



FINANCIAL MANAGEMENT

Course code:CMBB17

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Regulation: IARE R-18

BY

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FINANCIAL MANAGEMENT COURSE OUTCOMES



CO's	Course Outcomes
CO1	Describe the meaning, definitions, nature, scope, evolution and goals of financial management.
CO2	Examine the new role of finance function in contemporary scenario and demonstrate the concepts of risk return trade off, time value, future value and present value of money.
CO3	Discuss the meaning, definitions, characteristics and importance of investment decisions and capital budgeting principles.
CO4	Explain the term capital budgeting decision under risk & uncertainty, measurement of cost of capital and methods of capital budgeting techniques.
CO5	Demonstrate the meaning, definitions, importance and theories of cost of capital and capital structure and different leverages.
CO6	Enumerate the Break Even Analysis of Financial leverage and NI and NOI theories of capital structure.
CO7	Understand the dividend decisions, value of the firm and relevance of dividends declaration and payments based on MM hypothesis.
CO8	Introduce the major theories centered on the works of Gordon and Walter models.
CO9	Identify the strategies in cash management, receivables management and inventory management.
CO10	Examine the concept of working capital and committees recommendations on this concept.



UNIT- I

THE FINANCE FUNCTION

THE FINANCE FUNCTION

- Nature and scope
- Evolution of finance function
- New role in the contemporary scenario
- Goals of finance function
- Maximizing vs. satisfying
- Profit vs. wealth vs. welfare
- The agency relationship and costs
- Risk-return trade off
- Concept of time value of money
- Future value and present value

THE FINANCE

- Finance is the life-blood of business. Without finance neither any business can be started nor successfully run .
- Finance is needed to promote or establish business, acquire fixed assets, make necessary investigations, develop product keep man and machines at work, encourage management to make progress and create values.
- Finance is the managerial activity which is concerned with planning and controlling of the firms Financial Resources.

Definitions of Financial Management

- Financial management is the ways and means of managing money. i.e. the determination, acquisition, allocation and utilization of financial sources usually with the aim of achieving some particular goals or objectives.
- “Financial management is the application of planning and control function of the finance function”- Howard and Upton

Definitions of Financial Management

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1. According to Solomon

- “Financial Management is concerned with the efficient use of an important economic resource, namely capital funds.”

2. According to Howard & Upton

- “ Financial Management is the application of the planning & control functions of the finance function”

3. According to Weston & Brigham

- “ Financial management is an area of financial decision making harmonizing/ balancing/ matching individual motives & enterprise goals”

1. Analytical Thinking:

Under financial management financial problems are analyzed and considered. Study of trend of actual figures is made and ratio analysis is done.

2. Continuous Process:

Previously financial management was required rarely but now the financial manager remains busy throughout the year.

3. Basis of Management Decisions:

All managerial decisions relating to finance are taken after considering the report prepared by the finance manager. The financial management is the base of managerial decisions.

4. Maintaining balance between Risk and Profitability:

Larger the risk in the business larger is the expectation of profits. Financial management maintains balance between risk and profitability.

5. Coordination between Process:

There is always a coordination between various processed business.

6. Centralized Nature:

Financial management is of a centralized nature. Other activities can be decentralized but there is only one department for financial management.

Scope of Financial Management

The nature of financial decisions would be clear when we try to understand the operation of a firm. At the very outset, the promoters makes an appraisal of various investment proposals and selects one or more of them ,depending upon the net benefits derived from each as well as on the availability of funds.

Some of the major scope of financial management are as follows:

1. Investment Decision
2. Financing Decision
3. Dividend Decision
4. Working Capital Decision.

Most important of the three decisions

- What is the optimal firm size?
- What specific assets should be acquired?
- What assets (if any) should be reduced or eliminated?

What assets should the company hold? This determines the left-hand side of the balance sheet. These decisions are concerned with the effective utilization of funds in one activity or the other. The investment decision can be classified under two groups-

- (i) Long term investment decision
- (ii) Short term investment decision

The former are referred to as the capital budgeting and the latter as working capital management.

Determine how the assets (LHS of balance sheet) will be financed (RHS of balance sheet).

- What is the best type of financing?
- What is the best financing mix?
- What is the best dividend policy (e.g., dividend-payout ratio)?
- How will the funds be physically acquired?

How should the company pay for the investments it makes? This determines the right-hand side of the balance sheet. It is also known as capital structure decision. It involves the choosing the best source of raising funds and deciding optimal mix of various source of finance.

Determine how the assets (LHS of balance sheet) will be financed (RHS of balance sheet).

A company can not depend upon only one source of finance ,hence a varied financial structure is developed. but before using any particular source of capital ,its relative cost of capital ,degree of risk and control etc should be thoroughly examined by the financial manager. the major source of long-term capital as shares and debentures.

Dividend decisions - What should be done with the profits of the business?

The dividend decision is concerned with determining how much part of the earning should be distributed among the share holders by way of dividend and how much should be retained in the business for meeting the future needs of funds internally.

How do we manage existing assets efficiently?

- Financial Manager has varying degrees of operating responsibility over assets.
- Greater emphasis on Current Asset Management (Working Capital Management) than fixed asset management.

- Financial Problems
- Wealth Maximization Goal
- Allocation of Funds
- Maximizing Earnings
- Cost of Present & Future Funds
- Allocation of Earnings

Macro economic factors

1. The state of the economy
2. Governmental policy

Goal of the Firm

Maximization of Shareholder Wealth!

- Value creation occurs when we maximize the share price for current shareholders.

Maximization of profits

- Profit earning is the main aim of every economic activity. Profit maximization simply means maximizing the income of the firm . Economist are of the view that profits can be maximized when the difference of total revenue over total cost is maximum, or in other words total revenue is greater than the total cost.

Objectives of Financial Management

The objective of financial management are considered usually at two levels –at macro level and micro level. three primary objectives are commonly explained as the Objective of financial management-

- Maximization of profits
- Maximization of return
- Maximization of wealth

Maximization of return

Some authorities on financial management conclude that maximization of return provide a basic guideline by which financial decision should be evaluated .

