CA INTER

FINANCIAL MANAGEMENT

CONCEPT DECODER

ONE BOOK. EVERY CONCEPT. EXAM READY!

Crafted with Creativity, Designed for Success!

Covers 100% ICAI Concepts
(With innovative Doubt Busters)

CA GANESH BHARADWAJ

Concept Decoder

Welcome to this **'One of a Kind'** Concept Book on Financial Management.

This book is your single source of FM preparation as it is meticulously compiled to include all concepts, formulas & core theory areas distinctly — to ensure you have everything you need in one place. This will help you navigate through the subject with ease and help you decode all the concepts quickly. Hence the name 'Concept Decoder'

For the first time ever, I have incorporated a 'Doubt Busters" section where common doubts under respective concepts have been identified along with the possible solution to address it with a distinct colour background to boost your score. The best part is that I have personally improvised the presentation & structuring of the entire subject to enhance your learning experience, making it easy for you to crack your exams. This innovative approach will help you collate concepts faster and practice efficiently.

Study smarter, stay ahead, and ace your exams with confidence.
Remember, a perfect 50/50 in FM is soon a reality for you.

With Best Wishes,
CA Ganesh Bharadwaj

Dear Students,

We've worked really hard to make this book as accurate and error-free as possible. We even went through multiple rounds of proofreading to ensure everything is clear and correct. But, being human, there's always a chance that some small errors might have slipped through.

If you do come across any, let us know and help us improve future editions of the book!

Thank you for your trust and support and wishing you all clarity, confidence and success

Warm regards,

FOREWORD

In 1999-2000 my son and his group of ten friends who were pursuing the Chartered Accountancy course wanted me to coach them in Cost Accounting and Financial Management to which I agreed.

When they passed the Intermediate level of the course, they wanted me to teach Advanced Management Accounting and Strategic Financial Management for the Final level of the course. That was when my journey in coaching CA Intermediate and Final started.

Since then, I took more than 30 batches for Intermediate and Final students in small groups. To my satisfaction, I have a success rate of more than 90%.

I am satisfied that my students have been well placed in the industry. But to my surprise, I found that none of my students were interested in teaching. With this background, I got a call from Ganesh for an appointment. Ganesh was my student in CA Intermediate and Final level for the subjects Costing and Financial Management. He told me his desire to enter the teaching profession and wanted my views. Immediately I gave him the consent and gave some tips from my experience to start coaching students.

In Ganesh, I found an enterprising character and an urge to excel in whatever he does. As a student, he learned some finer points and asked pertinent questions. To his advantage, he has a command over technology and is tech-savvy. He keeps himself abreast of the latest technology and uses tech to his advantage.

Ganesh prepared this study material and wanted my views. A casual glance of this study material suggested the hard work and intelligence put in by him in preparing the study material. He has taken micro care in ensuring that this study material covers all the syllabus of the CA curriculum. The chapters are arranged in logical order and the concepts are arranged well from basic fundamental level to high professional level. Also, he has grouped all the similar segments together which will help students to revise similar concepts in a short time span. This idea is definitely one of a kind!

With the well-prepared study material and well-motivated Ganesh, I am absolutely certain that the students will benefit from his coaching sessions. If followed sincerely there is no doubt that students can face the CA exams with courage and determination.

I pray to my Guru to shower his blessings to Ganesh and reward him and his students for the hard work.

Love you all.
V N Prabakar CA, CMA, CS

PREFACE

It gives me immense pleasure to present this Solved Question Bank on Financial Management designed specifically for students pursuing the **Intermediate level** of **Chartered Accountancy (CA)** course as per the New Syllabus.

As per the learning objectives prescribed on the subject by The Institute of Chartered Accountants of India, a student at the Intermediate level is expected to develop an in-depth understanding of various aspects of Financial Management and acquire the ability to apply such knowledge in decision making, understand various finance functions like **Financing Decision, Investment Decision, Dividend Decision** and to develop an understanding of **Working Capital Management** and its components.

This book is a classroom supplement and contains a **rich collection** of **concepts, formulas & core theory** areas ranging from Easy to Difficult, that covers **100%** of the syllabus prescribed in **ICAI Study Material.** An extensive and in-depth discussion on the concepts along with the background logics will be covered during the lectures thereby making sure that you need not mug up even a single formula!

I am forever grateful to my parents **(Shri Seetharaman & Smt Usha Seetharaman)** and my brother **Hari,** for their constant motivation and support in all walks of my life. Many thanks to my friends **Mohit** and **Srinivas** who have stood by me through thick and thin in various phases of my life no matter what. I sincerely thank & appreciate the efforts of my **student Bharathi**, who helped me in editing the contents of this book. Special thanks to **Habib and team** for their complete DTP support.

I dedicate this book to my Costing & FM guru **Shri CA V.N. Prabakar Sir** who not only inculcated me with interest in the subject but was also kind enough to write a foreword to this book.

Finally, none of this would have been a reality without the blessings of **Shri Kanchi Maha Periyava** and I bow down to the great lineage of gurus originating from **Shri Adi Shankaracharya.**

I wish the students the very best in all their future endeavors. As the famous verse from the Bhagavad Gita goes - **"Your right is for action alone, never for the results. Do not become the agent of the results of action. May you not have any inclination for inaction."**

So, give your best and leave the rest. Success will automatically follow.

With Best Wishes,
CA Ganesh Bharadwaj

"Work Hard in Silence. Let your success make all the noise."

INDEX

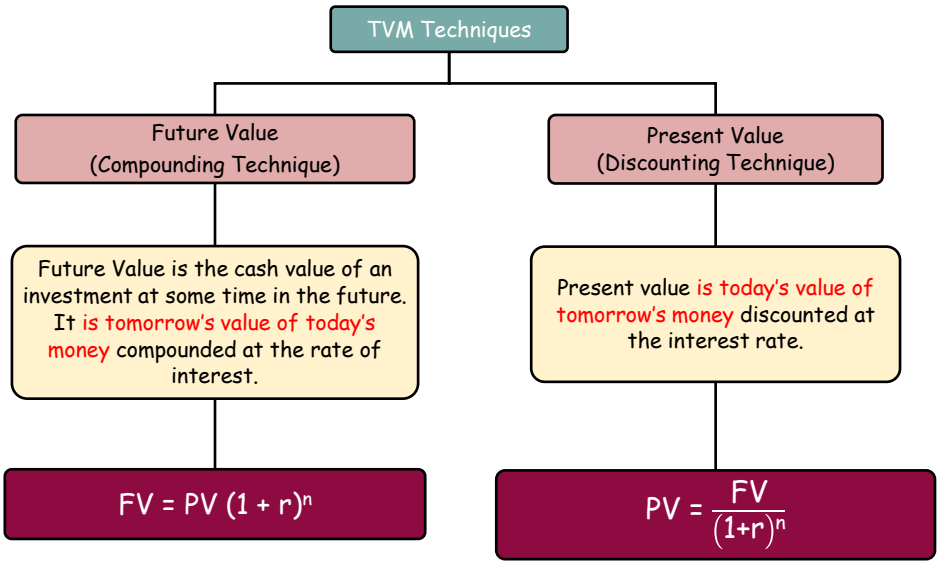
CHAPTER 1: TIME VALUE OF MONEY

1. Introduction

- ✓ The Time Value of Money (TVM) is a fundamental financial concept stating that money available at the present time is worth more than and the same amount in the future.
- ✓ Understanding TVM is essential for making informed financial decisions related to investments, loans, and any situation where money is received or paid over a period of time.
- ✓ It allows us to compare cash flows occurring at different points in time and make informed choices about where to put our money.
- ✓ Understanding TVM is crucial for sound financial decision-making and hence it is a core principle in finance.

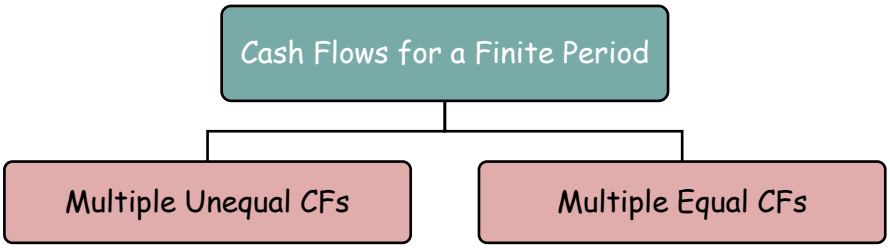
2. TVM Techniques

Broadly there are two TVM techniques – Future Value Technique & Present Value Technique



3. PV Of Multiple Cash Flows for Finite Period

In finance "Cash Flows for a Finite Period" refers to a series of cash inflows or outflows that occur over a specific limited timeframe. This is in contrast to cash flows that are expected to continue indefinitely (like a perpetuity). Finite Cashflows can be broadly classified into two:



A. Multiple Unequal CFs

The formula to calculate the Present Value of Multiple Unequal Cashflows for a finite period is as follows:

$$PV = \frac{CF\ 1}{(1+r)^1} + \frac{CF\ 2}{(1+r)^2} + \frac{CF\ 3}{(1+r)^3} + \frac{CF\ 4}{(1+r)^4} + \ldots + \frac{CF\ n}{(1+r)^n}$$

B. Multiple Equal CFs

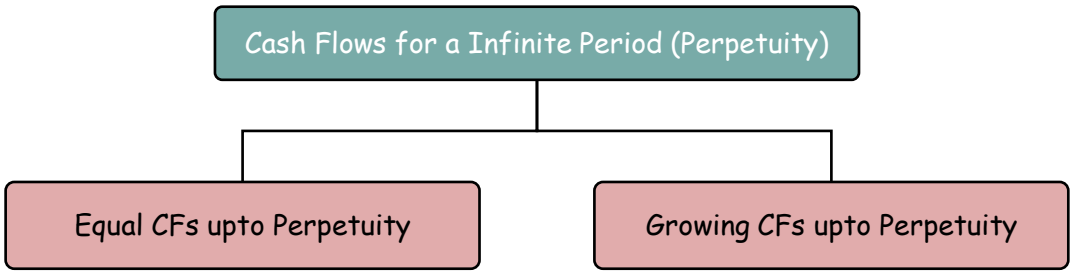
The formula to calculate the Present Value of Multiple Equal Cashflows for a finite period is as follows:

$$PV = \frac{CF}{(1+r)^1} + \frac{CF}{(1+r)^2} + \frac{CF}{(1+r)^3} + \frac{CF}{(1+r)^4} + \ldots + \frac{CF}{(1+r)^n}$$

$$PV = \text{Annual CF} \times PVAF\ (r_{\%}, n_y)$$

4. PV Of Multiple Cash Flows for Infinite Period (Perpetuity)

Cash flows for perpetuity refers to a stream of cashflows that are expected to continue forever, without any end date. Infinite Cashflows can be broadly classified into two:



A. Equal CFs upto Perpetuity

The formula to calculate the Present Value of Equal Cashflows for an infinite period (Perpetuity) is as follows:

$$PV = \frac{\text{Annual CF}}{\text{Discount Rate}}$$

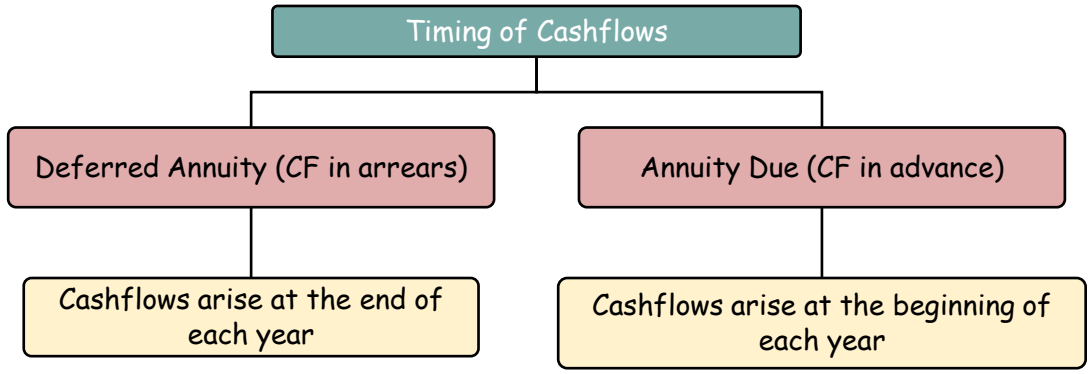
B. Growing CFs upto Perpetuity

The formula to calculate the Present Value of Growing Cashflows for an infinite period (Perpetuity) is as follows:

$$PV = \frac{CF1}{(\text{Discount Rate} - \text{Growth Rate})}$$

5. Timing of Cashflows

- ✓ Cashflows can arise either at the beginning or at the end of each year. This concept is called 'Timing of Cashflows' and plays a very crucial role while computing the Present Value.
- ✓ Based on their timing, Cashflows can be broadly classified into two:



Note: In the absence of information, always assume Deferred Annuity

A. Deferred Annuity (Multiple Equal CFs)

The formula to calculate the Present Value of Multiple Equal Cashflows for a finite period under Deferred Annuity is as follows: (SAME AS CONCEPT 3B)

PV = Annual CF x PVAF ($r_{\%}$, n_y)

B. Annuity Due (Multiple Equal CFs)

The formula to calculate the Present Value of Multiple Equal Cashflows for a finite period under Deferred Annuity is as follows:

PV = Annual CF x [1 + PVAF ($r_{\%}$, n - 1_y)]

6. Internal Rate of Return (IRR)

IRR is the discount rate at which the Net Present Value is Zero. In simpler terms, it is the rate of return at which the present value of cash inflows equals the present value of cash outflows.

Steps to calculate IRR	
Step 1:	Discount cash flows using these two discounting rates (Trial & Error). Adjust Discount Rate: If NPV > 0: Increase the discount rate. If NPV < 0: Decrease the discount rate.
Step 2:	Use following Interpolation Formula: $IRR = L + \frac{NPV_L}{NPV_L - NPV_H} \times (H - L)$ **Where,** L – Lower Rate H – Higher Rate NPV_L – NPV at Lower Rate NPV_H – NPV at Higher Rate

CHAPTER 2: COST OF CAPITAL

1. Introduction

- ✓ Cost of capital is the return expected by the providers of capital (i.e., shareholders, lenders and the debt-holders) to the business as a compensation for their contribution to the total capital and is expressed in rate (%).
- ✓ When an entity (corporate or others) procured finances from any source, it has to pay some additional amount of money besides the principal amount.
- ✓ This additional money paid is said to be the cost of using the capital and it is called the cost of capital.
- ✓ Cost of capital is also known as 'cut-off' rate', 'hurdle rate', 'minimum rate of return' etc. It is used as a benchmark for taking Capital Budgeting Decisions.
- ✓ In short, this is nothing but the discount rate we studied in TVM chapter used to discount/compound the cash flow or stream of cash flows.
- ✓ In this chapter, we will use the following terms for Discount Rate from each source of finance:

Equity	K_e (Cost of Equity)
Debenture	K_d (Cost of Debt)
Preference	K_p (Cost of Preference)
Retained Earnings	K_r (Cost of Retained Earnings)
Overall Cost of Capital	K_o (WACC - Weighted Average Cost of Capital)

2. Important Terms/Concepts used in Cost of Capital

The following are a few terms/concepts which will be used throughout this chapter.

A. Different Types of Issue Price

Securities of a company may be issued at:

- ✓ At Par (e.g., ₹100)
- ✓ At Discount (e.g., ₹ 90)
- ✓ At Premium (e.g., ₹ 110)

B. Different Types of Redemption Value

Securities of a company may be redeemed at:

- ✓ At Par (e.g., ₹100)
- ✓ At Discount (e.g., ₹ 90)
- ✓ At Premium (e.g., ₹ 110)

Note: In the absence of information, always assume redemption is at Par.

C. Flotation Cost/Issue Cost

- ✓ Flotation costs are those associated with the issue of NEW securities (E.g., Brokerage, Commission, Underwriter Commission, etc.)
- ✓ These costs apply only to new issues and not to existing securities.
- ✓ In case the flotation cost is given in the question, the issue price must be taken after deducting the flotation cost to arrive at NET PROCEEDS. (Since it is an outflow, it is being reduced.)

Doubt Busters:

If the flotation cost is say 1%, it can either be applied as a % on Issue Price or on Face Value in the absence of information. Students are expected to write a note regarding the approach followed in the solution.

D. Concept of Tax Savings on Interest

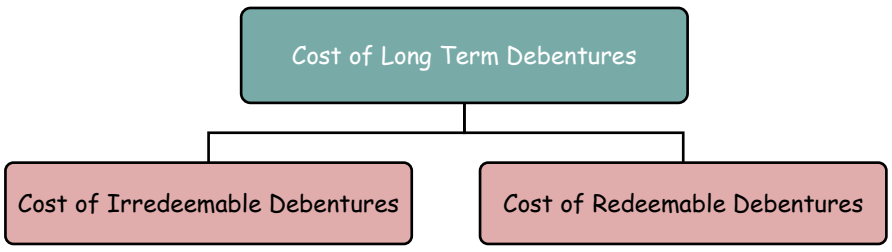
- ✓ The payment of interest to the debenture holders are allowed as expenses for the purpose of tax and hence can save the tax liability of the company. Saving in the tax liability is also known as tax shield.
- ✓ Example: Co A & B are similar in all aspects except that Co A raised an amount from Debentures whereas the same amount was raised from Preference Shares by Co B.

Particulars	Co A	Co B
EBIT	100	100
Less: Interest	(30)	-
EBT	70	100
Tax @ 30%	(21)	(30)
EAT	49	70
Less: Pref Div	-	(30)
Net Earnings to Equity SH	49	40

- ✓ It can be clearly seen from the above example that despite having the same EBIT, the Net Earnings is more for Co A as compared to Co B since interest is a tax-deductible expense whereas Dividend is not a tax-deductible.

3. Cost of Debentures (K_d)

Based on redemption (repayment of principal) on maturity the debts can be categorized into two



A. Cost of Irredeemable Debentures

The debentures which are not redeemed by the issuer of the debentures is known as irredeemable debentures. Cost of Irredeemable Debentures is calculated as follows:

$$K_d = \frac{I}{NP}(1 - t)$$

Where,

K_d = Cost of debt after tax

I = Annual interest payment

NP = Net proceeds of debentures or Current market price

t = Tax rate

B. Cost of Redeemable Debentures

Cost of Redeemable Debentures can be calculated using two approaches:

i. YTM Method (PV/IRR Method)

ii. Approximation Method (Shortcut/Formula Method)

i. YTM Method (PV/IRR Method)

- ✓ In this Method, K_d is calculated by discounting the relevant cash flows using IRR concept.
- ✓ Here, YTM is the annual return (cost) of an investment (funding) from the current date till maturity date.
- ✓ The relevant cash flows are as follows:

Year	Cash flows
0	Net proceeds in case of new issue/ Current market price in case of existing debt (NP or P_0)
1 to n	Interest net of tax [I(1 - t)]
n	Redemption value (RV)

- ✓ Steps to calculate relevant cash flows:

  Step-1: Identify the cash flows.

  Step-2: Calculate NPVs of CFs as identified above using two discount rates (guessing).

  Step-3: Calculate IRR.

ii. Approximation Method (Shortcut/Formula Method)

- ✓ Cost of Redeemable Debentures under Approximation Method is calculated as follows:

$$K_d = \frac{I(1 - t) + \frac{(RV - NP)}{n}}{\left(\frac{RV + NP}{2}\right)}$$

(The above formula to calculate K_d is used where only interest on debt is tax deductible.)

- ✓ Sometime, debts are issued at discount and/ or redeemed at a premium. If discount on issue and/ or premium on redemption are tax deductible, the following formula can be used to calculate the cost of debt:

$$K_d = \frac{I + \frac{(RV - NP)}{n}}{\frac{(RV + NP)}{2}}(1 - t)$$

- ✓ Where,

  I = Interest payment

  NP = Net proceeds or Current market price

  RV = Redemption value of debentures

  t = Tax rate applicable to the company

  n = Remaining life of debentures

Doubt Busters:

1. In the absence of any specific information, students may use any of the two Methods (YTM or Approximation) to calculate K_d.
2. The Approximation Method gives only the approximate value of K_d whereas YTM Method gives the accurate value of K_d.
3. Under Approximation Method, in the absence of any specific information, students may use any of the two formulae to calculate the K_d with logical assumption.
4. 'Net proceeds' means Issue Price less floatation cost.
5. If Issue Price is not given, then students can assume it to be equal to Current Market price. If Current Market price is also not given, then assume it to be equal to Face Value.
6. If Floatation Costs are not given, then simply assume it to be equal to zero.

Other Issues in K_d

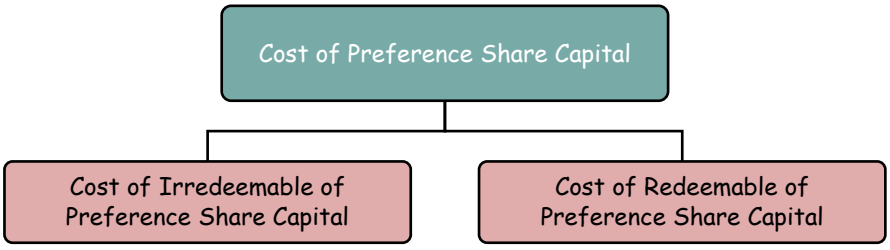
1. Amortization of Debenture/Bond
   - ✓ A Debenture/bond may be amortized every year i.e., principal is repaid every year rather than at maturity.
   - ✓ In such a situation, the principal will go down with annual payments and interest will be computed on the outstanding amount. The cash flows of the bonds will be uneven.
   - ✓ The formula for determining the value of a bond or debenture that is amortized every year is as follows:
   - ✓ $VB = \frac{CF\ 1}{(1 + k_d)^1} + \frac{CF\ 2}{(1 + k_d)^2} + \frac{CF\ 3}{(1 + k_d)^3} + \frac{CF\ 4}{(1 + k_d)^4} + \ldots + \frac{CF\ n}{(1 + k_d)^n}$
   - ✓ $VB = \sum_{t=1}^{n} \frac{CF_t}{(1 + k_d)^t}$
2. Cost of Convertible Debentures
   - ✓ The holders of the convertible debentures have the option to either get the debentures redeemed into the cash or get specified numbers of company's shares in lieu of cash.
   - ✓ The calculation of cost of convertible debentures are very much similar to that of redeemable debentures.

- ✓ While determining the redemption value of the debentures, it is assumed that all the debenture holders will choose the option which has the higher value and accordingly, it will be considered to calculate the cost of debentures.
- ✓ Redemption Value is taken as HIGHER of the following:
  - Cash Value of Debenture (or)
  - Value of Equity Shares

3. Zero Coupon Bond (Deep Discount Bonds)
   - ✓ These Bonds are generally issued at deep discounts and are redeemed at Par
   - ✓ There will not be any coupon payments during the life of the Bond.
   - ✓ K_d for Zero Coupon Bond is calculated using YTM approach
   - ✓ $Bo = \frac{RV}{(1 + k_d)^n}$
4. Treatment of Short-Term Debt
   - ✓ Short term debt is a part of current liability and not a part of capital employed
   - ✓ Hence, while calculating WACC (Ko) we should not consider short term debt eg: creditors
5. Cost of Long-Term Bank Loan
   - ✓ All the calculations as same as normal K_d computation (Redeemable Debentures)
   - ✓ K_d = Int Rate (1 - t)
   - ✓ No concept of Premium/Discount

4. Cost of Preference Share Capital (K_p)

- ✓ The preference shareholders are paid dividend at a specified rate on face value of preference shares.
- ✓ The payment of dividend to the preference shareholders are not charged as expenses but treated as an appropriation of after-tax profit.
- ✓ Hence, dividend paid to preference shareholders does not reduce the tax liability of the company.
- ✓ Like the debentures, Preference share capital can also be categorized as redeemable and irredeemable.



A. Cost of Irredeemable of Preference Share Capital

The of Preference Shares which are not redeemed by the issuer is known as irredeemable of Preference Shares. Cost of Irredeemable of Preference Share Capital is calculated as follows:

$$K_p = \frac{PD}{P_0}$$

Where,

PD = Annual preference dividend

P_0 = Net proceeds from issue of preference shares

B. Cost of Redeemable Preference Share Capital

Cost of Redeemable Preference Share Capital can be calculated using two approaches:

i. YTM Method (PV/IRR Method)

ii. Approximation Method (Shortcut/Formula Method)

i. YTM Method (PV/IRR Method)

- ✓ In this Method, K_p is calculated by discounting the relevant cash flows using IRR concept.
- ✓ Here, YTM is the annual return (cost) of an investment (funding) from the current date till maturity date.
- ✓ The relevant cash flows are as follows:

Year	Cash flows
0	Net proceeds in case of new issue/ Current market price in case of existing Preference Shares (NP or P_0)
1 to n	Preference Dividend (PD)
n	Redemption value (RV)

- ✓ Steps to calculate relevant cash flows:

Step-1: Identify the cash flows.

Step-2: Calculate NPVs of CFs as identified above using two discount rates (guessing).

Step-3: Calculate IRR.

ii. Approximation Method (Shortcut/Formula Method)

- ✓ Cost of Redeemable Preference Share Capital under Approximation Method is calculated as follows:

$$K_p = \frac{PD + \frac{(RV - NP)}{n}}{\frac{(RV + NP)}{2}}$$

- ✓ Where,

PD = Annual preference dividend

RV = Redemption value of preference shares

NP = Net proceeds from issue of preference shares

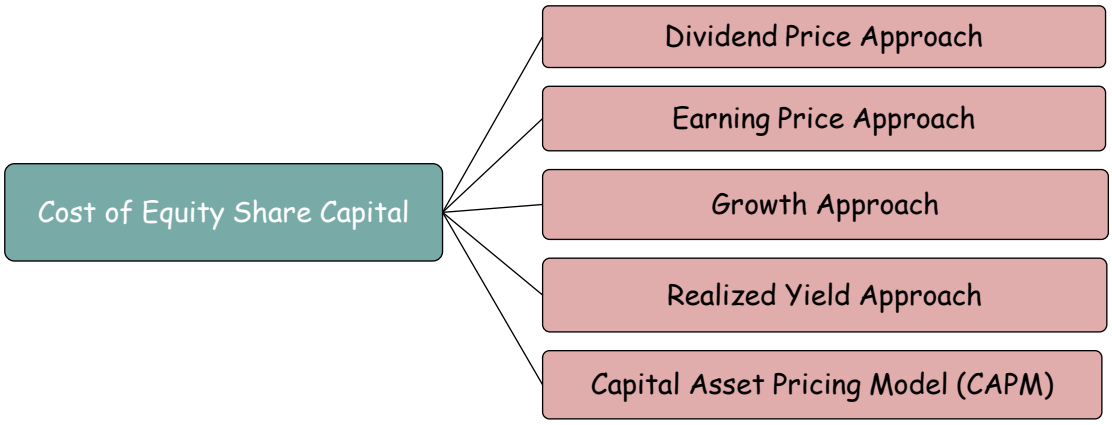
n = Remaining life of preference shares

Doubt Busters:

1. In the absence of any specific information, students may use any of the two Methods (YTM or Approximation) to calculate K_p.
2. The Approximation Method gives only the approximate value of K_p whereas YTM Method gives the accurate value of K_p.
3. 'Net proceeds' means Issue Price less floatation cost.
4. If Issue Price is not given, then students can assume it to be equal to Current Market price. If Current Market price is also not given, then assume it to be equal to Face Value.
5. If Floatation Costs are not given, then simply assume it to be equal to zero.

5. Cost of Equity Share Capital (K_e)

- ✓ Just like any other source of finance, Cost of Equity (K_e) is the expectation of equity shareholders.
- ✓ K_e computation is quite complex since there is no fixed contractual payment for equity shareholders. Moreover, there is no concept of redemption for equity shares.
- ✓ Hence, there is not a single method to calculate cost of equity but different methods which are as follows:
- ✓



- ✓ Which method to follow?
  - If dividend is expected to be constant, then Dividend Price Approach should be used.
  - If EPS is expected to be constant, then Earning Price Approach should be used.
  - If Dividend and Earning are expected to grow at a constant rate, then Growth Approach (Gordon's model) should be used.
  - If it is difficult to forecast future, then Realised Yield Approach should be used, which looks into past.

When the cost of equity or expectation of investors is dependent on risk i.e., Higher the risk, higher the expectations and vice versa, then Capital Asset Pricing Model (CAPM) should be used, which is based on risk.

A. Dividend Price Approach

- ✓ This is also known as Dividend Valuation Model. This model makes an assumption that the dividend per share is expected to remain constant forever.
- ✓ Here, cost of equity capital is computed as follows:

$$\text{Cost of Equity } (K_e) = \frac{D}{P_0}$$

Where,

K_e = Cost of equity

D = Expected dividend (also written as D_1)

P_0 = Market price of equity (ex- dividend)

B. Earnings Price Approach

- ✓ This approach assumes that the earnings per share will remain constant forever.
- ✓ The Earning Price Approach is similar to the dividend price approach; only it seeks to nullify the effect of changes in the dividend policy.
- ✓ Here, cost of equity capital is computed as follows:

$$\text{Cost of Equity } (K_e) = \frac{E}{P}$$

Where,

E = Current earnings per share

P = Market price per share

C. Growth Approach or Gordon's Model

- ✓ As per this approach, the rate of dividend growth remains constant. Where, earnings, dividends and equity share price all grow at the same rate, the cost of equity capital may be computed as follows:

$$\text{Cost of Equity } (K_e) = \frac{D_1}{P_0} + g$$

Where,

D_1 = $[D_0 (1 + g)]$ i.e. next expected dividend

P_0 = Current Market price per share

g = Constant Growth Rate of Dividend

- ✓ In case of newly issued equity shares where floatation cost is incurred, the cost of equity share with an estimation of constant dividend growth is calculated as below:

$$\text{Cost of Equity } (K_e) = \frac{D_1}{P_0 - F} + g$$

Where, F = Flotation cost per share

Doubt Busters:

1. Confusion regarding D_1 and D_0.
   - If the words 'Dividend Expected' is given, consider it as D_1.

- If the words 'Dividend Paid' is given, consider it as D_0.
- If the question is silent, you can assume the given figure either as D_1 or D_0 upon writing a note.

2. Estimation of Growth Rate

Generally, two methods are used to determine the growth rate, as discussed below:

i. Average Method

$$g = \sqrt[n]{\frac{D_0}{D_n}} - 1$$

Where,

D_0 = Current dividend,

D_n = Dividend in n years ago

ii. Gordon's Growth Model

$g = b \times r$

Where,

b = Earnings Retention Ratio

r = Rate of Return on Funds invested

D. Realized Yield Approach

- ✓ According to this approach, the average rate of return realized in the past few years is historically regarded as 'expected return' in the future.
- ✓ It computes cost of equity based on the past records of dividends actually realised by the equity shareholders.
- ✓ This is based on the principle that Cost to the Co. is equal to Investors' Return.
- ✓ This method is computed from the Investor's perspective and is normally followed when shares are sold by equity investors after a few years in the secondary market.
- ✓ Here, K_e is calculated by discounting the relevant cash flows using IRR concept

E. Capital Asset Pricing Model (CAPM) Approach

- ✓ CAPM model describes the risk-return trade-off for securities.
- ✓ The idea behind CAPM is that the investors need to be compensated in two ways – (i) Time value of money and (ii) Risk.
- ✓ This method says that the expected return of a security or a portfolio equals the rate on a risk-free security plus risk premium
- ✓ Thus, the cost of equity capital can be calculated under this approach as:

$$\text{Cost of Equity } (K_e) = R_f + \beta (R_m - R_f)$$

Where,

K_e = Cost of equity capital

R_f = Risk free rate of return

ß = Beta coefficient

R_m = Rate of return on market portfolio

(R_m – R_f) = Market risk premium

6. Cost of Retained Earnings (K_r)

- ✓ Retained Earnings belongs to the Equity Shareholders and hence is very much a part of Equity.
- ✓ Like other sources of fund, retained earnings also involves cost. It is the opportunity cost of dividends foregone by shareholders.
- ✓ Therefore, K_r is often used interchangeably with the K_e, as K_r is nothing but the expected return of the shareholders from the investment in shares of the company.
- ✓ The formulas used for calculation of cost of retained earnings are same as formulas used for calculation of cost equity and hence: $K_r = K_e$
- ✓ It should be noted that the concept of Floatation cost is not used for the calculation of cost of retained earnings.

Doubt Busters:

1. For calculation of K_e:
   P_0 = Net Proceeds realized which is Issue Price less floatation cost.
2. For calculation of K_r:
   P_0 = Current Market Price (CMP). If CMP is not available, then Issue Price can be taken.
3. However, ICAI has used Current Market Price & Issue Price interchangeably in their solutions for calculating K_r. In this case, students are suggested to write a note regarding the approach followed in their answers.
4. When Personal Income Tax & Personal Brokerage of the Investor are given,

$$Kr = K_e (1 - t_p) (1 - t_b)$$

Where,

t_p = Personal Income Tax

t_b = Personal Brokerage

7. Weighted Average Cost of Capital (WACC)

- ✓ A company usually does not procure entire fund from a single source, rather it makes a mix of various sources of finance.
- ✓ Hence, cost of total capital will be equal to weighted average of cost of individual sources of finance.
- ✓ WACC is also known as the overall cost of capital which includes the cost of different sources of capital and depends on the capital structure of a company.

- ✓ WACC is preferred because the proportions of various sources of funds in the capital structure are different.
- ✓ To be representative, therefore, cost of capital should take into account the relative proportions of different sources of finance.
- ✓ WACC represents the minimum rate of return at which a company produces value for its investors.
- ✓ The steps to calculate WACC is as follows:

Step 1:	Calculate the total capital from all the sources of capital. (Long-term debt capital + Pref. Share Capital + Equity Share Capital + Retained Earnings)
Step 2:	Calculate the proportion (or %) of each source of capital to the total capital.
Step 3:	Multiply the proportion as calculated in Step 2 above with the respective cost of capital.
Step 4:	Aggregate the cost of capital as calculated in Step 3 above. This is the WACC. (K_e + K_d + K_p + K_r as calculated in Step 3 above)

Doubt Busters:

1. For calculation of WACC, there is a choice of weights between the Book Value (BV) and Market Value (MV).
2. While Book value weight is operationally easy and convenient, Market value weight is more correct and represents a firm's true capital structure

8. Marginal Cost of Capital (MCC)

- ✓ The marginal cost of capital may be defined as the cost of raising an additional rupee of capital and is referred to as the cost incurred in raising new funds.
- ✓ Marginal cost of capital is derived, when the average cost of capital is calculated using the marginal weights which represent the proportion of funds the firm intends to employ.
- ✓ To calculate the marginal cost of capital, the intended financing proportion should be applied as weights to marginal component costs.
- ✓ Calculation of MCC is very similar to that of WACC but for the fact that all the calculations here are done only on the new funds raised.

Core Theory Topics

A. Significance Of Cost Of Capital

The cost of capital is crucial for making informed financial decisions. It helps in:

1. Evaluating Investment Options: By discounting future cash flows with the appropriate cost of capital, managers can assess the present value of investment opportunities. Different options may have distinct costs of capital, so it's essential to use the relevant rate for each.
2. Financing Decisions: When selecting between financing options, managers compare their costs to choose the more cost-effective one, considering financial risk and control as well.
3. Designing Credit Policy: The cost of providing credit is weighed against the benefits of extending credit to customers, using the cost of capital to evaluate the present value of both costs and benefits.

B. RISK CLASSIFICATION UNDER CAPM APPROACH

The risk to which a security is exposed, can be classified into two groups:

i. Unsystematic Risk: This is also called company specific risk as the risk is related with the company's performance. This type of risk can be reduced or eliminated by diversification of the securities portfolio. This is also known as diversifiable risk.

ii. Systematic Risk: It is the macro-economic or market specific risk under which a company operates. This type of risk cannot be eliminated by the diversification hence, it is non-diversifiable. The examples are inflation, Government policy, interest rate etc.

As diversifiable risk can be eliminated by an investor through diversification, the non-diversifiable risk is the risk which cannot be eliminated; therefore, a business should be concerned as per CAPM method, solely with non-diversifiable risk.

The non-diversifiable risks are assessed in terms of beta coefficient (b or β) through fitting regression equation between return of a security and the return on a market portfolio.

C. THE SHORTCOMINGS CAPM APPROACH

a. Estimation of beta with historical data is unrealistic; and

b. Market imperfections may lead investors to unsystematic risk.

CHAPTER 3: LEVERAGES

1. Introduction

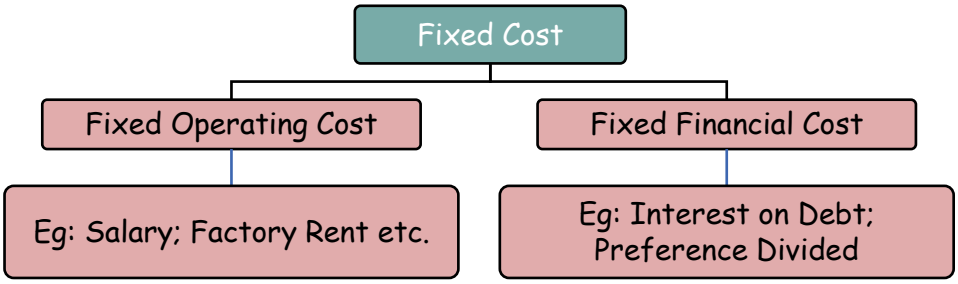
- ✓ The term leverage represents influence or power.
- ✓ In financial analysis, leverage represents the influence of one financial variable over some other related financial variable (Magnifying Effect)
- ✓ These financial variables may be costs, output, sales revenue, Earnings Before Interest and Tax (EBIT), Earning Per Share (EPS) etc.
- ✓ Objective of financial management is to maximize wealth. Here, wealth means market value.
- ✓ Value is directly related to performance of company and inversely related to expectation of investors.
- ✓ In turn, expectation of investor is dependent on risk of the company. Therefore, to maximize value, company should try to manage its risk.
- ✓ This risk may be business risk, financial risk or both as defined below:
  - Business Risk: It refers to the risk associated with the firm's operations. It is the uncertainty about the future operating income (EBIT) i.e., how well can the operating income be predicted?
  - Financial Risk: It refers to the additional risk placed on the firm's shareholders because of use of debt i.e., the additional risk, a shareholder bears when a company uses debt in addition to equity financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly or entirely by equity.
- ✓ In this chapter we will discuss factors that influence business and financial risks.

2. Important Terms/Concepts used in Leverages

The following are a few terms/concepts which will be used throughout this chapter.

A. Types of Fixed Cost

Fixed Costs can be classified as follows:



Note: If the question is silent, assume it as Fixed Operating Cost.

B. Marginal Costing Terminologies

- ✓ Variable Costs – Costs that vary with Sales
- ✓ Contribution = Sales (-) Variable Cost
- ✓ Profit Volume Ratio (PVR) = $\frac{\text{Contribution}}{\text{Sales}} \times 100$
- ✓ Break-Even Point (BEP) – A point of volume where the EBIT is equal to zero i.e total operating cost is equal to total sales revenue.

$$\text{BEP (in units)} = \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$$

- ✓ Margin of Safety (MOS) – It refers to the sales level beyond the breakeven point

MOS = Actual Sales (-) Break Even Sales

C. Some Ratios used in Numerical Problems in this chapter

The following are some ratios used in the numerical problems in this chapter along with leverage calculations. These are ideally a part of Ratio Analysis Chapter.

i. $\text{EPS} = \frac{\text{EFE}}{\text{No. of Equity shares}}$

ii. $\text{ROE (Return on Equity)} = \frac{\text{EFE}}{\text{Equity shareholders fund}}$

Where Equity shareholders fund = Equity shares capital (+) Reserves and surplus

iii. $\text{Price Earnings Ratio (PE Ratio)} = \frac{\text{MPS}}{\text{EPS}} = \frac{\text{Market Price per share}}{\text{Earnings Per Share}}$

iv. $\text{Earnings Price Ratio (Earning yield Ratio)} = \frac{\text{EPS}}{\text{MPS}}$

Note: It is the Inverse of PE Ratio

v. $\text{Total asset turnover ratio} = \frac{\text{Sales}}{\text{Total assets}}$

vi. Return on Capital Employed (ROCE) [Return on Investment (RoI)]

$= \frac{\text{EBIT}}{\text{Capital Employed}}$ (or) $\frac{\text{EBIT (1-T)}}{\text{Capital Employed}}$

Where: Capital Employed = Equity + Retained Earnings + PSC + Debentures + LTL

vii. Coverage Ratios

a) $\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}}$

b) $\text{Preference Dividend Coverage Ratio} = \frac{\text{EAT}}{\text{PD}}$

c) $\text{Equity Dividend Coverage Ratio} = \frac{\text{EFE}}{\text{ED}}$

viii. $\text{Operating Profit Ratio} = \frac{\text{EBIT}}{\text{Sales}} \times 100$

3. Types of Leverages

There are three commonly used measures of leverage in financial analysis.

