaining an effective risk programme, led by executive management.
iii. At the base lies the responsibility for risk ownership, including identifying, measuring, monitoring and reporting on specific risks led by the business units and functions.

Table 37: Measuring of Risk

Sr. No	Types of Risk	Information required to measure risk	Measures of risk
1	Institutional & Governance Risk – Mission Drift	Who are you reaching? - how many clients - profile of existing clients	Number of clients served target, actual profile of clients v/s target profile of clients
2	Operational Risk – Credit Risk	Outstanding principal of all loans with an overdue and total outstanding portfolio of the organisation	PAR Repayment rate DSCR
3	Financial Management-liquidity risk	Value of current assets and current liabilities, cash and bank balances	Current Ratio, Cash flow statements
4	External Risk – foreign exchange risk	Currency Rates, trends in currency rates	Exchange gain and losses

8.4 Risk Mitigation Strategies

Below mention table contain different mitigation strategies to cover different types of the risks prevailing in the sector. (Sonntag-O'Brian & Usher, 2004)

Table 38: Risk Mitigation Strategies

Type of Risk	Mitigation strategies
Product and Technology	• Revisit existing partnership arrangements immediately following the pilot to focus closely on after sales service provisions. • Agreement to include buffer stock arrangement for servicing replacement guarantee • If necessary build linkages with other energy companies that offer stronger maintenance and after sales services • In some situations collaborating with an insurance company to cover the technical risk provides the best coverage. • Research and development
Management & Governance Risks	• Awareness, education, exposure trips, client visits, visioning sessions with all relevant stakeholders to develop agreed upon plan of action and business plan. • Timely reporting and feedback sessions to develop confidence among all stakeholders.
Operational Risks	• Detailed energy program manual with carefully documented processes, structure, roles and responsibilities, approval mechanism, training and audit functions and information flow. • Monitoring, audit and feedback loops are in place.
Human Resources	• Staff training on sales, marketing and product features. Follow up with refresher training. • Sales process audit • Designing incentives in consultation with staff early iterations in order to settle on appropriate incentive structure • Develop talent pool for turn over related issues
Client Related Risks	• Emphasis on right set of sales strategies • Adequate and effective communication material on product features, after sales support and ensuring that client acknowledge these before purchase • Audit of sales processes and satisfaction surveys • High quality client assessment, solid loan tracking and monitoring systems and strong and sound credit management policies.
Financial Risk	• Design and maintain a cash flow management system • Working capital financing in place • Currency hedging • Proper review and adherence with policy and regulations
Policy & Regulatory Environmental Risks	• Understand regulatory landscape and design innovating models, if possible, for energy lending programs example energy subsidiary company model, product company invoicing client directly • Advances should be taken from clients

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National Institute for Micro, S. and M. E. (2015). MSME Schemes, 1–240. Retrieved from http://msme.gov.in/WriteReadData/eBook/MSMESchemesNew.pdf

Sonntag-O'Brian, V., & Usher, E. (2004). Mobilising Finance for Renewable Energies. Thematic Background Paper, (January).

Yadav, R. J. (2015). Issues in SME Financing, 1–62.

Videos Link:

1. Introduction to Income Statements: https://www.investopedia.com/terms/f/financial-statements.asp
2. Balance Sheet Introduction: https://www.investopedia.com/terms/b/balancesheet.asp
3. Cash Flow: https://www.investopedia.com/video/play/what-is-cash-flow/
4. Introduction to Free Cash Flow: https://www.investopedia.com/terms/f/freecashflow.asp
5. Introduction to Unlevered Cash Flow: https://www.investopedia.com/terms/u/unlevered-free-cash-flow-ufcf.asp
6. Capital Budgeting: https://www.investopedia.com/video/play/capital-budgeting/
7. Sensitivity Technique: https://www.investopedia.com/video/play/sensitivity-analysis/
8. Break even analysis: https://www.investopedia.com/terms/b/breakevenpoint.asp
9. What is financial planning? How can you start?: https://www.youtube.com/watch?v=HMmZEgVpAK0
10. Forecasting : https://www.youtube.com/watch?v=2OUtRu7jb6M
11. Working Capital Management: https://www.youtube.com/watch?v=bHK77IbdyWA