Maximization of wealth

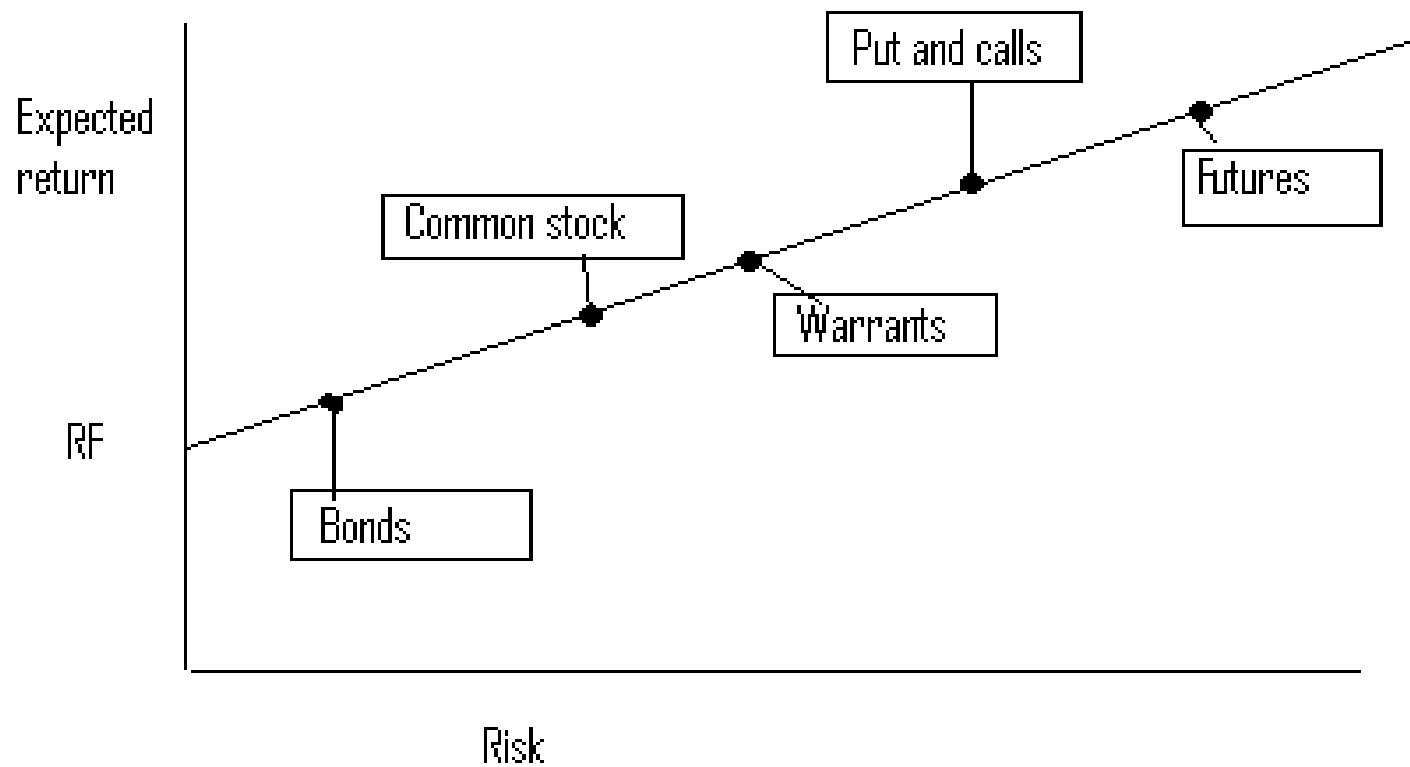
According to Prof. Solomon Ezra of stand ford university , the ultimate goal of financial management should be the maximization of the owners wealth. The value of corporate wealth may be interpreted in terms of the value of the company's total assets. The finance should attempt to maximize the value of the enterprise to its shareholders. Value is represented by the market price of the company's common stock.

- The basis of all investment decisions is to earn return and assume risk
- By investing, investors expect to earn a return (expected return)

Expected return and risk

- Realized returns(actual return) might be more or less than the expected return
- The chance that the actual return on an investment will be different from the expected return is called risk
- This way t-bills has no risk as the expected return and actual return are the same
- But actual returns on common stock have greater chances of deviating from expected return and hence have high risk

Expected Risk Return trade-off



Expected Risk return trade-off

- The expected risk-return is depicted in the graph
- The line from RFR shows risk-return relationship of different investment alternatives.
- It shows that at zero level of risk, investor can earn risk free rate (RFR) which is equal to the rate on t-bills
- To earn a little higher return than the risk free rate, investors can invest in corporate bonds, but the investors will have to take some risk as well

Time Preference for Money

- Time preference for money is an individual's preference for possession of a given amount of money now, rather than the same amount at some future time.
- Three reasons may be attributed to the individual's time preference for money:
 - ❖ Risk
 - ❖ Preference for consumption
 - ❖ Investment opportunities

Required Rate of Return

- The time preference for money is generally expressed by an interest rate. This rate will be positive even in the absence of any risk. It may be therefore called the risk-free rate.
- An investor requires compensation for assuming risk, which is called risk premium.
- The investor's required rate of return is:

Risk-free rate + Risk premium.

Time Value Adjustment



- Two most common methods of adjusting cash flows for time value of money:
 - ✓ Compounding— The process of calculating future values of cash flows and
 - ✓ Discounting— The process of calculating present values of cash flows.

The Future Value of cash flows

- Compounding is the process of finding the future values of cash flows by applying the concept of compound interest.
- Compound interest is the interest that is received on the original amount (principal) as well as on any interest earned but not withdrawn during earlier periods.
- Simple interest is the interest that is calculated only on the original amount (principal), and thus, no compounding of interest takes place.

The Future Value of cash flows

- The general form of equation for calculating the future value of a lump sum after n periods may, therefore, be written as follows:

$$F_n = P(1 + i)^n \qquad F_n = P \times \text{CVF}_{n,i}$$

- The term $(1 + i)^n$ is the compound value factor (CVF) of a lump sum of Re 1, and it always has a value greater than 1 for positive i , indicating that CVF increases as i and n increase.