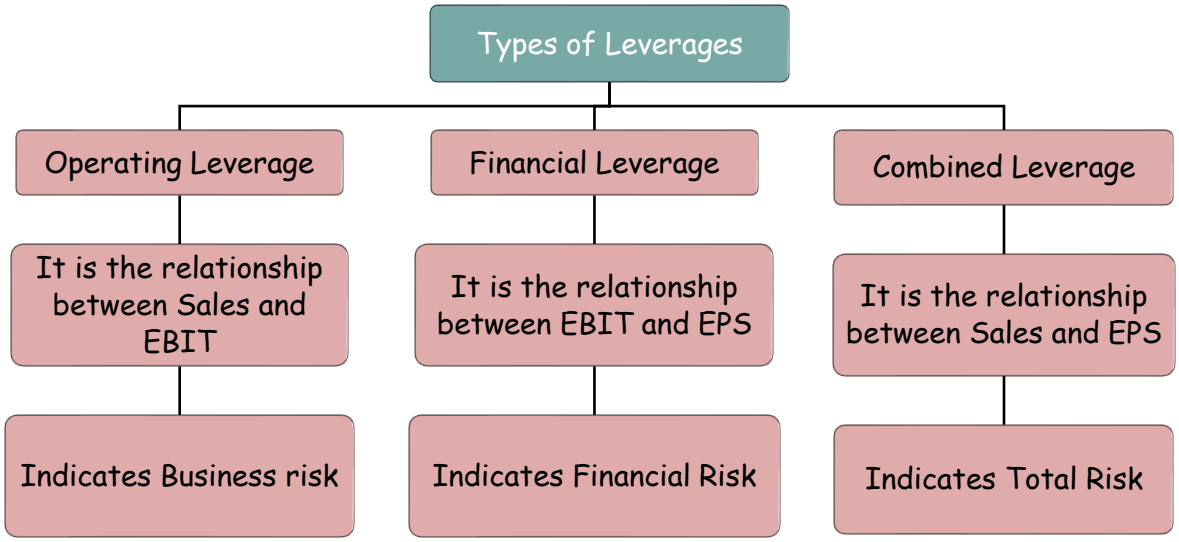


Chart Showing Degree of Operating Leverage, Financial Leverage and Combined leverage

Profitability Statement	
Sales	xxx
Less: Variable Cost	(xxx)
Contribution	xxx
Less: Fixed Cost	(xxx)
Operating Profit/EBIT	xxx
Less: Interest	(xxx)
Earnings Before Tax (EBT)	xxx
Less: Tax	(xxx)
Earnings After Tax (EAT)	xxx
Less: Pref. Dividend	(xxx)
Net Earnings available to Equity Shareholders (EFE)	xxx
No. Equity Shares (N)	xxx
Earnings per Share (EPS) [EFE ÷ N]	xxx

Degree of Operating Leverage

Degree of Financial Leverage

Degree of combined Leverage

4. Operating Leverage

A. Meaning of Operating Leverage

- ✓ Operating Leverage (OL) measures the relationship between Sales and EBIT.
- ✓ It measures the tendency of operating income (EBIT) to change disproportionately with change in sale volume. This disproportionate change is caused by operating fixed cost, which does not change with change in sales volume.
- ✓ In other words, Operating Leverage maybe defined as the employment of an asset with a fixed cost so that enough revenue can be generated to cover all the fixed and variable costs.
- ✓ The use of assets for which a company pays a fixed cost is called operating leverage.
- ✓ Operating leverage is a function of three factors:
  - Amount of fixed cost,
  - Variable contribution margin, and
  - Volume of sales.

B. Operating Leverage Formulas

Operating Leverage can be calculated using the following formulas

- ✓ Formula - 1:

$$\text{Degree of Operating Leverage (DOL)} = \frac{\text{Percentage Change in EBIT}}{\text{Percentage Change in Sales}}$$

- ✓ Formula - 2:

$$\text{Degree of Operating Leverage (DOL)} = \frac{\text{Contribution}}{\text{EBIT}}$$

- ✓ Formula - 3:

$$\text{Degree of Operating Leverage (DOL)} = \frac{1}{\text{Margin of Safety (\%)}}$$

Note: "Degree of Operating Leverage (DOL)" and "Operating Leverage (OL)" are identical words and can be used interchangeably.

C. Relationship between Break-Even Point, Fixed Cost and Operating Leverage

The relationship between Operating leverage, break-even point and fixed cost is as under:

Operating Leverage	Fixed cost	Break-Even point
1. Firm with High OL	1. High fixed cost	1. Higher Break-even point
2. Firm with Low OL	2. Lower fixed cost	2. Lower Break-even point

D. Relationship between Margin of Safety (MOS) and Operating Leverage

- ✓ MOS refers to the sales level beyond the breakeven point
- ✓ Higher MOS indicates lower business risk indicating higher profit and vice versa.
- ✓ MOS is inversely related to OL.

If MOS	Business Risk	DOL (1/MOS)
Rises	Falls	Falls
Falls	Rises	Rises

E. Analysis & Interpretation of Operating Leverage

S. No.	Situation	Result
1	When No Fixed Cost	No Operating Leverage (OL = 1)
2.	When EBIT = 0 (Sales At BEP)	OL is Undefined (OL = ∞)
3.	When EBIT > 0 (Sales more than BEP)	OL is Positive
4.	When EBIT < 0 (Sales less than BEP)	OL is Negative

Note: DOL can never be between zero and one. It can be zero or less or it can be one or more.

5. Financial Leverage

A. Meaning of Financial Leverage

- ✓ Financial Leverage (FL) measures the relationship between EBIT and EPS.
- ✓ FL maybe defined as 'the use of funds with a fixed cost in order to increase earnings per share'. In other words, it is the use of company funds on which it pays a limited return
- ✓ In short, FL is caused by Fixed Financial Cost (Interest & Preference Dividend).
- ✓ Financial leverage involves the use of funds obtained at a fixed cost in the hope of increasing the return to common stockholders. This concept is also known as 'Trading on Equity'

B. Financial Leverage Formulas

Financial Leverage can be calculated using the following formulas

- ✓ Formula - 1: General Formula

$$\text{Degree of Financial Leverage (DFL)} = \frac{\text{Percentage Change in EPS}}{\text{Percentage Change in EBIT}}$$

- ✓ Formula - 2: When the co. has issued Preference Shares,

$$\text{Degree of Financial Leverage (DFL)} = \frac{\text{EBIT}}{\text{EBIT-Int-}\frac{\text{PD}}{(1\text{-tax})}}$$

- ✓ Formula - 3: When the co. has not issued Preference Shares,

$$\text{Degree of Financial Leverage (DFL)} = \frac{\text{EBIT}}{\text{EBT}}$$

Note: "Degree of Financial Leverage (DFL)" and "Financial Leverage (FL)" are identical words and can be used interchangeably.

Doubt Busters:

1. Sometimes, ICAI uses Formula – 3 even when Preference Shares are issued. Therefore, when Preference Shares are issued, students can either follow Formula - 2 or Formula – 3.

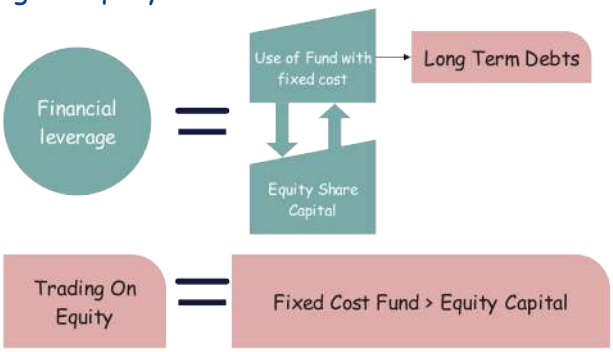
2. Logically speaking, Formula – 2 is only correct when Preference Shares are issued.

C. Analysis & Interpretation of Financial Leverage

S. No.	Situation	Result
1	When there is No Fixed Financial Cost	No Financial Leverage (FL = 1)
2.	When EBIT level is equal to Fixed Financial Cost	FL is Undefined (FL = ∞)
3.	When EBIT level is more than Fixed Financial Cost	FL is Positive
4.	When EBIT level is less than Fixed Financial Cost	FL is Negative

D. Financial Leverage as 'Trading on Equity'

- ✓ Financial leverage indicates the use of funds with fixed cost like long term debts and preference share capital along with equity share capital which is known as trading on equity.
- ✓ The basic aim of financial leverage is to increase the earnings available to equity shareholders using fixed cost fund.
- ✓ A firm is known to have a positive/favourable leverage when its earnings are more than the cost of debt.
- ✓ If earnings are equal to or less than cost of debt, it will be a negative/unfavourable leverage.
- ✓ When the quantity of fixed cost fund is relatively high in comparison to equity capital it is said that the firm is "trading on equity".

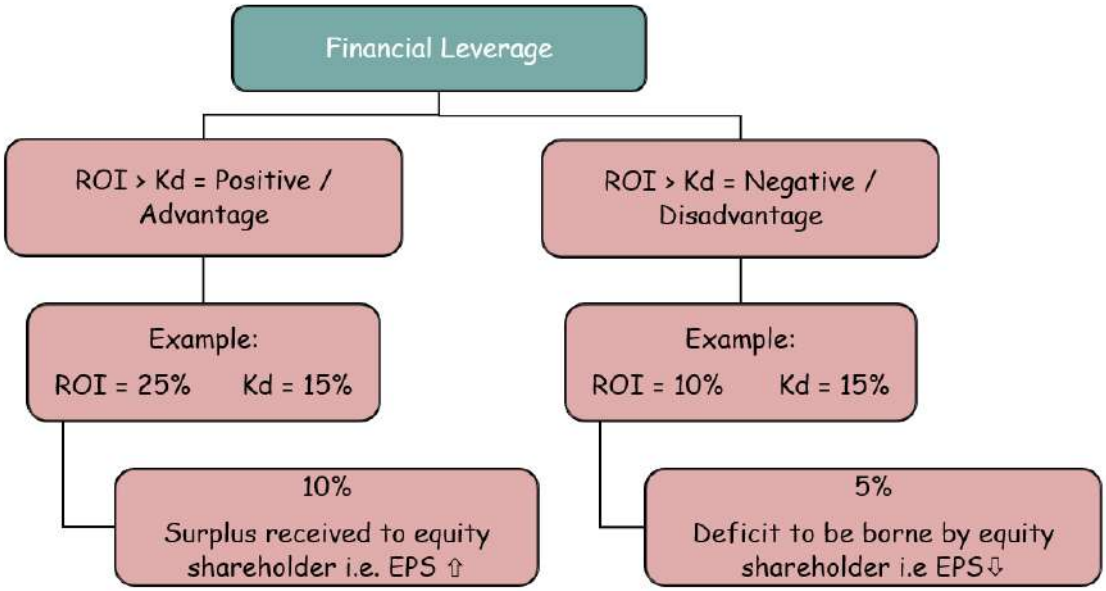


E. Financial Leverage as a 'Double edged Sword'

- ✓ When the cost of 'fixed cost fund' is less than the return on investment, FL will help to increase return on equity and EPS. The firm will also benefit from the saving of tax on interest on debts etc.
- ✓ However, when cost of debt will be more than the return it will affect return of equity and EPS unfavourably and as a result firm can be under financial distress.
- ✓ Therefore, financial leverage is also known as "double edged sword".
- ✓ Effect on EPS and ROE:
  - When, ROI > Interest – Favourable – Advantage
  - When, ROI < Interest – Unfavourable – Disadvantage

- When, ROI = Interest – Neutral – Neither advantage nor disadvantage

✓ This concept can be summarised as follows:



Note: DFL can never be between zero and one. It can be zero or less or it can be one or more.

6. Combined Leverage

A. Meaning of Combined Leverage

✓ Combined Leverage (CL) measures the relationship between Sales and EPS.

✓ It indicates the effect the changes in sales will have on EPS.

✓ Combined leverage measures total risk. It depends on combination of operating and financial risk.

✓ Therefore, CL is caused by both Fixed Operating & Fixed Financial Cost.

B. Combined Leverage Formulas

Combined Leverage can be calculated using the following formulas

✓ Formula - 1:

$$\text{Degree of Combined Leverage (DCL)} = \text{DOL} \times \text{DFL}$$

✓ Formula - 2:

$$\text{Degree of Combined Leverage (DCL)} = \frac{\text{Percentage Change in EPS}}{\text{Percentage Change in Sales}}$$

✓ Formula - 3: When the co. has issued Preference Shares,

$$\text{Degree of Combined Leverage (DCL)} = \frac{\text{Contribution}}{\text{EBIT-Int-}\frac{\text{PD}}{(1\text{-tax})}}$$

✓ Formula - 4: When the co. has not issued Preference Shares,

$$\text{Degree of Combined Leverage (DCL)} = \frac{\text{Contribution}}{\text{EBT}}$$

Note: "Degree of Combined Leverage (DCL)" and "Combined Leverage (CL)" are identical words and can be used interchangeably.

Doubt Busters:

1. Sometimes, ICAI uses Formula – 4 even when Preference Shares are issued. Therefore, when Preference Shares are issued, students can either follow Formula - 3 or Formula – 4.
2. Logically speaking, Formula – 3 is only correct when Preference Shares are issued.

C. Analysis & Interpretation of Combined Leverage

Combine leverage measures total risk. It depends on combination of operating and financial risk.

DOL	DFL	Comments
Low	Low	Lower total risk. Cannot take advantage of trading on equity.
High	High	Higher total risk. Very risky combination.
High	Low	Moderate total risk. Not a good combination. Lower EBIT due to higher DOL and lower advantage of trading on equity due to low DFL.
Low	High	Moderate total risk. Best combination. Higher financial risk is balanced by lower total business risk.

Doubt Busters:

1. All the three leverages (OL, FL & CL) can be in positive or negative
2. Depreciation is treated as Fixed Operating Cost.
3. In case of reverse working problems when both OL & FL are given, alterative solutions are possible depending on how students approach the question.

7. OL vs FL vs CL

DOL	DFL	DCL
Shows level of business risk.	Shows level of financial risk.	Shows level of total or combined risk.
It is dependent upon fixed cost.	It is dependent upon interest and preference dividend	It is dependent upon fixed cost, interest & preference dividend.
Measures % change in EBIT which results from a 1% change in Sales.	Measures % change in EPS which results from a 1% change in EBIT.	Measures % change in EPS which results from a 1% change in Sales.

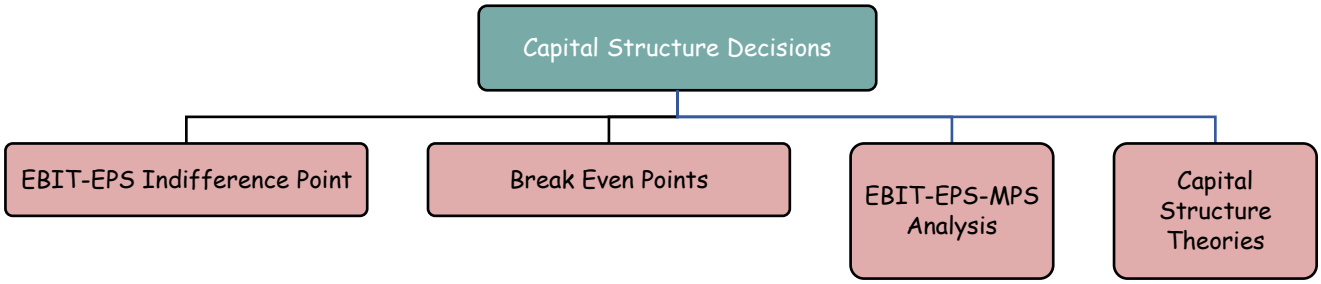
For example, if DOL is 3 and there is 8% increase in output then EBIT will increase by 24% & if there is a 8% decrease in output then EBIT will decrease by 24%.	For example, if DFL is 2 and there is 5% increase in EBIT then EPS will increase by 10% and if there is a 5% decrease in EBIT then EPS will decrease by 10%.	For example, if DCL is 6 and there is a 8% increase in sales then EPS will increase by 48% and if there is a 8% decrease in sales then EPS will decrease by 48%.
There is a unique DOL for each level of output.	There is a unique DFL for each level of EBIT.	There is a unique DCL for each level of sales.
It is undefined at Operating B.E.P.	It is undefined at Financial B.E.P.	It is undefined at Financial B.E.P.

CHAPTER 4: CAPITAL STRUCTURE DECISIONS

Introduction

- ✓ Capital structure refers to the combination of capitals from different sources of finance.
- ✓ The capital of a company consists of Equity Share Holders' Fund, Preference Share Capital and Long-Term External Debts.
- ✓ The source and quantum of capital is decided keeping in mind the following factors:
  - Control: Capital structure should be designed in such a manner that existing shareholders continue to hold majority stake.
  - Risk: Capital structure should be designed in such a manner that financial risk of a company does not increase beyond tolerable limit.
  - Cost: Overall cost of capital remains minimum.
- ✓ Practically, it is difficult to achieve all of the above three goals together, hence, a finance manager has to make a balance among these three objectives.
- ✓ However, the objective of a company is to maximise the value of the company and it is prime objective while deciding the optimal capital structure. Capital Structure decision refers to deciding the forms of financing (which sources to be tapped); their actual requirements (amount to be funded) and their relative proportions (mix) in total capitalization.

In this context, this chapter can be broadly classified into four parts



Faculty's Note:

The above classification of this chapter is crafted from the faculty's own perspective and creative approach to enhance the understanding and to simplify the complex concepts covered and hence the sequence may be different from ICAI Study Material.

Part A: EBIT-EPS Indifference Point

A. Meaning

✓ It is the level of EBIT at which EPS under two different financial plans are the same.

B. Formula

✓ The indifference point can be calculated algebraically in the following manner:

$$\frac{(EBIT-I_1)(1-t)-PD_1}{E_1} = \frac{(EBIT-I_2)(1-t)-PD_2}{E_2}$$

Where,

EBIT = Indifference point

E_1 = Number of Equity shares in Alternative 1

E_2 = Number of Equity shares in Alternative 2

I_1 = Interest charges in Alternative 1

I_2 = Interest charges in Alternative 2

PD_1 = Preference Dividend in Alternative 1

PD_2 = Preference Dividend in Alternative 2

t = Tax-rate

C. Decision Rule

Which Plan to Choose?

✓ If Expected EBIT < Indifference Point EBIT, select the Plan with Lower Fixed Financial Cost.

✓ If Expected EBIT > Indifference Point EBIT, select the Plan with Higher Fixed Financial Cost.

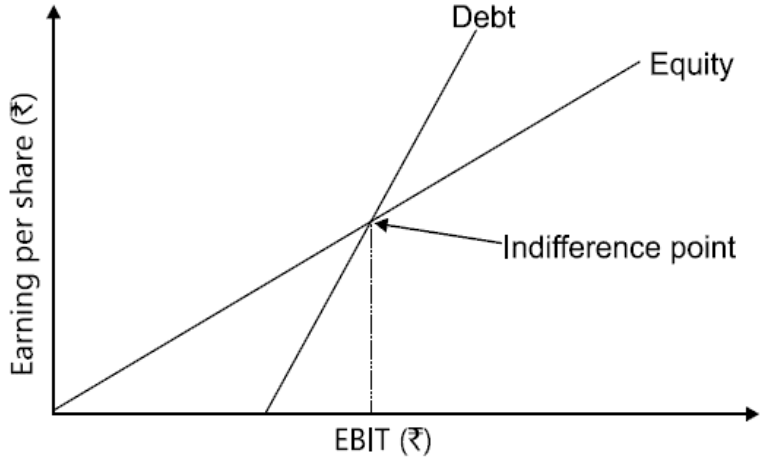
✓ If Expected EBIT = Indifference Point EBIT, then select Any Plan.

D. Cases When Indifference Point Cannot Be Calculated

When the No of Equity Shares under both alternatives equal AND

1. The Fixed Financial Cost of one Alternative is always more than the other alternative.
   (Reason: EPS of one alternative is always greater than EPS of the other alternative)
2. When the fixed financial cost of both the alternatives is equal.
   (Reason: EPS under both the alternatives will always be the same)

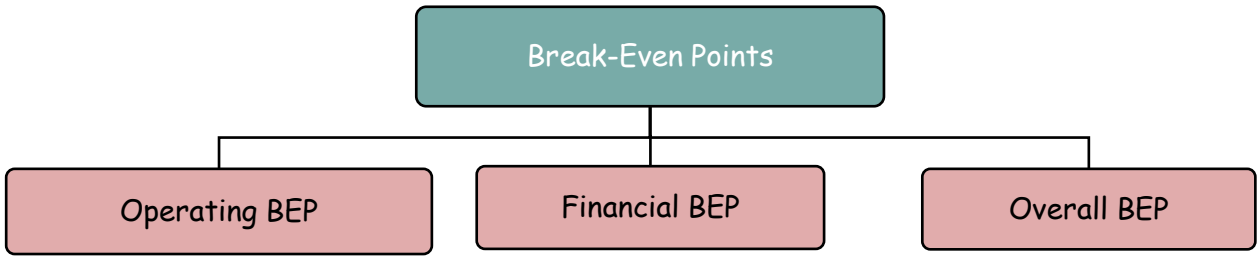
E. Graphical Presentation of Indifference Point



Part B: Break-Even Points (BEP)

A. Introduction

- ✓ Break Even Points indicates a 'No Profit, No Loss' situation.
- ✓ There are three types of Break-Even Points



B. Operating BEP

- ✓ Operating BEP is the Sales level at which EBIT is Zero.
- ✓ Operating BEP (Units) = $\frac{FC}{\text{Contribution per unit}}$
- ✓ Operating BEP (value) = $\frac{FC}{P/V\ Ratio}$

C. Financial BEP

- ✓ It is the EBIT level at which EPS is Zero.
- ✓ Financial BEP = Interest + $\frac{\text{Preference Dividend}}{(1 - \text{Tax Rate})}$

D. Overall BEP

- ✓ It is the Sales level at which EPS is Zero.
- ✓ Overall BEP (Units) = $\frac{\text{Operating Fixed Cost} + \text{Interest} + \frac{\text{Preference Dividend}}{(1-t)}}{\text{Contribution per unit}}$
- ✓ Overall BEP (Value) = $\frac{\text{Operating Fixed Cost} + \text{Interest} + \frac{\text{Preference Dividend}}{(1-t)}}{\text{Contribution per unit}}$

Part C: EBIT-EPS-MPS Analysis

- ✓ In this segment, we will try to find the best source (mix) of funding the business.
- ✓ Various sources from where money can be raised are as follows:
  - (i) Equity share capital
  - (ii) Retained earningss
  - (iii) Preference share capital
  - (iv) Debentures
  - (v) Long Term Loans
- ✓ The basic objective of financial management is to design an appropriate capital structure which can provide the highest wealth, i.e., highest MPS, which in turn depends on EPS.
- ✓ This will be done using metrics such as EPS, MPS, ROE etc. which needs to be worked out on a case-to-case basis (in all numerical problems) as there is no Fixed Thumb Rule.
- ✓ The following points need to be kept in mind
  - EPS varies with different financing mixes due to the level of debt financing.
  - Leverage affects EPS because of fixed financial charges like interest on debt and preference dividends.
  - If Return on Assets > Cost of Financing, increasing fixed charge financing (debt/preference shares) raises EPS (Favourable Financial Leverage or Trading on Equity).
  - If Return on Assets < Cost of Financing, increasing debt/preference shares reduces EPS.
  - Debt vs. Preference Shares:

    Debt Financing is generally preferred because:
    - Interest rates on debt are usually lower than fixed dividends on preference shares.
    - Interest on debt is tax-deductible, reducing the real cost compared to preference share capital.
  - Analysing capital structure and leverage impact on EPS and MPS helps in selecting the optimal debt level.
  - EBIT-EPS Analysis is a crucial tool for financial managers to effectively plan and design the firm's capital structure.

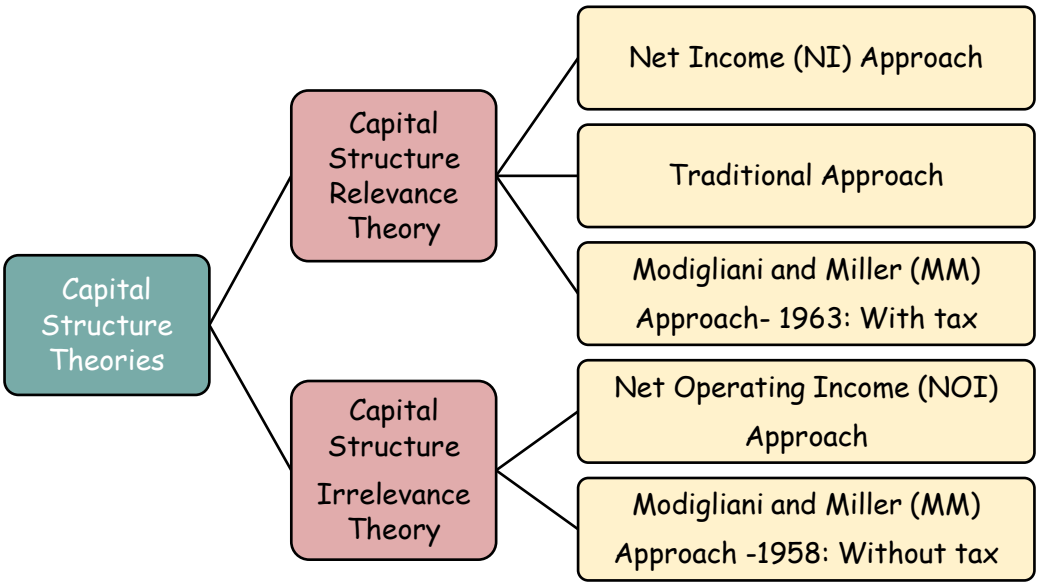
Doubt Busters:

1. EBIT (Operating Profit) will not change depending on the Capital Structure.
2. MPS = EPS x PE Ratio
3. EPS = Earnings Available to Equity SH / No. of Equity Shares

Part D: Capital Structure Theories

A. Segment Background

- ✓ In this segment, we will study the relationship between the cost of capital, capital structure, and the value of the firm.
- ✓ We will also be learning the four popular Capital Structure Theories (Perspectives) which are:
  1. Net Income (NI) approach
  2. Net Operating Income (NOI) approach
  3. Traditional approach
  4. Modigliani-Miller (MM) approach [with & without Tax]



B. General Assumptions in Capital Structure Theories

- ✓ There is no Preference Share Capital
- ✓ There are only two sources of funds used by a firm i.e., Debt and Equity
- ✓ Taxes are not considered (except MM Approach with Tax)
- ✓ The dividend payout ratio is 100% (DPS = EPS)
- ✓ Business risk is constant over time.
- ✓ The firm has perpetual life.
- ✓ Kd will always be less than Ke (Kd < Ke)
- ✓ The firm's total financing remains constant. The degree of leverage can be changed by selling debt to purchase shares or selling shares to retire debt.

C. General Formulas in Capital Structure Theories

1. Value of the Firm (Overall Co) is equal to Value of Equity + Value of Debt

$$V_F = V_E + V_D$$

2. V_E (Per share) = $\frac{EPS}{K_e}$; V_E (in total) = $\frac{EFE}{K_e}$

3. Value of Debt = $\frac{\text{Total Interest}}{K_d}$

4. Value of firm = $\frac{EBIT}{K_o}$

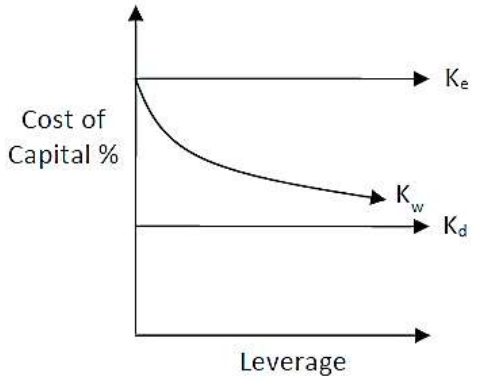
5. $K_O = K_dW_d \times K_eW_e$

Doubt Busters:

1. Generally, Ke > Kd
2. Lower the K_O higher the V_F & vice versa

D. Net Income Approach (NI)

- ✓ This approach was given by David Durand in the year 1952.
- ✓ According to this approach, capital structure decisions are relevant.
- ✓ This theory suggests that the value of the firm can be increased by reducing K_O,
- ✓ K_O can be decreased through a higher proportion of debt.
- ✓ Other Points in NI Approach:
  - $K_e > K_d$
  - K_e and K_d (Remain constant)
- ✓ Graphical Presentation:

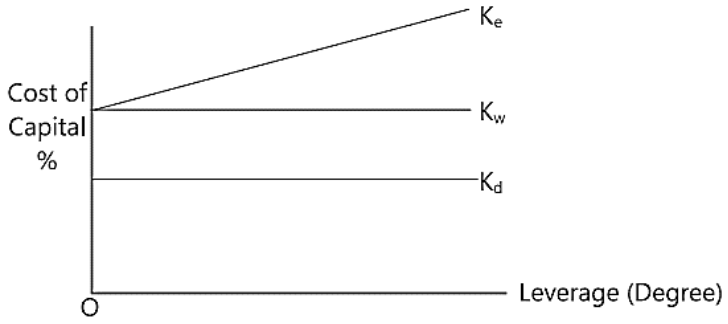


E. Net Operating Income Approach (NOI)

- ✓ The NOI Approach was also proposed by David Durand in 1952.
- ✓ As per this approach, capital structure decisions are irrelevant.
- ✓ This approach is exactly the opposite of the NI approach.
- ✓ As per this approach, the V_F and K_O remain constant.
- ✓ V_F cannot be increased or decreased by changing the debt component.
- ✓ Other Points in NOI Approach:
  - $K_e > K_d$
  - K_d will remain constant

- K_O will remain constant

✓ Graphical Presentation:



Doubt Busters:

1. In NOI Approach, K_O remains constant because the Low-Cost advantage of Debt is exactly offset by increase in K_e
2. NI vs NOI (With increase in debt):

	K_d	K_e	K_O	V_F
NI	Constant	Constant	Decrease	Increase
NOI	Constant	Increase	Constant	Constant

F. Traditional Approach

✓ According to this approach, capital structure decisions are relevant.

✓ Through proper mix of debt and equity, risk can be reduced and V_F can be increased.

✓ This approach can be studied under three phases.

Phase 1:

- K_e and K_d remain constant.
- $K_e > K_d$
- K_O will decrease with an increase in debt.

Phase 2:

- K_e will increase.
- K_d remains constant.
- $K_e > K_d$.
- K_O will remain constant.

Phase 3:

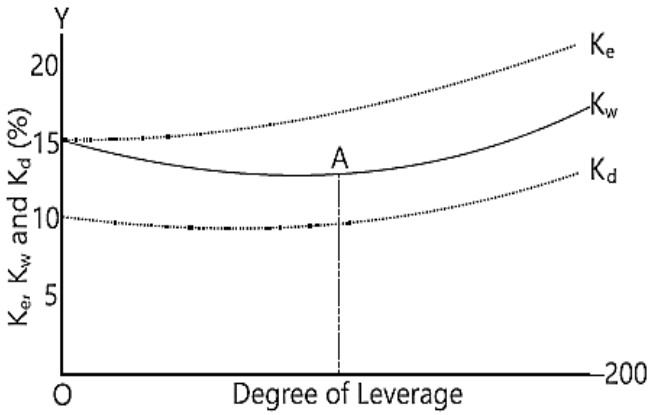
- K_e will increase.
- K_d will increase.
- $K_e > K_d$.
- K_O will increase

✓ Optimum capital structure occurs at the point where value of the firm is highest and the cost of capital is the lowest.

✓ Main Highlight of Traditional Approach

- The firm should strive to reach the optimal capital structure and its total valuation through a judicious use of both the debt and equity in capital structure.
- At the optimal capital structure, the overall cost of capital will be minimum and the value of the firm will be maximum.

✓ Graphical Presentation:

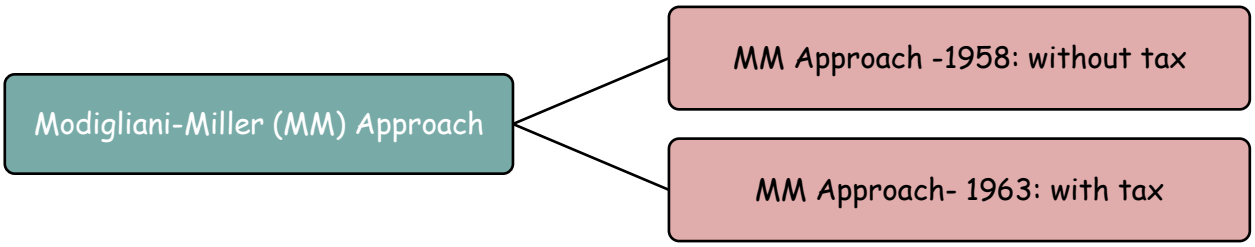


G. Modigliani-Miller (MM) Approach

✓ The NOI approach is definitional or conceptual and lacks behavioural significance. It does not provide operational justification for irrelevance of capital structure.

✓ However, Modigliani-Miller (MM) approach provides behavioural justification for constant overall cost of capital and therefore, total value of the firm.

✓ There are two types under Modigliani-Miller (MM) approach:



I. MM Approach without Tax

✓ This approach was given by Modigliani-Miller in 1958.

✓ This approach is similar to NOI approach.

✓ Capital structure decisions are irrelevant.

✓ V_F and K_O will always remain constant and are not affected by increase/decrease in debt (W_d).

✓ MM approach presents THREE PROPOSITIONS in their analysis:

PROPOSITION – 1:

- $V_F = \frac{EBIT\ (NOI)}{K_O}$
- The total value of firm and K_O remains constant.
- Therefore, Value of levered firm = Value of unlevered firm.

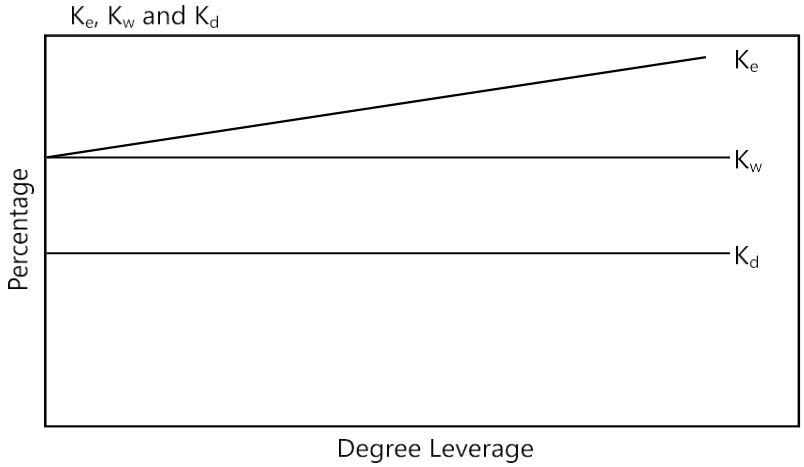
PROPOSITION – 2:

$$K_e = K_o (+) (K_o - K_d) \times \frac{\text{Debt}}{\text{Equity}}$$

PROPOSITION – 3:

The capital structure does not affect the overall cost of capital (K_O); the cost of capital is affected only by business risk and not by financial risk.

✓ Graphical Presentation:



II. MM Approach with Tax

✓ In 1963, MM model was amended by incorporating tax, they recognized that the value of the firm will increase, or cost of capital will decrease where corporate taxes exist.

✓ If tax rate is given, then the Value of Levered firm > Value of Unlevered firm.

✓ This is due to tax advantage on interest payment.

✓ Formulas:

- Value of Levered Firm (V_L) = V_{UL} + (D × T)

  Where,

  V_{UL} = Value of Unlevered Firm

  D = Debt

  T = Tax Rate

- Cost of equity in a levered company (K_{eg}) = $K_{eu} + (K_{eu} - K_d) \frac{\text{Debt}}{\text{Debt + Equity}}$

  Where,

  K_{eg} = Cost of equity in a levered company

  K_{eu} = Cost of equity in an unlevered company

  K_d = Cost of debt

- WACC in a levered company (K_{og}) = K_{eu} (1 – tL)

  Where,

  K_{og} = WACC of a levered company

  K_{eu} = Cost of equity in an unlevered company

  t = Tax rate

  $$L = \frac{\text{Debt}}{\text{Debt} + \text{Equity}}$$

H. Arbitrage Process

- ✓ Arbitrage refers to buying asset or security at lower price in one market and selling it at a higher price in another market.
- ✓ As a result, equilibrium is attained in different markets.
- ✓ This is illustrated by taking two identical firms of which one has debt in the capital structure while the other does not.
- ✓ Investors of the firm whose value is higher will sell their shares and instead buy the shares of the firm whose value is lower.
- ✓ They will be able to earn the same return at lower outlay with the same perceived risk or lower risk. They would, therefore, be better off.
- ✓ Detailed explanation on Arbitrage will be covered in our classroom discussion.

Core Theory Topics

A. Trade-off Theory

- ✓ Concept:
  - Balances the costs and benefits of debt and equity financing to determine an optimal capital structure.
- ✓ Key Elements:
  - Tax Benefits of Debt: Interest payments are tax-deductible, reducing the overall cost of debt.
  - Costs of Financial Distress: Includes bankruptcy costs and non-bankruptcy costs (e.g., employee turnover, strained supplier relations, and conflicts among stakeholders).
- ✓ Optimal Capital Structure:
  - Achieved when the marginal benefit of debt (mainly tax savings) equals the marginal cost of financial distress and agency costs.
  - As debt increases, the marginal benefit declines, and the marginal cost rises.
- ✓ Principle:
  - Modigliani and Miller in 1963 introduced the tax benefit of debt. Later work led to an optimal capital structure which is given by the trade-off theory.
  - According to Modigliani and Miller, the attractiveness of debt decreases with the personal tax on the interest income.
  - A firm experiences financial distress when the firm is unable to cope with the debt holders' obligations. If the firm continues to fail in making payments to the debt holders, the firm can even be insolvent.

B. Pecking Order Theory

- ✓ Pecking order theory suggests that managers may use various sources for raising of fund in the following order:
  1. Managers first choice is to use internal finance.
  2. In absence of internal finance, they can use secured debt, unsecured debt, hybrid debt etc.
  3. Managers may issue new equity shares as a last option.
- ✓ This theory is based on Asymmetric information, which refers to a situation in which different parties have different information.
- ✓ In a firm, managers will have better information than investors. This theory states that firms prefer to issue debt when they are positive about future earnings. Equity is issued when they are doubtful and internal finance is insufficient.

- ✓ The pecking order theory argues that the capital structure decision is affected by manager's choice of a source of capital that gives higher priority to sources that reveal the least amount of information.
- ✓ Myers has given the name 'PECKING ORDER' theory as here is no well-defined debt-equity target and there are two kind of equity internal and external.
- ✓ Now Debt is cheaper than both internal and external equity because of interest. Further internal equity is less than external equity particularly because of no transaction/issue cost, no tax etc.