Annexure – I

Template for ADB-UNESCO-IHE project proposals

RETA 6498: Knowledge and Innovation Support for ADB's Water Financing Program

KNOWLEDGE PARTNERSHIP BETWEEN ADB AND UNESCO-IHE

Date: _____

ADB		**UNESCO-IHE**	
To:	Director, RSID	**To:**	Director, RSID, ADB
Through:	Director	**Through:**	UIHE Rectorate
From:	Project/Activity Officer		UIHE Partnership Manager
		From:	Project Leader

PROJECT TITTLE: . . . . . (Max 50 characters)

PROJECT PROPOSAL

What is being requested	*Please check one or more* o Experts for project preparation and implementation o Operational research and joint studies, by making use of

	M.Sc and PhD research students o Peer review of complex projects o Promoting networking among clients and K-hubs o Contribution to ADB related sessions in workshops, seminars and forums o Education and capacity building activities (i.e. support to capacity development of key sector organizations/agencies in DMC; support to refresh the knowledge of staff from DMC country offices and knowledge sharing activities with ADB staff) o Support country Water Assessments, Future of Water in Asia study, Asian Water Info System, etc.
Country	
Project timing and duration	
Project Size	- For Expert input*: express in person-days/months* - For all other activities: *provide an indication of the number of missions, if applicable*
Nature of Activity	*Please check one or more* o Linked to on-going or planned TA o Linked to an on-going loan o Linked to a planned investment project o Linked to (sub) regional cooperation
Within which priority theme(s) does your proposal fit?	*Please check one or more* o Government-corporate-society partnerships, o Corporatization of public utilities o Partnerships with knowledge institutes o Water and climate change o Water and food security o Water, environment and ecosystems o Sanitation and wastewater management o Water governance
Is climate change being addressed by the project?	*If yes, please provide brief explanation how*

BRIEF DESCRIPTION OF THE ACTIVITY (no more than 2 - 3 pages)

- Describe the activity in terms of its objectives and the issues or problems it seeks to address

- If the activity is linked or supporting a specific loan or TA, describe briefly what added value does this activity provide to the loan or TA.

- If it is a stand-alone activity (not linked to specific loan or TA), describe what added value does this activity provide to ADB's overall water sector operations in that country.

ATTACHMENTS

- Terms of Reference if the proposal is for requesting expert/s

- Copy of TA or Project documents if activity is linked to a TA or loan

- Other relevant documents

Annexure - II

Specimen - Application for MSME Loan

Branch- CG Road, Ahmedabad

Sol Id _____

APPLICATION FORM FOR MICRO, SMALL & MEDIUM ENTERPRISES (MSMEs)

To be submitted along with documents as per the checklist

Application for MSME Loan

Photograph to be pasted at the time of signing of the application in the designated branch.

Date:

1. Name of the Enterprise*

2. Regd. Office Address*

3. Address of Factory/Shop*

4. Whether Belongs to SC/ST/OBC/Minority Community: Not Applicable

If Yes, then Please Select: SC/ ST/ OBC/ Minority Community

5. Telephone No.*

6. E mail Address*

7. Mobile No.*

8. PAN Card No.

9. Constitution (Please Select)* Individual/ Joint/ Prop. Concern/Partnership/ Pvt. Ltd. Co/ Limited Co/ Trust/ others - Trust

10. Date of Establishment*

11. State *

12. City where loan is required*

13. Branch where loan is required. (If any)

14. Name of Board of Trustees and their Addresses: *Enclosure 1

SN	Name	Date of Birth	Father/ Spouse	Academic Qualification	Mobile No
1.					
2.					

3.					

SN	PAN No.	Residential Address	Telephone No. (Residence)	Experience in the line of activity (Years)
1.				
2.				
3.				

15. 1) Activity*

Proposed# _____

#if a different activity other than existing activity is proposed.