The Future Value of cash flows - Example

- If you deposited Rs 55,650 in a bank, which was paying a 15 per cent rate of interest on a ten-year time deposit, how much would the deposit grow at the end of ten years?
- We will first find out the compound value factor at 15 per cent for 10 years which is 4.046. Multiplying 4.046 by Rs 55,650, we get Rs 225,159.90 as the compound value:

The Future Value of an Annuity

- Annuity is a fixed payment (or receipt) each year for a specified number of years. If you rent a flat and promise to make a series of payments over an agreed period, you have created an annuity.

$$F_n = A \left[\frac{(1+i)^n - 1}{i} \right]$$

- The term within brackets is the compound value factor for an annuity of Re 1, which we shall refer as CVFA.

$$F_n = A \times \text{CVFA}_{n,i}$$

The Future Value of an Annuity-Example

- Suppose that a firm deposits Rs 5,000 at the end of each year for four years at 6 per cent rate of interest. How much would this annuity accumulate at the end of the fourth year? We first find CVFA which is 4.3746. If we multiply 4.375 by Rs 5,000, we obtain a compound value of Rs 21,875:

$$F_4 = 5,000(\text{CVFA}_{4, 0.06}) = 5,000 \times 4.3746 = \text{Rs } 21,873$$

Sinking Fund

- Sinking fund is a fund, which is created out of fixed payments each period to accumulate to a future sum after a specified period. For example, companies generally create sinking funds to retire bonds (debentures) on maturity.
- The factor used to calculate the annuity for a given future sum is called the sinking fund factor (SFF).

$$A = F_n \left[\frac{i}{(1+i)^n - 1} \right]$$

Present Value

- Present value of a future cash flow (inflow or outflow) is the amount of current cash that is of equivalent value to the decision-maker.
- Discounting is the process of determining present value of a series of future cash flows.
- The interest rate used for discounting cash flows is also called the discount rate.

Present Value of a single cash flow

- The following general formula can be employed to calculate the present value of a lump sum to be received after some future periods:

$$P = \frac{F_n}{(1+i)^n} = F_n \left[(1+i)^{-n} \right]$$

- The term in parentheses is the discount factor or present value factor (PVF), and it is always less than 1.0 for positive i , indicating that a future amount has a smaller present value.

$$PV = F_n \times PVF_{n,i}$$

Present Value of a single cash flow-Example

- Suppose that an investor wants to find out the present value of Rs 50,000 to be received after 15 years. Her interest rate is 9 per cent. First, we will find out the present value factor, which is 0.275. Multiplying 0.275 by Rs 50,000, we obtain Rs 13,750 as the present value:

$$PV = 50,000 \times PVF_{15, 0.09} = 50,000 \times 0.275 = \text{Rs } 13,750$$

Present Value of an Annuity

- The computation of the present value of an annuity can be written in the following general form:

$$P = A \left[\frac{1}{i} - \frac{1}{i(1+i)^n} \right]$$

- The term within parentheses is the present value factor of an annuity of Re 1, which we would call PVFA, and it is a sum of single-payment present value factors.

$$P = A \times \text{PVAF}_{n,i}$$

Capital Recovery and Loan Amortization

- Capital recovery is the annuity of an investment made today for a specified period of time at a given rate of interest. Capital recovery factor helps in the preparation of a loan amortization (loan repayment) schedule.

$$A = P \left[\frac{1}{\text{PVAF}_{n,i}} \right]$$

$$A = P \times \text{CRF}_{n,i}$$

- The reciprocal of the present value annuity factor is called the capital recovery factor (CRF).

Present Value of an Uneven Periodic Sum



- Investments made by of a firm do not frequently yield constant periodic cash flows (annuity). In most instances the firm receives a stream of uneven cash flows. Thus the present value factors for an annuity cannot be used. The procedure is to calculate the present value of each cash flow and aggregate all present values.

Present Value of Perpetuity



- Perpetuity is an annuity that occurs indefinitely. Perpetuities are not very common in financial decision-making:

$$\text{Present value of a perpetuity} = \frac{\text{Perpetuity}}{\text{Interest rate}}$$

Present Value of Growing Annuities

- The present value of a constantly growing annuity is given below:

$$P = \frac{A}{i - g} \left[1 - \left(\frac{1 + g}{1 + i} \right)^n \right]$$

- Present value of a constantly growing perpetuity is given by a simple formula as follows:

$$P = \frac{A}{i - g}$$

Value of an Annuity Due

- Annuity due is a series of fixed receipts or payments starting at the beginning of each period for a specified number of periods.

- Future Value of an Annuity Due

$$F_n = A \times CVFA_{n,i} \times (1+i)$$

- Present Value of an Annuity Due

$$P = A \times PVFA_{n,i} \times (1+i)$$

Multi-Period Compounding

- If compounding is done more than once a year, the actual annualized rate of interest would be higher than the nominal interest rate and it is called the effective interest rate.

$$\text{EIR} = \left[1 + \frac{i}{m} \right]^{n \times m} - 1$$

Continuous Compounding

- The continuous compounding function takes the form of the following formula:

$$F_n = P \times e^{i \times n} = P \times e^x$$

- Present value under continuous compounding:

$$P = \frac{F_n}{e^{in}} = F_n \times e^{-i \times n}$$



UNIT– II

THE INVESTMENT DECISION

THE INVESTMENT DECISION

- Investment decision process
- Developing cash flow and Data for new projects
- Capital budgeting techniques :traditional and discounted cash flow methods, the net present value vs. internal rate return debate;
- Approaches for reconciliation
- Capital budgeting decision under conditions of risk and uncertainty;
- Cost of capital: concept and measurement of cost of capital,
- Debt vs. equity, cost of equity, preference shares, equity capital and retained earnings,
- Weighted average cost of capital and marginal cost of capital. Importance of cost of capital in capital budgeting decisions.

MEANING OF CAPITAL BUDGETING:

- Capital budgeting is the process of making investment decisions in capital expenditures.
- A capital expenditure may be defined as an expenditure the benefits of which are expected to be received over a period of time exceeding one year.

DEFINITIONS OF CAPITAL BUDGETING

- According to Charles T. Horn green, “ capital budgeting is long term planning for making and financing proposed capital outlays.”
- According to Richard and Green law, “ capital budgeting as acquiring inputs with long run return.”
- In the words of Lynch, “ capital budgeting consists in planning development of available capital for the purpose of maximizing the long term profitability of the concern.”

Significance of Capital Budgeting

1. Indirect Forecast of sales:

- The Investment in fixed assets is related to future sales of the firm during the life time of the assets purchased.
- It shows the possibility of expanding the production facilities to cover additional sales shown in the sales budget.
- Any failure to make the sales forecast accurately would result in over investment or under investment in fixed assets and any erroneous forecast of asset needs may lead the firm to serious economic results.