C. Factors affecting capital structure	
1. Financial leverage or Trading on Equity:	The use of long-term fixed interest bearing debt and preference share capital along with equity share capital is called financial leverage or trading on equity.
2. Growth and stability of sales:	The capital structure of a firm is highly influenced by the growth and stability of its sales. If the sales of a firm are expected to remain fairly stable, it can raise a higher level of debt.
3. Cost Principle:	According to this principle, an ideal pattern or capital structure is one that minimizes cost of capital structure and maximizes earnings per share (EPS). For e.g. Debt capital is cheaper than equity capital from the point of its cost and interest being deductible for income tax purpose, whereas no such deduction is allowed for dividends.
4. Risk Principle:	According to this principle, reliance is placed more on common equity for financing capital requirements than excessive use of debt.
5. Control Principle:	While designing a capital structure, the finance manager may also keep in mind that existing management control and ownership remains undisturbed.
6. Flexibility Principle:	By flexibility, it means that the management chooses such a combination of sources of financing which it finds easier to adjust according to changes in need of funds in future too..
7. Financial leverage or Trading on Equity:	The use of long-term fixed interest bearing debt and preference share capital along with equity share capital is called financial leverage or trading on equity.
8. Growth and stability of sales:	The capital structure of a firm is highly influenced by the growth and stability of its sales. If the sales of a firm are

	expected to remain fairly stable, it can raise a higher level of debt.
D. Over-Capitalization	
Over-Capitalization	Occurs when a firm has excess capital or assets worth less than its issued share capital, and earnings are insufficient to pay dividends and interest.
Causes of Over-Capitalization	1. Raising more money through share or debenture issuance than the company can use profitably. 2. Borrowing at high rates than the company's earning rate. 3. Overpaying for fictitious assets like goodwill. 4. Incorrect depreciation provision and over-distribution of dividends. 5. Wrong estimation of earnings and capitalization.
Consequences of Over-Capitalization	1. Lower dividend and interest payments. 2. Decline in share price. 3. Window dressing of financial statements. 4. Possible reorganization or even liquidation.
Remedies for Over-Capitalization	1. Reorganization of the company. 2. Buyback of shares. 3. Reduction in debenture holders' and creditors' claims. 4. Reducing share value to free up funds for asset replacement
E. Under-Capitalization	
Under-Capitalization	Occurs when a company's actual capitalization is lower than the proper capitalization required based on its earning capacity. Often seen in companies with insufficient capital but large secret reserves due to unrecorded appreciation of fixed assets.
Consequences of Under-Capitalization	1. Higher dividend rate compared to similar companies. 2. Higher share price due to higher earnings. 3. Real value of shares being greater than their book value.
Effects of Under-Capitalization	1. Encourages acute competition as high profits attract new businesses. 2. High dividend rate may lead to higher wage demands from workers' unions. 3. Consumers may feel exploited. 4. Management may manipulate share values. 5. May invite more government control, regulation, and higher taxes.

Remedies for Under-Capitalization	1. Share split to reduce dividend per share, but EPS remains the same. 2. Issue of bonus shares to lower both dividends per share and average earnings rate. 3. Increase par value of shares in exchange for existing shares.
F. Over-Capitalization vis-à-vis Under-Capitalization	
Conclusion	Both over-capitalization and under-capitalization are problematic, but over-capitalization is more dangerous to the company, shareholders, and society.
Handling Under-Capitalization	Under-capitalization is easier to manage compared to over-capitalization. It's more about adjusting the capital structure rather than an economic problem.
Danger Level	Under-capitalization is less dangerous than over-capitalization, but both situations are undesirable. Every company should aim for proper capitalization.

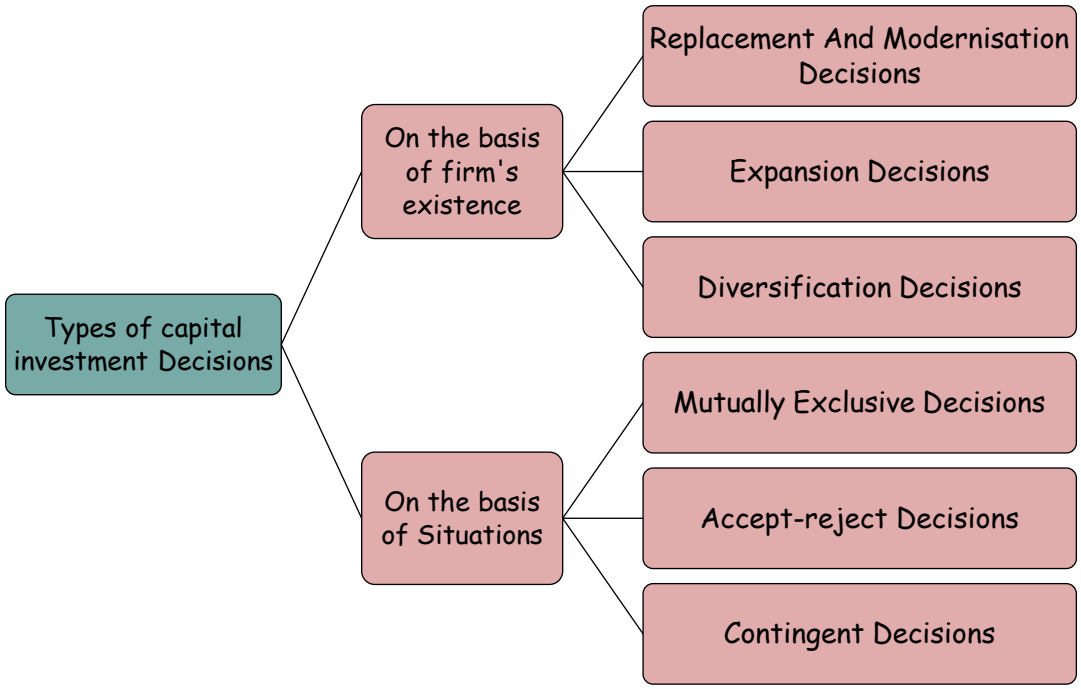
CHAPTER 5: INVESTMENT DECISIONS

1. Introduction

- ✓ Investment decision is concerned with optimum utilization of fund to maximize the wealth of the organization and in turn the wealth of its shareholders.
- ✓ As we have seen in the Cost of Capital chapter, each rupee of capital raised by an entity bears some cost, commonly known as cost of capital.
- ✓ It is necessary that each rupee raised is to be invested in a very prudent manner which requires a proper planning for capital, and it is done through a proper budgeting.
- ✓ In simple terms, Capital Budgeting involves:
  - Identification of investment projects that are strategic to business' overall objectives;
  - Estimating and evaluating post-tax incremental cash flows for each of the investment proposals; and
  - Selection of an investment proposal that maximizes the return to the investors.

2. Types Of Capital Investment Decisions

- ✓ There are many ways to classify the capital budgeting decision.
- ✓ Generally capital investment decisions are classified in two ways.
  - On the basis of Firm's Existence
  - On the basis of Decision Situation

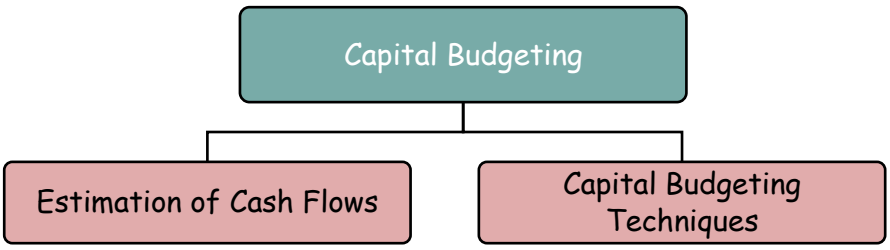


3. Steps of Capital Budgeting Procedure

The following are the steps involved in Capital Budgeting Procedure

1. Estimation of Cash flows over the entire life for each of the projects under consideration.
2. Evaluate each of the alternative, using different decision criteria.
3. Determining the minimum required rate of return (i.e., WACC) to be used as discount rate (Already covered in Cost of Capital Chapter)

Accordingly, this chapter is divided into two sections:



Part A: Estimation of Cash Flows

4. Estimation of Project Cash Flows

- ✓ Capital Budgeting analysis considers only incremental cash flows from an investment likely to result due to acceptance of any project.
- ✓ Therefore, one of the most important tasks in capital budgeting is estimating future cash flows for a project.
- ✓ Before we analyse how cash flow is computed in capital budgeting decision, following items needs consideration:

A. Depreciation

- ✓ Depreciation is a non-cash item and itself does not affect the cash flow.
- ✓ However, we must consider tax shield or benefit from depreciation in our analysis.
- ✓ Since this benefit reduces cash outflow for taxes, it is considered as cash inflow.

Example -1

X Ltd. manufactures electronic motors fitted in desert coolers. It has an annual turnover of ₹ 30 crore and cash expenses to generate this much of sale is ₹ 25 crore. Suppose applicable tax rate is 30% and depreciation is ₹ 1.50 crore p.a.

The table below is showing Tax shield due to depreciation under two scenarios i.e., with and without depreciation:

	No Depreciation is Charged (₹ Crore)	Depreciation is Charged (₹ Crore)
Total Sales	30.00	30.00
Less: Cost of Goods Sold	(25.00)	(25.00)
	5.00	5.00
Less: Depreciation	-	(1.50)
Profit before tax	5.00	3.50
Less: Tax @ 30%	(1.50)	(1.05)
Profit after Tax	3.50	2.45
Add: Depreciation*	-	1.50
Cash Flow	3.50	3.95

- ○ Being non- cash expenditure depreciation has been added back while calculatingthe cash flow.
- ○ As we can see in the above table that due to depreciation under the second scenario, a tax saving of ₹ 0.45 crore (₹ 1.50 – ₹ 1.05) was made.
- ○ This is called tax shield. The tax shield is considered while estimating cash flows.

B. Opportunity Cost
✓ Opportunity cost is foregoing of a benefit due to choosing an alternative investment option. ✓ This opportunity cost can occur both at the time of initial outlay and during the tenure of project. ✓ Opportunity costs are considered for estimation of Cash Flows.
C. Sunk Cost
✓ Sunk cost is an outlay of cash that has already been incurred in the past and cannot be reversed in present. ✓ Therefore, these costs do not have any impact on decision making, hence should be excluded from capital budgeting analysis.
D. Working Capital
✓ While evaluating the projects, initial working capital requirement should be treated as cash outflow and at the end of the project its release should be treated as cash inflow. ✓ It is important to note that no depreciation is provided on working capital though it might be possible that at the time of its release its value might have been reduced. ✓ Further there may be also a possibility that additional working capital may be required during the life of the project. ✓ In such cases the additional working capital required is treated as cash outflow at that period of time. ✓ Similarly, any reduction in working capital shall be treated as cash inflow. ✓ It may be noted that, if nothing has been specifically mentioned for the release of working capital it is assumed that full amount has been realized at the end of the project. ✓ However, adjustment on account of increase or decrease in working capital needs to be incorporated.
E. Additional Capital Investment
✓ It is not necessary that capital investment shall be required in the beginning of the project. ✓ It can also be required during the continuance of the project. ✓ In such cases, it shall be treated as cash outflows at that period of time.
F. Block of Assets and Depreciation
✓ Tax shield/benefit from depreciation is considered while calculating cash flows from the project which is calculated as per the provisions of Income Tax Act of the country. ✓ The treatment of deprecation is based on the concept of "Block of Assets", which means a group of assets falling within a particular class of assets.

- ✓ The treatment of tax depends on the fact whether block of asset consist of one asset or several assets.

Example- 2

Suppose A Ltd. acquired new machinery for ₹1,00,000, depreciable at 20% as per written down value (WDV) method. The machine has an expected life of 5 years with salvage value of ₹10,000. The treatment of depreciation/ short term capital loss in the 5th year in two cases shall be as follows:

Depreciation for initial 4 years shall be common and WDV at the beginning of the 5th year shall be computed as follows:

	₹
Purchase Price of Machinery	1,00,000
Less: Depreciation @ 20% for year 1	20,000
WDV at the end of year 1	80,000
Less: Depreciation @ 20% for year 2	16,000
WDV at the end of year 2	64,000
Less: Depreciation @ 20% for year 3	12,800
WDV at the end of year 3	51,200
Less: Depreciation @ 20% for year 4	10,240
WDV at the end of year 4	40,960

Case 1 - There is no other asset in the Block: When there is only one asset in the block and block shall cease to exist at the end of 5th year, then no deprecation shall be charged in 5th year and tax benefit/loss on short term capital loss/ gain shall be calculated as follows:

	₹
WDV at the beginning of year 5	40,960
Less: Sale value of Machine	10,000
Short Term Capital Loss (STCL)	30,960
Tax Benefit on STCL @ 30%	9,288

Case 2 - More than one asset exists in the Block: When more than one asset exists in the block, then deprecation shall be charged in the terminal year (5th year) in which asset is sold. The WDV on which depreciation be charged shall becalculated by deducting sale value from the WDV in the beginning of that year.Tax benefit on depreciation shall be calculated as follows:

	₹
WDV at the beginning of year 5	40,960
Less: Sale value of Machine	10,000
WDV	30,960
Depreciation @ 20%	6,192
Tax Benefit on Depreciation @ 30%	1,858

Now suppose if in above two cases, sale value of machine is ₹50,000, then no depreciation shall be provided in Case 2 because the WDV at the beginning of 5th year is only ₹40,960 i.e., less than sale value of ₹50,000 and tax loss on STCG in Case 1 shall be computed as follows:

	₹
WDV at the beginning of year 5	40,960
Less: Sale value of Machine	50,000
Short Term Capital Gain (STCG)	9,040
Tax outflow on STCG @ 30%	2,712

G. Exclusion of Financing Costs Principle

- ✓ When cash flows relating to long-term funds are being defined, financing costs of long-term funds (interest on long-term debt and equity dividend) should be excluded from the analysis.
- ✓ The interest and dividend payments are reflected in the weighted average cost of capital.
- ✓ Hence, if interest on long-term debt and dividend on equity capital are deducted in defining the cash flows, the cost of long- term funds will be counted twice.
- ✓ The exclusion of financing costs principle means that:
  - The interest on long-term debt is ignored while computing profits and taxes.
  - The expected dividends are deemed irrelevant in cash flow analysis.

H. Post-tax Principle

- ✓ Tax payments like other payments must be properly deducted in deriving the cash flows.
- ✓ That is, cash flows must be defined in post-tax terms.
- ✓ The discounting rate and the cash flows, both must be post-tax only.

Statement showing the calculation of Cash Inflow After Tax (CFAT)

Particulars	(₹)	(₹)
Sales value		xxx
Less: Variable Cost		xxx
Contribution		xxx
Less: Fixed Cost		
(a) Fixed Cash Cost (excluding Interest)	xxx	
(b) Depreciation	xxx	xxx
Earning Before Tax (EBT)		xxx
Less: Tax		xxx
Earning After Tax (EAT)		xxx
Add: Depreciation		xxx
Cash Inflow After Tax (CFAT)		xxx

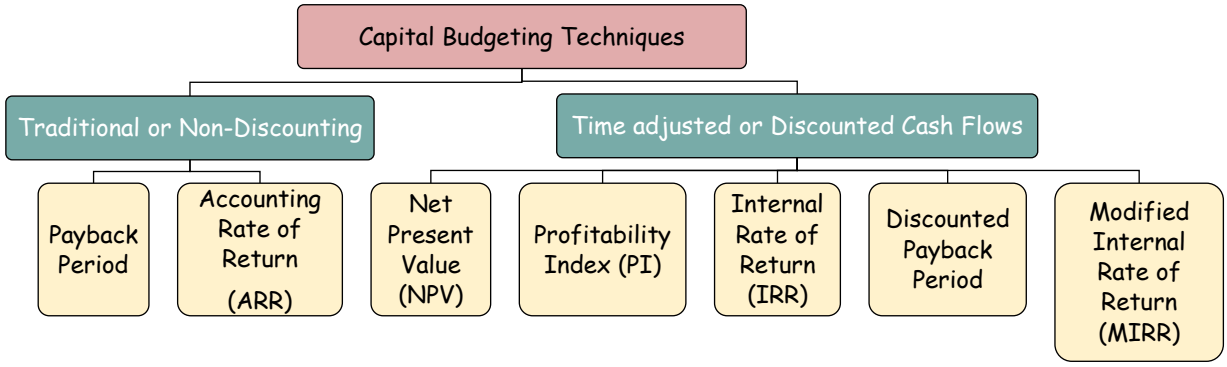
Doubt Busters:

1. In Replacement Decision Sums, when the seller of a new machine accepts the old machine as an exchange, the following should be the treatment:
   - If the co is following SLM for IT purpose - Do not reduce the Sale Value of Old Machine from the Cost (since no block of asset concept)
   - If the co is following WDV for IT purpose - Reduce the Sale Value of Old Machine from the cost (since block of asset concept is present)
2. Interest being a Financing cost along with its tax shield should be ignore for calculating CFAT.

Part B: Capital Budgeting Techniques

5. Introduction to Capital Budgeting Techniques

- ✓ In order to maximize the return to the shareholders of a company, it is important that the best or most profitable investment projects are selected.
- ✓ Results of making a bad long-term investment decision can be devastating in both financial and strategic terms.
- ✓ Proper care is required for investment project selection and evaluation.
- ✓ There are number of techniques available for the appraisal of investment proposals and can be classified as presented below:



6. Traditional or Non-Discounting Techniques

- ✓ These techniques of capital Budgeting does not discount the future cash flows.
- ✓ There are two such traditional techniques namely Payback Period and Accounting Rate of Return.

A. Payback Period

- ✓ Time required to recover the initial cash-outflow is called pay-back period.
- ✓ The payback period of an investment is the length of time required for the cumulative total net cash flows from the investment to equal the total initial cash outlays.
- ✓ At that point in time (payback period), the investor has recovered all the money invested in the project.
- ✓ Steps in Payback period technique:
  - The first step in calculating the payback period is determining the total initial capital investment (cash outflow).
  - The second step is calculating/estimating the annual expected after-tax cash flows over the useful life of the project.

i. Payback Period (Uniform Cash Flows)

- ✓ When the cash inflows are uniform over the useful life of the project, the number of years in the payback period can be calculated using the following equation:

$$\text{Payback period} = \frac{\text{Total initial capital investment}}{\text{Annual Expected After - Tax net Cash Flow}}$$

Example- 3

Suppose a project costs ₹20,00,000 and yields annually a profit of ₹3,00,000 after depreciation @ 12½% (straight line method) but before tax at 50%.

The first step would be to calculate the cash inflow from this project. The cash inflow is calculated as follows:

Particulars	(₹)
Profit before tax	3,00,000
Less: Tax @ 50%	1,50,000
Profit after tax	1,50,000
Add: Depreciation written off	2,50,000
Total cash inflow	4,00,000

While calculating cash inflow, depreciation is added back to profit after tax sinceit does not result in cash outflow.

The cash generated from a project therefore isequal to profit after tax plus depreciation. The payback period of the project shallbe:

$$\text{Payback period} = \frac{₹20,00,000}{4,00,000} = 5 \text{ Years}$$

ii. Payback Period (Non - Uniform Cash Flows)

- ✓ When the annual cash inflows are not uniform, the cumulative cash inflow from operations must be calculated for each year.
- ✓ The payback period shall be corresponding period when total of cumulative cash inflows is equal to the initial capital investment.
- ✓ However, if exact sum does not match, then the period in which it lies should be identified. After that we need to compute the fraction of the year.

Example- 4

Suppose XYZ Ltd. is analyzing a project requiring an initial cash outlay of ₹2,00,000 and is expected to generate cash inflows as follows:

Year	Annual Cash Inflows (₹)
1	80,000
2	60,000

3	60,000
4	20,000

Its payback period shall be computed by using cumulative cash flows as follows:

Year	Annual CashInflows (₹)	Cumulative CashInflows (₹)
1	80,000	80,000
2	60,000	1,40,000
3	60,000	2,00,000
4	20,000	2,20,000

In 3rd year, cumulative cash inflows equal to initial cash outlay i.e., ₹2,00,000. Hence,payback period is 3rd year.

Suppose if in above example, the initial outlay is ₹2,05,000, then:

Payback period shall lie between 3 to 4 years. Since up to 3 years, a sum of ₹2,00,000 shall be recovered and balance of ₹5,000 shall be recovered in the part(fraction) of 4th year, computation is as follows:

$$\text{Part of } 4^{th} \text{ year} = \frac{\text{Balance Cash outlay}}{\text{Cumulative Cash Inflow at } 4^{th} \text{ year}} = \frac{₹\,5,000}{₹\,20,000} = \frac{1}{4 \text{ year}}$$

Thus, total cash outlay of ₹2,05,000 shall be recovered in $3\frac{1}{4}$ years' time.

iii. Payback Reciprocal

- ✓ As the name indicates, it is the reciprocal of payback period.
- ✓ A major drawback of the payback period method of capital budgeting is that it does not indicate any cut off period for the purpose of investment decision.
- ✓ It is, however, argued that the reciprocal of the payback would be a close approximation of the Internal Rate of Return if the life of the project is at least twice the payback period and the project generates equal amount of the annual cash inflows.
- ✓ In practice, the payback reciprocal is a helpful tool for quick estimation of rate of return of a project provided its life is at least twice the payback period.
- ✓ The payback reciprocal can be calculated as follows:

$$\text{Payback Reciprocal} = \frac{\text{Average annual cash in flow}}{\text{Initial investment}}$$

Example- 5

Suppose a project requires an initial investment of ₹20,000 and it would give annual cash inflow of ₹4,000. The useful life of the project is estimated to be 10 years.

In this example, payback reciprocal = ₹ 4,000 × 100 / ₹ 20,000 = 20%

The above payback reciprocal provides a reasonable approximation of the internal rate of return, i.e. 20%.

B. Accounting Rate of Return or Average Rate of Return (ARR)

- ✓ The accounting rate of return of an investment measures the average annual net income of the project (incremental income) as a percentage of the investment.
- ✓ Formula:

$$\text{Accounting Rate of Return (ARR)} = \frac{\text{Average annual net income}}{\text{Investment}}$$

- ✓ The numerator is the average annual net income generated by the project over its useful life.
- ✓ The denominator can be either the initial investment (including installation cost) or the average investment over the useful life of the project.
- ✓ Average investment means the average amount of fund remained blocked during the lifetime of the project under consideration.

Example- 6

Suppose Times Ltd. is going to invest in a project a sum of ₹3,00,000 having a life span of 3 years. Salvage value of machine is ₹90,000. The profit before depreciation for each year is ₹1,50,000.

The Profit after Tax and value of Investment in the Beginning and at the End of each year shall be as follows:

Year	Profit Before Depreciation (₹)	Depreciation (₹)	Profit After Depreciation (₹)	Value of Investment in (₹)	
				Beginning	End
1	1,50,000	70,000	80,000	3,00,000	2,30,000
2	1,50,000	70,000	80,000	2,30,000	1,60,000
3	1,50,000	70,000	80,000	1,60,000	90,000

The ARR can be computed by following methods as follows:

Version 1: Annual Basis

$$\text{ARR} = \frac{\text{Profit after Depreciation}}{\text{Investment in the beginning of the year}} \times 100$$

Year	
1	$\frac{80,000}{3,00,000} = 26.67\%$
2	$\frac{80,000}{2,30,000} = 34.78\%$
3	$\frac{80,000}{1,60,000} = 50\%$

$$\text{Average ARR} = \frac{26.67\%+34.78\%+50.00\%}{3} = \mathbf{37.15\%}$$

Version 2: Total Investment Basis

$$\text{ARR} = \frac{\text{Average Annual Profit}}{\text{Investment in the beginning}} \times 100$$

$$= \frac{(80,000 + 80,000 + 80,000) / 3}{3,00,000} \times 100 = 26.67\%$$

Version 3: Average Investment Basis

$$\text{ARR} = \frac{\text{Average Annual Profit}}{\text{Average Investment}} \times 100$$

Average Investment = (₹3,00,000 + ₹90,000)/2 = ₹1,95,000

Or, Average Investment = ½ (Initial Investment – Salvage Value) + Salvage Value

= ½ (₹3,00,000 – ₹90,000) + ₹90,000 = ₹1,95,000

$$\text{ARR} = \frac{80,000}{1,95,000} \times 100 = 41.03\%$$

- ✓ Further, it is important to note that project may also require additional working capital during its life in addition to initial working capital.
- ✓ In such situation, formula for the calculation of average investment shall be modified as follows:

  ½(Initial Investment – Salvage Value) + Salvage Value + Additional Working Capital

Continuing above example, suppose a sum of ₹45,000 is required as additional working capital during the project life, then average investment shall be:

= ½ (₹3,00,000 – ₹90,000) + ₹90,000 + ₹45,000 = ₹2,40,000 and

$$\text{ARR} = \frac{80,000}{2,40,000} \times 100 = 33.33\%$$

7. Discounting Techniques

- ✓ Discounting techniques consider time value of money and discount the cash flows to their Present Value and are also known as Present Value techniques.
- ✓ These are namely Net Present Value (NPV), Internal Rate of Return (IRR), Profitability Index (PI), Discounted Payback Period & Modified Internal Rate of Return (MIRR)

- ✓ Theoretically, the discount rate or desired / expected rate of return on an investment is the rate of return the firm would have earned by investing the same funds in the best available alternative investment that has the same risk.
- ✓ Determining the best alternative opportunity available is difficult in practical terms so rather than using the true opportunity cost, organizations often use an alternative measure for the desired rate of return.
- ✓ An organization may establish a minimum rate of return that all capital projects must meet; this minimum could be based on an industry average or the cost of other investment opportunities.
- ✓ Many organizations choose to use the overall cost of capital or Weighted Average Cost of Capital (WACC) that an organization has incurred in raising funds or expects to incur in raising the funds needed for an investment.

A. Net Present Value Technique (NPV)

- ✓ The net present value technique is a discounted cash flow method that considers the time value of money in evaluating capital investments.
- ✓ The net present value method uses a specified discount rate to bring all subsequent cash inflows after the initial investment to their present values (the time of the initial investment is year 0).
- ✓ The net present value of a project is the amount, in current value of amount, the investment earns after paying cost of capital in each period.
- ✓ NPV = Present Value of Net Cash Inflow - Total Net Initial Investment

$$NPV = \left(\frac{C_1}{(1+k)} + \frac{C_2}{(1+k)^2} + \frac{C_3}{(1+k)^3} + \ldots + \frac{C_n}{(1+k)^n}\right) - I$$

Where,

C = Cash flow of various years

k = Discount rate

N = Life of the project

I = Investment

- ✓ The steps for calculating net present value are:
  1. Determine the net cash inflow in each year of the investment.
  2. Select the desired rate of return or discounting rate or Weighted Average Cost of Capital.
  3. Find the discount factor for each year based on the desired rate of return selected.

4. Determine the present values of the net cash flows by multiplying the cash flows by respective discount factors of respective period called Present Value (PV) of Cash flows
5. Total the amounts of all PVs of Cash Flows.

✓ Decision Rule:

If NPV ≥ 0	Accept the Proposal
If NPV ≤ 0	Reject the Proposal

The NPV method can be used to select between mutually exclusive projects; the one with the higher NPV should be selected.

B. Profitability Index/Desirability Factor/Present Value Index Method (PI)

✓ The Profitability Index (PI) is calculated as below:

$$PI = \frac{\text{Sum of discounted cash in flows}}{\text{Initial cash outlay or Total discounted cash outflow (as the case may)}}$$

✓ Decision Rule:

If PI ≥ 1	Accept the Proposal
If PI ≤ 1	Reject the Proposal

In case of mutually exclusive projects, project with higher PI should be selected.

C. Internal Rate of Return Method (IRR)

✓ The internal rate of return method considers the time value of money, the initial cash investment, and all cash flows from the investment.

✓ But unlike the net present value method, the internal rate of return method does not use the desired rate of return but estimates the discount rate that makes the present value of subsequent cash inflows equal to the initial investment. This discount rate is called IRR.

✓ IRR is the discount rate that equates the present value of the expected cash inflows with the initial cash outflow.

✓ This IRR is then compared to a criterion rate of return that can be the organization's desired rate of return for evaluating capital investments.

✓ Steps to Compute IRR have been covered in TVM Chapter

✓ Decision Rule:

If IRR ≥ Cut-off Rate or WACC	Accept the Proposal
If IRR ≤ Cut-off Rate or WACC	Reject the Proposal

D. Discounted Payback Period Method

✓ This is similar to Payback period as discussed under the non-discounting method except that the cash flows here are discounted at predetermined rate and the payback period so calculated is called Discounted payback period.

Example-7

For example, a ₹30,000 cash outlay for a project with annual cash inflows of ₹6,000 would have a payback period of 5 years (₹30,000 / ₹6,000).

The problem with the Payback Period is that it ignores the time value of money. In order to correct this, we can use discounted cash flows in calculating the payback period. Referring back to our example, if we discount the cash inflows at 15%required rate of return, we have:

Year	Cash Flow (₹)	PVF@15%	PV (₹)	Cumulative PV (₹)
1	6,000	0.870	5,220	5,220
2	6,000	0.756	4,536	9,756
3	6,000	0.658	3,948	13,704
4	6,000	0.572	3,432	17,136
5	6,000	0.497	2,982	20,118
6	6,000	0.432	2,592	22,710
7	6,000	0.376	2,256	24,966
8	6,000	0.327	1,962	26,928
9	6,000	0.284	1,704	28,632
10	6,000	0.247	1,482	30,114

The cumulative total of discounted cash flows after ten years is ₹30,114. Therefore, our discounted payback is approximately 10 years as opposed to 5 years under simple payback.

Note: It should be noted that as the required rate of return increases, the distortion between simple payback and discounted payback grows.

E. Modified Internal Rate of Return (MIRR)

- ✓ There are several limitations attached with the concept of the conventional Internal Rate of Return (IRR).
- ✓ The MIRR addresses some of these deficiencies e.g., it eliminates multiple IRR rates; it addresses the reinvestment rate issue and produces results which are consistent with the Net Present Value method.
- ✓ This method is also called Terminal Value method.
- ✓ Under this method, all cash flows, apart from the initial investment, are brought to the terminal value using an appropriate discount rate (usually the Cost of Capital). This results in a single stream of cash inflow in the terminal year.
- ✓ The MIRR is obtained by assuming a single outflow in the zeroth year and the terminal cash inflow as mentioned above.
- ✓ The discount rate which equates the present value of the terminal cash inflow to the zeroth year outflow is called the MIRR.

- ✓ The decision rule of MIRR is same as IRR i.e. you accept an investment if MIRR is larger than required rate of return and reject if it is lower than the required rate of return.

8. Some Issues in IRR

A. IRR and Mutually Exclusive Projects

- ✓ Projects are called mutually exclusive, when the selection of one precludes the selection of others
- ✓ E.g., in case a company owns a piece of land which can be put to use either for project S or L, such projects are mutually exclusive to each other i.e., the selection of one project necessarily means the rejection of the other.
- ✓ Mutually exclusive projects can create problem with the IRR technique as IRR is expressed in percentage and does not take into account the scale of investment or the quantum of money earned.
- ✓ Let us understand this with the help of two numerical examples.

Example - 8

Cash flows

	Year 0	Year 1	IRR	NPV at 10%
Project A	(₹1,00,000)	₹1,50,000	50%	₹36,360
Project B	(₹5,00,000)	₹6,25,000	25%	₹68,180

- Project A earns a return of 50% which is more than what Project B earns; however, the NPV of Project B is more than of Project A.
- Acceptance of Project A means rejection of Project B since the two Projects are mutually exclusive.
- Acceptance of Project A also implies that the total investment will be ₹4,00,000 less had the Project B been accepted, ₹4,00,000 being the difference between the initial investment of the two projects.
- Assuming that the funds are freely available at 10%, the total capital expenditure of the company should ideally be equal to sum totalof all outflows provided they earn more than 10% return along with the chosen mutually exclusive project.
- Selection of Project A implies rejection of an opportunity to earn an additional amount of ₹31,820 (₹68,180 - ₹36,360) for the shareholders, thus reduction in the shareholders' wealth.
- In the above example, the larger project had lower IRR, but maximizes the shareholders' wealth.
- It is not safe to assume that a choice can be made between mutually exclusive projects

using IRR in cases where the larger project also happens to have the higher IRR. Refer next example

Example – 9

Year	Project A	Project B
	(₹)	(₹)
0	(9,00,000)	(8,00,000)
1	7,00,000	62,500
2	6,00,000	6,00,000
3	4,00,000	6,00,000
4	50,000	6,00,000

In this case, Project A has the larger investment and also has a higher IRR as shown below,

Year	(₹)	r = 46%	PV (₹)	(₹)	r = 35%	PV (₹)
0	(9,00,000)	1.0000	(9,00,000)	(8,00,000)	1.0000	(8,00,000)
1	7,00,000	0.6849	4,79,430	62,500	0.7407	46,294
2	6,00,000	0.4691	2,81,460	6,00,000	0.5487	3,29,220
3	4,00,000	0.3213	1,28,520	6,00,000	0.4064	2,43,840
4	50,000	0.2201	11,005	6,00,000	0.3011	1,80,660
			415			14
IRR of Project A = 46%						
IRR of Project B = 35%						

However, in case the relevant discounting factor is taken as 5%, the NPV of the two projects provides a different picture as follows:

Year	Project A (₹)			Project B (₹)		
	(₹)	r= 5%	PV (₹)	(₹)	r= 5%	**PV (₹)**
0	(9,00,000)	1.0	(9,00,000)	(8,00,000)	1.0	(8,00,000)
1	7,00,000	0.9524	6,66,680	62,500	0.9524	59,525
2	6,00,000	0.9070	5,44,200	6,00,000	0.9070	5,44,200
3	4,00,000	0.8638	3,45,520	6,00,000	0.8638	5,18,280
4	50,000	0.8227	41,135	6,00,000	0.8227	4,93,620
NPV			6,97,535			8,15,625

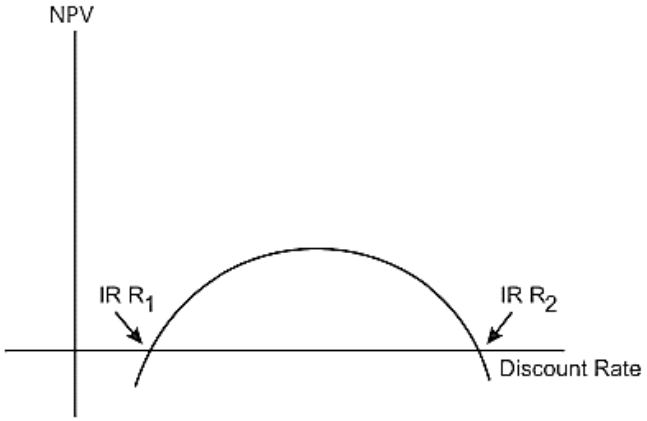
- It can be seen from the above, Project B should be the one to be selected even though its IRR is lower than that of Project A.
- This decision shall need to be taken in spite of the fact that Project A has a larger investment coupled with a higher IRRas compared with Project B.
- This type of anomalous situation arises due to reinvestment assumptions implicit in the two evaluation methods of NPV and IRR.
- This issue is overcome by Modified Internal Rate of Return (MIRR).

Note on Reinvestment Assumption:

- ✓ The NPV technique assumes that all cash flows can be reinvested at the discount rate used for calculating the NPV.
- ✓ This is a logical assumption since the use of the NPV technique implies that all projects which provide a higher return than the discounting factor are accepted.
- ✓ In contrast, IRR technique assumes that all cash flows are reinvested at project's IRR.
- ✓ This assumption means that projects with heavy cash flows in the early years will be favoured by the IRR method vis-à-vis projects which have larger cash flows in the later years.
- ✓ This implicit reinvestment assumption means that Projects like A, with cash flows concentrated in the earlier years of life will be preferred by the method relative to Projects such as B.

B. Multiple IRR

- ✓ In cases, where project cash flows change signs or reverse during the life of a project e.g. an initial cash outflow is followed by cash inflows and subsequently followed by a major cash outflow, there may be more than one IRR.
- ✓ The following graph of discount rate versus NPV may be used as an illustration:



- ✓ In such situations. if the cost of capital is less than the two IRR's, a decision can be made easily, however otherwise the IRR decision rule may turn out to be misleading as the project should only be invested if the cost of capital is between IRR1 and IRR2.

- ✓ This issue is overcome by Modified Internal Rate of Return (MIRR).

9. Conflict between NPV & IRR

There are circumstances/scenarios under which the net present value method and the internal rate of return methods will reach different conclusions.

Let us discuss these scenarios:

Scenario 1 – Scale or Size Disparity

- ✓ IRR being a relative measure and NPV an absolute measure in case of disparity in scale or size both may give contradicting ranking.

Scenario 2 – Time Disparity in Cash Flows

- ✓ It might be possible that overall cash flows may be more or less same in the projects but there may be disparity in their flows i.e., larger part of cash inflows may be occurred in the beginning or end of the project.
- ✓ In such situation there may be difference in the ranking of projects as per two methods.

Scenario 3 – Disparity in life of Proposals (Unequal Lives)

- ✓ Conflict in ranking may also arise if we are comparing two projects (especially mutually exclusive) having unequal lives.

10. Special Cases

A. Capital Budgeting under Capital Rationing

- ✓ As discussed earlier, if project has positive NPV, it should be accepted with an objective of maximisation of wealth of shareholders.
- ✓ However, there may be a situation due to resource (capital) constraints (rationing) a firm may have to select some projects among various projects, all having positive NPVs.
- ✓ Broadly two scenarios may influence the method of evaluation to be adopted.
  - Projects are independent of each other and are divisible in nature: In such situation, NPV rule should be modified and accordingly projects should be ranked on the basis of 'NPV per rupee of Capital' method.
  - Projects are not divisible: In such situation, projects shall be ranked on the basis of absolute NPV and should be mixed up to the point available resources are exhausted.

B. Projects with unequal lives

Sometimes firm may be faced with problem arises in case projects have unequal lives. In such situations we can deal with the problem by following any of the following method:

i. Replacement Chain Method

ii. Equivalent Annualized Criterion

11. Summary Of Decision Criteria Of Capital Budgeting Techniques

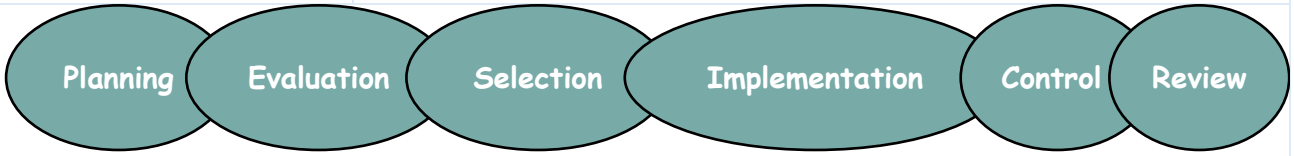
Techniques		For Independent Project	For Mutually Exclusive Projects
Non-Discounted	Pay Back	i. When Payback period ≤ Maximum Acceptable Payback period: Accepted ii. When Payback period ≥ Maximum Acceptable Payback period:Rejected	Project with least Payback periodshould be selected
	Accounting Rate of Return (ARR)	i. When ARR≥ Minimum Acceptable Rate of Return: Accepted ii. When ARR ≤ Minimum Acceptable Rate of Return: Rejected	Project with the maximum ARR should be selected.
Discounted	Net Present Value (NPV)	i. When NPV> 0: Accepted ii. When NPV< 0: Rejected	Project with the highest positiveNPV should be selected
	Profitability Index (PI)	i. When PI > 1: Accepted ii. When PI < 1: Rejected	When Net Present Value is sameproject withHighest PI should be selected
	Internal Rate of Return (IRR)	i. When IRR >K: Accepted ii. When IRR <K: Rejected	Project with the maximum IRR should beselected

12. Core Theory Areas

PURPOSE OF CAPITAL BUDGETING	
Reason	Explanation
Substantial Investment	Capital budgeting requires significant investment for long-term objectives and survival. It involves choosing sources of finance based on the size of the capital and timing of cash flows. A thorough study and planning is necessary due to large investments and associated costs.
Long Time Period	Capital budgeting decisions affect the future benefits and costs of the firm over a long period. These decisions also influence the growth rate and direction of the firm.
Irreversibility	Most investment decisions are irreversible. Once made, they are difficult to reverse due to upfront payments, contractual obligations, or technological limitations.
Complex Decisions	The decision-making process involves assessing future events, which are hard to predict. It is challenging to estimate all the benefits and costs of an investment decision in quantitative terms.

CAPITAL BUDGETING PROCESS	
Phase	Explanation
Planning	The process starts with identifying investment opportunities. The potential impact on the firm's fortunes and the management's ability to exploit it are assessed. Poor opportunities are rejected, and promising ones are moved to the evaluation phase.
Evaluation	In this phase, proposals are assessed for investments, inflows, and outflows. Various investment appraisal techniques like payback method, accounting rate of return, and discounted cash flow are used. The chosen technique should help the manager make the best decision based on circumstances.
Selection	The firm chooses the project that maximizes shareholders' wealth, considering the returns, risks, and cost of capital for each project.
Implementation	Once a project is selected, the firm must acquire funds, purchase necessary assets, and begin implementation of the project.

Control	The project's progress is monitored using feedback reports, including capital expenditure progress, performance comparisons, and post-completion audits.
Review	After project completion, or even before, the firm reviews the project to understand its success or failure. This phase may influence future planning and evaluation processes and generate ideas for new proposals.



Advantages of Payback period	
Advantage	Explanation
Easy to Compute	The payback period is simple to calculate, making it easy for managers to use.
Easy to Understand	It provides a quick estimate of how long it will take to recoup the invested cash, making it easily understandable.
Estimate of Risk	The length of the payback period can indicate a project's risk. Longer payback periods are riskier due to the uncertainty of long-term predictions. In industries with high obsolescence risk or where cash is limited, shorter payback periods are often preferred.