16. Names of Associate Concerns and Nature of Association:

Name of Associate Concerns	Address of Associate Concerns	Presently Banking With	Nature of Association	Extent of Interest as a Prop./ Partner/ Director or Just Investor in Associate Concern

Relationship of Proprietors/ Partners/ Directors with the officials of the Bank/ Director of the Bank: Please select (Yes/ No) _____

17. Banking/Credit Facilities (Existing) (Rs. in lakh)

Type of Facilities	Limit (in lakh)	Outstanding as on 31st Dec,2017	Presently Banking With	Securities	Rate of Interest	Repayment Terms
Current Account						
Cash Credit						
Term Loan						
LC/BG						
Others						
Total						

If banking with our Bank, customer ID be given here: _____

18. Credit Facilities (Proposed)*

Type of Facilities	Amount (in lakh)	Purpose for which Required	Security Offered	
			Primary Security(Details with approx. value to be mentioned)	Whether Collateral Security Offered (If , yes, then provide details on column 20) (Yes/ No)
Cash Credit**				
Term Loan				
LC/BG				
Others				
Total				

*Mandatory Fields

**Basis of Cash Credit Limit applied

Cash Credit	**Projected**						
	Sales	**Working Cycle in months**	**Inventory**	**Debtors**	**Creditors**	**Other current assets**	**Promoters Contribution**
Not Applicable							

19. In case of term loan requirements, the details of machinery may be given as under:

Type of Machine/ Equipment	Purpose for which Required	Whether Imported or Indigenous	Name of Supplier	Total Cost of Machine (in case of imported machine, the breakup of basic costs, freight, insurance and customs duty may be given)	Contribution being made by the promoters	Loan Required (Rs.)

20. Details of Collateral Securities Offered, if any, including third party guarantee

(As per RBI guidelines banks are not to take collateral security for loans upto Rs.10 Lakhs to MSME Units)

a) Third Party Guarantee:

S.No	Name of Guarantor	Residential Address	Telephone No. (Residence)	Mobile No	Net worth (Rs. in lakh)	PAN No
1.						
2.						
3.						

b) Other Collateral Security:

SN	Name of owner of Collateral	Collateral Security		
		Nature	Details	Value (Rs. in lakh
1.				
2.				
3.				

21. Past Performance / Future Estimates-

Past Performance / Future Estimates (Actual performance for two previous years, estimates for current year and projections for next year to be provided for working capital facilities. However for term loan facilities projections to be provided till the proposed year of repayment of loan)				
Rs. in lakh	Past Year 1 (Actual)	Past Year 2 (Actual)	Present Year (Estimate)	Next Year (Projection)
Net Sales				
Net Profit				
Capital (Net Worth in case of Companies)				

22. Status Regarding Statutory Obligations:

Statutory Obligation: Remarks (Any details in Connection with the relevant obligation to be given)

Whether Complied with (select Yes /No). If not applicable then select N. A.		
1. Registration under Shops and Establishment ACT	Yes/ No/ NA	
2. Registration under MSME (Provisional /Final)	Yes/ No/ NA	
3. Drug License	Yes/ No/ NA	
4. Latest Sales Tax Return Filed	Yes/ No/ NA	
5.Latest Income Tax Returns Filed	Yes/ No/ NA	
6.Any other Statutory dues remaining outstanding	Yes/ No/ NA	

22. a.) ID Proof (Any of following):

Passport/ Voter Identity Card/ PAN Card/ Driving Licence/ Job Card/ Aadhaar Card/ Identity Card (subject to the satisfaction of bank)

ID Proof No. PAN Card-

b.) Address Proof (Any of following:

Electricity Bill/ Telephone Bill/ Bank Account Statement of any other bank/ Letter from reputed employer/ Letter from recognized public authority verifying the address of the customer to the satisfaction of the bank/ Ration Card

Address Proof No:_____

Declaration:

I/We hereby certify that all information furnished by me/us is true; that I/We have no borrowing arrangements for the unit except is in the application; that there is no over dues/ statutory dues against me/us/promoters except as indicated in the application; that I/We shall furnish all other information that may be required connection with my/our application that this may also be exchanged by you with an agency you may deem fit and you, your representatives or Reserve Bank of India or any other agency as authorised by you, may at any time, inspect/ verify my/our assessment of account etc. in our factory/business premises as given above.