2. Comparative study of Alternative Projects:

- Capital budgeting makes a comparative study of the alternative projects for the replacement of assets which were wearing out or in danger of becoming obsolete so as to make the best possible investment in the replacement of assets.
- For this purpose, the profitability of each project is estimated.

3. Timing of Assets-Acquisition:

- Proper capital budgeting leads to proper timing of assets-acquisition and improvement in quality of assets purchased.
- It is due to the nature of the demand and supply of capital goods.
- The demand of capital goods does not arise until sales impinge on productive capacity and such situation occur only immediately. On the other hand, supply of capital goods with their availability is one of the functions of capital budgeting.

4. Cash Forecast:

- Capital investment requires substantial funds which can only be arranged by making determined efforts to ensure their availability at the right time.
- Thus it facilitates cash forecast.

5. Wealth Maximization of shareholders:

- The impact of long term capital investment decisions is far reaching.
- It protects the interests of the shareholders and the enterprise because it avoids over-investment and under-investment in fixed assets.
- By selecting the most profitable projects, the management facilitates the wealth maximization of equity shareholders.

6. Other Factors:

- It assist in formulating a sound depreciation and assets replacement policy. It may be useful in considering the cost reduction.
- A reduction campaign may necessitate the consideration of purchasing most up-to-date and modern equipment.
- The feasibility of replacing manual work by machinery may be seen from the capital forecast be comparing the manual cost with the capital cost.

6. Other Factors:

- The capital cost of improving working conditions or safety can be obtained through capital expenditure forecasting.
- It facilitates the management in making of the long-term planning of an assists in the formulation of general policy.
- It studies the impact of capital investment on the revenue expenditure of the firm such as depreciation, insurance on fixed assets.
-

LIMITATIONS OF CAPITAL BUDGETING:



1. Uncertainty in future:

- The Capital budgeting proposals are infested with the uncertainty in future.
- All data used in the evaluation of proposals is the estimates. The data is error-prone more with the human judgment, bias or discretion in the identification of cash inflows and cash out flows.
- Even advanced capital budgeting techniques such as sensitivity analysis cannot be useful if the data is erroneous.

2. Qualitative factors ignored:

- In capital budgeting, we consider only such factors which can be quantified in terms of money.
- Factors such as improved morale of employees as a result of implementation of proposals are not focused.
- The other factors in the business environment such as social, political and economic conditions and so on, are not reflected here.

3. Volatile business conditions:

- The factors influencing investment decisions include technological advancement, government policies, sales forecast, attitudes of management, estimated cash flows discount factor and rate of return.
- Any change in one or more of these factors is going to affect the capital budgeting decisions.

LIMITATIONS OF CAPITAL BUDGETING:

4. Unrealistic Assumptions:

- There are certain unrealistic assumptions underlying capital budgeting process. They are
 - i) There is no risk and uncertainty in the business environment. This is not correct. The future of the business is full of uncertainty and we apply the management techniques to minimize the risk.
 - ii) The cash flows are received in lump sum at the end of the given period.
 - iii) The key variables such as sales revenue, costs, price or investments and so on are taken based on past data. Particularly in times of raising prices, these seldom hold good for future.
 - iv) The cost of capital and discount rates are one and the same.

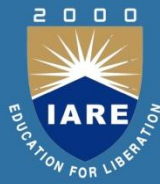
Introduction of Cost of Capital

- The cost of capital is the measurement of the sacrifice made by an investor in order to capital formation with a view to get a fair return as his investment as a reward is the measurement of disutility of funds in the present as compared to the return expected in future.
- The cost of capital is the required rate of return to justify the use of capital so that the expected rate of return can be maintained on equity share and market value per share remains unchanged or should not be reduced at least.

Meaning & Definitions of Cost of Capital

- “The cost of capital is the rate of return that a firm must earn on its project investment to maintain its market value of the firm to remain unchanged and attract fund.”
- According to James C. Van Home, “The cost of capital represent a cut-off rate of the allocation of capital to investment of project. It is the rate of return on a project that will leave unchanged the market price of the stock.”

Meaning & Definitions of Cost of Capital



- According to Salomon Ezra, “The cost of capital in any discounting rate, used to value cash stream.”
- According to Salomon Ezra, “The cost of capital is the minimum required of a earnings on the cut-off rate of capital expenditures.”

Significance / Importance of Cost of Capital



- The cost of capital is a very important concept in financial management decision making.
- The concept, is however a recent development and has relevance in almost every financial decision making but prior to the development, the problem was or by passed.
- There are almost 5 important reasons for management to aware the cost of capital (K_o).

1. Capital Budgeting Decision:

- Cost of capital may be used as the measuring road for adopting an investment proposal.
- The firm naturally, will choose the project which gives a satisfactory return on investment which would in no case be less than the cost of capital incurred for its financing. In various methods of capital budgeting, cost of capital is the key factor in deciding the project out of various proposals pending before the management.
- It measures the financial performance and determines the acceptability of all investment opportunities.

2. Designing the corporate Financial Structure:

- The cost of capital is significant in designing the firm's capital structure.
- The cost of the capital is influenced by the changes in capital structure.
- A capable financial executive always keeps an eye on capital market fluctuations and tries to achieve the sound and economical capital structure for the firm.
- He may try to substitute the various methods of finance in an attempt to minimize the cost of capital so as to increase the market price and earning per share.

3. Deciding about the method of Financing:

- A capable financial executive must have knowledge of the fluctuations in the capital market and should analyze the rate of interest on loans and normal dividends and normal dividend rates in the market from time to time.
- Whenever company requires additional finance, he may have a better choice of the source of finance which bears the minimum cost of capital.
- Although cost of capital is an important factor in such decisions, but equally important the considerations of relating control and of avoiding risk.

4. Performance of Top Management:

- The cost of capital can be used to evaluate the financial performance of the top executives.
- Evaluation of the financial performance will involve a comparison of actual profitability of the projects and taken with the projected overall cost of capital and an appraisal of the actual cost incurred in raising the required funds.

5. Other Areas:

- The concept of cost of capital is also important in many others areas of decision making, such as dividend decisions, working capital policy etc.

The cost of capital is considered as a standard of comparison for making different business decisions. Such importance of cost of capital has been presented below:

1. Making Investment Decision:

- Cost of capital is used as discount factor in determining the net present value.
- Similarly, the actual rate of return of a project is compared with the cost of capital of the firm.
- Thus the cost of capital has a significant role in making investment decisions.