Advantages of Payback period	
Advantage	Explanation
Easy to Compute	The payback period is simple to calculate, making it easy for managers to use.
Easy to Understand	It provides a quick estimate of how long it will take to recoup the invested cash, making it easily understandable.
Estimate of Risk	The length of the payback period can indicate a project's risk. Longer payback periods are riskier due to the uncertainty of long-term predictions. In industries with high obsolescence risk or where cash is limited, shorter payback periods are often preferred.

Limitations of Payback period	
Limitation	Explanation
Ignores Time Value of Money	The payback period ignores the time value of money. Two projects with the same payback period are treated as equal, even if one project generates most of its cash inflows early, and the other generates them later.
Ignores Total Profitability	The technique only considers cash inflows up to the point when the initial investment is fully recovered and ignores cash flows after the payback period, failing to assess the total profitability of the investment.
Focuses on Short Payback Periods	The payback method emphasizes short payback periods, often ignoring the value of long-term projects.

Advantages of ARR	
Advantage	Explanation
Uses Readily Available Data	The ARR method uses data that is already available from financial reports and does not require special procedures to generate the data.
Consistency in Evaluation	This method aligns with the approach used to assess operating results and management performance, ensuring consistency in decision-making and performance evaluation.
Considers Entire Project Profitability	The ARR method takes into account all net incomes over the entire life of the project, offering a comprehensive measure of the project's profitability.

Limitations of ARR	
Limitation	Explanation
Ignores Time Value of Money	Like the payback period, the ARR method ignores the time value of money and treats all cash flows as equal in value.
Depends on Accounting Procedures	The method relies on accounting numbers, which are influenced by the organization's choice of accounting procedures (e.g., depreciation methods). Different procedures can lead to varying net income and book values.
Ignores Cash Flows	ARR focuses on net income, but it ignores cash flows, which are a better measure of an investment's actual performance.

Excludes Working Capital and Outlays	The method considers only the book value of the asset and overlooks other necessary investments, like working capital and other outlays, that are crucial for the project's success.

Advantages of NPV	
Advantage	Explanation
Considers Time Value of Money	The NPV method accounts for the time value of money, making future cash flows more accurately reflect their current value.
Considers Entire Cash Flow Stream	The method evaluates the entire stream of cash flows, providing a comprehensive view of the investment's financial impact.
Aligns with Shareholders' Wealth	NPV shows the addition to shareholders' wealth, aligning with the basic financial objectives of increasing value.
Enables Independent Project Evaluation	NPV uses discounted cash flows, allowing for comparisons of different projects in terms of current value (rupees), enabling independent evaluation of each project.

Limitations of NPV	
Limitation	Explanation
Difficult Calculations	NPV involves complex calculations, which may be difficult for some to perform accurately.
Depends on Accurate Forecasting	The accuracy of NPV relies on forecasting cash flows and the discount rate, which can be challenging to estimate correctly in practice.
Ignores Differences in Projects	NPV is based on an absolute measure, so it doesn't account for differences in initial outflows or the size of mutually exclusive projects.

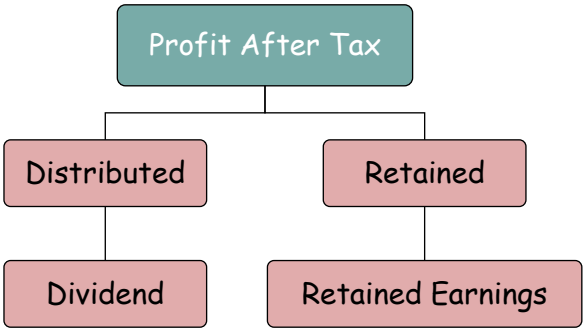
Advantages of PI	
Advantage	Explanation
Considers Time Value of Money	The PI method also takes into account the time value of money, making future cash flows more accurately valued.
Relative Measure of Profitability	PI is a relative measure of a project's profitability, as it compares the present value of cash inflows to the present value of cash outflows.

Limitations of PI	
Limitation	Explanation
Fails in Capital Rationing	The Profitability Index (PI) method is not effective when capital rationing is involved, especially with indivisible projects.
Excludes Smaller Projects	After selecting a large project with a high NPV, it may exclude the possibility of taking several smaller projects that could have a higher total NPV.
Ignores Future Opportunities	A project with a lower PI might generate cash flows in such a way that another project can be undertaken later, resulting in a higher total NPV than a higher PI project.
Requires Comprehensive Evaluation	PI cannot be used in isolation; all alternative project options must be carefully considered to ensure the best choice.

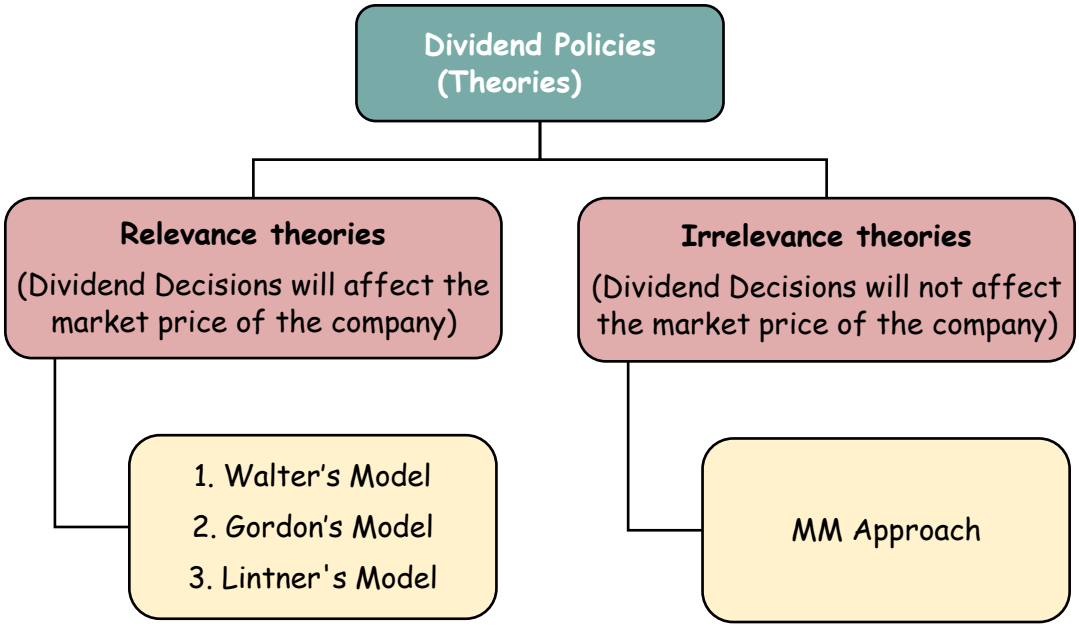
CHAPTER 6: DIVIDEND DECISIONS

1. Introduction

- ✓ In this chapter, we will discuss the "Dividend decision" which is one of the most important areas of Financial Management decisions.
- ✓ Dividend is that part of Profit After Tax (PAT) which is distributed to the shareholders of the company. Further, the profit earned by a company after paying taxes can be used for:
  - Distribution of dividend, or
  - Retaining as surplus for future growth



- ✓ In this chapter, we will determine the optimum dividend paid by the company i.e., how much dividend should be paid, and how much should be retained for investment purposes.
- ✓ Furthermore, there are few Dividend theories which put light on the complexities involved in dividend decision.



2. Important Concepts used in Dividend Decisions

The following are a few terms/concepts which will be used throughout this chapter.

A. Relationship Between Retained Earnings and Growth

- ✓ Growth (g) = b x r

  Where,

  g = Growth rate of the firm

  b = Retention ratio

  r = Rate of return on investment

B. Relationship Between Dividend Payout Ratio & Retention Ratio

- ✓ Retention Ratio (b) = $\frac{(E - D)}{E} \times 100$
- ✓ Dividend Payout Ratio (1-b) = $\frac{D}{E} \times 100$
- ✓ Dividend Payout Ratio + Retention Ration = 100%

Where,

E = Earnings Per Share

D = Dividend Per Share

C. Other Formulas

- ✓ PE Ratio = $\frac{\text{Market Price per Share}}{\text{Earnings Per Share}}$
- ✓ Return on Equity (ROE) = $\frac{\text{EFE}}{\text{Equity SH Funds}} \times 100$
- ✓ Book Value per Share (BVPS) = $\frac{\text{Equity SH Funds}}{\text{No. of Equity Shares}}$
- ✓ EPS = BVPS x ROE

3. Walter's Model

A. Assumptions of Walter's Model

- ✓ EPS and DPS remain constant.
- ✓ 'r' rate of return & 'Ke' cost of capital are constant.
- ✓ The firm has perpetual life
- ✓ Perfect capital markets: The firm operates in a market in which all investors are rational and information is freely available to all.
- ✓ Assume no taxes
- ✓ No floatation or transaction cost

B. Walter's Formula

$$P_o = \frac{D}{K_e} + \frac{r(E - D)}{K_e^2}$$

Where,

P_o = Price of share today

D = Dividend per share

E = Earnings per share

K_e = Cost of equity/Expected return/Capitalization rate/Discount rate

r = Return on Investment/Return on Equity/IRR

(E - D) = Retained earnings per share

C. Optimum Dividend Payout as per Walter's Model

✓ Under Walter's model dividend Decisions are taken by comparing Ke (Investors expectation) with r (Return on Investment by company) which is summarised below:

Company	Condition of 'r' vs 'Ke'			Correlation between Size of Dividend and Market Price of share	Optimum payout dividend ratio
Growth	r	>	Ke	Negative	0%
Constant	r	=	Ke	No correlation	Every payout ratio is optimum
Decline	r	<	Ke	Positive	100%

4. Gordon's Model

A. Assumptions of Gordon's Model

✓ Growth rate (g = b x r) is constant

✓ Ke will remain constant

✓ Ke > g,

✓ Retention ratio (b) will remain constant

✓ 'r' will remain constant

✓ Firm is an all-equity firm i.e., no debt.

✓ All investment proposals of the firm are to be financed through retained earnings only.

B. Gordon's Formula

$$P_o = \left[\frac{D_1}{K_e - g}\right]$$

Or

$$P_o = \left[\frac{D_0(1+g)}{K_e - g}\right]$$

Or

$$P_o = \frac{E_1(1-b)}{K_e - br}$$

Where,

P_0 = Price per share

D_0 = Current year dividend

D_1 = Expected Dividend per share

E_1 = Earnings per share

b = Retention ratio;

(1 – b) = Payout ratio

K_e = Cost of capital

r = IRR

br = Growth rate (g)

$D_1 = D_0(1 + g)$

C. Optimum Dividend Payout as per Gordon's Model

✓ Following is the conclusion of Dividend Decision under Gordon's model

Company	Condition of r vs Ke	Optimum dividend payout ratio
Growth	r > Ke	0%
Constant	r = Ke	There is no optimum ratio
Declining	r < Ke	100%

Doubt Busters:

1. Both Walter's Model and Gordon's model prescribe the same Optimum Dividend Payout Criteria.
2. Confusion regarding D_1 and D_0.
   - If the words 'Dividend Expected' is given, consider it as D_1.
   - If the words 'Dividend Paid' is given, consider it as D_0.
   - If the question is silent, you can assume the given figure either as D_1 or D_0 upon writing a note.

5. Lintner's Model

- ✓ Lintner's model has two parameters:
  - i. The target payout ratio,
  - ii. The spread at which current dividends adjust to the target.
- ✓ Under this model, D_1 i.e. Dividend to be paid is computed
- ✓ In this model, the current year's dividend is dependent on current year's earnings and last year's dividend and a fall in Dividend indicates a wrong signal
- ✓ Formula:

$$D_1 = D_o + [(EPS \times \text{Target payout}) - D_o] \times A_f$$

Where,

D_1 = Dividend in year 1

D_o = Dividend in year 0 (last year dividend)

EPS = Earnings per share

Af = Adjustment factor or Speed of adjustment

6. Modigliani and Miller (MM) Approach

- ✓ Modigliani – Miller theory was proposed by Franco Modigliani and Merton Miller in 1961.
- ✓ MM approach is in support of the irrelevance of dividends i.e., firm's dividend policy has no effect on either the price of a firm's stock or its cost of capital.
- ✓ According to MM Hypothesis
  - Market value of equity shares of a firm depends solely on its earning power and is not influenced by the manner in which its earnings are split between dividends and retained earnings.
  - Market value of equity shares is not affected by dividend size.
  - Under MM hypothesis there is no meaningful distinction between dividend and share repurchases. They both are ways for a company to return cash to shareholders.

A. Assumptions under MM Approach

- ✓ Perfect capital markets exist and investors are rational
- ✓ No taxes
- ✓ All investments should be financed through equity only
- ✓ No floatation or transaction cost
- ✓ Investors are able to forecast future prices and dividend with certainty

B. Formulas under MM Approach

- ✓ The value of firm will remain unchanged due to dividend decision. This can be computed with the help of the following formula:

$$V_f (or)\ nP_o = \frac{(n + \Delta n)P_1 + E - I}{(1 + K_e)^1}$$

Where:

V_f = Value of the firm in the beginning of the period

n = No. of shares at the beginning of the period

Δn = No. of shares issued to raise the required funds

- ✓ Here, market price of shares can be calculated as follows:

$$P_0 = \frac{P_1 + D_1}{1 + K_e}$$

Where,

P_0 = Price in the beginning of the period

P_1 = Price at the end of the period

D_1 = Dividend at the end of the period

K_e = Cost of equity/ rate of capitalization/ discount rate

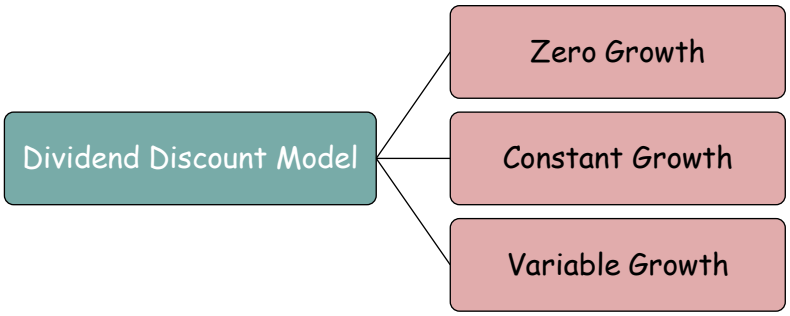
7. Dividend Discount Model (DDM)

- ✓ It is a financial model that values shares at the discounted value of the future dividend payments.
- ✓ Under this model, the price of a share that will be traded is calculated by the PV of all expected future dividend payment discounted by an appropriate risk- adjusted rate.
- ✓ The dividend discount model price is the intrinsic value of the stock i.e.

Intrinsic value = Sum of PV of Dividends + PV of Stock Sale Price

$$\text{Stock Intrinsic Value} = \frac{D_1}{(1 + K_e)^1} + \frac{D_2}{(1 + K_e)^2} + \ldots\ldots\ldots + \frac{D_n}{(1 + K_e)^n} + \frac{RV_n}{(1 + K_e)^n}$$

- ✓ There can three possible situations:



A. Zero Growth Rate

- ✓ This model assumes that dividend remains constant.
- ✓ In this case the stock price would be equal to:

$$\text{Stock's intrinsic Value} = \frac{\text{Annual dividend}}{\text{Required rate of return}}$$

$$\text{i.e. } P_0 = \frac{D}{K_e}$$

Where,

D = Annual dividend

Ke = Cost of capital

P_0 = Current Market price of share

B. Constant Growth Rate Model

- ✓ This is exactly the same as Gordon's Model

C. Variable Growth Rate Model

- ✓ When more than one growth rate is applicable, this model is used
- ✓ Formula (Assuming growth rate becomes constant after 4 years)

$$P_0 = \frac{D_1}{(1+K_e)^1} + \frac{D_2}{(1+K_e)^2} + \frac{D_3}{(1+K_e)^3} + \frac{D_4}{(1+K_e)^4} + \left[\frac{D_5}{(K_e - g)} \times \frac{1}{(1+K_e)^4}\right]$$

8. Graham & Dodd Model:

- ✓ According to this model, the stock market places considerable weight on dividends than retained earnings
- ✓ Formula:

$$P = m\left(D + \frac{E}{3}\right)$$

Where:

P = Market Price

D = Dividend per share

E = Earnings per share

m = Multiplier

9. Core Theory Topics

FORMS OF DIVIDEND	
Form of Dividend	Explanation
Cash Dividend	The most common form of dividend, paid in the form of cash, cheque, warrant, demand draft, pay order, or through Electronic Clearing Service (ECS). It does not include dividends in kind.
Share Repurchases	In a share repurchase, the company buys back its own shares using corporate cash. The bought-back shares can be: a. Treasury Shares: Kept for future re-issuance. b. Cancelled Shares: Retired from share capital. Both cash dividend and share repurchases have the same effect on shareholder wealth, assuming tax considerations are the same.
Stock Dividend (Bonus Shares)	Bonus shares are issued in lieu of a cash dividend. These shares are distributed to existing shareholders proportionately, retaining their ownership percentage. The total net worth remains unaffected since retained earnings are capitalized. Example: 10% dividend on 100 shares means 10 extra shares.

Advantages of Stock Dividend	
Advantage	Explanation
To Shareholders	
No Tax on Stock Dividend	No tax is payable by shareholders on stock dividend as it is considered a capital asset under the Income Tax Act, 1961.
Increase in Future Cash Dividends	A fixed dividend per share continues after the stock dividend, which increases total cash dividend for shareholders in the future.
Improved Liquidity	Bonus shares break down higher-priced shares into lower-priced shares, giving shareholders the option to sell some of these and gain liquidity.
To Company	
Cash Conservation	Stock dividends help conserve cash, which can be used for profitable investment opportunities.
Suitable for Cash Deficiency	Ideal in situations where there is a cash deficiency or when lenders have imposed restrictions on paying cash dividends.

Limitations of Stock Dividend	
Limitation	Explanation
To Shareholders	➢ No impact on wealth: Stock dividends do not increase shareholder wealth since they only capitalize past earnings. ➢ No extra benefit: Shareholders own the same proportion of the company as before, just with more shares. ➢ Purely psychological effect: It creates a positive impression as a sign of company growth but has no real financial gain.
To Company	➢ Higher administrative costs: Stock dividends are costlier to manage than cash dividends. ➢ Disadvantage of frequent stock dividends: Regular small stock dividends may lead to dilution of earnings over time.

Significance Of Dividend Policy	
Aspect	Explanation
Long-Term Financing Decision	➢ Equity Financing: A company can raise equity externally (new share issuance) or internally (retained earnings). Retained earnings are preferred as they avoid flotation costs. ➢ Retain or Distribute Profits?: The decision to retain earnings or pay dividends impacts the firm's financing options. ➢ Key Considerations: 1. Does the company have profitable investment opportunities? 2. Will the return on investment (ROI) exceed shareholders' expected return (Ke)?
Wealth Maximization Decision	➢ Dividend Payout vs. Market Price: The Dividend Payout Ratio (D/P) affects the Market Price of Shares (MPS). ➢ Market Perception: Investors often prefer immediate dividends over future capital gains due to market uncertainties. ➢ Retained Earnings & Shareholder Returns: 1. Higher Retained Earnings Lower dividends, but potential future growth and higher earnings per share (EPS). 2. Higher Dividends Immediate shareholder benefit, but may limit investment opportunities, affecting future earnings. ➢ Optimal Dividend Policy: The company should balance dividends and retained earnings to maximize shareholder wealth, considering investment opportunities and shareholder preferences.

Determinants Of Dividend Decisions	
Factor	Explanation
Availability of Funds	If the company needs funds, it may prefer retaining earnings to save floatation costs and avoid dilution of control from issuing new equity.
Cost of Capital	➢ If financing is through debt (cheaper source), higher dividends can be distributed. ➢ If financing requires issuing new equity, it's better to retain earnings instead.
Capital Structure	A company must maintain an optimal Debt-Equity ratio while deciding on dividend payments.
Stock Price	Generally, higher dividends increase the market price of shares, while lower dividends may decrease it.
Investment Opportunities	If the company has profitable investment opportunities, it may retain more earnings instead of paying dividends.
Industry Trends	Some industries are known for regular dividends. Companies in such industries must pay dividends to maintain investor confidence and market stability.
Shareholder Expectations	Shareholders can be i. Income-seeking investors (who prefer regular dividends) or ii. Growth-oriented investors (who prefer retained earnings for growth).
Legal Constraints	As per Section 123 of the Companies Act, 2013, dividends can be declared only from: 1. Current year's profits (after depreciation). 2. Undistributed profits from previous years (after depreciation). 3. Both current & past profits. 4. Government-provided funds (if applicable). Unrealized gains or revaluation profits cannot be considered for dividend payments.
Taxation	➢ Before April 1, 2020: Companies paid Dividend Distribution Tax (DDT), and dividends were tax-free for shareholders under Section 10(34). ➢ After April 1, 2020: DDT was removed, and dividends are now taxable in the hands of investors as 'Other Income' at their applicable tax rate.

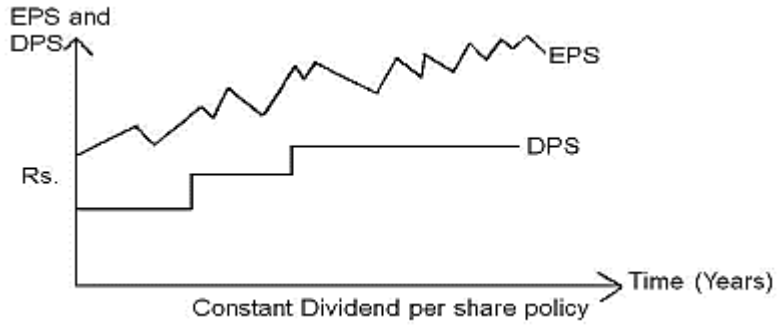
Practical Considerations in Dividend Policy	
Consideration	Explanation
Stable vs. Independent Dividend Decision	A company must decide whether to follow a stable dividend pattern or treat each dividend decision independently based on financial conditions.
Financial Needs of a Company	➢ Retained earnings serve as a funding source for profitable investments. ➢ If ROI (Return on Investment) > Required Return (Ke), reinvesting earnings benefits shareholders. ➢ Issuing new shares involves floatation costs and potential dilution of control.

Comparison Between Growth Companies And Mature Companies

Aspect	Mature Companies	Growth Companies
Dividend Payout Ratio	High payout ratios due to limited investment opportunities.	Low payout ratios as they need funds for rapid expansion.
Impact on Share Prices	Sensitive to dividend changes investors expect stable dividends.	Retain earnings & issue bonus shares instead of cash dividends to maintain growth.
Earnings Utilization	Retain a small portion for emergency and occasional financial needs.	Gradually increase dividends as investment opportunities decline.

Constraints on Paying Dividends	
Constraint	Explanation
Legal	Governed by Companies Act, 2013 (covered under "Determinants of Dividend Decisions").
Liquidity	➢ Dividends require cash outflow. ➢ Mature companies: Have strong cash reserves and fewer investment needs, making dividend payments easier. ➢ Growth-oriented companies: Even with high profits, they need funds for expansion and working capital, so they are less likely to declare dividends.
Access to Capital Market	➢ Large dividend payouts reduce cash reserves. ➢ If new shares must be issued to raise funds, existing shareholders may face dilution of control. ➢ To avoid dilution, companies may withhold dividends and reinvest earnings instead.

Investment Opportunities	➢ If profitable investment opportunities are lacking, it is better to pay dividends. ➢ If needed, external funds can be raised for future investment opportunities.

Payout Policies in Dividend Decisions	
Policy	Explanation
Constant Dividend Policy	➢ Fixed dividend amount, regardless of actual earnings. ➢ May increase or decrease over time, but generally remains stable for a considerable period. ➢ Requires a Dividend Equalization Reserve Fund to ensure dividends are paid even in low-profit years. ➢ Treats common shareholders like preference shareholders, offering a predictable income. ➢ Preferred by investors who depend on dividend income (e.g., retirees, institutions). ➢ Dividends fluctuate in the short term with earnings but aim for long-term stability.  Constant Dividend per share policy
Stable Dividend Policy	➢ Dividend payout ratio = Fixed percentage of net earnings each year. ➢ Example: Infosys (2011) followed a 30% payout ratio on Consolidated Profit after Tax (PAT). ➢ Warren Buffett's View: Either large dividends or none—companies should only pay dividends if reinvestment is not profitable. ➢ Example: If a company adopts a 40% payout ratio: ➢ Earnings per share = ₹2 → Dividend = ₹0.80 - Earnings per share = ₹1.50 → Dividend = ₹0.60 ➢ No dividend is paid in case of losses. ➢ Retained earnings adjust automatically based on earnings growth or decline. ➢ Provides a conservative approach that prevents overpayment or underpayment.

	➢ Used by companies that base dividends on long-term sustainable earnings and increase dividends when earnings rise consistently.

Advantages of MM Hypothesis
a. This model is logically consistent. b. It provides a satisfactory framework on dividend policy with the concept of Arbitrage process.
Limitations of MM Hypothesis
a. Validity of various assumptions is questionable. b. This model may not be valid under uncertainty.
Advantages of Walter's Model
1. The formula is simple to understand and easy to compute. 2. It can envisage different possible market prices in different situations and considers internal rate of return, market capitalisation rate and dividend payout ratio in the determination of market value of shares.
Limitations of Walter's Model
1. The formula does not consider all the factors affecting dividend policy and share prices. Moreover, determination of market capitalisation rate is difficult. 2. Further, the formula ignores such factors as taxation, various legal and contractual obligations, management policy and attitude towards dividendpolicy and so on.
Advantages of Gordon's Model
1. The dividend discount model is a useful heuristic model that relates the present stock price to the present value of its future cash flows. 2. This Model is easy to understand.
Limitations of Gordon's Model
1. The dividend discount model depends on projections about company growth rate and future capitalization rates of the remaining cash flows, which may be difficult to calculate accurately. 2. The true intrinsic value of a stock is difficult to determine realistically
STOCK SPLITS
Meaning of Stock Split Stock split means splitting one share into many, say, one share of ₹ 500 into 5 shares of ₹ 100. Stock splits is a tool used by the companies to regulate the prices of shares i.e. if a share price increases beyond a limit, it may become less tradable, for e.g. suppose a company's share price increases from ₹ 50 to ₹ 1000 over the years, it is possible that it might goes out of range of many investors.

Advantages of Stock Splits
1. It makes the share affordable to small investors. 2. Number of shares may increase the number of shareholders; hence thepotential of investment may increase.
Limitations of Stock Splits
1. Additional expenditure needs to be incurred on the process of stock split. 2. Low share price may attract speculators or short-term investors, which aregenerally not preferred by any company.
SHARE BUYBACK
Meaning of Share Buyback Share buyback, in simple terms, means buying/repurchasing own shares by the company resulting into decrease in share capital of the company. Thus, the shares bought back are cancelled leading reduction in outstanding number of shares. Share buyback is also a form of shareholders' dividend. As the number of circulating shares in the market fall, amount of dividend per share in the future increases. There are two main types of buyback that can be performed by the companies. Oneis through an open market, and another is through tender offer. While company intending to buyback through open market, it need to go through secondary market. However, in case of tender offer, company offers a fixed price where all the shareholders can participate or sell their shares.

CHAPTER 7: RATIO ANALYSIS

1. Introduction

- ✓ The basis for financial analysis, planning and decision making is financial statements which mainly consist of Balance Sheet and Profit and Loss Account.
- ✓ The profit & loss account shows the operating activities of the concern over a period of time and the balance sheet depicts the financial position of an organization at a particular point of time.
- ✓ However, the above statements do not disclose all of the necessary and relevant information.
- ✓ For the purpose of obtaining the material and relevant information necessary for ascertaining the financial strengths and weaknesses of an enterprise, it is necessary to analyse the data depicted in the financial statement.
- ✓ The financial manager has certain analytical tools which help in financial analysis and planning. One of the main tools is Ratio Analysis
- ✓ A ratio means financial ratio or accounting ratio which is a mathematical expression of the relationship between two accounting figures.

2. Important Terms/Concepts used in Ratio Analysis

The following are a few terms/concepts which will be used throughout this chapter.

A. Trading Account

- ✓ Format of Trading A/c

Sales / Revenue	XXX
(-) COGS	(XXX)
Gross Profit	XXX

- ✓ Note:

COGS = Opening stock + Purchases - Closing stock + Direct Expenses.

B. Profit & Loss A/C

- ✓ Format of P&L A/c

Particulars	Amount (₹)
Gross Profit	XXX
Less: Operating Expenses (e.g. Salary/Rent/Maintenance/AOH/POH/SOH)	(XXX)
Less: Non-Operating Expenses (e.g. Interest)	(XXX)
Add: Non-Operating Income (e.g. Rent / Interest Received)	XXX
Net Profit before Tax	XXX
Less: Tax	(XXX)
Profit after Tax	XXX
Less: Preference Dividend	(XXX)
Earnings for Equity SHs	XXX

Less: Equity Dividend	(XXX)
Retained Earnings	XXX

C. Balance Sheet

✓ Liabilities Side:

Equity Share Capital	XXX
Reserves & Surplus	XXX
Less: Accumulated Losses	(XXX)
Less: Miscellaneous Expenses	(XXX)
(a) Equity Shareholders Funds	XXX
(b) Preference Share Capital	XXX
(c) Net Worth/Equity/Proprietor's/SH's Funds	XXX
(d) Debentures / Bonds / LTL	XXX
(e) Current Liabilities	XXX
Total Liabilities	XXX

✓ **Note:**

Total Debt = (d) + (e)

Total Capital Employed = (c) + (d)

✓ Assets Side:

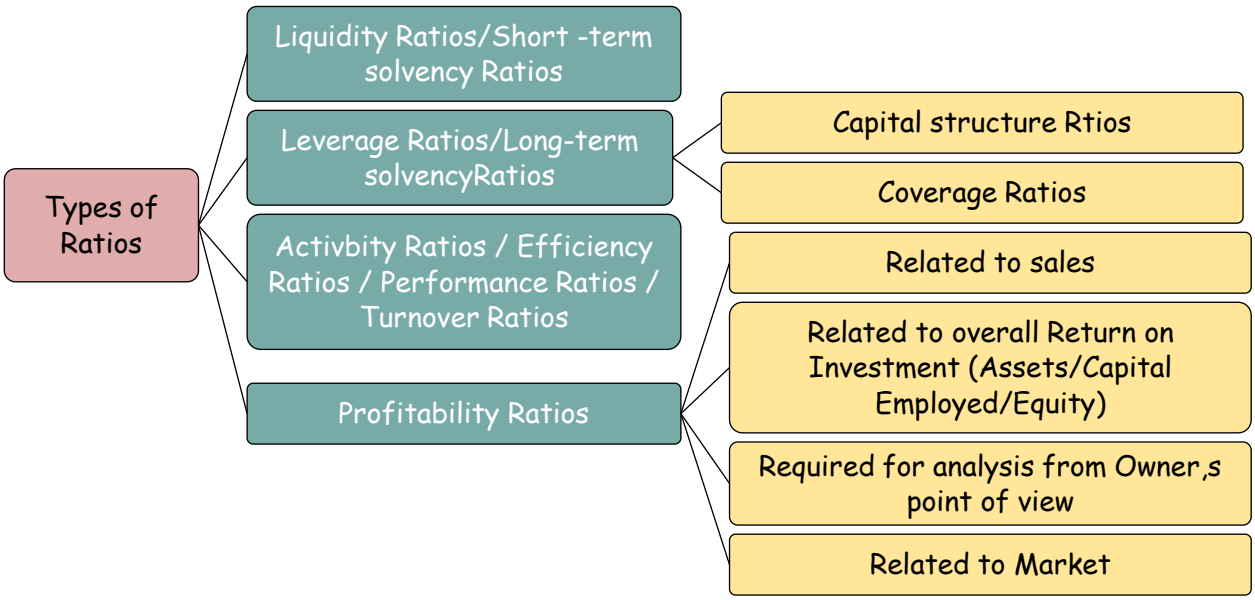
Net Fixed Asset (Including Tangible / Intangible)	XXX
Add: Investments	XXX
(a) Fixed Assets / Non-Current Assets	XXX
(b) Current Assets	XXX
Total Assets (a + b)	XXX

✓ **Note:**

Net Fixed Assets = Fixed Assets - Accumulated Depreciation

3. Types of Ratios

The following are the different types of Ratios:



4. Liquidity Ratios

- ✓ Liquidity or short-term solvency means ability of the business to pay its short- term liabilities.
- ✓ Inability to pay-off short-term liabilities affects its credibility as well as its credit rating.
- ✓ Continuous default on the part of the business leads to commercial bankruptcy. Eventually such commercial bankruptcy may lead to its sickness and dissolution.
- ✓ Short-term lenders and creditors of a business are very much interested to know its state of liquidity because of their financial stake.
- ✓ Both lack of sufficient liquidity and excess liquidity is bad for the organization.
- ✓ Various Liquidity Ratio are as follows:
  - (a) Current Ratio
  - (b) Quick Ratio or Acid test Ratio
  - (c) Cash Ratio or Absolute Liquidity Ratio
  - (d) Basic Defense Interval or Interval Measure Ratio
  - (e) Net Working Capital

A. Current Ratio

- ✓ A generally acceptable current ratio is 2:1. But whether or not a specific ratio is satisfactory depends on the nature of the business and the characteristics of its current assets and liabilities.
- ✓ Current Ratio is calculated as follows:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Where,

Current Asset	=	Inventories + Sundry Debtors + Cash and Bank Balances + Receivables/ Accruals + Loans and Advances + Disposable Investments + Any other current assets.
Current Liabilities	=	Creditors for goods and services + Short-term Loans + Bank Overdraft + Cash Credit + Outstanding Expenses + Provision for Taxation + Proposed Dividend + Unclaimed Dividend + Any other current liabilities.

B. Quick Ratio

- ✓ The Quick Ratio is sometimes called the "acid-test" ratio and is one of the best measures of liquidity.
- ✓ An acid-test of 1:1 is considered satisfactory unless the majority of "quick assets" are in accounts receivable, and the pattern of accounts receivable collection lags behind the schedule for paying current liabilities.

- ✓ The Quick Ratio is a much more conservative measure of short-term liquidity than the Current Ratio.
- ✓ It helps answer the question: "If all sales revenues should disappear, could my business meet its current obligations with the readily convertible quick funds on hand?"
- ✓ Quick Ratio is calculated as follows:

$$\text{Quick Ratio or Acid Test Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

Where,

Quick Assets = Current Assets - Inventories - Prepaid expenses

Current Liabilities = As mentioned under Current Ratio.

C. Cash Ratio/ Absolute Liquidity Ratio

- ✓ The cash ratio measures the absolute liquidity of the business. This ratio considers only the absolute liquidity available with the firm.
- ✓ The Absolute Liquidity Ratio only tests short-term liquidity in terms of cash and marketable securities/ current investments. This ratio is calculated as:

$$\text{Cash Ratio} = \frac{\text{Cash and Bank balances} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

Or

$$\text{Cash Ratio} = \frac{\text{Cash and Bank balances} + \text{Current Investments}}{\text{Current Liabilities}}$$

D. Basic Defense Interval/ Interval Measure

- ✓ If for some reason all the company's revenues were to suddenly cease, the Basic Defense Interval would help determine the number of days for which the company can cover its cash expenses without the aid of additional financing.
- ✓ It is calculated as follows:

$$= \frac{\text{Cash and Bank balances} + \text{Net Receivables} + \text{Marketable Securities}}{\text{Daily Operating Expenses}}$$

Or

$$= \frac{\text{Current Assets} - \text{Prepaid expenses} - \text{Inventories}}{\text{Daily Operating Expenses}}$$

Where,

$$\text{Daily Operating Expenses} = \frac{\text{COGS} + \text{Selling Admin \& General Exp} - \text{Depn \& Non Cash Exp}}{\text{No. of Days in a year}}$$

E. Net Working Capital

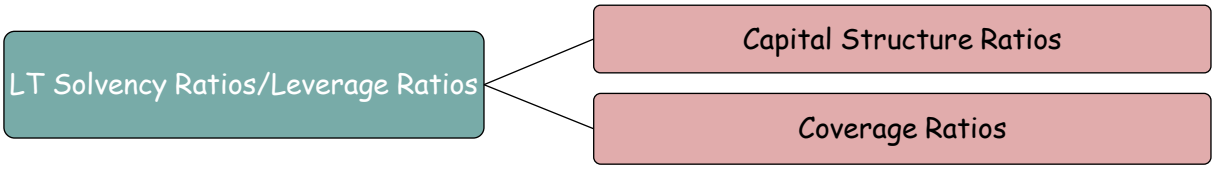
- ✓ Net working capital is more a measure of cash flow than a ratio.
- ✓ Bankers look at Net Working Capital over time to determine a company's ability to weather financial crises.
- ✓ Loans are often tied to minimum working capital requirements.

- ✓ It is calculated as follows:

  Net Working Capital = Current Assets - Current Liabilities (Excl. ST bank borrowing)

5. Long-term Solvency Ratios/ Leverage Ratios

- ✓ The leverage ratios may be defined as those financial ratios which measure the long-term stability and capital structure of the firm.
- ✓ These ratios indicate the mix of funds provided by owners and lenders and assure the lenders of the long- term funds with regard to:
  - i. Periodic payment of interest during the period of the loan and
  - ii. Repayment of principal amount on maturity.
- ✓ Leverage ratios are of two types:



- ✓ I. Capital Structure Ratios
  - (a) Equity Ratio
  - (b) Debt Ratio
  - (c) Debt to Equity Ratio
  - (d) Debt to Total Assets Ratio
  - (e) Capital Gearing Ratio
  - (f) Proprietary Ratio
- ✓ II. Coverage Ratios
  - (a) Debt-Service Coverage Ratio (DSCR)
  - (b) Interest Coverage Ratio
  - (c) Preference Dividend Coverage Ratio
  - (d) Fixed Charges Coverage Ratio

I. Capital Structure Ratios

- ✓ These ratios provide an insight into the financing techniques used by a business and focus, as a consequence, on the long-term solvency position.
- ✓ From the balance sheet, one can get only the absolute fund employed and its sources but only capital structure ratios show the relative weight of different sources.
- ✓ Various capital structure ratios are discussed below.

A. Equity Ratio

- ✓ This ratio indicates proportion of owner's fund to total fund invested in the business.

- ✓ Traditionally, it is believed that higher the proportion of owner's fund, lower is the degree of risk for potential lenders.
- ✓ Equity Ratio is calculated as follows:

$$\text{Equity Ratio} = \frac{\text{Shareholder's Equity}}{\text{Net Assets}}$$

- ✓ Where,

  Shareholder's Equity = Equity Share Capital + Reserves & Surplus (excluding fictitious assets etc).

  Net Assets or Capital employed = Net Fixed Assets and Net Current Assets (CA - CL).

B. Debt Ratio

- ✓ This ratio is used to analyse the long-term solvency of a firm. A ratio greater than 1 would mean greater portion of company assets are funded by debt and could be a risky scenario.
- ✓ Debt Ratio is calculated as follows:

$$\text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Net Assets}}$$

- ✓ Where,

  Total debt or total outside liabilities includes short- and long-term borrowings from financial institutions, debentures/bonds, deferred payment arrangements for buying capital equipment, bank borrowings, public deposits and any other interest-bearing loan.

C. Debt to Equity Ratio

- ✓ A high debt to equity ratio here means less protection for creditors, a low ratio, on the other hand, indicates a wider safety cushion (i.e., creditors feel the owner's funds can help absorb possible losses of income and capital).
- ✓ This ratio indicates the proportion of debt fund in relation to equity. This ratio is very often used for making capital structure decisions such as issue of shares and/or debentures.
- ✓ Lenders are also very keen to know this ratio since it shows relative weights of debt and equity. Debt equity ratio is the indicator of firm's financial leverage.
- ✓ It is calculated as follows:

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt*}}{\text{Shareholder's Equity}}$$

or

$$= \frac{\text{Long- term Debt **}}{\text{Shareholders' equity}}$$

- ✓ Note:

  *Not merely long-term debt i.e., both current & non-current liabilities.