Signature:

(To be signed at the designated branch only)

CHECK LIST

1. Proof of Identity: Voter's ID Card / Passport / Driving License / PAN Card / Signature identification from present bankers of proprietor, partner of director (if a company)
2. Proof of residence: Recent telephone bills, electricity bill, property tax receipt /Passport / voter's ID Card of Proprietor, partner of Director (if a company)
3. Proof of business Address
4. Applicant should not be defaulter in any Bank/F.I.
5. Last three years balance sheets of the units along with income tax / sales tax returns etc. (Applicable for all cases from ₹. 2 lakh and above) However, for cases below fund based limits of ₹. 25 lakh if audited balance sheets are not available, then un audited balance sheets are also acceptable as per extant instructions of the bank.
6. Memorandum and articles of association of the Company / Partnership Deed of partners etc.
7. Assets and liabilities statement of promoters and guarantors along with latest income tax returns.
8. Rent Agreement (if business premises on rent) and clearance from pollution control board if applicable.
9. SSI / MSME registration if applicable.
10. Projected balance sheets for the next two years in case of working capital limits and for the period of the loan in case of term loan (For all cases of ₹. 2 lakh and above).
11. In case of takeover of advances, sanction letters of facilities being availed from existing bankers/ Financial Institutions along with detailed terms and conditions.
12. Photocopies of lease deeds/ title deeds of all the properties being offered as primary and collateral securities.
13. Position of accounts from the existing bankers and confirmation about the asset being standard with them. (In case of takeover).

For Cases With Exposure above Rs. 25 Lakh (Additional documents)

14. The audited balance sheets are necessary.
15. Profile of the unit (includes names of promoters, other directors in the company, the activity being undertaken addresses of all offices and plants, shareholding pattern etc.
16. Last three years balance sheets of the Associate / Group Companies (if any).
17. Project report (for the proposed project if term funding is required) containing details of the machinery to be acquired, from whom to be acquired, price, names of suppliers, financial details like capacity of machines, capacity of utilization assumed, production, sales, projected profit and loss and balance sheets for the next 7 to 8 years till the proposed loan is to be paid, the details of labour, staff to be hired, basis of assumption of such financial details etc.
18. Review of account containing month wise sales (quantity and value both), production (quantity and value), imported raw material (quantity and value), indigenous raw material (quantity and value), value of stocks in process, finished good (quantity and value), debtors, creditors, bank's outstanding for working capital limits, term loan limits, bills discounted.
19. Manufacturing process if applicable, major profile of executives in the company, any tie-ups, details about raw material used and their suppliers, details about the buyers, details about major-competitors and the company's strength and weaknesses as compared to their competitors etc.

(The check list is only indicative and not exhaustive and depending upon the local requirements at different places addition could be made as per (necessity).

Application No: _____
Application Receipt date: _____

IDBI Bank Ltd
Branch……..

ACKNOWLEDGEMENT OF LOAN APPLICATION

To
_____
_____
_____

Your Loan Application dated: - _____

Dear Sir,

We acknowledge receipt of your application for Loan of Rs._____ on_____. The application is being taken up for processing. We shall get in touch with you shortly for any further information if required in this regard and shall communicate disposal of the application in due course.

Yours Faithfully

Branch Manager

NOTE:-

1. Processing of application is subject to submission of all necessary information/documents required for processing the application.
2. Sanction of loan is subject to conformity with Bank's policy and procedures and is an entirely at Bank's discretion.
3. You may please contact the branch manager giving the above application no. and date of receipt for any further information/clarifications.

……Please tear off from here ……

IDBI Bank Ltd
Branch……..

COUNTERFOIL FOR ACKNOWLEDGEMENT ISSUED

Acknowledgement issued to ……. for his/her/their loan application dated…… with application No. _____ dated_____.

Signature of the Applicant **Branch Manager**

Friends of Women's World Banking, India
101, Sakar- I Building, Opp. Gandhigram Station,
Ashram Road, Ahmedabad -380009

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