2. Designing Capital Structure:

- The proportion of debt and equity is called capital structure.
- The proportion which can minimize the cost of capital and maximize the value of the firm is called optimal capital structure.
- Cost of capital helps to design the capital structure considering the cost of each sources of financing.
- Investor's expectations effect of tax and potentiality of growth.

3. Evaluating the Performance:

- Cost of capital is the benchmark of evaluating the performance of different departments.
- The department is considered the best which can provide the highest positive net present value to the firm.
- The activities of different departments are expanded or dropped out on the basis of their performance.

4. Formulating Dividend Policy:

- Out of the total profit of the firm, a certain portion is paid to shareholders as dividend.
- However, the firm can retain all the profits in the business.
- If it has the opportunity of investing in such projects which can provide higher rate of return in comparison of cost of capital.
- On the other hand, all the profit can be distributed as dividend if the firm has no opportunity investing the profit.
- Therefore, cost of capital plays a key role formulating the dividend policy.

Importance of Cost of Capital in Capital Budgeting Decisions



- The concept of cost of capital is very essential in the financial management.
- It is useful in capital budgeting and in making decision related to capital structure planning.
- The performance of the firm is analyzed with the help of concepts of cost of capital and useful in taking other financial decisions.

Importance of Cost of Capital in Capital Budgeting Decisions



1. Capital Budgeting Decisions:

- According to its James T.S. Postter field, “the concept of capital has assumed growing importance largely because of the need to devise a rational mechanism for making investment decisions of the firm”.
- Cost of capital is taken into consideration while making capital budgeting decisions.
- With the help of cost of capital, firms accept or reject the projects.
- It is very useful in capital budgeting decision.

Importance of Cost of Capital in Capital Budgeting Decisions



2. Capital Structure Decisions:

- In order to run a business smoothly, firm must maintain an appropriate level of debt and equity mix to finance the assets.
- At the time of preparing optimal capital structure, management must concentrate on maximizing the value of the firm and minimizing the cost of capital.

Importance of Cost of Capital in Capital Budgeting Decisions



3. Analyzing Financial Performance:

- According to S.K.Bhattacharya, the concept of cost of capital is used to evaluate the financial performance of top management.
- At the time of evaluating the performance of top management, the actual profitability of project is compared with overall estimated cost of capital.
- If profitability is more, then performance is satisfactory.

4. Other Financial Decisions:

- Many other financial decisions can be made with the help of cost of capital such as dividend policy, capitalization of profits, working capital etc.

Measurement of Cost of Capital

- The cost of capital is very important for making decisions. Cost of capital involves different costs related to different sources of finance.
- It is necessary for every firm to compute cost of capital before making decisions. The evaluation process of cost of capital involves two steps.
- Calculation of different costs which are the sources of finance.
- The overall cost is calculated by combining different costs into a composite cost.

Measurement of Cost of Capital

- Hence it is essential to compute the specific cost of each source to evaluate minimum obligation of company i.e., composite cost of raising capital.
 1. Cost of Debt
 2. Cost of Preferential Capital
 3. Cost of Equity Capital
 4. Cost of Retained Earnings.

1. Cost of Debt:

The rate of interest which is paid on debt is termed as cost of debt. For calculation of the cost of debt following are required. Net proceeds of debentures, amount of interest paid periodically and the principal quantity of debt. The cost of debt before tax is calculated from following formula.

$$K_{dh} = I / P$$

Where K_{dh} = Before tax cost of debt

I = Interest

P = Principal

1. Cost of Debt:

When firm raises debt at premium or discount, then P is not the face value of securities but it is the amount of net proceeds received from the issue. In this case the formula will be,

$$K_{dh} = I / NP$$

Where K_{dh} = Before tax cost of debt

I = Interest

P = Principal

NP = Net Proceeds

1. Cost of Debt:

When firm raises capital from debt a sufficient amount of tax is saved because interest is treated as deductible expense in calculation of tax. Hence it reduces tax. The cost of debt after tax is calculated as follows:

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

Where K_{dh} = After tax cost of debt

I = Interest

P = Principal

NP = Net Proceeds

t = Rate of Tax.

Cost of Redeemable Debt

The debt which is issued to be redeemed after specific period of time is known as redeemable debt. The cost of redeemable debt after tax is calculated as follows:

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

Where I = Annual Interest.

T=Tax Rate.

n = Number of years in which debt is to be redeemed.

RV = Redeemable value of debt.

NP = Net Proceeds of debentures.

2. Cost of Preference Capital (K_p):

- Preference shares are the fixed cost bearing securities.
- In case of preference shares, the rate of dividend is fixed in advance at the time of issue.
- Preference shareholders have a preferential rights unlike equity shareholders with regard to payment of dividend and return of principle amount.
- Preference dividend is paid from after tax profits, so adjustments are not made in tax at the time of calculating cost of preference shares.

2. Cost of Preference Capital (K_p):

- Preference dividend is considered as an appropriation of profits and not as a charge on profits.
- There are two types of preference capital.
They are i) Irredeemable preference capital.
ii) Redeemable preference capital.

i) Irredeemable preference capital:

- Irredeemable Preference capital involves perpetual payment of dividend to preference shareholders at a prescribed rate.

$$K_p = D_p / N_p$$

(Where preference shares are issued at a premium or discount)

Where K_P = Cost of preference capital

D_P = Annual Preferential Dividend

P = Net Proceeds of preference share capital

ii) Redeemable preference capital:

- Redeemable Preference shares are those which can be redeemed or recovered on maturity of issue or after specific period of time.

$$K_p = D_p + \frac{P_n - P}{\frac{P_n + P}{2} \cdot n}$$

Where K = Cost of the preferential capital

P = Net Proceeds on issue of Pref.shares

D = Annual Preference Dividend

P_n = Amount payable at the time of redemption

N = Redemption period of preference shares.

3. Cost of Equity Share Capital (K_e)

- The cost of equity capital is the return which is expected by its investors.
- In order to provide expected returns to the equity shareholders, company must earn minimum rate of return which is necessary to have a constant market price of the shares.
- The expectations of the shareholders must be considered before issuing new equity shares for raising additional capital.