  ** Sometimes only long-term debt is used instead of total liabilities (i.e excluding current liabilities)

D. Debt to Total Assets Ratio

- ✓ This ratio measures the proportion of total assets financed with debt and, therefore, the extent of financial leverage.
- ✓ Higher the ratio, indicates that assets are less backed up by equity and hence higher financial leverage. It is calculated as follows:

$$\text{Debt to Total Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

E. Capital Gearing Ratio

- ✓ In addition to debt-equity ratio, sometimes capital gearing ratio is also calculated to show the proportion of fixed interest (dividend) bearing capital to funds belonging to equity shareholders i.e. equity funds or net worth.
- ✓ Again, higher ratio may indicate more risk. It is calculated as follows:

$$\text{Capital Gearing Ratio} = \frac{\text{Preference Share Capital + Debentures + Other Borrowed funds}}{\text{Equity Share Capital + Reserves \& Surplus - Losses}}$$

F. Proprietary Ratio

- ✓ It indicates the proportion of total assets financed by shareholders. Higher the ratio, less risky scenario it shall be.
- ✓ It is calculated as follows:

$$\text{Proprietary Ratio} = \frac{\text{Proprietary Fund}}{\text{Total Assets}}$$

II. Coverage Ratios

- ✓ The coverage ratios measure the firm's ability to service the fixed liabilities. These ratios establish the relationship between fixed claims and what is normally available out of which these claims are to be paid.
- ✓ The fixed claims consist of:
  - Interest on loans
  - Preference dividend
  - Amortisation of principal or repayment of the instalment of loans or redemption of preference capital on maturity.
- ✓ The following are important coverage ratios:

A. Debt Service Coverage Ratio (DSCR)

- ✓ Lenders are interested in debt service coverage to judge the firm's ability to pay off current interest and instalments. Normally DSCR of 1.5 to 2 is satisfactory
- ✓ It is calculated as follows:

$$\text{Debt Service Coverage Ratio} = \frac{\text{Earnings available for Debt Services}}{\text{Interest + Installments}}$$

Where,

Calculation of Earnings available for Debt Services =

Net profit (Earning after taxes) + Non-cash operating expenses like depreciation and other amortizations + Interest + other adjustments like loss on sale of Fixed Asset etc.

Note:

Fund from operations (or cash from operations) before interest and taxes also can be considered as per the requirement.

B. Interest Coverage Ratio

- ✓ This ratio also known as "times interest earned ratio" indicates the firm's ability to meet interest (and other fixed charges) obligations.
- ✓ It measures how many times a company can cover its current interest payment with its available earnings.
- ✓ A high interest coverage ratio means that an enterprise can easily meet its interest obligations even if earnings before interest and taxes suffer a considerable decline.
- ✓ A lower ratio indicates excessive use of debt or inefficient operations.
- ✓ This ratio is computed as:

$$\text{Interest Coverage Ratio} = \frac{\text{Earnings before Interest and Taxes(EBIT)}}{\text{Interest}}$$

C. Preference Dividend Coverage Ratio

- ✓ This ratio measures the ability of a firm to pay dividend on preference shares which carry a stated rate of return.
- ✓ This ratio indicates margin of safety available to the preference shareholders. A higher ratio is desirable from preference shareholders point of view.
- ✓ This ratio is computed as:

$$\text{Preference Dividend Coverage Ratio} = \frac{\text{Net Profit/Earning after taxes (EAT)}}{\text{Preference dividend}}$$

- ✓ Similarly, Equity Dividend coverage ratio can also be calculated as:

$$\text{Equity Dividend Coverage Ratio} = \frac{\text{Earning after taxes (EAT) - Preference dividend}}{\text{Equity dividend}}$$

D. Fixed Charges Coverage Ratio

- ✓ This ratio shows how many times the cash flow before interest and taxes covers all fixed financing charges.
- ✓ This ratio of more than 1 is considered as safe and is calculated as follows:

$$\text{Fixed Charges Coverage Ratio} = \frac{\text{EBIT} + \text{Depreciation}}{\text{Interest} + \text{Repayment of Loan}}$$

Doubt Busters:

1. EBIT (Earnings before interest and taxes) = PBIT (Profit before interest and taxes), EAT (Earnings after taxes) = PAT (Profit after taxes)

EBT (Earnings before taxes) = PBT (Profit before taxes)

2. Ratios shall be calculated based on requirement and availability of information and may deviate from original formulae. If required, assumptions should be given.
3. Numerator should be taken in correspondence with the denominator and vice-versa.

6. Activity Ratios/ Efficiency Ratios/ Performance Ratios/ Turnover Ratios

- ✓ These ratios are employed to evaluate the efficiency with which the firm manages and utilises its assets. For this reason, they are often called as 'Asset management ratios'.
- ✓ These ratios usually indicate the frequency of sales with respect to its assets. These assets may be capital assets or working capital or average inventory.
- ✓ These ratios are usually calculated with reference to sales/cost of goods sold and are expressed in terms of rate or times.
- ✓ Various Turnover Ratios are as follows:
  - (a) Total Assets Turnover Ratio
  - (b) Fixed Assets Turnover Ratio
  - (c) Capital Turnover Ratio/ Net Assets Turnover Ratio
  - (d) Current Assets Turnover Ratio
  - (e) Working Capital Turnover Ratio
    - i. Inventory/ Stock Turnover Ratio
    - ii. Receivables (Debtors) Turnover Ratio
    - iii. Payables (Creditors) Turnover Ratio

A. Total Asset Turnover Ratio

- ✓ This ratio measures the efficiency with which the firm uses its total assets. Higher the ratio, better it is.
- ✓ A high total assets turnover ratio indicates the efficient utilization of total assets in generation of sales.
- ✓ Similarly, a low asset turnover ratio indicates total assets are not efficiently used to generate sales.
- ✓ This ratio is computed as:

$$\text{Total Asset Turnover Ratio} = \frac{\text{Sales/Cost of Goods Sold}}{\text{Total Assets}}$$

B. Fixed Assets Turnover Ratio

- ✓ It measures the efficiency with which the firm uses its fixed assets.
- ✓ A high fixed assets turnover ratio indicates efficient utilisation of fixed assets in generating sales.

- ✓ A firm whose plant and machinery are old may show a higher fixed assets turnover ratio than the firm which has purchased them recently.
- ✓ This ratio is computed as:

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales/Cost of Goods Sold}}{\text{Fixed Assets}}$$

C. Capital Turnover Ratio/ Net Asset Turnover Ratio

- ✓ Since Net Assets equals to capital employed it is also known as Capital Turnover Ratio.
- ✓ This ratio indicates the firm's ability of generating sales/ Cost of Goods Sold per rupee of long-term investment.
- ✓ The higher the ratio, the more efficient is the utilisation of owner's and long-term creditors' funds.
- ✓ This ratio is computed as:

$$\text{Capital Turnover Ratio} = \frac{\text{Sales/Cost of Goods Sold}}{\text{Net Assets}}$$

D. Current Assets Turnover Ratio

- ✓ It measures the efficiency of using the current assets by the firm
- ✓ The higher the ratio, the more efficient is the utilization of current assets in generating sales.
- ✓ This ratio is computed as:

$$\text{Current Assets Turnover Ratio} = \frac{\text{Sales/Cost of Goods Sold}}{\text{Current Assets}}$$

E. Working Capital Turnover Ratio

- ✓ It measures how effective a company is at generating sales for every rupee of working capital put to use.
- ✓ Higher the ratio, the more efficient is the utilisation of working capital in generating sales.
- ✓ However, a very high working capital turnover ratio indicates that the company needs to raise additional working capital for future needs.
- ✓ This ratio is computed as:

$$\text{Working Capital Turnover Ratio} = \frac{\text{Sales/Cost of Goods Sold}}{\text{Working Capital}}$$

- ✓ Working Capital Turnover is further segregated into Inventory Turnover, Debtors Turnover, and Creditors Turnover.

i. Inventory/ Stock Turnover Ratio

- ✓ This ratio also known as stock turnover ratio establishes the relationship between the cost of goods sold during the year and average inventory held during the year.
- ✓ This ratio indicates that how fast inventory is used or sold.
- ✓ A high ratio is good from the view point of liquidity and vice versa.
- ✓ A low ratio would indicate that inventory is not used/ sold/ lost and stays in a shelf or in the warehouse for a long time.

- ✓ It measures the efficiency with which a firm utilizes or manages its inventory. It is calculated as follows:

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold / Sales}}{\text{Average Inventory}}$$

Where,

Average Inventory = (Op. Stock + Cl. Stock) / 2

- ✓ In the case of inventory of raw material, the inventory turnover ratio is calculated using the following formula:

$$\text{Raw Material Inventory Turnover Ratio} = \frac{\text{Raw Material Consumed}}{\text{Average Raw Material Stock}}$$

ii. Receivables (Debtors) Turnover Ratio

- ✓ The speed with which the receivables are collected affects the liquidity position of the firm.
- ✓ The debtor's turnover ratio throws light on the collection and credit policies of the firm.
- ✓ It measures the efficiency with which management is managing its accounts receivables.
- ✓ A low debtors' turnover ratio reflects liberal credit terms granted to customers, while a high ratio shows that collections are made rapidly.
- ✓ It is calculated as follows:

$$\text{Receivables (Debtors) Turnover Ratio} = \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$$

<u>Receivables (Debtors) Velocity/Average Collection Period:</u>

- ✓ Debtor's turnover ratio indicates the average collection period. However, the average collection period can be directly calculated as follows:

$$= \frac{\text{Average Accounts Receivables}}{\text{Average Daily Credit Sales}} \text{ or } \frac{\text{12 months/52 weeks/360 days}}{\text{Receivable Turnover Ratio}}$$

Where,

Average Daily Credit Sales = Credit Sales / No. of days in year

- ✓ The average collection period measures the average number of days it takes to collect an account receivable. This ratio is also referred to as the number of days of receivable and the number of day's sales in receivables. In determining the credit policy, debtor's turnover and average collection period provide a unique guidance.

iii. Payables Turnover Ratio

- ✓ This ratio is calculated on the same lines as receivable turnover ratio is calculated.
- ✓ It measures how fast a company makes payment to its creditors. It shows the velocity of payables payment by the firm.
- ✓ A low creditor's turnover ratio reflects liberal credit terms granted by suppliers, while a high ratio shows that accounts are settled rapidly.

- ✓ It is calculated as follows:

$$\text{Payables Turnover Ratio} = \frac{\text{Annual Net Credit Purchases}}{\text{Average Accounts Payables}}$$

Payable Velocity/ Average payment period

- ✓ The average payment period can be directly calculated as follows:

$$= \frac{\text{Average Accounts Payable}}{\text{Average Daily Credit Purchases}} \textit{or} \frac{\text{12months/52weeks/360days}}{\text{Payables Turnover Ratio}}$$

- ✓ The firm can compare what credit period it receives from the suppliers and what it offers to the customers. Also, it can compare the average credit period offered to the customers in the industry to which it belongs.

Doubt Busters:

1. Only selling & distribution expenses differentiate Cost of Goods Sold (COGS) and Cost of Sales (COS). In its absence, COGS will be equal to Cost of Sales.
2. We can consider Cost of Goods Sold/ Cost of Sales to calculate turnover ratios eliminating profit part.
3. Average of Total Assets/ Fixed Assets/ Current Assets/ Net Assets/ Working Capital also can be taken in denominator while calculating the above ratios. In fact, when average figures of total assets, net assets, capital employed, shareholders' fund etc. are available it may be preferred to calculate ratios by using this information.
4. Ratios shall be calculated based on requirement and availability of information and may deviate from original formulae. If required, assumptions should be given.

7. Profitability Ratios

- ✓ The profitability ratios measure the profitability or the operational efficiency of the firm.
- ✓ These ratios reflect the final results of business operations. They are some of the most closely watched and widely quoted ratios.
- ✓ Management attempts to maximize these ratios to maximize the firm's value.
- ✓ The results of the firm can be evaluated in terms of its earnings with reference to a given level of assets or sales or owner's interest etc.
- ✓ Therefore, the profitability ratios are broadly classified in four categories:

I. Profitability Ratios based on Sales
   a. Gross Profit Ratio
   b. Net Profit Ratio
   c. Operating Profit Ratio

d. Expenses Ratio

II. Profitability Ratios related to Overall Return on Assets/ Investments

a. Return on Investments (ROI)

i. Return on Assets (ROA)

ii. Return of Capital Employed (ROCE)

iii. Return on Equity (ROE)

III. Profitability Ratios required for Analysis from Owner's Point of View

a. Earnings per Share (EPS)

b. Dividend per Share (DPS)

c. Dividend Pay-out Ratio (DP)

IV. Profitability Ratios related to Market/ Valuation/ Investors

a. Price Earnings (P/E) Ratio

b. Dividend and Earning Yield

c. Market Value/ Book Value per Share (MV/BV)

d. Q Ratio

I. Profitability Ratios based on Sales

A. Gross Profit (G.P) Ratio/ Gross Profit Margin

- ✓ It measures the percentage of each sale in rupees remaining after payment for the goods sold.
- ✓ Gross profit margin depends on the relationship between sales price, volume and costs.
- ✓ A high Gross Profit Margin is a favourable sign of good management.

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

B. Net Profit Ratio/ Net Profit Margin

- ✓ It measures the relationship between net profit and sales of the business.
- ✓ Net Profit ratio finds the proportion of revenue that finds its way into profits after meeting all expenses. A high net profit ratio indicates positive returns from the business.
- ✓ Depending on the concept of net profit, it can be calculated as:

$$\frac{\text{Net Profit or Earnings after taxes (EAT)}}{\text{Sales}} \times 100$$

or

$$\text{Pre-tax Profit Ratio} = \frac{\text{Earnings before taxes (EBT)}}{\text{Sales}} \times 100$$

C. Operating Profit Ratio

- ✓ Operating profit ratio is also calculated to evaluate operating performance of business.
- ✓ Operating profit ratio measures the percentage of each sale in rupees that remains after the payment of all costs and expenses except for interest and taxes.
- ✓ This ratio is followed closely by analysts because it focuses on operating results.

- ✓ Operating profit is often referred to as earnings before interest and taxes or EBIT.
- ✓ It can be calculated as:

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit or EBIT}}{\text{Sales}} \times 100$$

Where,

Operating Profit = Sales – Cost of Goods Sold (COGS) – Operating Expenses

D. Expenses Ratio

- ✓ Based on different concepts of expenses it can be expresses in different variants as below:

i. Cost of Goods Sold (COGS) Ratio = $\frac{COGS}{Sales} \times 100$

ii. Operating Expenses Ratio = $\frac{\text{Admin OHS+Selling OHS}}{Sales} \times 100$

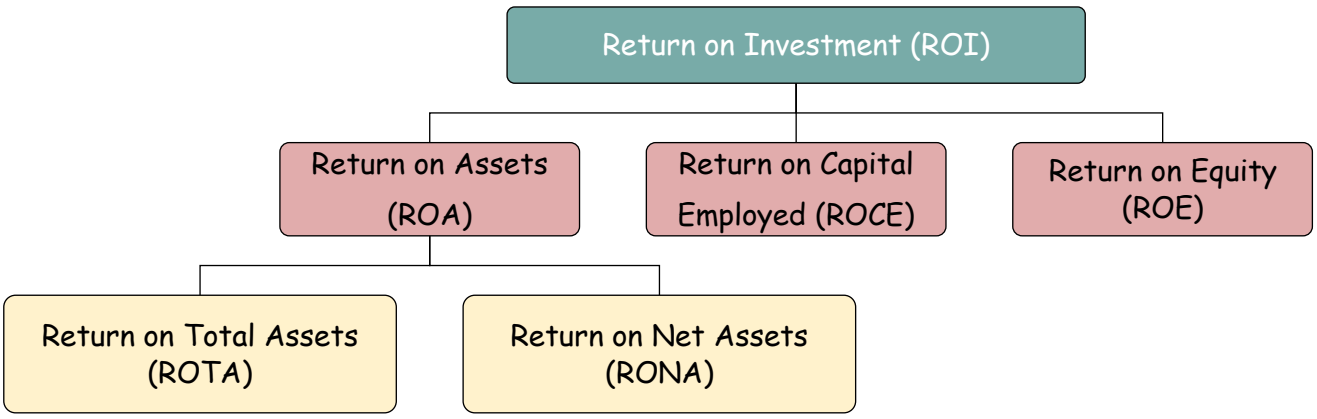
iii. Operating Ratio $= \frac{COGS + \text{Operating expenses}}{Sales} \times 100$

iv. Financial Expenses Ratio $= \frac{\text{Financial expenses *}}{Sales} \times 100$

*It excludes taxes, loss due to theft, goods destroyed by fire etc.

Note: Administration Expenses Ratio and Selling & Distribution Expenses Ratio can also be calculated in similar ways.

II. Profitability Ratios related to Overall Return on Assets/ Investments



A. Return on Investment (ROI)

- ✓ ROI is the percentage of return on funds invested in the business by its owners.
- ✓ In short, this ratio tells the owner whether or not all the effort put into the business has been worthwhile.

- ✓ It compares earnings/ returns/ profit with the investment in the company. The ROI is calculated as follows:

$$\text{Return on Investment} = \frac{\text{Return/Profit/Earnings}}{\text{Investment}} \times 100$$

- ✓ The concept of investment varies and accordingly there are three broad categories of ROI i.e.
  i. Return on Assets (ROA),
  ii. Return on Capital Employed (ROCE) and
  iii. Return on Equity (ROE).

i. Return on Assets (ROA)

- ✓ The profitability ratio is measured in terms of relationship between net profits and assets employed to earn that profit.
- ✓ This ratio measures the profitability of the firm in terms of assets employed in the firm.
- ✓ Based on various concepts of net profit (return) and assets, the ROA may be measured as follows:

$$\text{ROA} = \frac{\text{Return}}{\text{Average Assets}} \text{ x } 100$$

Note - 1: Return could be "EBIT" or "EBIT(1-t)" or "EAT" or "EAT + Interest"

Note - 2: Average Assets could be "Average Total Assets" or "Average Tangible Assets" or "Average Fixed Assets". If Average figures are not available, Total figures can also be used.

ii. Return on Capital Employed (ROCE)

- ✓ It is another variation of ROI. ROCE should always be higher than the rate at which the company borrows.
- ✓ The ROCE is calculated as follows:

$$\text{ROCE (Pre-tax)} = \frac{\text{Earnings before interest and taxes(EBIT)}}{\text{Capital Employed}} \times 100$$

$$\text{ROCE (Post-tax)} = \frac{\text{EBIT(1- t)}}{\text{Capital Employed}} \times 100$$

Sometimes, it is also calculated as:

$$= \frac{\text{Net Profit after taxes (EAT)} + \text{Interest}}{\text{Capital Employed}} \times 100$$

Doubt Busters:

- ✓ Intangible assets (assets which have no physical existence like goodwill, patents and trade-marks) should be included in the capital employed.

- ✓ But no fictitious asset (such as deferred expenses) should be included within capital employed.
- ✓ If information is available, then average capital employed shall be taken.

iii. Return on Equity (ROE)

- ✓ Return on Equity measures the profitability of equity funds invested in the firm.
- ✓ This ratio reveals how profitably of the owners' funds have been utilised by the firm.
- ✓ It also measures the percentage return generated to equity shareholders. This ratio is computed as:

$$\text{ROE} = \frac{\text{Net Profit after taxes - Preference dividend (if any)}}{\text{Net Worth/ Equity Shareholders' Funds}} \times 100$$

III. Profitability Ratios Required for Analysis from Owner's Point of View

A. Earnings per Share (EPS)

- ✓ The profitability of a firm from the point of view of ordinary shareholders can be measured in terms of earnings per share basis.
- ✓ It is calculated as follows:

$$\text{Earnings per Share (EPS)} = \frac{\text{Net profit available to equity shareholders}}{\text{Number of equity shares outstanding}}$$

B. Dividend per Share (DPS)

- ✓ Earnings per share as stated above reflects the profitability of a firm per share; it does not reflect how much profit is paid as dividend and how much is retained by the business.
- ✓ Dividend per share ratio indicates the amount of profit distributed to equity shareholders per share.
- ✓ It is calculated as:

$$\text{Dividend per Share (DPS)} = \frac{\text{Total Dividend paid to equity shareholders}}{\text{Number of equity shares outstanding}}$$

C. Dividend Pay-out Ratio (DP)

- ✓ This ratio measures the dividend paid in relation to net earnings.
- ✓ It is determined to see to how much extent earnings per share have been retained by the management for the business. It is computed as:

$$\text{Dividend pay-out Ratio} = \frac{\text{Dividend per equity share (DPS)}}{\text{Earning per Share (EPS)}}$$

IV. Profitability Ratios related to market/valuation/ Investors

- ✓ These ratios consider the market value of the company's shares in calculation.
- ✓ Frequently, share prices data are punched with the accounting data to generate new set of information.

- ✓ These are (a) Price- Earnings Ratio, (b) Dividend Yield, (c) Market Value/ Book Value per share, (d) Q Ratio.

A. Price- Earnings Ratio (P/E Ratio)

- ✓ The price earnings ratio indicates the expectation of equity investors about the earnings of the firm.
- ✓ It indicates the payback period to the investors or prospective investors.
- ✓ A higher P/E ratio could either mean that a company's stock is over-valued or the investors are expecting high growth rates in future.
- ✓ It is calculated as follows:

$$\text{Price-Earnings per Share (P/E Ratio)} = \frac{\text{Market Price per Share (MPS)}}{\text{Earning per Share (EPS)}}$$

B. Dividend and Earning Yield

- ✓ This ratio indicates return on investment; this may be on average investment or closing investment.
- ✓ Dividend (%) indicates return on paid up value of shares. But yield (%) is the indicator of true return in which share capital is taken at its market value.
- ✓ It is calculated as follows:

$$= \frac{\text{Dividend per Share (DPS)}}{\text{Market Price per Share (MPS)}} \times 100$$

- ✓ Similarly, "Earnings Yield" or "Earnings Price Ratio" can be calculated as follows:

$$\text{Earnings Yield* or EP Ratio} = \frac{\text{Earnings per Share (EPS)}}{\text{Market Price per Share (MPS)}} \times 100$$

C. Market Value/ Book Value per Share (MV/BV)

- ✓ It provides evaluation of how investors view the company's past and future performance.
- ✓ This ratio indicates market response of the shareholders' investment. Undoubtedly, higher the ratio, better is the shareholders' position in terms of return and capital gains.
- ✓ It is calculated as follows:

$$\text{Market Value/ Book Value per Share (MV/BV)} = \frac{\text{MPS}}{\text{BVPS}}$$

Where,

MPS can be either Average Market Price or Closing Market Price

BVPS = Net worth ÷ No. of equity shares

D. 'Q' Ratio

- ✓ This ratio represents the relationship between market valuation and intrinsic value.
- ✓ Equilibrium is when Q Ratio = 1 because when it is less than 1, it could mean that the stock is undervalued and when it is more than 1, it could mean that stock is overvalued.
- ✓ It is calculated as follows:

$$\text{Q Ratio} = \frac{\text{Market Value of a Company}}{\text{Assets' Replacement Cost}}$$

Doubt Busters:

1. In absence of preference dividend PAT can be taken as earnings available to equity shareholders.
2. If information is available then average capital employed shall be taken while calculating ROCE.
3. Ratios shall be calculated based on requirement and availability of information and may deviate from original formulae. If required, assumptions should be given.
4. Numerator should be taken in correspondence with the denominator and vice-versa.
5. We should keep in mind that investment may be Total Assets or Net Assets. Further, funds employed in net assets are also known as capital employed which is nothing but Net worth plus Debt, where Net worth is equity shareholders' fund. Similarly, the concept of returns/ earnings/ profits may vary as per the requirement and availability of information.

8. Return on Equity using the Du Pont Model

- ✓ A finance executive at E.I. Du Pont de Nemours and Co., of Wilmington, Delaware, created the DuPont system of financial analysis in 1919. That system is used around the world today and serves as the basis of components that make up return on equity.
- ✓ There are various components in the calculation of return on equity using the traditional DuPont model viz. the net profit margin, asset turnover, and the equity multiplier.
- ✓ By examining each input individually, the sources of a company's return on equity can be discovered and compared to its competitors.
- ✓ The components are as follows:

1. Profitability/Net Profit Margin:

   The net profit margin is simply the after-tax profit a company generates for each rupee of revenue and is calculated as follows:

$$\text{Profitability/ Net Profit margin} = \frac{\text{Net Income}}{\text{Sales}}$$

2. Asset Turnover:

   The asset turnover ratio is a measure of how effectively a company converts its assets into sales. It is calculated as follows:

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Assets}}$$

3. Equity Multiplier:

The equity multiplier, a measure of financial leverage, allows the investor to see what portion of the return on equity is the result of debt. The equity multiplier is calculated as follows:

$$\text{Equity Multiplier} = \frac{\text{Assets}}{\text{Shareholders' Equity}}$$

✓ Calculation of Return on Equity using the DuPont model:

To calculate the return on equity using the DuPont model, simply multiply the three components

(Net Profit Margin x Asset Turnover x Equity Multiplier)

$$\text{ROE} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Shareholders' Equity}}$$

Extra Knowledge:

Students may note that now a company is also required to disclose the following ratios in the notes to accounts while preparing Financial Statements:

a. Current Ratio,
b. Debt-Equity Ratio,
c. Debt Service Coverage Ratio,
d. Return on Equity Ratio,
e. Inventory turnover ratio,
f. Trade Receivables turnover ratio,
g. Trade payables turnover ratio,
h. Net capital turnover ratio,
i. Net profit ratio,
j. Return on Capital employed,
k. Return on investment.

9. Core Theory Topics

USERS AND OBJECTIVE OF FINANCIAL ANALYSIS - A BIRD'S EYE VIEW			
Financial Statement analysis is useful to various shareholders to obtain the derived information about the firm.			
S.No.	Users	Objectives	Ratios Used
1.	Shareholders	Interested in profitability and growth of the organization.	Profitability Ratios (e.g., EPS, DPS, P/E, Dividend Payout Ratio)
2.	Investors	Interested in the overall financial health and future perspective of the organization.	Profitability Ratios, Capital Structure Ratios, Solvency Ratios, Turnover Ratios
3.	Lenders	Concerned about the safety of the money they lend to the organization.	Coverage Ratios, Solvency Ratios, Turnover Ratios, Profitability Ratios
4.	Creditors	Interested in the liability position, particularly for short-term obligations.	Liquidity Ratios, Short-term Solvency Ratios
5.	Employees	Interested in the overall financial health of the organization, comparing it with competitors.	Liquidity Ratios, Long-term Solvency Ratios, Profitability Ratios, Return on Investment
6.	Regulator / Government	Analyzes financial statements for taxation and other payments to the government.	Profitability Ratios
7.	Managers	Interested in various financial ratios for decision-making.	
a.	Production Managers	Focus on input-output data, production quantities, etc.	Input-output Ratio, Raw Material Consumption Ratio
b.	Sales Managers	Focus on sales figures, both past and future projections.	Turnover Ratios (e.g., Receivable Turnover Ratio), Expense Ratios
c.	Financial Managers	Interested in ratios to predict financial requirements.	Profitability Ratios (e.g., Return on Investment), Turnover Ratios, Capital

			Structure Ratios
d.	CEO/General Manager	Concerned with the overall perspective of the company, including sales, finance, inventory, HR, production.	All Ratios
8.	Different Industries	Industry-specific analysis by financial managers.	
a.	Telecom	Compare company ratios with industry norms.	Call Ratios, Revenue and Expenses per Customer
b.	Bank		Loan to Deposit Ratios, Operating Expenses and Income Ratios
c.	Hotel		Room Occupancy Ratio, Bed Occupancy Ratios
d.	Transport		Passenger-Kilometre, Operating Cost per Passenger-Kilometre

APPLICATION OF RATIO ANALYSIS IN FINANCIAL DECISION MAKING	
Aspect	Explanation
Liquidity Position	Liquidity ratios help assess if a firm can meet its short-term obligations. Important for credit analysis by banks and short-term lenders.
Long-term Solvency	Evaluates a firm's long-term financial health using leverage (capital structure) and profitability ratios. Indicates the firm's ability to offer returns and manage debt.
Operating Efficiency	Activity ratios measure how efficiently assets are managed and utilized. A firm's solvency depends on its ability to generate sales revenue from its assets.
Overall Profitability	Management is concerned with the firm's ability to meet obligations, offer returns to owners, and utilize assets effectively. Ratios are considered collectively for this view.
Inter-firm Comparison	Comparing a firm's ratios with industry averages or competitors helps identify strengths and weaknesses. This comparison guides remedial measures and future forecasting.
Financial Ratios	Ratios help in budgeting by estimating future activities based on past data.

for Budgeting	They also help compare actual performance with budgeted figures and highlight areas for adjustments.

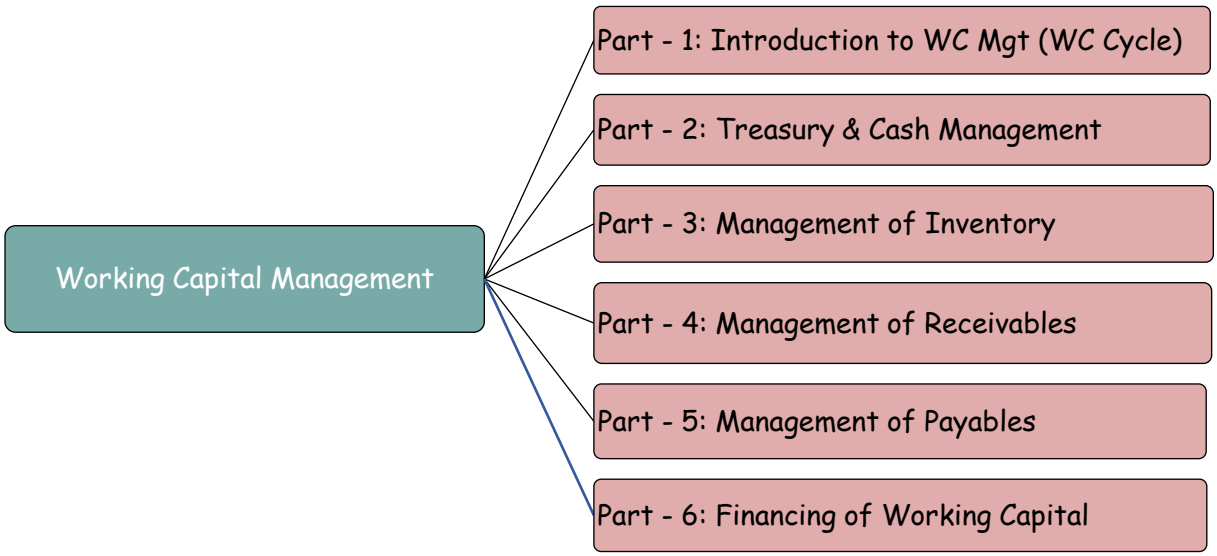
LIMITATIONS OF FINANCIAL RATIOS	
Limitation	Explanation
Diversified Product Lines	Firms with multiple divisions in different industries may have aggregate data that doesn't allow for meaningful inter-firm comparisons.
Distortion due to Inflation	Historical cost values may not reflect true values due to inflation, affecting the accuracy of financial data and ratios.
Seasonal Factors	Seasonal variations in sales or inventory levels can distort ratios (e.g., inventory ratios during peak seasons). Monthly averages can help, but they may not be available.
Window Dressing	Year-end adjustments (like changes to the current ratio or debt-equity ratio) can artificially alter ratios and may not reflect the true financial situation.
Differences in Accounting Policies	Differences in accounting methods and periods can make it difficult to compare financial ratios across different firms.
Lack of Standard Ratios	Industry averages may not be a suitable benchmark, as they may be too high or low for certain firms based on their position.
Difficulty in Judging Ratio Quality	Low ratios may seem bad, but a high ratio could indicate inefficient use of resources (e.g., current ratio). Context matters.
Inter-dependence of Ratios	Ratios are inter-related, meaning viewing one in isolation may mislead. Multivariate analysis is required to understand the complete picture.
Financial Ratios are Clues, Not Conclusions	Ratios offer insights, but the final interpretation requires expert analysis; there's no single standard for interpreting them.

FINANCIAL ANALYSIS	
Type of Analysis	Explanation
Horizontal Analysis	This analysis compares financial statements from different years to assess changes. It can be based on ratios derived from financial information over the same period.
Vertical Analysis	This analysis focuses on the financial statement of a single year. It is useful for inter-firm comparisons. Items in the Profit and Loss account are shown as a percentage of gross sales, and items in the Balance Sheet are expressed as a percentage of total assets.

CHAPTER 8: WORKING CAPITAL MANAGEMENT

1. Chapter Overview

- ✓ In this chapter, we will understand the meaning, need and importance of Working Capital along with the components and methods of estimating it for a smooth functioning of an entity.
- ✓ In this context, this chapter is divided into six parts:



2. Important Terms/Concepts used in WC Management

Before we enter into this chapter, one needs to understand the format of Cost Sheet which is ideally covered in P4: Cost & Management Accounting.

Cost Sheet Format for Working Capital Calculations:

Opening stock of RM	xxx
(+) Purchase of RM	xxx
(-) Closing stock of RM	(xxx)
RM consumed	xxx
(+) Direct wages	xxx
(+) Direct expenses	xxx
Prime cost	xxx
(+) Production Overheads	xxx
Gross Works Cost	xxx
(+) Opening WIP	xxx
(-) Closing WIP	(xxx)
Works cost / Factory cost / Cost of Production (COP)	xxx
(+) Opening FG	xxx

(-) Closing FG	(xxx)
Cost Of Goods Sold (COGS)	xxx
(+) Administration Overheads (AOH)	xxx
(+) Selling & Distribution Overheads (SOH)	xxx
Cost of Sales (COS)	xxx
(+) Profit	xxx
Sales	xxx

Doubt Busters:

AOH may be alternatively treated as product cost (Refer classroom discussion)

PART - 1: INTRODUCTION TO WORKING CAPITAL MANAGEMENT

1. Meaning & Concept of Working Capital

- ✓ In accounting terms, working capital is defined as the difference between current assets and current liabilities.
- ✓ If we break down the components of working capital, we will find working capital as follows:

Working Capital = Current Assets – Current Liabilities

A. Current Assets

- ✓ An asset is classified as current when:
  - i. It is expected to be realised or intends to be sold or consumed in normal operating cycle of the entity or within twelve months after the reporting period whichever is longer; and
  - ii. The asset is held primarily for the purpose of trading in the ordinary course of business.
- ✓ For the purpose of working capital management, current assets of an entity can be grouped into the following categories:
  - a. Inventory (raw material, work in process and finished goods)
  - b. Receivables (trade receivables and bills receivables)
  - c. Cash or cash equivalents (including short-term marketable securities)
  - d. Prepaid expenses
- ✓ Other current assets may also include short term loans or advances, any other accrued revenue etc.

B. Current Liabilities

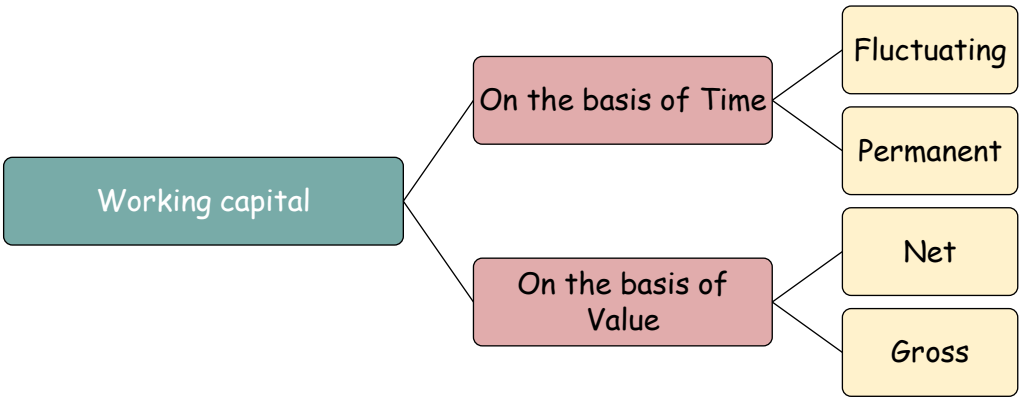
- ✓ A liability is classified as current when:
  - i. It is expected to be settled in normal operating cycle of the entity or within twelve months after the reporting period whichever is longer; and
  - ii. It is settled either by the use of current assets or by creation of new current liability.
- ✓ For the purpose of working capital management, current liabilities of an entity can be grouped into the following categories:
  - a. Payable (trade payables and bills payables)
  - b. Outstanding payments (wages & salary, overheads & other expenses etc.)
- ✓ Other current liabilities may also include short term borrowings, current portion of long-term debts, short term provisions that are payable within twelve months such as provision for taxes etc.

C. Working Capital Management

- ✓ Working Capital Management is concerned with:
  - a. Maintaining adequate working capital (managing the level of individual current assets and the current liabilities) and

b. Financing of the working capital.

- ✓ For the point (a) above, a Finance Manager needs to plan and compute the working capital requirement for its business. And once the requirement has been computed he needs to ensure that it is financed properly. This whole exercise is known as Working Capital Management.
- ✓ Working Capital Management is a process which is designed to ensure that an organization operates efficiently by monitoring & utilizing its current assets and current liabilities to the best effect.
- ✓ The primary objective is to enable a company maintaining sufficient cash flows in order to meet its day-to-day operating expenses and its short-term obligations.
- ✓ The concept of working capital can also be explained through two angles.



- ✓ Gross Working Capital refers to the firm's investment in Current Assets
- ✓ Net Working Capital refers to the difference between Current Assets & Current Liabilities
- ✓ Permanent Working Capital is the minimum level of investment in Current Assets that is carried by the entity at all times to carry its day-to-day activities and remains invested in the business throughout.
- ✓ Fluctuating or Temporary Working Capital refers to that part of total working capital which is required by an entity in addition to the permanent working capital.

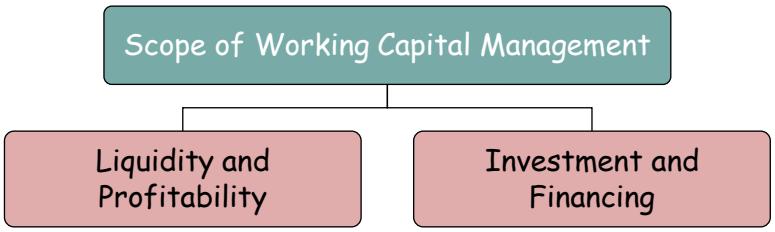
D. Optimum Working Capital

- ✓ If a company's current assets do not exceed its current liabilities, then it may run into trouble with creditors that want their money quickly. Not being able to meet its short-term obligations, company shall eventually lose its reputation and not many vendors would like to do business with them.
- ✓ Current ratio (current assets/current liabilities) (along with acid test ratio to supplement it) has traditionally been considered the best indicator of the working capital situation.
- ✓ It is understood that a current ratio of 2 (two) for a manufacturing firm implies that the firm has an optimum amount of working capital.
- ✓ A higher ratio may indicate inefficient use of funds and a lower ratio would mean liquidity issues as mentioned above.

- ✓ This is supplemented by Quick Ratio or Acid Test Ratio (Quick assets/Current liabilities) which should be at least 1 (one) which would imply that there is a comfortable liquidity position if liquid current assets are equal to current liabilities (where quick assets / liquid current assets refer to current assets less inventory & prepaid expenses).
- ✓ However, it should be remembered that optimum working capital can be determined only with reference to the particular circumstances of a specific situation.
- ✓ Thus, in a company where the inventories are easily saleable and the sundry debtors are as good as liquid cash, the current ratio may be lower than 2 and yet firm may be sound or where the nature of finished goods are perishable in nature like a restaurant, then also the organization cannot afford to hold large amount of working capital.
- ✓ On the other hand, an organization dealing in products which take a longer production time, may need a higher amount of working capital.
- ✓ In nutshell, a firm should have adequate working capital to run its business operations. Both excessive as well as inadequate working capital positions are dangerous.

E. Scope of Working Capital Management

- ✓ The scope of working capital management can be grouped into two broad areas:
  (i) Liquidity and Profitability (ii) Investment and Financing Decision.



- ✓ For uninterrupted and smooth functioning of the day-to-day business of an entity, it is important to maintain liquidity of funds evenly.
- ✓ As we have already learnt in previous chapters that each rupee of capital bears some cost. So, while maintaining liquidity the cost aspect needs to be borne in mind.
- ✓ Also, a higher working capital may be intended to increase the revenue & hence profitability, but at the same time unnecessary tying up of funds in idle assets not only reduces the liquidity but also reduces the opportunity to earn better return from a productive asset.
- ✓ Hence, a trade-off is required between the liquidity and profitability which increases the profitability without disturbing the day-to-day functioning. This requires 3Es i.e., economy in financing, efficiency in utilization and effectiveness in achieving the intended objectives.
- ✓ The trade-off between the components of working capital can be summarized as follows:

Component of Working Capital	Advantages of higher side (Profitability)	Trade-off (between Profitability and Liquidity)	Advantages of lower side (Liquidity)
Inventory	Fewer stock-outs increase the profitability.	Use techniques like EOQ, JIT etc. to carry optimum level of inventory.	Lower inventory requires less capital but endangered stock-out and loss of goodwill.
Receivables	Higher Credit period attract customers and increase revenue (but can result in more bad debts)	Evaluate the credit policy; use the services of debt management (factoring) agencies.	Cash sales provide liquidity but fails to boost sales and revenue (due to lower credit period)
Pre-payment of expenses	Reduces uncertainty and profitable in inflationary environment.	Cost-benefit analysis required	Improves or maintains liquidity.
Cash and Cash equivalents	Payables are honoured in time, improves the goodwill and helpful in getting future discounts.	Cash budgets and other cash management techniques can be used	Cash can be invested in some other investment avenues
Payables and Expenses	Capital can be used in some other investment avenues	Evaluate the credit policy and related cost.	Payables are honoured in time, improves the goodwill and helpful in getting future discounts.

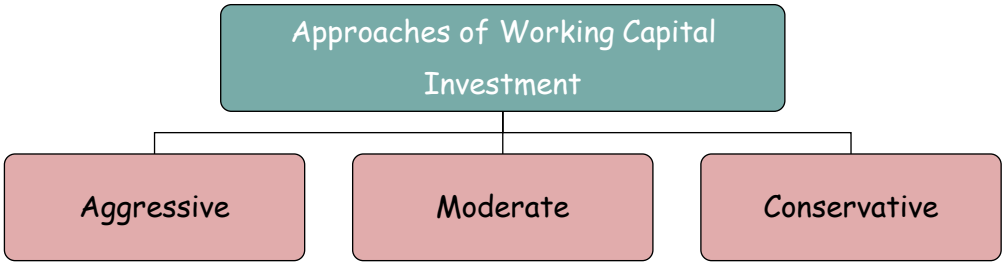
F. Investment and Financing of Working Capital

- ✓ Working capital policy is a function of two decisions, first is investment in working capital and the second is financing of the investment.
- ✓ Investment in working capital is concerned with the level of investment in the current assets. It gives the answer of 'How much' fund to be tied in to achieve the organisation objectives (i.e., Effectiveness of fund).
- ✓ The level of investment in working capital depends on the various factors such as Nature of Industry, Types of products, Sector of operation (Manufacturing/Trading/Service), Volume of sales, credit policy etc.)

- ✓ Financing decision is concerned with the arrangement of funds to finance the working capital. It gives the answer 'Where from' fund to be sourced at lowest cost as possible (i.e. Economy). Financing decision, we will discuss this in last unit of this chapter.

2. Approaches Of Working Capital Investment

- ✓ Based on the organisational policy and risk-return trade off, working capital investment decisions are categorised into three approaches i.e., aggressive, conservative and moderate.



- ✓ Aggressive:
  - Here investment in working capital is kept at minimal investment in current assets which means the entity does hold lower level of inventory, follow strict credit policy, keeps less cash balance etc.
  - The advantage of this approach is that lower level of fund is tied in the working capital which results in lower financial costs but the flip side could be risk of stock-outs & that the organisation could not grow which leads to lower utilisation of fixed assets and long-term debts.
  - In the long run firm may stay behind the competitors. This approach would better suit a highly integrated organisation with efficient processes.
- ✓ Conservative:
  - In this approach, organisation choose to invest high capital in current assets.
  - Organisations use to keep inventory level higher, follows liberal credit policies, and cash balance as high as to meet any current liabilities immediately.
  - The advantages of this approach are higher sales volume, increased demand due to liberal credit policy and increase goodwill among the suppliers due to payment in short time.
  - The disadvantages are increased cost of capital, inventory obsolescence, higher risk of bad debts, shortage of liquidity in long run due to longer operating cycles.
- ✓ Moderate:
  - This approach is in between the above two approaches. Under this approach a balance between the risk and return is maintained to gain more by using the funds in very efficient manner.

- ✓ Graph:

- ✓ A conservative policy implies greater liquidity and lower risk whereas an aggressive policy indicates higher risk and poor liquidity.
- ✓ Moderate current assets policy will fall in the middle of conservative and aggressive policies which most of the firms follow to strike an appropriate balance as per the requirements of their trade or industry.
- ✓ Also, an organization may follow a different policy at different times as may be needed depending on determinants of working capital as discussed earlier.

3. Current Assets to Fixed Assets Ratio

- ✓ The finance manager is required to determine the optimum level of current assets so that the shareholders' value is maximized.
- ✓ A firm needs both fixed and current assets to support a particular level of output.
- ✓ The level of the current assets can be measured by creating a relationship between current assets and fixed assets. Dividing current assets by fixed assets gives current assets/fixed assets ratio.
- ✓ Assuming a constant level of fixed assets, a higher current assets/fixed assets ratio indicates a conservative current assets policy and a lower current assets/fixed assets ratio means an aggressive current assets policy assuming all other factors to be constant.

4. Estimating Working Capital Needs

- ✓ Operating cycle is one of the most reliable methods of Computation of Working Capital.
- ✓ However, other methods like ratio of sales and ratio of fixed investment may also be used to determine the Working Capital requirements. These methods are briefly explained as follows:
  i. Current Assets Holding Period: To estimate working capital needs based on the average holding period of current assets and relating them to costs based on the company's experience in the previous year. This method is essentially based on the Operating Cycle Concept.

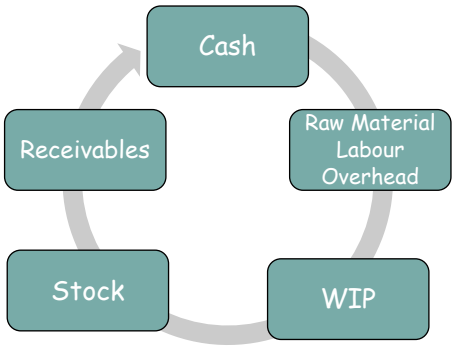
ii. Ratio of Sales: To estimate working capital needs as a ratio of sales on the assumption that current assets change with changes in sales.

iii. Ratio of Fixed Investments: To estimate Working Capital requirements as a percentage of fixed investments.

- ✓ A number of factors will, however, be impacting the choice of method of estimating Working Capital. Factors such as seasonal fluctuations, accurate sales forecast, investment cost and variability in sales price would generally be considered.
- ✓ The production cycle and credit and collection policies of the firm will have an impact on Working Capital requirements. Therefore, they should be given due weightage in projecting Working Capital requirements.
- ✓ We will now discuss the most reliable method - Operating Cycle Method

A. Operating Or Working Capital Cycle

- ✓ A useful tool for managing working capital is the operating cycle.
- ✓ The operating cycle analyses the accounts receivable, inventory and accounts payable cycles in terms of number of days.
- ✓ For example:
  - Accounts receivables are analyzed by the average number of days it takes to collect an account.
  - Inventory is analyzed by the average number of days it takes to turn over the sale of a product (from the point it comes in the store to the point it is converted to cash or an account receivable).
  - Accounts payables are analyzed by the average number of days it takes to pay a supplier invoice.
- ✓ Working Capital cycle indicates the length of time between a company's paying for materials, entering into stock and receiving the cash from sales of finished goods.



- ✓ It can be determined by adding the number of days required for each stage in the cycle.
- ✓ For example, a company holds raw materials on an average for 60 days, it gets credit from the supplier for 15 days, production process needs 15 days, finished goods are held for 30 days and 30 days credit is extended to debtors.

- ✓ The total of all these, 120 days, i.e., 60 – 15 + 15 + 30 + 30 days is the total working capital cycle.
- ✓ Most businesses cannot finance the operating cycle (accounts receivable days + inventory days) with accounts payable financing alone. Consequently, working capital financing is needed.
- ✓ This shortfall is typically covered by the net profits generated internally or by externally borrowed funds or by a combination of the two.
- ✓ Each component of working capital (namely inventory, receivables and payables) has two dimensions Time and Money. When it comes to managing working capital then time is money.

If you……	**Then** …….
Collect receivables (debtors) faster	You release cash from the cycle
Collect receivables (debtors) slower	Your receivables soak up cash.
Get better credit (in terms of duration or amount) from suppliers.	You increase your cash resources.
Shift inventory (stocks) faster	You free up cash.
Move inventory (stocks) slower	You consume more cash.

- ✓ The determination of operating capital cycle helps in the forecasting, controlling and management of working capital. The length of operating cycle is the indicator of performance of management. The net operating cycle represents the time interval for which the firm has to negotiate for Working Capital from its lenders. It enables to determine accurately the amount of working capital needed for the continuous operation of business activities.
- ✓ The duration of working capital cycle may vary depending on the nature of the business.
- ✓ In the form of an equation, the operating cycle process can be expressed as follows:

Operating Cycle = R + W + F + D – C

Where,

R = Raw material storage period

W = Work-in-progress inventory* holding period

F = Finished goods storage period

D = Receivables (Debtors) collection period

C = Credit period allowed by suppliers (Creditors)

* work in progress inventory may also be termed as works cost.

- ✓ Also,

Number of Operating Cycles in a Year = 360 or 365 ÷ Operating Cycle

- ✓ Wherein, more the number of operating cycles better it is for the organization as it indicates shorter operating cycle.

B. Various components of Operating Cycle

✓ The various components of Operating Cycle may be calculated as shown below:

1.	Raw Material Storage Period	$= \frac{\text{Average stock of raw material}}{\text{Average Costof Raw Material Consumption perday}}$
2.	Work-in-Progress inventory holding period	$= \frac{\text{AverageWork -in-progress inventory}}{\text{Average Costof Production perday}}$
3.	Finished Goods storage period	$= \frac{\text{Average stock of finished goods}}{\text{Average Costof Goods Sold perday}}$
4.	Receivables (Debtors) collection period	$= \frac{\text{Average Receivables}}{\text{Average Credit Sales perday}}$
5.	Credit period allowed by suppliers (Creditors)	$= \frac{\text{Average Payables}}{\text{Average Credit Purchases perday}}$

5. Estimation of Different Components of Current Assets and Current Liabilities

✓ The various constituents of current assets and current liabilities have a direct bearing on the computation of working capital and the operating cycle.

✓ The holding period of various constituents of Current Assets and Current Liabilities cycle may either contract or expand the net operating cycle period.

A. Estimation of Current Assets

✓ The estimates of various components of gross working capital or current assets may be made as follows:

i. Raw Materials Inventory: The funds to be invested in raw materials inventory may be estimated on the basis of production budget, the estimated cost per unit and average holding period of raw material inventory by using the following formula:

$$\frac{\text{Estimated Production (units)}}{\text{12months /365days *}} \times \text{Estimated cost per unit x Average raw material storage period}$$

ii. Work-in-Progress Inventory: The funds to be invested in work-in-progress can be estimated by the following formula:

$$\frac{\text{Estimated Production (units)}}{\text{12months /365days *}} \times \text{Estimated WIP cost per unit x Average WIP holding period}$$

iii. Finished Goods: The funds to be invested in finished goods inventory can be estimated with the help of following formula:

$$\frac{\text{Estimated Production (units)}}{\text{12months /365days *}} \times \text{Estimated COP per unit x Average finished goods storage period}$$

iv. Receivables (Debtors): Funds to be invested in trade receivables (debtors) may be estimated with the help of following formula:

$$\frac{\text{Estimated Credit sales (units)}}{\text{12months /365days *}} \times \text{Estimated COS (Excl. Dep.) p.u} \times \text{Average receivable collection period}$$

Note that only cash cost is considered for debtors and finished goods elements (as the sales to debtors include cost & profit whereas the funds required for working capital purposes doesn't need to include profit). Further, non-cash expense like depreciation is also excluded.

v. Cash and Cash equivalents: Minimum desired Cash and Bank balance to be maintained by the firm has to be added in the current assets for the computation of working capital.

B. Estimation of Current Liabilities

- ✓ Current liabilities are deducted from the current assets to get working capital. Hence, the amount of working capital is lowered to the extent of current liabilities (other than bank credit) arising in the normal course of business.
- ✓ The important current liabilities like trade payables, wages and overheads can be estimated as follows:

i. Trade Payables: Trade payable can be estimated on the basis of material purchase budget and the credit purchase by using following formula:

$$\frac{\text{Estimated credit purchase}}{\text{12months /365days *}} \times \text{Credit period allowed by suppliers}$$

ii. Direct Wages: It is estimated with the help of direct wages budget by using following formula:

$$\frac{\text{Estimated labour hours} \times \text{wages rate perhour}}{\text{12months /365days *}} \times \text{Average time lag in payment of wages}$$

iii. Overheads (other than depreciation and amortization): It may be estimated with the help of following formula:

$$\frac{\text{Estimated Overheads}}{\text{12months /360days *}} \times \text{Average time lag in payment of overheads}$$

*Number of days in a year may be taken as 365 or 360 days.

C. Estimation of Working Capital Requirements

		Amount (₹)	Amount (₹)	Amount (₹)
I.	Current Assets:			
	Inventories:			
	-Raw Materials	---		
	-Work-in-process	---		
	-Finished goods	---	---	
	Receivables:			
	-Trade debtors	---		
	-Bills	---	---	
	Prepaid Expenses		---	
	Minimum Cash Balance		---	
	Gross Working Capital		---	---
II.	Current Liabilities:			
	Trade Payables		---	
	Bills Payables		---	
	Wages Payables		---	
	Payables for overheads		---	---
III.	Excess of Current Assets over Current Liabilities [I – II]			---
IV.	Safety Margin			---
V.	Net Working Capital [III + IV]			---

D. Working Capital Requirement Estimation based on Cash Cost

- ✓ We have already seen that working capital is the difference between current assets and current liabilities. To estimate requirements of working capital, we have to forecast the amount required for each item of current assets and current liabilities.
- ✓ In practice another approach may also be useful in estimating working capital requirements.
- ✓ This approach is based on the fact that in the case of current assets, like sundry debtors and finished goods, etc., the exact amount of funds blocked is less than the amount of such current assets.

- ✓ For example:
  - If we have sundry debtors worth ₹ 1 lakh and our cost of sales is ₹ 75,000, the actual amount of funds blocked in sundry debtors is ₹ 75,000 the cost of sundry debtors, the rest (₹ 25,000) is profit.
  - Again, some of the cost items also are non-cash costs; depreciation is a non-cash cost item. Suppose out of ₹ 75,000, ₹ 5,000 is depreciation; then it is obvious that the actual funds blocked in terms of sundry debtors totalling ₹ 1 lakh is only ₹ 70,000. In other words, ₹ 70,000 is the amount of funds required to finance sundry debtors worth ₹ 1 lakh.
  - Similarly, in the case of finished goods which are valued at cost, non-cash costs may be excluded to work out the amount of funds blocked.
  - Many experts, therefore, calculate the working capital requirements by working out the cash costs of finished goods and sundry debtors. Under this approach, the debtors are calculated not as a percentage of sales value but as a percentage of cash costs. Similarly, finished goods are valued according to cash costs.

E. Effect of Double Shift Working in Working Capital Requirements

(Refer Classroom Discussion)

PART - 2: TREASURY AND CASH MANAGEMENT

6. Treasury Management: Meaning

- ✓ The treasury management mainly deals with: -
  - i. Working capital management; and
  - ii. Financial risk management (It includes forex and interest rate management).
- ✓ The key goals of treasury management are: -
  - Maximize the return on the available cash;
  - Minimize interest cost on borrowings;
  - Mobilise as much cash as possible for corporate ventures for maximum returns; and
  - Effective dealing in forex, money and commodity markets to reduce risks arising because of fluctuating exchange rates, interest rates and prices which can in turn affect the profitability of the organization.

7. Functions Of Treasury Department

- ✓ The fundamental tasks for which treasury department of any enterprise is responsible are:

1. Cash Management: It involves efficient cash collection process and managing payment of cash both inside the organisation and to third parties.
2. Currency Management: The treasury department manages the foreign currency risk exposure of the company. If risks are to be minimized then forward contracts can be used either to buy or sell currency forward.
3. Fund Management: Treasury department is responsible for planning and sourcing the company's short, medium and long-term cash needs. They also facilitate temporary investment of surplus funds by mapping the time gap between funds inflow and outflow. Treasury department will also participate in the decision on capital structure and forecast future interest and foreign currency rates.
4. Banking: It is important that a company maintains a good relationship with its bankers. Treasury department carry out negotiations with bankers with respect to interest rates, foreign exchange rates etc. and act as the initial point of contact with them. Short-term finance can come in the form of bank loans or through the sale of commercial paper in the money market.
5. Corporate Finance: Treasury department is involved with both acquisition and divestment activities within the group. In addition, it will often have responsibility for investor relations.

8. Management Of Cash

- ✓ Management of cash is an important function of the finance manager. It is concerned with the managing of:
  - Cash flows into and out of the firm;
  - Cash flows within the firm; and
  - Cash balances held by the firm at a point of time by financing deficit or investing surplus cash.
- ✓ The main objectives of cash management for a business are: -
  - Provide adequate cash to each of its units as per requirements;
  - No funds are blocked in idle cash; and
  - The surplus cash (if any) should be invested in order to maximize returns for the business.
- ✓ A cash management scheme therefore, is a delicate balance between the twin objectives of liquidity and costs.
- ✓ The following are three basic considerations in determining the amount of cash or liquidity as have been outlined by Lord Keynes, a British Economist:
  - Transaction need: Cash facilitates the meeting of the day-to-day expenses and other debt payments.
  - Speculative needs: Cash may be held in order to take advantage of profitable opportunities that may present themselves and which may be lost for want of ready cash/settlement.
  - Precautionary needs: Cash may be held to act as for providing safety against unexpected events.

9. Cash Budget

- ✓ Cash Budget is the most significant device to plan for and control cash receipts and payments.
- ✓ On the basis of cash budget, the firm can decide to invest surplus cash in marketable securities and earn profits.
- ✓ On the contrary, any shortages can also be managed by making overdraft or credit arrangements with banks

A. Cash budget for short period

The following is the Format of Cash Budget for short period

	Month 1	Month 2	Month 3		Month 12
Receipts:					
1. Opening balance					
2. Collection from debtors					
3. Cash sales					
4. Loans from banks					
5. Share capital					
6. Miscellaneous receipts					
7. Other items					
Total					
Payments:					
1. Payments to creditors					
2. Wages					
3. Overheads					
(a)					
(b)					
(c)					
4. Interest					
5. Dividend					
6. Corporate tax					
7. Capital expenditure					
8. Other items					
Total					
Closing balance					
[Surplus (+)/Shortfall (-)]					

B. Cash Budget for long period

- ✓ Long-range cash forecast often resemble the projected sources and application of funds statement.
- ✓ The following procedure may be adopted to prepare long-range cash forecasts:

(i) Take the cash at bank and in the beginning of the year

Add:

a. Trading profit (before tax) expected to be earned;
b. Depreciation and other development expenses incurred to be written off;
c. Sale proceeds of assets;
d. Proceeds of fresh issue of shares or debentures; and
e. Reduction in working capital that is current assets (except cash) less current liabilities.

Deduct:

a. Dividends to be paid.
b. Cost of assets to be purchased.
c. Taxes to be paid.
d. Debentures or preference shares to be redeemed.
e. Increase in working capital that is current assets (except cash) less current liabilities

10. Determining the Optimum Cash Balance

- ✓ A firm should maintain optimum cash balance to cater to the day-to-day operations.
- ✓ It may also carry additional cash as a buffer or safety stock.
- ✓ The amount of cash balance will depend on the risk-return trade off. The firm should maintain an optimum level i.e. just enough, i.e. neither too much (to avoid any opportunity cost) nor too little cash balance (to settle day to day payments).
- ✓ This, however, poses a question. How to determine the optimum cash balance if cash flows are predictable and if they are not predictable?
- ✓ In recent years several types of mathematical models have been developed which helps to determine the optimum cash balance to be carried by a business organization.
- ✓ The purpose of all these models is to ensure that cash does not remain idle unnecessarily and at the same time the firm is not confronted with a situation of cash shortage.
- ✓ All these models can be put in two categories:
  1. Inventory type model
  2. Stochastic models
- ✓ Inventory type models have been constructed to aid the finance manager to determine optimum cash balance of his firm. William J. Baumol's economic order quantity model applies equally to cash management problems under conditions of certainty or where the cash flows are predictable.
- ✓ However, in a situation where the EOQ Model is not applicable, stochastic model of cash management helps in determining the optimum level of cash balance. It happens when the demand for cash is stochastic and not known in advance.

A. William J. Baumol's Economic Order Quantity Model, (1952)

- ✓ According to this model, optimum cash level is that level of cash where the carrying costs and transactions costs are the minimum.
- ✓ The carrying costs refer to the cost of holding cash, namely, the opportunity cost or interest foregone on marketable securities. The transaction costs refer to the cost involved in getting the marketable securities converted into cash.
- ✓ The formula for determining optimum cash balance is:

$$C = \sqrt{\frac{2U \times P}{S}}$$

Where,

C = Optimum cash balance

U = Annual (or monthly) cash disbursement

P = Fixed cost per transaction.

S = Opportunity cost of one rupee p.a. (or p.m.)

- ✓ Diagram:

B. Miller-Orr Cash Management Model (1966)

- ✓ According to this model the net cash flow is completely stochastic.
- ✓ When changes in cash balance occur randomly the application of control theory serves a useful purpose. The Miller-Orr model is one of such control limit models.
- ✓ This model is designed to determine the time and size of transfers between an investment account and cash account. In this model control limits are set for cash balances. These limits may consist of h as upper limit, z as the return point; and zero as the lower limit.
- ✓ When the cash balance reaches the upper limit, the transfer of cash equal to h – z is invested in marketable securities account.
- ✓ When it touches the lower limit, a transfer from marketable securities account to cash account is made.
- ✓ During the period when cash balance stays between (h, z) and (z, 0) i.e. high and low limits no transactions between cash and marketable securities account is made.

- ✓ The high and low limits of cash balance are set up on the basis of fixed cost associated with the securities transactions, the opportunity cost of holding cash and the degree of likely fluctuations in cash balances.
- ✓ These limits satisfy the demands for cash at the lowest possible total costs.
- ✓ The MO Model is more realistic since it allows variations in cash balance within lower and upper limits. The finance manager can set the limits according to the firm's liquidity requirements i.e., maintaining minimum and maximum cash balance.
- ✓ The following diagram illustrates the Miller-Orr model.

PART - 3: MANAGEMENT OF INVENTORY

- ✓ Inventories constitute a major element of working capital.
- ✓ It is, therefore, important that investment in inventory is properly controlled.
- ✓ The objectives of inventory management are, to a great extent, similar to the objectives of cash management.
- ✓ Inventory management covers a large number of problems including fixation of minimum and maximum levels, determining the size of inventory to be carried, deciding about the issues, receipts and inspection procedures, determining the economic order quantity, proper storage facilities, keeping check over obsolescence and ensuring control over movement of inventories.
- ✓ Inventory Management has been discussed in detail in Material Cost Chapter of Paper 4: Cost and Management Accounting. Students are advised to refer the same.

PART – 4: MANAGEMENT OF RECEIVABLES

11. Meaning And Objective of Receivables Management

- ✓ Management of receivables refers to planning and controlling of 'debt' owed to the firm from customer on account of credit sales. It is also known as trade credit management.
- ✓ The basic objective of management of receivables (debtors) is to optimise the return on investment on these assets.
- ✓ When large amounts are tied up in receivables, there are chances of bad debts and there will be cost of collection of debts.
- ✓ On the contrary, if the investment in receivables is low, the sales may be restricted, since the competitors may offer more liberal terms.
- ✓ Therefore, management of receivables is an important issue and requires proper policies and their implementation.

12. Aspects Of Management Of Debtors

There are basically three aspects of management of receivables:

1. Credit Policy: A balanced credit policy should be determined for effective management of receivables. Decision of Credit standards, Credit terms and collection efforts is included in Credit policy. The credit period is generally stated in terms of net days. For example, if the firm's credit terms are "net 50". It is expected that customers will repay credit obligations not later than 50 days.

   Further, the cash discount policy of the firm specifies:
   - The rate of cash discount.
   - The cash discount period; and
   - The net credit periods.

   For example, the credit terms may be expressed as "3/15 net 60". This means that a 3% discount will be granted if the customer pays within 15 days; if he does not avail the offer he must make payment within 60 days.
2. Credit Analysis: This requires the finance manager to determine as to how risky it is to advance credit to a particular party. This involves due diligence or reputation check of the customers with respect to their credit worthiness.
3. Control of Receivable: This requires finance manager to follow up debtors and decide about a suitable credit collection policy. It involves both laying down of credit policies and execution of such policies.

Cost Of Maintaining Receivables

- ✓ There is always cost of maintaining receivables which comprises of following costs:
  - The company requires additional funds as resources are blocked in receivables which involves a cost in the form of interest (loan funds) or opportunity cost (own funds)
  - Administrative costs which include record keeping, investigation of credit worthiness
  - Collection costs.
  - Defaulting costs.

13. Approaches To Evaluation Of Credit Policies

- ✓ There are basically two methods of evaluating the credit policies to be adopted by a Company
- ✓ Total Approach and Incremental Approach.
- ✓ The formats for the two approaches are given as under:

A. Statement showing the Evaluation of Credit Policies (based on Total Approach)

Particulars	Present Policy	Proposed Policy I	Proposed Policy II	Proposed Policy III
	₹	₹	₹	₹
A. Expected Profit:				
a. Credit Sales	.....	.....	.....	.....
b. Total Cost other than Bad Debts				
i. Variable Costs	.....	.....	.....	.....
ii. Fixed Costs	.....	.....	.....	.....
	.....	.....	.....	.....
c. Bad Debts	.....	.....	.....	.....
d. Cash discount				
e. Expected Net Profit before Tax (a-b-c-d)	.....	.....	.....	.....
f. Less: Tax	.....	.....	.....	.....
g. Expected Profit after Tax	.....	.....	.....	.....
B. Opportunity Cost of Investments in Receivables locked up in Collection Period	.....	.....	.....	.....
Net Benefits (A – B)	.....	.....	.....	.....

Advise: The Policy……should be adopted since the net benefits under this policy are higher as compared to other policies.

Here,

Total Fixed Cost = [Average Cost per unit – Variable Cost per unit] × No. of units sold on credit under Present Policy

$$\text{Opportunity Cost} = \text{Total Cost of Credit Sales} \times \frac{\text{Collection period (Days)}}{365 \text{ (or } 360)} \times \frac{\text{Required Rate of Return}}{100}$$

B. Statement showing the Evaluation of Credit Policies (based on Incremental Approach)

Particulars	Present Policy days	Proposed Policy I days	Proposed Policy II days	Proposed Policy III days
	₹	₹	₹	₹
A. Incremental Expected Profit:				
Credit Sales	……	……	……	……
a. Incremental Credit Sales	……	……	……	……
b. Less: Incremental Costs of Credit Sales				
i. Variable Costs	……	……	……	……
ii. Fixed Costs	……	……	……	……
c. Incremental Bad Debt Losses	……	……	……	……
d. Incremental Cash Discount	……	……	……	……
e. Incremental Expected Profit (a-b-c-d)	……	……	……	……
f. Less: Tax	……	……	……	……
g. Incremental Expected Profit after Tax	……	……	……	……
	……	……	……	……
B. Required Return on Incremental Investments:				
a. Cost of Credit Sales	……	……	……	……

b. Collection Period (in days)	.....	.....	.....	.....
c. Investment in Receivable (a × b ÷ (365 or 360))	.....	.....	.....	.....
d. Incremental Investment in Receivables	.....	.....	.....	.....
e. Required Rate of Return (in %)	.....	.....	.....	.....
f. Required Return on Incremental Investments (d × e)	.....	.....	.....	.....
Incremental Net Benefits (A – B)	.....	.....	.....	.....

Advise: The Policy..... should be adopted since the net benefits under this policy are higher as compared to other policies.

Here,

Total Fixed Cost = [Average Cost per unit – Variable Cost per unit] × No. of units sold on credit under Present Policy

$$\text{Opportunity Cost} = \text{Total Cost of Credit Sales} \times \frac{\text{Collection period (Days)}}{365 \text{ (or } 360)} \times \frac{\text{Required Rate of Return}}{100}$$

14. Financing Receivables - Factoring

- ✓ Factoring is a relatively new concept in financing of accounts receivables. This refers to outright sale of accounts receivables to a factor or a financial agency.
- ✓ A factor is a firm that acquires the receivables of other firms. The factoring lays down the conditions of the sale in a factoring agreement. The factoring agency bears the risk of collection and services the accounts for a fee.
- ✓ Factoring arrangement can be either on a recourse basis or on a non-recourse basis:
  - Recourse: In case factor is unable to collect the amount from receivables then, factor can turn back the same to the organization for resolution (which generally is by replacing those receivables with new receivables)
  - Non-Recourse: The factor bears the ultimate risk of loss in case of default and hence in such cases they charge higher commission.
- ✓ The biggest advantages of factoring are the immediate conversion of receivables into cash and predicted pattern of cash flows.
- ✓ Financing receivables with the help of factoring can help a company having liquidity without creating a net liability on its financial condition and hence no impact on debt equity ratio.

- ✓ Besides, factoring is a flexible financial tool providing timely funds, efficient record keepings and effective management of the collection process.
- ✓ This is not considered as a loan. There is no debt repayment and hence no compromise to balance sheet, no long-term agreements or delays associated with other methods of raising capital.
- ✓ Factoring allows the firm to use cash for the growth needs of business.

Statement showing the Evaluation of Factoring Proposal

	Particulars	₹
A.	Annual Savings (Benefit) on taking Factoring Service	
	Cost of credit administration saved	.....
	Bad debts avoided	.....
	Interest saved due to reduction in average collection period (Wherever applicable) [Cost of Annual Credit Sales × Rate of Interest × (Present Collection Period – New Collection Period) ÷ 360* days]	.....
	Total	.....
B.	Annual Cost of Factoring to the Firm:	
	Factoring Commission [Annual credit Sales × % of Commission (or calculated annually)]	.....
	Interest Charged by Factor on advance (or calculated annually) [Amount available for advance or (Annual Credit Sales – Factoring Commission – Factoring Reserve)] × $\left[\frac{\text{Collection Period (days)}}{360^*} \times \text{Rate of Interest}\right]$	.....
	Total	.....
C.	Net Annual Benefits/Cost of Factoring to the Firm:	A-B

	Rate of Effective Cost of Factoring to the Firm $\frac{\text{Net Annual cost of Factoring}}{\text{Amount available for advance}} \times 100$ or $\frac{\text{Net Annual cost of Factoring}}{\text{Advances to be paid}} \times 100$ Advances to be paid = (Amount available for advance – Interest deducted by factor)	

*1 Year is taken as 360 days

Advise:

1. The company should avail Factoring services if rate of effective Cost of Factoring to the firm is less than the existing cost of borrowing or if availing services of factoring results in to positive Net Annual Benefits.
2. The company should not avail Factoring services if the Rate of Effective Cost of Factoring to the Firm is more than the existing cost of borrowing.

PART – 5: MANAGEMENT OF PAYABLE

- ✓ There is an old age saying in business that if you can buy well then you can sell well.
- ✓ Management of your creditors and suppliers is just as important as the management of your debtors.
- ✓ Trade creditor is a spontaneous / short term source of finance in the sense that it arises from ordinary business transaction.
- ✓ But it is also important to look after your creditors - slow payment by you may create ill-feeling and your supplies could be disrupted and also create a bad image for your company.
- ✓ Creditors are a vital part of effective cash management and should be managed carefully to enhance the cash position.

15. Computation Of Cost Of Payables

- ✓ By using the trade credit judiciously, a firm can reduce the effect of growth or burden on investments in Working Capital.
- ✓ Now question arises how to calculate the cost of not taking the discount.
- ✓ The following equation can be used to calculate nominal cost, on an annual basis of not taking the discount:

$$\frac{d}{100 - d} \times \frac{365 \text{ days}}{t}$$

- ✓ However, the above formula does not take into account the compounding effect and therefore, the cost of credit shall be even higher. The cost of lost cash discount can be estimated by the formula:

$$\left(\frac{100}{100 - d}\right)^{\frac{365}{t}} - 1$$

Where,

d = Size of discount i.e. for 6% discount, d = 6

t = The reduction in the payment period in days, necessary to obtain the early discount or Days Credit Outstanding – Discount Period.

PART – 6: FINANCING OF WORKING CAPITAL

INTRODUCTION	
Step	Details
Step After Estimating Working Capital Needs	The finance manager arranges funds to meet the working capital requirements.
Types of Working Capital	➢ Permanent Working Capital: Always needed, regardless of sales fluctuations. Financed by long-term sources like debt and equity. ➢ Temporary Working Capital: Required for short periods. Financed by short-term sources.
Categories of Working Capital Finance	1. Spontaneous Sources 2. Negotiated Sources
Spontaneous Sources	➢ Naturally arise during business operations. ➢ Examples: Trade credit, employee credit, supplier credit.
Negotiated Sources	➢ Require formal negotiation with lenders. ➢ Examples: Commercial banks, financial institutions, general public.
Factors for Selecting a Financing Source	1. Cost: Expense of acquiring funds. 2. Impact on Credit Rating: Effect on company's financial reputation. 3. Feasibility: Practicality of obtaining funds. 4. Reliability: Certainty of fund availability. 5. Restrictions: Limitations imposed by lenders. 6. Hedging Approach: Matching financing with asset maturity.

SOURCES OF FINANCE

Spontaneous Sources of Finance		
Source	Description	Key Advantages
Trade Credit	➢ Credit extended by sellers or service providers to the purchasing company. ➢ Contributes to one-third of total short-term finance needs. ➢ If obtained without formalities, it is called "Open Account Trade Credit".	➢ Lower cost than other sources. ➢ Easily available. ➢ Helps businesses manage cash flow efficiently.
Bills Payable	➢ A written promise by the buyer to pay the seller at a future date or on demand. ➢ Used widely, especially by small and medium enterprises (SMEs). ➢ The amount depends on purchase volume and payment schedule.	➢ Simple process. ➢ No immediate payment burden. ➢ Widely used in all business sizes.
Accrued Expenses	➢ Outstanding liabilities for services used but not yet paid (e.g., wages, salaries, taxes). ➢ A built-in and automatic finance source. ➢ Interest-free with no explicit or implicit cost.	➢ No additional cost. ➢ Improves liquidity. ➢ Helps manage short-term cash flow.
Inter-corporate Loans and Deposits		
Sometimes, organizations having surplus funds invest for short-term period with other organizations. The rate of interest will be higher than the bank rate of interest and depends on the financial soundness of the borrower company. This source of finance reduces dependence on bank financing.		

Commercial Papers (CP)	
Aspect	Details
What is CP?	➢ An unsecured promissory note issued by a firm for short-term borrowing. ➢ Used by highly rated corporate borrowers to raise funds. ➢ Maturity period: 7 days to less than 1 year. ➢ Can be issued in denominations of Rs. 5 lakhs or multiples thereof.
Advantages of CP	1. Unsecured: No collateral required and no restrictive conditions. 2. Continuous Fund Source: Maturing CP can be repaid by issuing new CP. 3 3. Customizable Maturity: Firms can set the maturity period based on their requirements. 4. Available in Tight Money Markets: CP can be issued even during tight

	money market conditions. 5. Lower Cost: Generally, lower cost than commercial bank loans.
Limitations of CP	1. Credit Rating Requirement: Only firms with high credit ratings can issue CP. 2. No Flexibility in Redemption: CP cannot be redeemed before maturity or extended beyond maturity.

Funds Generated from Operations
Funds generated during an accounting period increase working capital by the same amount. The main components are profit and depreciation.

Public Deposits
Deposits from the public are a key source of finance for well-established, large companies. They are primarily used for short and medium-term financing.

Bills Discounting
A method where a supplier draws a bill of exchange, directing the buyer to pay after a set period. The supplier can discount the bill before maturity for immediate funds.

Bill Rediscounting Scheme
Introduced by the Reserve Bank of India (RBI) in 1970. It encourages the use of bills of exchange for credit and helps create a bill market. Licensed banks can rediscount bills with the RBI.

Factoring	
Aspect	Description
Definition	Factoring is a method where a firm sells its trade debts at a discount to a financial institution (called the factor).
Parties Involved	The key parties are the client (the firm selling goods/services), the factor (the financial institution), and the debtor (the customer who owes money).
Process	The factor buys the client's trade debts (including accounts receivable) either with or without recourse to the client. The factor also controls the credit extended to the customers and manages the sales ledger.
Layman's Explanation	A factor is an agent who collects the dues from the client's customers for a fee.

Factoring vs. Bills Discounting		
Aspect	Factoring	Bills Discounting
Definition	A method where a firm sells its trade debts at a discount to a financial institution (called the factor). The factor collects dues for a fee.	A method where a supplier draws a bill of exchange, and the buyer agrees to pay after a set period.
Parties Involved	Client, Factor, Debtor	Drawer, Drawee, Payee
Nature	Management of book debts, focusing on accounts receivable.	A borrowing method from commercial banks.
Legislation	No specific Act for Factoring.	Negotiable Instrument Act applies to Bills Discounting.

Working Capital Finance from Banks	
Aspect	Description
Major Source of Finance	Banks are the main suppliers of working capital credit for businesses in India. Recently, term lending financial institutions have also launched schemes for working capital financing.
Key Committees	The Tandon Committee and Chore Committee developed guidelines for working capital financing, which have laid the foundation for innovation in this area.
Assessment of Working Capital	RBI withdrew the Maximum Permissible Bank Finance (MPBF) method in April 1997. Banks can now develop their own methods, with Board approval, for assessing working capital needs while following prudential guidelines and exposure norms.
Banks' Discretion	Banks have flexibility in their lending policies but must follow RBI's directions related to directed credit (e.g., priority sector, export) and prohibited credit (e.g., bridge finance).
Liberalization Effect	With the withdrawal of MPBF guidelines, the instructions related to lending discipline (appraisal, sanction, monitoring, and utilization) are no longer mandatory. However, banks can include necessary guidelines in their policies.

Forms of Bank Credit	
Form of Credit	Description
Cash Credit	Continuous credit facility provided by banks. The borrower cannot exceed the

	sanctioned limit.
Bank Overdraft	Short-term borrowing facility for urgent funds. Banks set limits and can call the overdraft on short notice.
Bills Discounting	A company selling goods on credit draws a bill on the buyer, which is discounted with the bank. The bank sets the discounting bill limit.
Bills Acceptance	A company draws a bill of exchange on the bank, and the bank accepts it, committing to pay the amount on a specified future date.
Line of Credit	A bank's commitment to lend a certain amount of funds on demand, specifying a maximum lending limit.
Letter of Credit	An arrangement where the bank guarantees payment or negotiates documents on behalf of a customer under specified terms and conditions.
Bank Guarantees	A bank guarantees payment to a third party (beneficiary) on behalf of its client, ensuring the client's obligations are met.

Core Theory Topics

Methods of Cash Flow Budgeting	
Method	Explanation
Receipts and Payments Method	Considers all expected receipts and payments for the budget period. Includes cash inflows and outflows from all functional budgets, including capital expenditure. Adjustments and accruals are ignored. The closing cash balance is calculated by adding anticipated cash inflow to the opening balance and deducting cash payments. Commonly used in businesses.
Adjusted Income Method	Adjusts sales revenue and costs by considering delays in receipts and payments (changes in debtors and creditors). Non-cash items like depreciation are removed to calculate the actual cash flow.
Adjusted Balance Sheet Method	Uses a budgeted balance sheet, where assets (except cash & bank) and short-term liabilities are expressed as a percentage of expected sales. Profit is also estimated as a percentage of sales. This method helps forecast owner's equity and determine if extra finance is needed or if there will be a positive cash balance.

Managing Cash Collection and Disbursements	
Aspect	Explanation
Objective	The finance manager should minimize the gap between projected and actual cash flows by ensuring efficient cash collection and disbursement.
Key Goals	1. Accelerate cash collections as much as possible. 2. Delay cash disbursements within a permissible time frame.

Accelerating Cash Collections	
Type of Float	Meaning
Billing Float	Time taken between a sale and the issuance of an invoice to the customer.
Mail Float	Time when a cheque is in transit (e.g., via post, courier, or messenger).
Cheque Processing Float	Time taken by the seller to record, sort, and deposit the cheque after receiving it.
Banking Processing Float	Time from the cheque deposit to the actual crediting of funds in the seller's account.

Methods to Reduce Float & Speed Up Collections	
Method	Explanation
Faster Invoicing	Issuing invoices quickly reduces billing float.
Reducing Mail Delays	Faster cheque collection reduces mail float.
Faster Cheque Processing	Immediate sorting & depositing of cheques reduces processing float.
Concentration Banking	Establishing multiple regional collection centers to reduce time lag in receiving payments. Funds from these centers are sent to the main bank of the company, improving liquidity.
Lock Box System	Customers send payments directly to a bank-managed post-office box. The bank collects, processes, and deposits cheques directly, eliminating delays. Reduces cheque processing float but comes with operational costs.