3. Cost of Equity Share Capital (K_e)

- The calculation of cost of equity shares is a complicated process because interest or dividend is not paid on fixed rate and also there is no legal commitment to pay dividend to equity shareholders.
- Hence market value of shares depends upon the amount of dividend paid and the rate of dividend depends on the degree of the business and financial risk.
- Following are the approaches or methods through which cost of equity shares can be computed.

i) Dividend Yield Method:

- In this method the cost of equity capital is considered as a discount rate at which current value of expected future dividend per share is equal to net proceeds or market price of a share. In this approach the cost of equity shares will be,

$$K_e = (D / NP) \times 100 \text{ or } (D / MP) \times 100$$

Where K = Cost of capital, D= Expected Dividend per share

NP = Net Proceeds per share, MP= Market price share

ii) Dividend Yield with Annual Growth Rate:

This method is used in the situation where dividend pay-out ratio remains constant and dividends are expected to grow at a constant rate of the firm, then this method is suitable to calculate cost of equity capital .

Measurement of Cost of Capital

In this method, dividends are the growth rate from the basis for the cost of equity capital.

$$K_e = (D_1 / NP) + G = \frac{D_0 (1+g) + G}{NP}$$

Where D_1 = Expected dividend per share at the end of year,
 G = Rate of Growth in dividend ,
 D_0 = Previous year dividend.

When the cost existing equity share capital is calculated, then net must be replaced with market price.

$$K_e = (D_1 / MP) + G$$

iii) Earnings Yield Method:

In this method, the cost of equity capital is considered as the discount rate at which the current value of expected future EPS is equal to the prevailing market price or net proceeds of the shares. In this method the cost of equity capital is

$$K_e = \text{Earnings per share} / \text{Net Proceeds} = \text{EPS} / \text{NP}$$

The earnings yield method is applicable in the following situations for the calculating cost of capital.

1. When it is expected that earnings per share remains constant.
2. In times when the dividend pay-out ratio is 100% or Retention ratio is zero.
3. When market price of the share is effected only by the earnings per share.
4. When firm expects that earnings on new equity shares capital is equal to present rate of earnings.

iv) Capital Asset Pricing Model/ Approach

- This method separates the cost of equity into risk free return which is available for investing in government bonds and an additional risk premium which is for investing in a specific share or investment.
- The risk premium involves the average return on the overall market portfolio and the beta factor i.e., the risk factor of the particular investment.
- The cost of equality for an investment with the help of CAPM approach is calculated as follows:

$$K_e = R_f + b_i (R_m - R_f)$$

Where K_e = Cost of Capital, R_f = Risk free rate of return,

b_i = Beta of the Investment, R_m = Average Market Return.

v) Bond Yield with Risk Premium Approach

- According to bond yield with risk premium approach, the required rate of return of the equity shareholders of a firm is equal to the return on long term bonds and risk premium.

$$K_e = \text{Return on long term bonds} + \text{Risk Premium.}$$

- This approach explains that risk of equity investors is much greater than risk of bond investors. Hence required rate of return of the equity investor involves premium for higher risk. There is no theoretical basis to calculate the risk premium.

vi) Realized Yield Method:

- The problem of evaluating the expectations of the investors relating to future dividends and earnings can be solved with the help of realized yield method.
- It is difficult to calculate accurate future dividends and earnings because of they are dependent on many uncertain factors.
- Hence the realized yield method is suitable, which considers the actual average rate of return realized in the past to calculate the cost of equity share capital.
- In order to calculate the average rate of return realized, the dividend received in the past and the gain realized at the time of the sale of shares must be taken into consideration.

Measurement of Cost of Capital

The realized yield method has the following assumptions.

- A. The firm will have constant risk for a specific period of time.
- B. The expectations of the shareholders are dependent on past realized yield.
- C. Investors assume that they get same rate of return as the realized yield even if they invest somewhere else.
- D. It is assumed that there are no remarkable changes in market price of shares.

4. Cost of Retained Earnings:

- As, firms do not pay any dividends on retained earnings, hence no cost is involved in retained earnings.
- The cost of retained earnings can be evaluated as rate of return acquired by the shareholders from an alternative by investing after tax dividends.
- It is similar to the opportunity cost of dividend which is scarified by the shareholders.

4. Cost of Retained Earnings:

- The cost of retained earnings can be calculated as follows:

$$K_r = \frac{D_1 + G}{MP}$$

Where,

K_r = Cost of Retained Earnings

D = Expected Dividend

MP = Market price per share

G = Growth Rate.

Measurement of Cost of Capital

4. Cost of Retained Earnings:

- In spite of 100% payout ratio, shareholders are unable to get whole amount of retained earnings in the form of dividends. Shareholders need to pay tax on dividend income. Some alternative way is to be made with regard to tax, following formula is useful.

$$K_r = \frac{D + G \times (1-t) \times (1-b)}{NP}$$

Where, k = cost of Retained earnings

d = Expected Dividend, G = Growth Rate

NP = Net proceeds of equity share, T = Tax Rate

B = cost of purchasing new securities

k = Rate of return available to shareholders.