Controlling Payments	
Strategy	Explanation
Paying on Due Date	Ensuring timely payments but not before the due date to maintain cash flow.
Using Drafts Instead of Cheques	Drafts (bills of exchange) take longer to clear, giving more time to manage cash flow.
Playing the Float	Issuing cheques strategically based on expected encashment timing, so only the necessary cash balance is maintained in the bank.
Delaying Outstation Payments	Sending cheques via mail to increase the float period, allowing firms to use funds for a longer time.

Recent Developments in Cash Management

- Electronic Fund Transfer
- Zero Balance Account
- Money Market Operations
- Petty Cash Imprest System
- Management of Temporary Cash Surplus
- Electronic Cash Management System
- Virtual Banking

Development	Explanation
Electronic Fund Transfer (EFT)	With banking digitalization, banks are now computerized and networked, offering: ➢ Instant account updates ➢ Quick fund transfers ➢ Real-time foreign exchange rates.
Zero Balance Account (ZBA)	Firms use zero balance accounts to manage cash efficiently by investing excess funds in marketable securities and selling them when cash is needed.
Money Market Operations	Large firms invest surplus funds in short-term deposits in banks and financial markets. Deposits can range from overnight to one year, and interest rates fluctuate based on demand.
Petty Cash Imprest System	Companies set aside a fixed weekly amount for small daily expenses, based on past usage and future needs. This reduces cash management efforts for minor transactions.
Managing Temporary Cash Surplus	Firms invest extra cash in: ➢ Short-term bank deposits ➢ Short-term debt instruments ➢ Long-term flexible debt instruments ➢ Shares of top-performing (blue-chip) companies. Investment choice depends on economic conditions, risk appetite, and return volatility.

Electronic Cash Management System (ECMS)	
Aspect	Explanation
Speed & Efficiency	Modern cash management systems are electronically based because speed is crucial.
Electronic Data & Fund Transfers	Data and funds are transferred electronically across various locations involved in cash collection, fund transfers, and payments.
Satellite-Linked System	Various elements of cash management are interlinked via satellite, ensuring real-time tracking and processing.
Limited Third-Party Access	Some networked cash management systems allow restricted access to regular parties, such as brokers or vendors, to track receipts and payments.
Example - Finance Companies	A finance company accepting public deposits via sub-brokers may give them limited access to track collections and commissions.

Benefits of Electronic-Scientific Cash Management	
Benefit	Explanation
Saves Time	Speeds up cash management processes.
Higher Interest Earnings & Lower Interest Costs	Optimizes fund utilization, increasing earnings and reducing expenses on interest.
Reduces Paperwork & Manpower	Minimizes manual work, leading to lower administrative costs.
Greater Accounting Accuracy	Automates bookkeeping, making it easier to detect errors.
Better Control Over Funds	Ensures efficient cash flow management and fund tracking.
Supports Electronic Payments	Enables secure and quick digital transactions.
Faster Fund Transfers	Allows instant fund transfers between locations when needed.
Quick Conversion of Instruments	Speeds up turning cheques or financial instruments into cash.
Funds Available Anytime, Anywhere	Ensures money is accessible where and when required.
Reduces Idle Float	Minimizes unused cash, improving liquidity.
No Idle Funds in the Organization	Ensures all funds are effectively utilized.
Easier Inter-Bank Balancing	Simplifies fund transfers between different banks.
True Centralized Cash Management	Provides complete control over company-wide cash flow.
Faster Electronic Reconciliation	Speeds up matching transactions and bank records.
Fewer Cheques Issued	Reduces dependence on paper cheques, making payments faster and more secure.

Virtual Banking & Payment System Reforms	
Aspect	Explanation
Evolution of Banking	Since the 1990s, banking has shifted towards relationship banking while customers prefer electronic banking like net banking & mobile banking.
Virtual Banking	Uses technology to provide banking services without requiring physical visits to branches. It started in the 1970s with ATMs and expanded due to market competition & customer demand.
Role of RBI in Payment Reforms	The Reserve Bank of India (RBI) has introduced several initiatives to improve cash management and payment systems.
Key Technological Developments	➢ Computerized settlement of clearing transactions ➢ MICR (Magnetic Ink Character Recognition) for faster cheque clearing ➢ Inter-city & high-value clearing facilities

	➢ Electronic Clearing Service (ECS) & Electronic Funds Transfer (EFT) UPI payment platforms ➢ Real-Time Gross Settlement (RTGS) ➢ Delivery vs. Payment (DVP) for government securities ➢ Indian Financial Network (INFINET)
Additional Payment Systems	Centralised Funds Management System (CFMS) Securities Services System (SSS) Structured Financial Messaging System (SFMS)
Future Vision for Payments	Linking all bank branches with a domestic payments network for cross-border connectivity and enhanced cash control for banks & corporates.

Advantages of Virtual Banking	
Advantage	Explanation
Lower Transaction Costs	Virtual banking reduces the cost of handling transactions compared to traditional banking.
Faster Customer Service	Enables quick responses to customer needs.
Cost Efficiency	Reduces branch operation costs and staff expenses, improving overall cost efficiency.
Improved & Diverse Services	Offers better banking services that are faster, more accurate, and convenient for customers.
24/7 Accessibility	Provides round-the-clock access to banking services, increasing convenience and user satisfaction.

Management of Marketable Securities	
Aspect	Explanation
Purpose	Manages surplus cash by investing in short-term securities, ensuring both liquidity and returns.
Need for Marketable Securities	Working capital needs fluctuate, so excess funds can be parked in short-term investments and liquidated when needed.
Key Principles for Selection	1. Safety: Minimum risk is preferred since liquidity is the priority. 2. Maturity: Investments should match expected cash needs; short-term securities are less risky. 3. Marketability: Securities should be easily and quickly converted into cash without losing value.
Types of Marketable Securities	➢ Government Treasury Bills ➢ Bank Deposits ➢ Inter-Corporate Deposits ➢ Units of Unit Trust of India (UTI) ➢ Commercial Papers (CPs) of Corporates

	➢ Deposits with Sister Concerns/Associate Companies
Money Market Mutual Funds (MMMFs)	MMMFs have emerged as a popular short-term investment option for managing temporary excess cash.

Factors Determining Credit Policy	
Factor	Explanation
Effect on Sales Volume	Credit policies impact sales—lenient credit terms may increase sales, while strict policies may reduce them.
Credit Terms	Conditions set for credit period, interest rates, and repayment schedules influence receivables management.
Cash Discounts	Offering discounts for early payments can encourage faster cash inflows and reduce outstanding receivables.
Customer Selection Policies	Firms set criteria for approving credit customers, balancing risk and sales growth.
Customer Payment Habits	The paying practices of customers affect the likelihood of delayed payments or defaults.
Collection Policies	A strict collection process ensures timely payments, while a lenient policy may increase bad debts.
Operational Efficiency	Billing, record-keeping, and adjustments impact receivables management—efficient processes minimize errors and costs.
Other Costs	Interest costs, collection expenses, and bad debts affect the company's investment in receivables.
Lenient vs. Stringent Credit Policy	- Lenient Policy: Liberal credit terms increase sales and receivables, but also bad debt risks and financing needs. - Stringent Policy: Selective credit approvals lower bad debts and costs, but may reduce sales if competitors offer better terms.

Factors Under the Control of the Finance Manager	
Responsibility	Explanation
Supervising Credit Administration	Ensures efficient handling of credit approvals and collections.
Deciding Credit Policies	Helps in formulating the best credit policies to balance risk and sales growth.
Setting Credit Selection Criteria	Defines eligibility conditions for approving credit to customers.
Speeding Up Cash Collections	Implements aggressive collection policies to convert receivables into cash faster.
Balancing Costs & Profits	Maintains an optimal trade-off between investment in receivables and profitability from higher sales.

Forfaiting	
Aspect	Explanation
Meaning	Forfaiting (from the French word "forfait" meaning "relinquish a right") is a bill discounting arrangement where an exporter sells trade bills (receivables) to a bank or financial institution and relinquishes the right to collect payment from the importer.
Key Feature	It is a "without recourse" financing, meaning the bank assumes the risk of non-payment, providing the exporter with immediate cash.
Process	1. Exporter sells goods/services to an overseas importer. 2. Importer issues a letter of credit (or other negotiable instrument) via its bank (importer's bank). 3. Exporter submits the letter of credit to its bank (exporter's bank). 4. Exporter's bank buys the letter of credit "without recourse" and pays the exporter immediately.

Features of Forfaiting	
Feature	Explanation
Encourages Exporters	Payment assurance motivates exporters to expand into new markets.
Deferred Payment for Importers	Overseas buyers (importers) can import goods/services on credit.
Reduces Transaction Costs & Complexity	Simplifies international trade transactions for exporters.
Supports Business Growth	Exporters can compete globally, while using working capital efficiently to scale operations.
Competitive Financing for Importers	Importers can access forfaiting facilities from global financial institutions to finance imports at better interest rates.

Example of Forfaiting – Exim Bank's 'Buyer's Credit'	
Aspect	Explanation
What is Buyer's Credit?	A forfaiting arrangement by Exim Bank of India, providing credit to overseas buyers to import goods from India.
Purpose	Helps SMEs export capital goods/services on deferred payment terms, while ensuring non-recourse finance for Indian exporters.
Benefit to Exporters	Converts deferred credit contracts into cash contracts, enabling immediate payments and reducing risk.
How it Works?	Exim Bank makes advance payments to Indian exporters on behalf of the overseas buyer.

The following is a diagrammatic illustration of Exim's Buyer's Credit:

Innovations In Receivable Management	
During the recent years, a number of tools, techniques, practices and measures have been invented to increase effectiveness in accounts receivable management. Following are the major determinants for significant innovations in accounts receivable management and process efficiency.	
Re-engineering Receivable Process	
Aspect	Explanation
Re-engineering Definition	A fundamental re-think & redesign of the accounts receivable process using modern business strategies to reduce costs & improve efficiency.
Impact on Receivables	Decisions made across the organization can impact how resources are allocated for managing receivables.
Key Aspects for Improving Receivables Management	
Aspect	Explanation
Centralization	High-value transactions in accounts receivables & payables should be centralized for better efficiency & faster recovery.
Alternative Payment Strategies	Offering multiple payment options speeds up outstanding payments and serves as a marketing tool to attract & retain customers.
Alternative Payment Methods	
Payment Method	Explanation
Direct Debit	Automatic fund transfer from the buyer's bank account, reducing delays.
Integrated Voice Response (IVR)	Customers pay via phone, using a computer-based system & human operators. Ideal for businesses handling bulk payments.
Third-Party Collection	Payments collected by external agencies, banks, or authorized firms using cash, cheque, credit card, or electronic transfer.
Lock Box Processing	An outsourced partner collects cheques & invoice data, then transmits them to the company for faster processing.
Online Payments	Funds transferred via RTGS, NEFT, UPI, or app-based platforms (Paytm, PhonePe, etc.) for instant & seamless transactions.
Customer Orientation in Receivables Management	
Aspect	Explanation
Strategic Customer Relations	For important customers, businesses should use a case-study approach to understand payment behavior and develop strategies for quicker debt settlement.

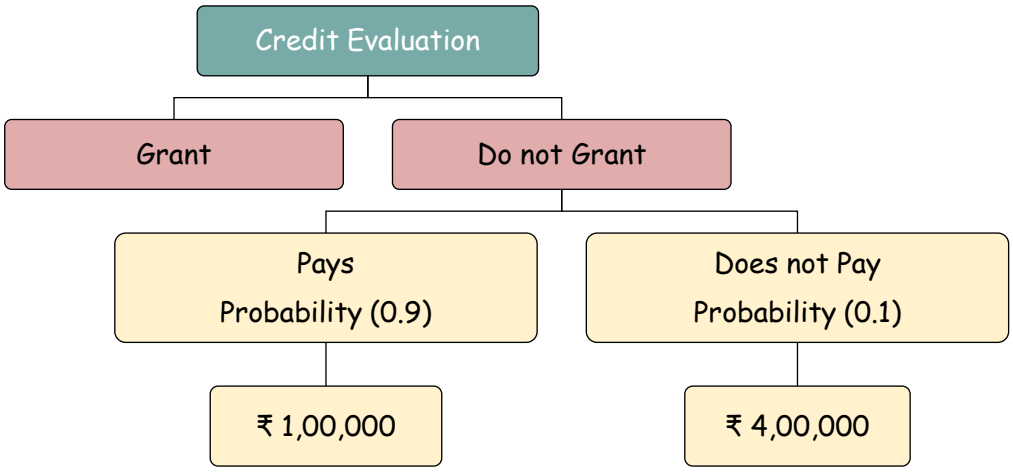
Evaluation of Risk in Accounts Receivable Management	
Aspect	Explanation
Importance of Risk Evaluation	A key part of establishing control mechanisms to identify, assess, and manage risks in accounts receivables.
Risk Management Approach	Once risks are assessed, businesses can implement controls to either reduce risks to an acceptable level or eliminate them entirely.
Opportunity for Process Improvement	Evaluating risks helps in removing inefficient practices and improving the effectiveness of receivables management.
Re-thinking & Optimization	Encourages a fresh look at processes, questioning how tasks are performed, leading to greater efficiency & effectiveness.
Use of Latest Technology in Accounts Receivable Management	
Aspect	Explanation
Role of Technology	Modern technology enhances efficiency in managing accounts receivables through automation & system integration.
E-Commerce in Receivables	Uses computers & electronic communication to facilitate trade in goods & services between businesses.
Key Technologies in E-Commerce	➢ Electronic Data Interchange (EDI): Automates exchange of business documents. ➢ Electronic Mail (Email): Enables faster communication. ➢ Electronic Funds Transfer (EFT): Ensures quick & secure transactions. ➢ Electronic Catalogue Systems: Digital product listings for online transactions (e.g., Amazon, Flipkart).
Automated Accounts Receivable Systems	Large firms automate receivable management to replace manual processes, reducing errors, costs, and delays.
Functionality of Automated Systems	➢ Automatically updates records: Adjusts customer balances, inventory, and sales upon transaction. ➢ Tracks receivables & collections: Ensures faster processing of payments & adjustments. ➢ Stores unlimited customer data: Enables better management of multiple transactions.
Receivable Collection Practices	
Aspect	Explanation
Objective	The goal is to reduce, monitor, and control accounts receivable while maintaining customer goodwill.
Key Principle	Minimize time lag between sales and collection to prevent buildup of receivables and reduce bad debt risks.

Causes of Delay	Billing & collection inefficiencies and customer delays can lead to longer receivable cycles.

Major Receivable Collection Practices	
Practice	Explanation
Issue of Invoice	Timely issuance of invoices ensures faster payment cycles.
Open Account or Open-End Credit	Provides flexibility in payments, allowing continuous credit for trusted customers.
Credit Terms or Time Limits	Clearly defined payment terms help in managing receivables efficiently.
Periodic Statements & Follow-Ups	Regular reminders & statements help track outstanding payments and ensure timely collection.
Payment Incentives & Penalties	Encouraging early payments with discounts and charging late fees reduces delays.
Record Keeping & Continuous Audit	Accurate tracking of accounts receivable ensures better financial control.
Export Factoring	Third-party factors handle credit management, loss protection, and collection services for exporters.
Business Process Outsourcing (BPO)	Companies outsource collection management to specialized agencies for efficiency and cost savings.

Use of Financial Tools/Techniques in Receivables Management	
Tool/Technique	Explanation
Credit Analysis	Evaluates customer creditworthiness to minimize bad debts and set appropriate credit terms.
Credit Rating	Assigns credit scores to debtors based on financial status, reputation, and payment history. Agencies like Dun & Bradstreet provide ratings.
Sources for Credit Evaluation	➢ Trade References ➢ Bank References ➢ Credit Bureau Reports ➢ Past Experience ➢ Published Financial Statements ➢ Salesman's Reports
Credit Limit Setting	After assessing creditworthiness, a credit limit is set, which may increase with a positive payment history.
Credit Granting - Decision Tree Analysis	Uses probability analysis to assess risks vs. benefits before granting credit.

	Example: If profit probability = 0.9 and default probability = 0.1, the expected net benefit is ₹50,000. Since it's positive, credit should be granted.
Receivables Control	Monitoring and follow-ups ensure that standards and credit policies are effectively implemented.
Collection Policy	Ensures timely debt collection, minimizing bad debts and reducing the average collection period.
Collection Process Optimization	A balance between efficient debt collection and customer relations should be maintained.
Key Questions in Credit Collection	➢ When should collection start? ➢ What is the procedure for follow-ups & reminders? ➢ Should company representatives visit defaulting customers? ➢ How should doubtful accounts be handled? Legal action or escalation matrix?



Monitoring of Receivables	
Aspect	Explanation
Importance of Monitoring	Regular tracking ensures efficient receivables management and helps in maintaining liquidity.
Key Steps in Monitoring Receivables	Various methods are used to analyze, compare, and control receivables for better cash flow management.

Methods for Monitoring Receivables	
Method	Explanation
Computation of Average Age of Receivables	Measures the average collection period, helping assess liquidity and efficiency in collections.
Ageing Schedule	➢ Classifies receivables based on age for better control. ➢ Helps predict collection patterns and liquidity trends.

	➢ Compares current receivables with past data and with competitors. ➢ Identifies slow-paying customers and helps take corrective action.
Comparison with Past Trends & Other Firms	Helps firms recognize increases or declines in sales trends by analyzing receivables over time.

Debt Collection Programme	
Step	Explanation
Monitoring Receivables	Regular tracking of outstanding payments.
Intimation to Customers	Reminders sent before the due date.
Follow-ups via Email & Phone	Customers are contacted on the due date for payment reminders.
Escalation & Legal Warning	Customers with overdue accounts are informed of potential legal action.
Legal Action on Overdue Accounts	If payments remain unsettled, legal steps are initiated.

CHAPTER 9:SCOPE & OBJECTIVE OF FINANCIAL MANAGEMENT

Introduction

We will like to explain Financial Management by giving a very simple scenario. For the purpose of starting any new business/venture, an entrepreneur goes through the following stages of decision making: -

Stage	Description	Key Focus
Stage 1	Decide which assets (premises, machinery, equipment, etc.) to buy.	Assets
Stage 2	Determine total investment required for buying assets.	Investment (Total cost of assets)
Stage 3	Determine cash needed for daily operations (raw material, salaries, wages, etc.) — also called Working Capital requirement.	Working Capital (Funds for daily operations)
Stage 4	Decide sources to finance the total investment (assets + working capital). Sources could be Share Capital, Bank Loans, or Investments from Financial Institutions.	Financing (Source of funds)

Financial Management Focus Areas

1. Financing Decision: Where to get the money from?
2. Investment Decision: Where to invest the money?
3. Dividend Decision: How much to distribute among shareholders to keep them satisfied?

Objective

The goal of financial management is to efficiently acquire and allocate funds, with the aim to generate profit (or dividends) for the owners. This includes making decisions on investment, financing, and dividends.

Meaning of Financial Management

- Financial management is the activity of planning and controlling a firm's financial resources. It's about acquiring, financing, and managing assets to achieve the business goal, mainly to maximize shareholder wealth.

Planning & Control, Financial Resources, Shareholder Wealth

Definition 1

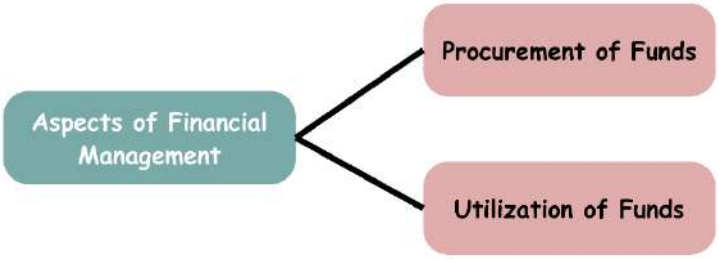
- It involves forecasting, planning, organizing, directing, and controlling the financial activities of a business to meet its financial objectives.
- Forecasting, Organizing, Controlling

Definition 2 (Phillippatus)

- Financial management deals with managerial decisions that lead to acquiring and financing both short-term and long-term credits for the firm.
- Managerial Decisions, Short-term & Long-term Credits

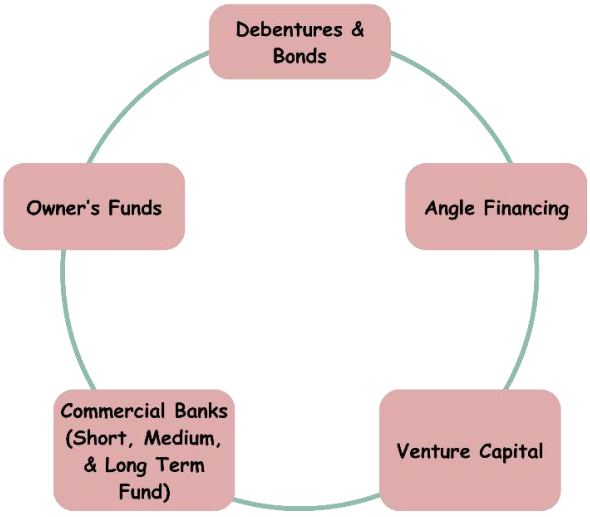
Two Basic Aspects of Financial Management

1. Procurement of funds
2. Effective use of funds to achieve business objectives.



Procurement of Funds

- Funds can be raised from different sources. In modern business, innovative financial products are being used, like Carbon Credit Trading, to raise funds.
- Innovative Funding, Carbon Credit Trading



Cost of Funds

- Different sources of funds have varying risk, cost, and control. The goal is to keep the cost of funds at a minimum by balancing risk and control.
- Risk, Cost of Funds, Control

Equity

- Funds raised by issuing equity shares are risky but do not require repayment, except in liquidation. However, equity is usually expensive due to higher dividend expectations and tax considerations.
- Equity Shares, Risk, Costly Funds

Debentures

- Debentures are cheaper than equity as they offer tax advantages. However, they are risky since they require repayment and interest must be paid regardless of company profit.
- Debentures, Tax Advantages, Risk

Funding from Banks

- Commercial Banks provide funding for both short-term and long-term business needs. They also support businesses in routine activities like deposits and payments.
- Banks, Short-term & Long-term Needs

International Funding

- With globalization, businesses can raise funds from international markets via FDI (Foreign Direct Investment), FII (Foreign Institutional Investors), and financial instruments like ADR's and GDR's.
- FDI, FII, Global Market

Angel Financing

- Angel investors provide funds for startups or expansions in exchange for equity ownership. This source is often used by businesses that don't qualify for bank loans or venture capital.
- Angel Investors, Equity Ownership, Startups

Key Considerations in Financial Management:

- Balancing equity and debt to create an optimal funding structure.
  Ensuring the cost of funds is as low as possible while managing risk and control effectively.

Effective Utilisation of Funds

Effective Utilization of Funds

- The finance manager is responsible for ensuring funds are not kept idle and are utilized profitably. Funds should generate a return higher than their cost.
- Utilization, Profitability, Cost

Fixed Assets Utilization

- Funds must be invested in fixed assets (e.g., machinery, plants) to ensure optimal production without harming the company's financial solvency. The finance manager needs to understand capital budgeting.
- Fixed Assets, Capital Budgeting, Solvency

Working Capital Utilization

- The finance manager must maintain an optimum level of working capital, avoiding excessive funds tied up in inventories, book debts, or cash.
- Working Capital, Liquidity, Efficiency

Key Considerations in Fund Utilization:

- Ensuring funds are profitable and not idle.
- Using capital budgeting techniques for long-term investments.
- Balancing working capital to avoid excess funds being tied up in current assets.

Evolution of Financial Management

The Traditional Phase

- Financial management was needed only for occasional events like takeovers, mergers, expansion, or liquidation. Financial decisions focused on the needs of outsiders (e.g., investment bankers, lenders).
- Occasional Events, Outsiders, Lenders

The Transitional Phase

- Financial managers began focusing on day-to-day problems related to funds analysis, planning, and control. The importance of these tasks grew during this phase.
- Day-to-Day Problems, Funds Analysis, Planning

The Modern Phase

- The scope of financial management greatly expanded. Financial analysis became critical for decision-making. New theories were developed in areas like efficient markets, capital budgeting, option pricing, and valuation models.
- Financial Analysis, Efficient Markets, Capital Budgeting, Decision Making

Finance Functions/ Finance Decision

Value of the Firm (V = f(I, F, D))

- The value of a firm depends on three key financial decisions: Investment (I), Financing (F), and Dividend (D).
- Investment, Financing, Dividend

Long-Term Finance Functions

- The finance functions are divided into long-term and short-term decisions.
- Long-term Functions

Investment Decisions (I)

- These decisions involve selecting the assets in which funds will be invested (e.g., fixed assets, current assets). Capital budgeting is used to evaluate investments. A part of long-term funds is also used for working capital.
- Asset Selection, Capital Budgeting, Working Capital

Financing Decisions (F)

- These decisions focus on acquiring the optimum finance for financial objectives and balancing equity and debt. Managers must understand cash flow vs. profit and assess risk (e.g., currency fluctuations, debt risk). Hedging strategies are used to minimize risks.
- Capital Structure, Risk Management, Cash Flow

Dividend Decisions (D)

- These decisions determine how much of the profit will be paid as dividends to owners/shareholders and how much will be retained for growth. Dividends impact the company's market value and stock price. The decision has both financial and growth implications.
- Dividends, Profit Retention, Market Value

Short term Finance Decisions/ Function

Working Capital Management (WCM): Generally short term decision are reduced to management of current asset and current liability (i.e., working capital Management)

Importance Of Financial Management

Importance of Financial Management

Financial management is crucial for the success of business operations. Without proper financial administration, no business can achieve its full growth potential. Financial management is about planning investments, funding investments, monitoring expenses against budgets, and managing the gains from investments. It involves managing all financial matters related to an organization.

Key tasks in financial management include:

- Avoiding over-investment in fixed assets.
- Balancing cash inflows with cash outflows.
- Ensuring adequate short-term working capital.
- Setting sales revenue targets to support growth.
- Increasing gross profit through proper pricing strategies.
- Controlling general and administrative expenses by finding more cost-efficient ways of running operations.
- Engaging in tax planning to minimize taxes.

Scope Of Financial Management

Financial management is a critical part of overall management, focused on the acquisition and use of funds by an organization. Based on Ezra Solomon's concept, the following aspects are key in financial management:

1. Determining the size of the enterprise and its rate of growth.
2. Composition of assets within the enterprise.
3. Deciding on the mix of financing (i.e., the debt-to-equity ratio).
4. Analysis, planning, and control of the enterprise's financial affairs.

Role of the Financial Controller

The role of the financial controller has evolved significantly over time. Initially, it was limited to fund procurement during major events (e.g., promotion, expansion, mergers). Today, it involves making three key decisions: investment, financing, and dividends.

The figure (not shown) highlights the relationship between market value, financial decisions, and the risk-return trade-off. The financial controller's role is to maximize shareholders' wealth by balancing returns against risk. They must ensure that funds are properly monitored, safeguarded, and effectively used.

Objectives Of Financial Management

Objectives of Financial Management

Effective financial management requires clear objectives or goals, as decisions are judged based on these objectives. While various objectives can exist, we focus on two primary objectives for detailed discussion:

1. Objective of financial management
2. Profit Maximization
3. Wealth/Value Maximization

Profit Maximization

Profit Maximization

Traditionally, profit maximization has been considered the primary goal of a company, meaning that financial management should focus on decisions that maximize profits. Every alternative is assessed based on whether it maximizes profit. However, profit maximization has limitations and should not be the sole objective of a business. Some issues with focusing only on profit maximization include:

1. Vague Definition of Profit
   The term profit is unclear—it can refer to short-term or long-term profit, total profit, or rate of profit, and its meaning varies among people.
2. Risk Ignorance
   Profit maximization overlooks the risk involved. There is a direct relationship between risk and profit—higher risk often leads to higher profits. Focusing only on profit could lead to accepting high-risk proposals without considering the associated dangers.
3. Time Factor of Returns
   Profit maximization doesn't account for when the returns will be received. For example, a proposal that offers high profits after 10 years (Proposal A) might be less attractive than a proposal that offers lower profits but quicker returns (Proposal B).
4. Narrow Perspective
   Profit maximization is too limited as it doesn't consider social obligations, the welfare of workers, consumers, or society, or ethical practices. Ignoring these factors could harm the long-term sustainability of the company.

Wealth Maximization/ Value Creation

Wealth Maximization / Value Creation

The Wealth Maximization Model focuses on increasing shareholder wealth, which results from a cost-benefit analysis adjusted for timing and risk (i.e., the time value of money).

Wealth = Present Value of Benefits – Present Value of Costs

- The finance manager must measure benefits in terms of cash flow rather than accounting profit. This ensures that investment and financing decisions focus on cash flow.

The shareholder value maximization model suggests that the firm's primary goal is to maximize its market value, which means business decisions should aim to increase the net present value (NPV) of the firm's economic profits.

To achieve this, the finance manager should focus on:

- Cash flow instead of accounting profit.
- Cost-benefit analysis.
- Application of the time value of money.

How do we measure the value/wealth of a firm?

Measuring the Value/Wealth of a Firm

According to Van Horne, the value of a firm is represented by the market price of its common stock. The stock price reflects the judgment of all market participants regarding the firm's value. It considers several factors:

- Current and future earnings per share.
- Timing and risk of earnings.
- Dividend policy.
- Other factors influencing stock price.

The market price serves as a performance indicator, showing how well management is performing on behalf of shareholders.

Why Wealth Maximization Works

Before understanding why wealth maximization is effective, it's important to recognize other possible goals for a business:

- Higher growth rate.
- Larger market share.
- Leadership in products/technology.
- Employee welfare.
- Customer satisfaction.
- Community support, such as education, research, and solving societal issues.

While these goals are significant, wealth maximization remains the primary goal because it is critical to the survival and growth of the business. Without it, investors may lose confidence, restricting the company's growth and making it harder to achieve other goals like community welfare.

Conflicts In Profit Versus Value Maximization Principle

Management Objectives: Profit Maximization vs. Wealth Maximization

- Management Decision-Making: In any company, the management is responsible for decision-making. However, when external parties (like shareholders, lenders, etc.) are involved, management's personal goals (such as profit maximization) may conflict with the broader goals of these stakeholders.
- Stakeholder Influence: Management's survival depends on satisfying stakeholders (employees, creditors, customers, government). Wealth maximization aligns better with the interests of stakeholders, as it focuses on increasing the firm's value over time, benefiting all parties.

- Wealth Maximization as the Better Goal: While profit maximization is limited by timing and social considerations, wealth maximization accounts for uncertainty and multi-period scenarios, making it more suitable for long-term goals. In short-term, low-risk situations, both goals may seem similar.

Comparison of Profit Maximization and Wealth Maximization

Goal Objective	Advantages	Disadvantages
Profit Maximization	Large amount of profits i. Easy to calculate profits ii. Easy to link financial decisions to profits	Focuses on short-term gains i. Ignores risk or uncertainty ii. Ignores timing of returns iii. Requires immediate resources
Wealth Maximization	Highest market value of shares i. Focuses on long-term gains ii. Recognizes risk and uncertainty iii. Considers timing of returns iv. Focuses on shareholders' return	i. No clear link between financial decisions and share price ii. May cause management anxiety or frustration

Role Of Finance Executive

Changing Role of the Finance Executive

- Evolution of Financial Management: Modern financial management has evolved significantly from traditional corporate finance. With globalization, liberalization, and the opening up of markets, finance managers now have access to limitless opportunities.
- New Era for CFOs: In recent years, the role of the Chief Financial Officer (CFO) or finance executive has transformed. Their role has expanded beyond just cost management and controls to become integral to business strategy, transformation, and growth.

Key Responsibilities of the Modern Finance Executive:

1. Financial Analysis and Planning
   - Determining the right amount of funds for the firm.
   - Deciding the firm's size and growth rate.
2. Investment Decisions
   - Efficiently allocating funds to assets.
3. Financing and Capital Structure Decisions
   - Raising funds under favorable terms.
   - Determining the firm's debt-equity structure.
4. Management of Financial Resources
   - Ensuring effective management of working capital.

5. Risk Management ➢ Protecting the firm's assets from potential risks.
Quote by Jeff Thomson, IMA President and CEO:
"Today's CFO team is expected to add value well beyond the traditional roles of cost management, controls, and acting as the conscience of the organization. They must collaborate, integrate key business processes, and act as catalysts for business transformation and trusted advisors to drive sustainable growth."

Organisation of Finance Function

Organization of the Finance Function: Changing Role of the CFO	
The role of the Chief Financial Officer (CFO) has evolved drastically over time. Historically, the CFO's role was primarily confined to accounting, reporting, and risk management. In contrast, today's CFO is seen as a strategic business partner to the Chief Executive Officer (CEO), playing a crucial role in business decision-making and long-term strategy.	
Key Differences in the Role of the CFO: Past vs. Present	
What a CFO Used to Do	What a CFO Now Does
Budgeting	Budgeting
Forecasting	Forecasting
Accounting	Managing Mergers and Acquisitions (M&As)
Treasury (cash management)	Profitability Analysis (e.g., by customer or product)
Preparing internal financial reports	Pricing Analysis
Preparing quarterly/annual filings	Decisions about Outsourcing
Tax Filing	Overseeing IT Function
Tracking accounts payable and receivable	Overseeing HR Function
Travel and entertainment expense management	Strategic Planning (sometimes overseeing this function)
Regulatory Compliance	Risk Management

Financial Distress And Insolvency

Financial Distress and Insolvency

Financial distress and insolvency are critical issues that can severely affect a firm's operations and survival. These conditions arise when a company faces significant difficulties in managing its finances and fulfilling its obligations.

Financial Distress:

- Definition: Financial distress occurs when a firm's cash inflows are insufficient to meet its current obligations (e.g., paying debts, wages, operating expenses).

- Causes:
  - Price Fluctuations: Changes in product/service prices or input costs (e.g., raw materials, labor) can strain financial health.
  - Debt Levels: High levels of debt increase the pressure on the company due to higher interest payments.
  - Inadequate Cash Flow: If cash inflows are not sufficient to cover the company's short-term and long-term liabilities, financial distress intensifies.

Insolvency:

- Definition: Insolvency is the state in which a firm cannot meet its debt obligations because its revenue is insufficient. Insolvency typically results from prolonged financial distress.
- Consequences:
  - The firm may have to sell its assets, often at lower prices than expected.
  - If revenue generation doesn't improve, the company may ultimately fail to meet its obligations, leading to insolvency.

Relationship Of Financial Manage- Ment With Related Disciplines

As an integral part of the overall management, financial management is not a totally independent area. It draws heavily on related disciplines and areas of study namely economics, accounting, production, marketing and quantitative methods. Even though these disciplines are inter-related, there are key differences among them. Some of the relationships are being discussed below: Here's a simplified and organized version of the content in a table format:

Aspect	Financial Management	Accounting
Relationship	Financial management relies on accounting for financial decision-making and planning.	Accounting provides essential financial data for financial decision-making.
Treatment of Funds	Focuses on cash flow: revenues are recognized when cash is received and expenses when cash is paid.	Based on accrual principle: revenues are recognized when earned, and expenses when incurred, regardless of cash flow.

Purpose	Ensures solvency and manages cash flows to meet obligations and achieve goals.	Collects and presents financial data, including past, present, and future operations.
Key Focus	Concerned with long-term financial planning, controlling, and decision-making to maintain solvency.	Focused on reporting financial data and preparing financial statements like balance sheets and income statements.
Decision-Making	Primarily responsible for financial planning, controlling, and decision-making.	Focused on data collection and presentation, not direct decision-making.
Goal	Helps the organization avoid insolvency by ensuring healthy cash flow and achieving financial goals.	Provides financial reports that inform decision-making but doesn't engage in the decision-making process itself.

Financial Management And Other Related Disciplines

Discipline	Role in Financial Management	Impact on Day-to-Day Decisions
Marketing	Provides insights into capital requirements for new products, promotions, etc.	Financial managers evaluate the capital needed for marketing plans and how these affect cash flows.
Production	Changes in production may require capital expenditures.	Financial managers assess and finance the required capital for production process improvements.
Quantitative Methods	Provides analytical tools and techniques.	Financial managers use these methods to analyze complex financial problems and make informed decisions.
Economics	Offers knowledge of external factors affecting the business environment.	Helps financial managers understand broader economic trends and external factors impacting business.
Accounting	Primary discipline providing financial data through reports (balance sheets, income statements, etc.).	Essential for financial decision-making as it presents past performance, future projections, and liquidity.

Agency Problem And Agency Cost

Agency Problem A situation where managers may prioritize personal goals (e.g., salary, perks) over the interests of shareholders (owners), leading to a conflict of interest.
Agency Cost The additional cost borne by shareholders to monitor and control managers' behavior to ensure they act in shareholders' best interest.
Types of Agency Costs 1. Monitoring: Costs of overseeing manager actions. 2. Bonding: Costs to ensure managers act in shareholders' interest. 3. Opportunity: Costs due to suboptimal decisions made by managers. 4. Structuring: Costs related to creating systems to limit agency problems.
Agency Problem with Debt Lenders Debt lenders may face agency problems due to managers taking high risks. This is addressed by imposing negative covenants (restrictions on borrowing).
Agency Problem between Managers & Shareholders The key issue arises when managers' personal interests are not aligned with shareholder wealth maximization.
Ways to Address Agency Problem 1. Managerial Compensation: Linking manager pay to company profits and long-term objectives. 2. Employee Stock Ownership Plans (ESOPs): Aligning manager and shareholder interests. 3. Monitoring: Strengthening oversight mechanisms to ensure managers act in the best interest of shareholders.

CHAPTER 10. TYPES OF FINANCING

Financial Needs And Sources Of Finance Of A Business

Financial Needs of a Business

	Category	Duration	Purpose
i	Long-term Financial Needs	More than 5-10 years	Investment in plant, machinery, land, buildings, and permanent working capital.
ii	Medium-term Financial Needs	1 to 5 years	Funds for stores, critical spares, tools, dies, moulds.
iii	Short-term Financial Needs	Up to 1 year	Financing current assets like stock, debtors, cash (Working Capital).

Basic Principle for Funding Needs

- Short-term needs → Funded by short-term sources
- Medium-term needs → Funded by medium-term sources
- Long-term needs → Funded by long-term sources

The funding approach varies based on business stage and risk level:

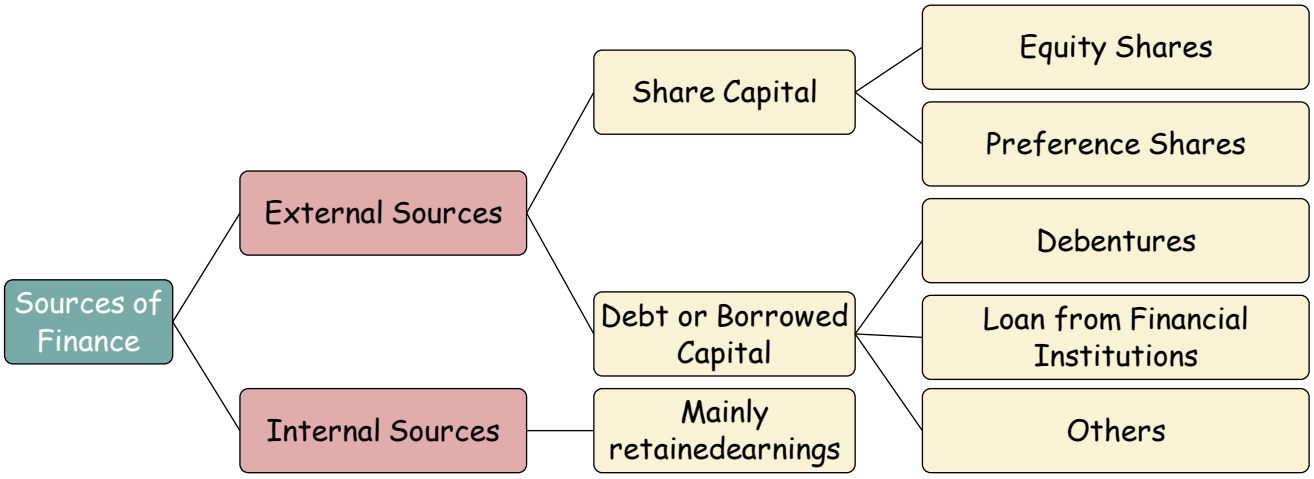
Stage	Uncertainty Level	Sources of Funds
Early Stage	High Uncertainty	Equity (Angel Investors)
	High to Moderate Uncertainty	Equity, Venture Capital, Debt
Growth Stage	Moderate to Low Uncertainty	Debt, Venture Capital, Private Equity
Stable Stage	Low Uncertainty	Debt

Classification Of Financial Sources

There are mainly two ways of classifying various financial sources (i) Based on basic Sources (ii) Based on Maturity of repayment period.