Differences between Debt and Equity

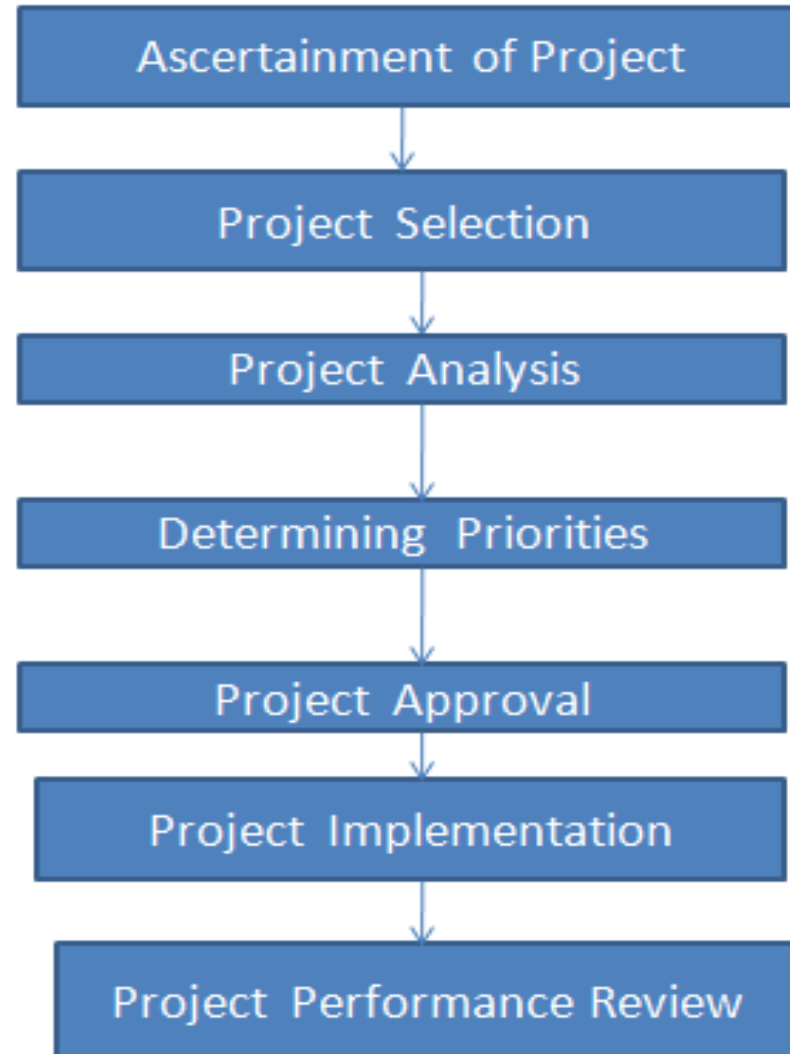
Debt

1. Debt refers to a sum of money that is lent to another party on the repayment of principal amount of a loan.
2. In debt, investment risk is less for both investors and creditors.
3. Cash receipts are fixed.
4. Debt management involves the provision for contractual future cash payments and holds an impact on credit ratings of a firm.
5. Debts have tax-deductible interest.
6. It acts as a liability in the balance sheet.
7. Transactions related to debt effects the income statement.
8. In debts, maturity date and time needs to be clearly specified.

Equity

1. Equity refers to the value of ordinary shares and preference shares.
2. In equity investment risk is high for the both investors and creditors.
3. Cash receipts are variable.
4. Equity has discretionary dividends and is effected by dilution/ takeover.
5. In equity, tax is not deductible from dividends.
6. It acts as an asset under a name and shareholders equity of balance sheet.
7. Transactions related to the equity does not effect the income statement.
8. In equity, no specific maturity date and time is stated.

Investment Decision Process



1. Ascertainment of Project:

- Identifying the project for investment is the first step in capital budgeting.
- From various projects, the project needs to be ascertained by department officer or head for analysis and the suitable project is selected according to corporate strategies and submitted to the capital expenditure planning committee for large organization or else to concerned head for long term investment decisions.

2. Project Selection:

- Different projects are checked thoroughly by capital expenditure planning committee and selection is based on the corporate strategy.

3. Project Analysis:

- In this step, profitability of different projects is analyzed.
- It may be classified into independent project, dependent project and mutually exclusive project.
- The methods by which profitability of project can be ascertained are Pay-back period, Rate of Return, Net Present Value, Internal Rate of Return etc.

4. Determining Priorities:

- Giving priorities helps the firm or an individual to work smoothly.
- By analyzing the project, one can know the profitability, urgency and risk involved and can accordingly select the project.
- Ranking different projects is required for the firm.

5. Project Approval:

- After meeting all the requirements stated in the above step the project is approved and included in capital expenditure budget.
- Then the amount from which fixed assets are purchased in budget period is estimated.

6. Project Implementation:

- Implementing the project is an important aspect for capital expenditure committee as they have to consider the profitability of the project with time and cost limit.
- To overcome the delays in net work techniques such as PERT and CPM are useful for managing the project.

7. Project Performance Review:

- The final step is to check whether all the above steps are running smoothly or not and if any problem occurred, it can be rectified with corrective actions.
- The project expenditure needs to be compared with post completion expense of the investment process, the actual return generating from investment, everything needs to be properly viewed. Finally the performance can be known.

Cash flow is the amount obtained by subtraction of cash expenses from cash revenues. Usually investment decisions have three types of cash flows.

- They are
- (i) Initial Investment
 - (ii) Operating cash flows
 - (iii) Terminal cash flows

(i) Initial Investment:

- The capital expenditure incurred in the beginning of the period, $t=0$, to acquire asset is known as initial investment.
- It involves cost of new asset to acquire land, building, machinery etc., and also includes expenses like insurance, freight, installation cost etc., net working capital and opportunity cost which is incurred by the firm.

(ii) Operating Cash flows / New Annual Cash Flows:

- Operating cash flows are the expected future benefits that are generated from investment in capital assets.
- These operating cash flows are evaluated on after-tax basis.
- In order to find the net annual cash flows depreciation is added and tax is deducted.

Net Cash Inflows = Cash Revenues- cash Expenses-Tax

OR

Net Cash Inflow = Net Earnings after tax+ Depreciation.

(iii) Terminal Cash flows :

- Terminal cash flows is the value of asset that is obtained by the firm in the last year of the asset when it is sold as scrap.
- When firm makes a replacement decision in which old asset is replaced for new asset, the reduction in cost of new asset due to sale value of old asset is known as terminal flow of asset replaced.

Pattern of Conventional and Non-conventional Cash flows :

- Conventional cash flows are those in which initial cash outflows is followed by a sequence of equal or unequal amount of cash inflows. Usually, this pattern is followed by many capital investment decisions.
- Non conventional cash flows are a pattern of cash flow in which more than one cash outflows are followed by series of cash inflows of equal or different amounts.
- Usually, this pattern is used when a machine is purchased and requires some cost in between its usage time.

The conflicts in project ranking may arise due to size disparity, time disparity and life disparity

i) Time Disparity:

- Usually, the difference between NPV and IRR methods due to differences in timing of cash flows. When large cash inflows are made in initial stage of project.
- It leads to higher rate of return and if large cash inflows are made in final stage of project.
- In order to maximize the shareholders wealth firm must select the project with higher NPV. In case of mutually exclusive projects, NPV must be selected.

ii) Size Disparity:

- The conflicts between NPV and IRR methods may arise due to unequal amount of cash outflows.
- As NPV method give clear results and focus on objective of shareholders wealth maximization , the project which gives higher NPV must be accepted.
- The result of NPV is same as the results of internal rate of return on incremental investment.

iii) Life Disparity:

- When two mutually exclusive projects have different life spans they result in conflict between NPV and IRR rules.
- Let us assume two projects A and B are mutually exclusive and both have same amount of initial outcome.
- But project A generate cash inflows at the end of first year, whereas project B provide cash inflows at the end of fifth year.
- When NPV method is used project is more profitable and in terms of IRR.
- Project A is the best. Firm must select the project with higher NPV because it emphasis on wealth maximization principle.