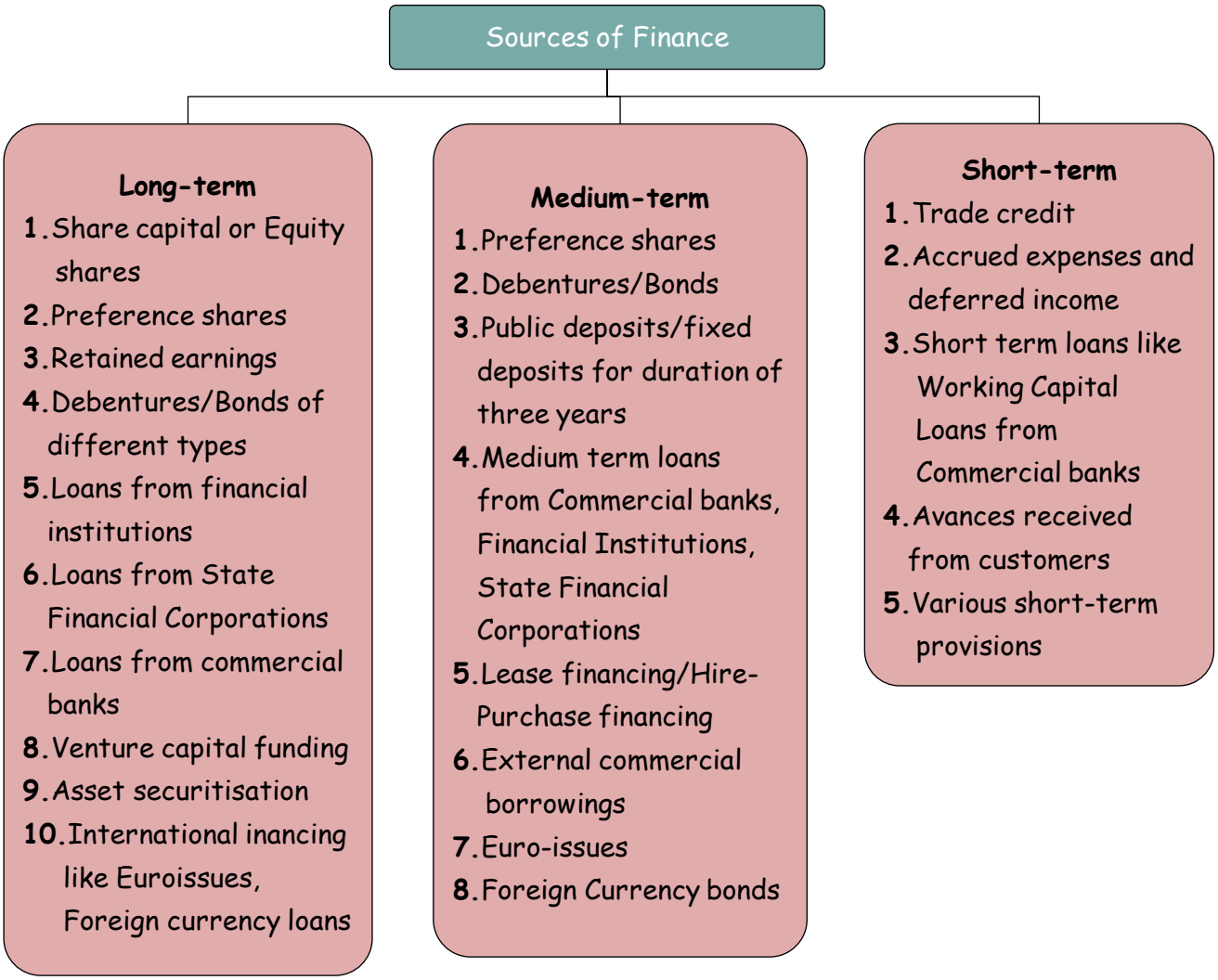
Sources of Finance based on Basic Sources

Based on basic sources of finance, types of financing can be classified as below:



Sources of Finance based on Maturity of Payment

Sources of finance based on maturity of payment can be classified as below:



Long-Term Sources Of Finance

Long-term financial needs can be met through two main sources:

- Share Capital (Equity & Preference Shares)
- Debt (Debentures, Long-Term Borrowings, Other Debt Instruments)

Equity Capital (Owner's Capital)

A public limited company can raise funds from promoters or the public by issuing equity shares.

Feature	Explanation
Permanent Capital	Equity capital is a long-term source of finance.
Ownership & Risk	Equity shareholders are the owners and bear the highest risk.
Dividend	Shareholders receive dividends only after all other claims are settled.
Claim on Assets	In case of liquidation, equity shareholders have the last claim on assets.
Cost of Capital	The cost is highest as shareholders expect higher returns due to risk.
Security for Loans	A strong equity base helps in securing debt financing.
Types of Equity Shares	New Issue, Rights Issue, Bonus Shares, Sweat Equity.

Advantages of Raising Funds Through Equity Shares

	Advantage	Explanation
i	Permanent Source of Finance	Equity shares are not redeemable, meaning the company has no cash outflow liability for repaying investors. Shares can be bought and sold freely in the market.
ii	Enhances Borrowing Power	Issuing equity shares strengthens the company's financial base, making it easier to raise additional funds through debt. This can lead to higher earnings per share (EPS) and an increase in share prices.
iii	No Legal Obligation for Dividends	Unlike debt, a company is not legally required to pay dividends. In tough times, dividends can be reduced or skipped without financial strain.
iv	Option to Raise More Capital	A company can issue more shares through a Rights Issue, allowing existing shareholders to buy additional shares.

Disadvantages of Raising Funds Through Equity Shares

	Disadvantage	Explanation
i	Higher Risk for Investors	Equity shares are riskier as dividends and capital gains are uncertain.
ii	Earnings Dilution	Issuing new equity shares reduces Earnings Per Share (EPS) unless profits increase proportionally.

iii Loss of Ownership & Control	New equity share issuance dilutes ownership, reducing the control of existing shareholders.

Preference Share Capital

Preference shares provide priority in dividend payments and capital repayment in case of company liquidation.

Feature	Explanation
Source of Long-Term Funds	Can be raised through a public issue of shares.
Cumulative Dividends	If no dividend is paid in a loss-making year, it gets carried forward until profits allow payment.
Higher Dividend Rate	Dividend rate is usually higher than debenture or loan interest rates.
Fixed Repayment Period	Most preference shares have a stipulated repayment period.
Hybrid Financing	Combines features of equity and debt – dividends are not tax-deductible like equity, but the dividend rate is fixed like debt.
Cumulative Convertible Preference Shares (CCPs)	These shares provide a fixed cumulative dividend for a set period (e.g., 3 years) before converting into equity shares. Useful for long-gestation projects.
Redeemable Option	Can be redeemed at a pre-decided date or earlier from company profits. This allows promoters to reinvest capital in other ventures.

Various types of Preference shares can be as below:

S. No.	Type of Preference Shares	Salient Features
1	Cumulative	Arrear Dividend will accumulate.
2	Non-cumulative	No right to arrear dividend.
3	Redeemable	Redemption should be done.
4	Participating	Can participate in the surplus which remains after payment to equity shareholders.
5	Non-Participating	Cannot participate in the surplus after payment of fixed rate of Dividend.
6	Convertible	Option of converting into equity Shares.

Advantages of Raising Funds Through Preference Shares

Advantage	Explanation
No EPS Dilution	Unlike equity shares, preference shares do not reduce Earnings Per Share (EPS), preserving market confidence.
Leverage Benefit	Carries a fixed dividend rate, helping with financial planning. Non-payment does not lead to liquidation like debt.

No Risk of Takeover	No voting rights for preference shareholders (except when dividends are unpaid), preventing hostile takeovers.
Fixed Dividends	Preference dividends are pre-decided, meaning shareholders cannot claim extra profits, unlike ordinary shareholders.
Redeemable Option	Preference capital can be redeemed after a fixed period, allowing for flexibility in financial structuring.

Disadvantages of Raising Funds Through Preference Shares

Disadvantage	Explanation
No Tax Benefit	Preference dividends are not tax-deductible, unlike interest on debt, making them costlier than debentures.
Cumulative Dividend Obligation	Unpaid preference dividends accumulate and must be paid before ordinary shareholders.
Impact on Reputation	If preference dividends are not paid, it prevents dividends to ordinary shareholders, which can harm the company's market reputation.

Difference between Equity Shares and Preference Shares are as follows:

S. No.	Basis of Distinction	Equity Share	Preference Share
1	Dividend payment	Equity Dividend is paid after preference dividend.	Payment of preference dividend is preferred over equity dividend.
2	Rate of dividend	Fluctuating	Fixed
3	Convertibility	Not convertible	Convertible
4	Voting rights	Equity shareholders enjoy full voting rights.	They have very limited voting rights.

Retained Earnings

Retained earnings refer to accumulated profits reinvested in the business rather than distributed as dividends.

Feature	Explanation
Source of Long-Term Funds	Generated by ploughing back profits into the business.
Belongs to Shareholders	These funds increase net worth and belong to ordinary shareholders.
No Additional Risk	Retained earnings do not create debt obligations and entail minimal risk.
No Ownership Dilution	Unlike issuing new shares, control remains with existing owners.
Legal & Expansion Needs	Public companies must retain a portion of profits to meet legal requirements and growth plans.
Dividend Decision Factor	The decision to retain earnings depends on the company's return on investment vs. cost of equity.

Debentures

Debentures are long-term debt instruments issued by public limited companies to raise funds.

Feature	Explanation
Denominations & Interest Rates	Issued in amounts ranging from ₹100 to ₹1,000 with varying interest rates.
Debenture Trust Deed	Issued based on a trust deed outlining the terms & conditions.
Long-Term Debt Instrument	Used for raising long-term capital.
Maturity Period	Typically 3 to 10 years, longer for high-gestation projects.
Secured or Unsecured	Debentures can be backed by assets (secured) or unsecured.
Stock Exchange Listing	May or may not be listed on stock exchanges.
Tax Benefit	Interest is tax-deductible, reducing the cost of capital.
Investor Advantage	Interest is paid regardless of company profits, making it more attractive than preference shares.

Types of Debentures Based on Convertibility

Type	Explanation
Non-Convertible Debentures (NCDs)	Cannot be converted into equity shares and are repaid on maturity.
Fully Convertible Debentures (FCDs)	Converted into equity shares based on pre-defined terms (price & time). Offer lower interest rates due to conversion benefits.
Partly Convertible Debentures (PCDs)	Partially converted into equity shares, while the remaining portion is repaid on maturity. Provide both debt and equity benefits to investors.

Other types of Debentures with their features are as follows:

Sl. No.	Type of Debenture	Salient Feature
1	Bearer	Transferable like negotiable instruments
2	Registered	Interest payable to registered person
3	Mortgage	Secured by a charge on Asset(s)
4	Naked or simple	Unsecured
5	Redeemable	Repaid after a certain period
6	Non-Redeemable	Not repayable

Advantages of Raising Finance Through Debentures

Advantage	Explanation
Lower Cost of Capital	Interest is tax-deductible, making debentures cheaper than preference or equity capital. Investors also find debentures safer, so they accept a lower return.
No Ownership Dilution	Debenture holders do not have voting rights, ensuring no loss of control for existing shareholders.

Beneficial During Inflation	Fixed interest payments lose value over time as prices rise, making it cost-effective in inflationary periods.

Disadvantages of Debenture Financing

Disadvantage	Explanation
Obligatory Payments	Interest payments and principal repayment are mandatory, regardless of company performance.
Restrictive Covenants	Debenture agreements often include strict terms that may limit company operations.
Increased Financial Risk	High debt obligations raise the financial risk of the company.
Large Cash Outflow at Maturity	Principal repayment at maturity requires a significant cash reserve.
Mandatory Credit Rating	Public and private debenture issues must be rated by agencies like CRISIL, which evaluate company performance, profitability, and risk.

Difference Between Preference Shares and Debentures

Basis of Difference	Preference Shares	Debentures
Ownership	A special type of share representing partial ownership.	A loan instrument used to raise funds from the public.
Payment of Dividend/Interest	Priority in dividend payments and capital repayment during liquidation.	Pays a fixed interest rate, regardless of company profits.
Nature	A hybrid financing method, combining equity and debt features.	A pure debt instrument with a fixed maturity period.

Bonds

Bonds are fixed-income securities issued to raise funds through public issues or private placements.

Types of Bonds (Based on Call Option)

Type	Explanation
Callable Bonds	Issuer has the right to redeem the bond before maturity at a predetermined call price (usually at a premium).
Puttable Bonds	Investor has the right to sell the bond back to the company before maturity (put option).

Various Bonds with their salient features are as follows:

Types of Foreign Bonds & Their Features

Sl. No.	Bond Name	Salient Features
1	Foreign Currency	➢ Low interest rate bond.

	Convertible Bond (FCCB)	➢ Issuer benefits from low-cost foreign currency borrowing. ➢ Risk: If the bond is not converted, the issuer must repay at maturity, which may be challenging.
2	Plain Vanilla Bond	➢ Pays principal + interest. ➢ No embedded options. ➢ Can be issued as a discounted bond or coupon-bearing bond.
3	Convertible Floating Rate Notes (FRN)	➢ Option to convert into long-term debt security. ➢ Protects investors from falling interest rates. ➢ No capital gains tax. ➢ Can be sold for profit.
4	Drop Lock Bond	➢ Floating rate note that converts to a fixed rate bond if rates drop below a set level. ➢ The new fixed rate stays until maturity. ➢ Short option structure, unlike convertible FRN (long option structure).
5	Variable Rate Demand Obligations (VRDOs)	➢ Floating rate bond with nominal maturity. ➢ Investors can sell back to the trustee at par + accrued interest. ➢ More liquid than a standard FRN.
6	Yield Curve Note (YCN)	➢ Structured debt security. ➢ Yield rises when interest rates fall. ➢ Yield falls when interest rates rise. ➢ Used for interest rate hedging. ➢ Functions like an inverse floater.
7	Euro Bond	➢ Issued outside the country of the currency it is denominated in. ➢ Example: A British company issues a bond in Germany, denominated in USD. ➢ Not related to the Euro currency, "Euro-" refers to offshore deposits.

Types of Indian Bonds & Their Features

Sl. No.	Bond Name	Salient Features
1	Masala Bond	➢ Rupee-denominated bond issued outside India. ➢ Allows Indian companies to raise funds in foreign markets. ➢ Example: NTPC raised ₹2,000 crore in 2016 for capital expenditure.
2	Municipal Bond	➢ Used to finance urban infrastructure projects. ➢ Ahmedabad Municipal Corporation was the first in Asia to issue a municipal bond (₹100 crore) for a water supply project.

3	Government or Treasury Bond	➢ Issued by Government of India, RBI, state governments, or government departments. ➢ Considered low-risk investment instruments.

Some other bonds are included in other source of Financing (para 8)

Loans from Financial Institutions

Financial Institution: National

S. No.	Name of the Financial Institution	Year of Establishment	Remarks
1.	Industrial Finance Corporation of India (IFCI)	1918	Converted into a public company
2.	State Financial Corporations (SFCs)	1951	-
3.	Industrial Development Bank of India (IDBI)	1954	Converted into Bank
4.	National Industrial Development Corporation (NIDC)	1954	-
5.	Industrial Credit and Investment Corporation of India (ICICI)	1955	Converted into Bank and Privatised
6.	Life Insurance Corporation of India (LIC)	1956	-
7.	Unit Trust of India (UTI)	1964	-
8.	Industrial Reconstruction Bank of India (IRBI)	1971	-

Financial Institution: International Institutions

Sl. No.	Name of the Financial Institution	Year of Establishment
1.	The World Bank/ International Bank for Reconstruction and Development (IBRD)	1944
2.	The International Finance Corporation (IFC)	1956
3.	Asian Development Bank (ADB)	1966

Loans from Commercial Banks

Commercial banks primarily provide short-term funding, but they also offer long-term financing for industries.

Type	Explanation
Long-Term Loans	➢ Provided for business expansion or new unit setup. ➢ Repayment is scheduled over a long period, based on anticipated income.
Working Capital Term Loan (WCTL)	➢ Funds the minimum working capital requirement that remains constant.

	➢ Not affected by seasonal fluctuations.
Bridge Finance	➢ Short-term loan taken while waiting for approved long-term loans to be disbursed. ➢ Helps companies avoid project delays. ➢ Secured against movable assets, guarantees, and promissory notes. ➢ Higher interest rate than regular term loans. ➢ Repaid from sanctioned term loans once disbursed.

Venture Capital Financing

Meaning of Venture Capital Financing

Venture capital financing provides funds to high-risk startups led by qualified entrepreneurs who lack experience and capital but have high growth potential.

Characteristics of Venture Capital Financing

Feature	Explanation
Equity Finance	Primarily involves equity investment in new companies.
Long-Term Investment	Focuses on growth-oriented small/medium firms.
Strategic Support	Investors provide funds, sales strategy, business networking, and management expertise to help the business grow.

Methods of Venture Capital Financing

Method	Explanation
Equity Financing	➢ Provides long-term funding via equity share capital. ➢ Venture capital firms hold less than 49% equity to ensure entrepreneurial control.
Conditional Loan	➢ Repayable as a royalty on sales once the business generates revenue. ➢ No interest is charged. ➢ Royalty rates range from 2% to 15%, depending on factors like gestation period, cash flow, and risk. ➢ Some financiers allow firms to pay high-interest rates (above 20%) instead of royalty once stable.
Income Note	➢ A hybrid security combining conventional and conditional loan features. ➢ Requires both interest and royalty payments but at low rates. ➢ IDBI's Venture Capital Fund (VCF) funds 80-87.5% of project costs for commercializing indigenous technology.
Participating Debenture	➢ Three-stage interest structure: No interest in the startup phase, low interest up to a certain revenue level, then high interest after achieving stability.

Debt Securitisation

Debt securitisation is the process of converting illiquid assets into marketable securities, which are then sold to investors. These securities represent ownership interest or are secured by a pool of income-generating assets such as real estate, car loans, or equipment loans.

Example of Debt Securitisation

Step	Explanation
1. Loan Issuance	A finance company provides car loans to borrowers.
2. Need for More Funds	To issue more loans, the company needs additional capital.
3. Role of Special Purpose Vehicle (SPV)	Instead of selling individual loans, the company sells its existing car loans to an SPV.
4. Pooling & Conversion	The SPV pools the car loans and converts them into marketable securities.
5. Issuing to Investors	The securities are sold to investors, creating a liquid investment.
6. Loan Repayments	Borrowers continue making payments, but now payments go to new investors, not the finance company.
7. Benefits	➢ The finance company raises funds and removes loans from its Balance Sheet. ➢ Investors get a diversified fixed-income investment. ➢ Borrowers remain unaware of the securitisation process and continue regular payments.

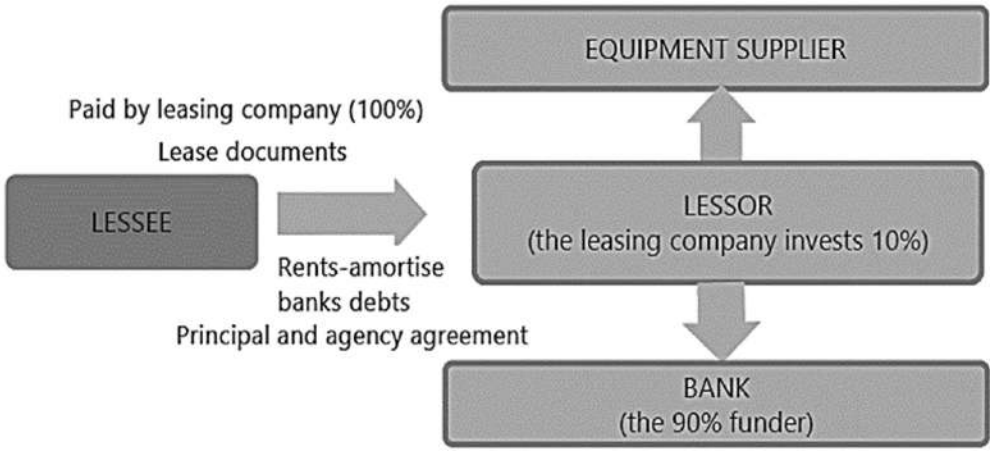
Lease Financing

Leasing is a contract between the owner (lessor) and the user (lessee), where the lessor purchases the asset and leases it to the lessee for a specified rental payment. Leasing serves as an alternative to buying an asset using own or borrowed funds and is faster to arrange than term loans.

Types of Lease Contracts

Type	Explanation
Operating Lease	➢ Lessor retains ownership, while lessee pays periodic rent for using the asset. ➢ Lessor bears maintenance, insurance, and repair costs. ➢ Short-term lease, so the lessor may lease the asset to multiple lessees. ➢ Normally cancelable with notice. ➢ Ideal for companies frequently updating equipment to avoid technological obsolescence.
Financial Lease (Capital Lease)	➢ Long-term, non-cancelable lease—lessee cannot terminate the agreement.

	➢ Lease term covers most of the asset's economic life. ➢ Lessee bears maintenance, insurance, and other costs. ➢ Functions like a loan in disguise, requiring fixed payments over the lease period. ➢ Designed to amortize the lessor's investment and ensure profit.



Note: The above diagram may be summarized in a short paragraph.

Comparison Between Financial Lease and Operating Lease

Basis	Financial Lease	Operating Lease
Ownership Risk & Reward	Lessee assumes risks and rewards of ownership; lessor remains legal owner.	Lessor retains ownership risks; lessee only gets right to use.
Obsolescence Risk	Lessee bears risk of asset becoming obsolete.	Lessor bears risk of obsolescence.
Cancellability	Non-cancelable—lessor must recover full cost and interest.	Cancelable—lessor can lease asset to other users.
Responsibility for Maintenance	Lessee handles maintenance, repairs, and operations.	Lessor handles maintenance, repairs, and operations.
Payment Structure	Full payout lease—single lease recovers full asset cost + interest.	Non-payout lease—lessor releases asset multiple times to different users.

Other Types of Leases

Type	Explanation
Sales and Lease Back	➢ Owner sells an asset to a buyer, who leases it back to the seller. ➢ No physical exchange—only recorded in financials. ➢ Seller becomes lessee, and buyer becomes lessor. ➢ Allows the lessee to retain asset use while freeing up capital.
Leveraged Lease	➢ Involves a third party (lender) along with lessor and lessee. ➢ Lessor borrows a part (e.g., 80%) of the asset cost from the lender. ➢ Lessee pays lease rentals directly to the lender; remaining amount goes to

	the lessor. ➢ Lessor claims depreciation benefits.
Sales-Aid Lease	➢ Lessor partners with a manufacturer to lease products. ➢ Helps boost product sales for the manufacturer. ➢ Lessor earns from both the lessee and manufacturer (through commission or credit).
Close-Ended Lease	➢ Asset returns to the lessor at lease end. ➢ Lessor bears obsolescence risk and residual value responsibility.
Open-Ended Lease	➢ Lessee has the option to purchase the asset at lease end. ➢ Flexibility for the lessee in asset ownership.

Leasing is a popular financing option in India as it eliminates immediate cash outflow and lease rentals are tax-deductible. However, buying provides benefits like depreciation allowance and interest deductions, requiring a careful cost-benefit evaluation.

Short-Term Sources Of Finance

Source	Explanation
i Trade Credit	➢ Credit from suppliers as part of business transactions. ➢ Duration: 15 to 90 days. ➢ No explicit cost—automatically increases with business growth.
ii Accrued Expenses & Deferred Income	➢ Accrued Expenses: Liabilities for services already received (e.g., wages, taxes, interest). ➢ Deferred Income: Advance payments for future goods/services, improving liquidity.
iii Advances from Customers	➢ Manufacturers & contractors take advance payments for large projects. ➢ Cost-free finance, useful for long-duration projects.
iv Commercial Paper (CP)	➢ Unsecured promissory note, introduced by RBI in 1989. ➢ Issued by top-rated corporates & financial institutions. ➢ Denomination: ₹5 lakhs or multiples. ➢ Interest linked to 1-year Govt. bond yield. ➢ Must be rated by CRISIL, ICRA, CARE, FITCH, etc..
v Treasury Bills (T-Bills)	➢ Issued by Govt. of India for short-term borrowing. ➢ Maturity: 14 to 364 days.
vi Certificates of Deposit (CDs)	➢ Fixed-maturity savings certificates. ➢ Maturity: 15 days to 1 year.
vii Bank Advances	➢ Banks lend funds collected from public deposits. ➢ Used for economic development & profit generation. ➢ Loans are callable when required.

Some of the facilities provided by banks are:

Types of Short-Term Bank Advances

Type	Explanation
a. Short-Term Loans	➢ One-time disbursement in cash or to the borrower's account. ➢ Secured against shares, govt. securities, life insurance policies, or fixed deposit receipts. ➢ Repayment is either full or in scheduled installments.
b. Overdraft (OD)	➢ Allows withdrawal beyond current account balance within a fixed limit. ➢ Repayable on demand, but limits are usually renewed annually. ➢ Interest is charged on daily balances.
c. Clean Overdrafts	➢ Given only to financially strong & reputed borrowers. ➢ No tangible security, banks rely on borrower's personal creditworthiness. ➢ Banks may require third-party guarantees as a safeguard. ➢ Typically short-term, not continued for long.
d. Cash Credits (CC)	➢ Credit limit sanctioned by a bank, allowing the borrower to withdraw as needed. ➢ Interest is charged only on the amount used, not on the full limit. ➢ Secured against tradable goods via pledge or hypothecation. ➢ Though repayable on demand, banks usually do not recall them unless necessary.
e. Advances Against Goods	➢ Secured loans against goods, including agricultural commodities, raw materials, or finished products. ➢ Goods are charged to the bank by pledge or hypothecation. ➢ Reliable, liquid security with quick turnover.
f. Bills Purchased / Discounted	➢ Advances given against trade bills, which can be clean or documentary. ➢ Banks purchase bills from approved customers and hold them as security. ➢ The bank retains pledge rights over goods covered in the documents.

viii Financing of Export Trade by Banks

Aspect	Explanation
Importance of Export Finance	➢ Exports are crucial for the economic growth of countries like India. ➢ Credit plays a key role in enabling exporters to efficiently execute orders.
RBI Initiatives	➢ RBI has introduced measures to ensure timely and hassle-free export credit flow, such as: ✓ Rationalization and liberalization of interest rates

	✓ Flexibility in repayment/prepayment ✓ Special packages for large exporters and agricultural exports ✓ Gold Card Scheme ✓ Unrestricted sourcing of foreign funds for export credit
Types of Export Finance	➢ Pre-shipment finance (before shipment) ➢ Post-shipment finance (after shipment)
Currency Used	➢ Export finance can be granted in Rupees or foreign currency.
Banking Freedom	➢ Banks can source funds from abroad without limits to grant export credit in foreign currency.

Pre-Shipment Finance (Packing Credit)

Aspect	Explanation
Definition	Packing credit is a short-term advance provided by banks to exporters for buying, manufacturing, processing, packing, and shipping goods to overseas buyers.
Eligibility	Available to exporters with a firm export order or an irrevocable letter of credit from the overseas buyer.
Repayment	The advance must be repaid within 180 days by negotiation of export bills or receipt of export proceeds.
Required Documentation	Exporters must provide letters of credit and firm sale contracts to show the arrangement and finance amount.
Nature	Short-term advance to fund pre-shipment activities.
Conditions	Long-standing customers may receive packing credit based on firm contracts without the need for letters of credit.

Types of Packing Credit

Type	Explanation
a. Clean Packing Credit	Advance based on a firm export order or letter of credit without control over raw materials or finished goods. Requires a suitable margin and ECGC cover.
b. Packing Credit Against Hypothecation of Goods	Finance is provided where goods are hypothecated as security. Exporters must submit stock statements regularly and provide a firm export order or letter of credit.
c. Packing Credit Against Pledge of Goods	Export finance based on pledging finished goods with the bank. The goods remain under the bank's control and are shipped by approved clearing agents as required by the exporter.
d. E.C.G.C. Guarantee	Packing credit loans for export activities (manufacturing, processing, purchasing) can be guaranteed by Export Credit Guarantee Corporation (ECGC).
e. Forward Exchange	Exporters must enter into a forward exchange contract with the

Contract	bank to mitigate currency risk when export bills are in a foreign currency.

Post-Shipment Finance

Type	Explanation
a. Purchase/Discounting of Documentary Export Bills	Finance is provided by purchasing or discounting export bills (sight or usance) backed by documents like bill of lading, air consignment notes, or parcel receipts.
b. E.C.G.C. Guarantee	Post-shipment finance is eligible for E.C.G.C. guarantee, which covers risks related to shipment and contracts. Exporters must obtain risk policies covering both political and commercial risks.
c. Advance Against Export Bills Sent for Collection	Finance is offered against export bills forwarded for collection. The bank evaluates the creditworthiness, nature of goods, and standing of drawee.
d. Advance Against Duty Drawbacks, Cash Subsidy, etc.	Banks provide advances against export duty drawbacks or cash subsidies receivable, with care taken to verify the exporter's export performance through negotiated or collected export bills.

Other facilities extended to the exporters are as follows:

Service	Description
Letters of Credit	Banks issue letters of credit for approved exporters, guaranteeing payments to their overseas or up-country suppliers.
Guarantees	Banks provide guarantees for various purposes such as waiver of excise duty, performance of contracts, bond in lieu of cash security deposit, and advance payments.
Export Finance	Banks offer finance to approved clients who are exporting on deferred payment terms.
Trade Information	Banks secure status reports of buyers and provide trade information on commodities for their exporter customers through correspondents.
Economic Intelligence	Banks provide economic intelligence about different countries to help exporters.

Source	Explanation
ix Inter Corporate Deposits	Companies can borrow funds for a short period (e.g., 6 months) from other companies with surplus liquidity. Interest rates vary depending on the amount and time period.
x Certificate of Deposit (CD)	A certificate of deposit (CD) is a document of title similar to a time deposit receipt but with no fixed interest rate. The advantage is that the investor can sell it in the secondary market for liquidity before

	maturity.
xi Public Deposits	Public deposits are a key source of short-term and medium-term financing, especially when credit squeeze occurs. Companies can accept deposits up to 35% of their paid-up capital and reserves. These deposits are unsecured loans for a period of 6 months to 3 years and should not be used for acquiring fixed assets. They are mainly used for working capital needs.

Other Sources Of Financing

Financial Assistance Type	Description
i Seed Capital Assistance	IDBI's Seed Capital Assistance supports entrepreneurs with skills but lacking financial resources. It is interest-free for 5 years, with a 1% service charge. The loan repayment depends on the company's ability and includes an initial moratorium of up to 5 years.
ii Internal Cash Accruals	Profit-making companies can use their reserves or cash profits for capital expenditure like expansion or diversification, based on their past performance. The funds should be used for working capital needs.
iii Unsecured Loans	Promoters provide unsecured loans to meet the required contribution. These loans are subordinate to institutional loans, with interest rates no higher than institutional loans. These cannot be repaid without prior approval from financial institutions and count as part of equity.
iv Deferred Payment Guarantee	Suppliers of machinery offer deferred credit, where the company doesn't pay upfront. A bank guarantee is required, and there's no moratorium for repayment, so it's ideal for profit-making companies.
v Capital Incentives	Backward area development incentives are offered as lump sum subsidies or tax exemptions to encourage new industrial units. These depend on the location's degree of backwardness. The project's viability should not rely on these incentives.
vi Deep Discount Bonds	Zero-interest bonds sold at a discount, with face value paid on maturity. No interest is paid during the lock-in period.
vii Secured Premium Notes	These notes come with a detachable warrant and are redeemable after 4-7 years. The warrant can be converted into equity shares within a specific time period.
viii Zero Interest Fully Convertible Debentures	Zero-interest debentures are automatically converted into equity shares after a certain period. Beneficial to companies as no interest is paid. Investors benefit if the company's share price increases.
ix Zero Coupon Bonds	These bonds are sold at a discount with no interest paid. The difference between the discounted price and face value represents the interest earned by the investor.

x Option Bonds	These bonds can be cumulative or non-cumulative, with interest payable at maturity or periodically. Redemption premiums are offered to attract investors.
xi Inflation Bonds	Inflation-adjusted bonds offer interest that protects against inflation. For example, if inflation is 5% and the interest rate is 11%, the investor earns 16% in total.
xii Floating Rate Bonds	These bonds have an interest rate that floats with market conditions. They help issuers hedge against interest rate volatility and are popular among financial institutions like IDBI and ICICI.

International Financing

Source of External Financing	Description
i Commercial Banks	Domestic and foreign currency (FC) loans are provided by commercial banks for both international and domestic operations. Banks may also offer overdrafts.
ii Development Banks	Development banks offer long-term and medium-term loans, including FC loans. Examples include national agencies like EXIM Bank.
iii Discounting of Trade Bills	This short-term financing method is widely used in Europe and Asia to fund both domestic and international business.
iv International Agencies	Key international agencies, such as IFC, IBRD, ADB, and IMF, provide funding for international trade and business.
v International Capital Markets	Modern organizations, including MNCs, rely on borrowing in both rupees and FC through international capital markets (e.g., London). Systems for FC include: ➢ Euro-currency market ➢ Export credit facilities ➢ Bond issues ➢ Financial institutions Euro-dollar deposits form the backbone of the Euro-currency market.
vi Financial Instruments	Different financial instruments used in the international market:
	a. External Commercial Borrowings (ECB) ECBs are commercial loans (e.g., bank loans, buyers' credit, suppliers' credit) from non-resident lenders. These are available through: ➢ Automatic route (no approval required) ➢ Approval route (approval needed).

b. Euro Bonds

Euro bonds are debt instruments not denominated in the currency of the issuing country. They offer privacy and are issued in bearer form.

c. Foreign Bonds

Foreign bonds are debt instruments issued by foreign entities. They are exposed to default risk and exchange rate risks if issued in a foreign currency.

d. Fully Hedged Bonds

Fully hedged bonds eliminate currency risk by using forward markets to secure principal and interest payments.

e. Medium Term Notes (MTN)

MTNs are bonds issued in lots with different features like coupon rates and currencies, allowing flexibility in timing and documentation.

f. Floating Rate Notes (FRN)

FRNs have a floating interest rate based on prevailing exchange rates. They are cheaper than foreign loans and can be issued for up to 7 years.

g. Euro Commercial Papers (ECP)

ECPs are short-term money market instruments with a maturity of less than a year and are typically denominated in US Dollars.

h. Foreign Currency Option (FC)

A FC option gives the right (not obligation) to buy or sell foreign currency at a set price before a specified date, offering a hedge against financial risks.

i. Foreign Currency Futures

FC Futures are obligations to buy or sell foreign currency at a future date, offering a way to hedge against exchange rate fluctuations.

j. Foreign Euro Bonds

These bonds have various regional names (e.g., Yankee Bonds in the US, Samurai Bonds in Japan, Bulldogs in the UK), depending on where they are issued.

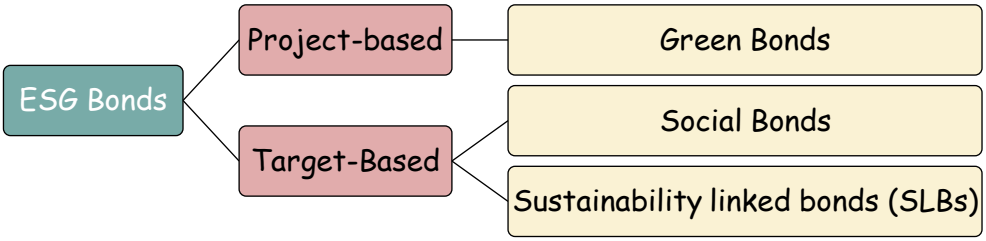
k. Euro Convertible Bonds

Convertible bonds allow investors to convert them into equity shares at a predetermined price. They may also include call options or put options.

l. Euro Convertible Zero Bonds

These zero-interest bonds convert into equity shares at maturity. They usually have a 5-year maturity and are treated as

	a deferred equity issue.
	m. Euro Bonds with Equity Warrants These bonds carry a coupon rate and are issued with detachable warrants, which can be sold or converted into equity shares.
	n. ESG-linked Bonds ESG (Environmental, Social, and Governance) bonds prioritize socially responsible investing. They include green bonds, social bonds, and sustainability-linked bonds (SLBs).



Type of Bond	Description
Green Bonds	Green bonds are issued by financial, non-financial, or public institutions to finance environmentally-friendly projects. These projects aim for positive environmental or climate impact. Example: Ghaziabad Municipal Corporation raised ₹150 crore in 2021 through green bonds.
Social Bonds	Social bonds finance projects that address social issues like human rights, equality, and animal welfare. Example: Vaccine bonds were issued to fund vaccination of vulnerable children in low-income countries.
Sustainability-linked Bonds (SLBs)	SLBs combine features of green and social bonds. Proceeds are used for general corporate purposes to meet Key Performance Indicators (KPIs), not for specific projects. Example: UltraTech Cement raised US$ 400 million through India's first SLBs in 2021 to reduce carbon emissions over 10 years.

Topic	Description
vii Euro Issues by Indian Companies	Indian companies can raise foreign currency resources by issuing Global Depository Receipts (GDRs), American Depository Receipts (ADRs), and/or Foreign Currency Convertible Bonds (FCCBs) to foreign investors (including NRIs). This investment is considered Foreign Direct Investment (FDI).
	a. American Depository Receipts (ADRs) ADRs allow non-US companies to list on US exchanges. Each ADR represents a specific number of the company's shares. ADRs enable US investors to buy shares without investing directly in foreign stock exchanges. Indian companies prefer GDRs over ADRs due to stringent regulations in the US market.

	b. Global Depository Receipts (GDRs) GDRs are negotiable certificates that represent a specific number of shares of a stock traded in another country's exchange. These are used by companies to raise capital in dollars or Euros, and are mainly traded in European countries (particularly London).
	c. ADRs/GDRs and the Indian Scenario Indian companies like Infosys Technologies (first listed on Nasdaq in 1999) and Reliance Industries (first to issue sponsored GDR/ADR) have started to tap overseas markets. Other companies like Wipro, MTNL, SBI, and Tata Motors are also listed abroad.
	d. Indian Depository Receipts (IDRs) IDRs are similar to ADRs/GDRs but are issued by foreign companies to raise funds in the Indian Capital Market. IDRs are traded in India like any other Indian security. They allow foreign companies to access Indian capital.

Contemporary Sources Of Funding

Source of Funding	Description
i Crowd Funding	Crowdfunding is raising money for a project from a large group of people, typically via internet platforms (social media and websites). It involves contributions in exchange for equity, loans (P2P lending), or as donations. It helps start-ups gauge product demand before production. The three parties involved are: fundraiser, mediator (platform), and investor. Platforms may charge fees (processing, transaction, etc.).
ii Equity Funding	Equity crowdfunding allows investors to fund an organisation in exchange for securities (equity). The amount of ownership depends on the investment. This type of funding is popular with startups. Examples of platforms include StartEngine, EquityNet, SeedInvest.
iii Peer-to-Peer (P2P) Lending	P2P lending matches lenders with borrowers to provide unsecured loans online. Borrowers repay with interest. Risk of defaults exists. Investors choose borrowers based on risk & returns. Platforms include i2iFunding, Lend box, Fair cent, Rupee Circle.
iv Start-up Funding	Startups often turn to crowdfunding as they may find it difficult to secure bank loans. Crowdfunding provides a way to raise money from a large group, through equity funding, P2P lending, or both.
v Donation-based Crowdfunding	In donation-based crowdfunding, people donate money for charity or a cause with no expectation of ownership or repayment. Platforms include GoFundMe (for medical, educational needs), Ketto (medical), and Fuel A Dream (charity projects, new ideas).

SHRESHTA
THE GREATEST OF ALL TIME

CA Ganesh Bharadwaj's
COSTFIN ACADEMY
CA | CMA
Nurturing Minds, Cultivating Wisdom

I've put my heart into crafting this material to guide you, but your dedication is what will truly bring it to life. Success is a team effort, and together, we can conquer FM and crack this exam. You bring the determination, and I'll provide the direction— together, let's make it happen!" Remember, a perfect 50/50 in FM is soon a reality for you.

With ❤ Ganesh

Know your Faculty

CA Ganesh Bharadwaj is a highly regarded faculty for Costing and Financial Management in CA & CMA courses, known for his engaging and student-friendly teaching style.

He has been recognized as one of the top performers in India in the subjects Costing & FM for an impressive score of 94% in his CA exams.

He has been on a mission to teach Costing & FM in simple English with crystal clear explanations and real-life examples, aiming for both exam success and conceptual understanding.

A firm believer in Conceptual Learning, his teaching philosophy aligns with his powerful quote: **"Stop Mugging Up. Start Learning."**