SHARE CAPITAL:

- The capital of a company is usually divided into certain indivisible units of a fixed amount known as “Shares”.
- Under the companies Act, 1956, a public company can issue three types of shares viz.,
 - (1) Equity Shares
 - (2) Preference Shares
 - (3) Differed Shares

A private company which is not a subsidiary of a public company can, however, issue any kind of shares.

1. EQUITY SHARES:

- Equity shares are those which not preference shares.
- These shares do not enjoy any preferential right in respect of dividend or repayment of capital.
- Dividend on these shares is paid at a rate recommended by the directors and declared by the company in general meeting.
- Dividend on equity shares is payable after dividend has been paid on preference shares.

2. PREFERENCE SHARES:

Preference shares are those shares which have

- i) A preferential right to be paid dividend at a fixed rate during the life time of the company.
- ii) A Preferential right to be repaid capital when the company goes into liquidation.

Preference shares may of several types. They are

- (i) Cumulative Preference Shares (ii) Non-Cumulative Preference Shares (iii) Participating Preference Shares (iv) Non-Participating Preference Shares (v) Redeemable Preference shares (vi) Irredeemable Preference Shares (vii) Convertible Preference Shares (viii) Non-convertible Preference Shares.

(i) Cumulative Preference Shares:

- In case of such shares, if dividend in any year cannot be paid due to non-availability of profit, the holders of these shares are entitled to get such arrears dividend out of subsequent year of years.

(ii) Non-Cumulative Preference Shares:

- In case of such shares, if dividend in any year cannot be paid, the right to receive dividend for that year lapses, and holders are not entitled to get such arrear dividend out of profits of subsequent years.

(iii) Participating Preference Shares:

- The holders of these shares, in addition to a fixed rate of dividend and entitled to share with the equity shareholders, the balance of profits in some proportion after the rights of the equity shareholders have been reasonably met.
- These shareholders are sometimes also allowed to share in surplus assets on the company being wound up.

(iv) Non-Participating Preference Shares:

- The shareholders of these shares are entitled to a fixed rate of dividend only and do not share in the surplus profits or assets which all go to the equity share holders.

TYPES OF PREFERENCE SHARES

(v) Redeemable Preference Shares:

- These shares, in addition to the preferential right in respect of dividend, enjoy the right to be redeemed. i.e., to be paid back to the shareholders within the life of the company subject to the terms of the issue and the fulfillment of certain conditions laid down in Sec.80 of the companies Act.

(vi) Irredeemable Preference Shares:

- The amount of irredeemable preference shares (like the amounts of equity share) can be paid back only when the company is wound up. After the commencement of the companies (Amendment) Act, 1988, no company limited by shares shall issue any preference share which is irredeemable or redeemable after the expiry of a period of ten years from the date of issue.

(vii) Convertible Preference Shares:

- These shares are given the right of being converted into equity shares within a specified period or at a specified date according to the terms of issue.

(viii) Non-convertible Preference Shares:

- The shares which cannot be converted into equity shares are known as non-convertible preference shares.

3. Deferred Shares:

- These shareholders get their dividend only when all other shareholders are fully satisfied.
- Thus, deferred shares rank last so far as payment of dividend and return of capital concerned.
- These shares were earlier issued to Promoters or Founders for services rendered to the company. This was supposed to be the best method of remunerating the founders of the company. So these shares are also called Founders Shares or Promoters Shares.

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- When a company issues deferred shares, maximum amount of dividend payable on ordinary shares is fixed.

3. Deferred Shares:

- The deferred shareholders are paid their dividend only after the maximum percentage of dividend is paid to equity shareholders.
- So deferred shareholders get their dividend only when the company makes high profits.
- But with the prosperity of the companies, the deferred shares began to fetch large yield.
- Under the present Act, these shares cannot be issued by a public company.
- According to companies Act, 1956 no public company or a private company which is a subsidiary of a public company can issue deferred shares.

Investments

- Generally, “investments” refers to financial assets and in particular to marketable securities.
- Financial assets are paper or electronic claims on some issuer, such as the government or a company.
- Marketable securities financial assets that are easily and cheaply tradable in organized markets
- Real assets are tangible assets such as gold, silver, diamonds, real estate.

Difference Between Investment and Speculation

Investment

- Long term planning (at least one year)
- Low or moderate risk.
- Low or moderate rate of return.
- Investment decisions are based on fundamentals.
- Investors leveraged its own funds.

Speculation

- Short term Planning (few days or months)
- High Risk.
- High rate of return.
- Decisions are based on hearsay and market psychology.
- Resort to borrowed funds.

Steps in the Investment decision process

- Traditionally, the investment decision process has been structured using two-steps:
 1. Security analysis
 2. Portfolio management

Security analysis:

- This is the first part of investment decision process
- It involves the analysis and valuation of individual securities
- To analyze securities, it is important to understand the characteristics of the various securities and the factors that affect them
- Then valuation model is applied to find out their value or price
- Value of a security is a function of estimated future earnings from the security and the risk attached.
- For securities valuation, investors must deal with economy, industry or the individual company.
- Both the expected return and risk must be estimated keeping in view the economic, market or company related factors.

Portfolio Management:

- The second major component of the decision processes is portfolio management
- After securities have been analyzed and valued, portfolio of selected securities is made
- Once a portfolio is made, it is managed with the passage of time
- For management, there can be two approaches

Approaches to portfolio management:

A. Passive investment strategy

B. Active investment strategy

- In Passive Strategy, investors make few changes in the portfolio so that transactions costs, time and search costs are minimum
- In Active Strategy, investors believe that they can earn better returns by actively making changes in the portfolio

Capital Budgeting Stages

- Project Evaluation and Selection
- Potential Difficulties
- Capital Rationing
- Project Monitoring
- Post-Completion Audit

Capital Budgeting Techniques/Project Evaluation: Alternative Methods



- Payback Period (PBP)
- Internal Rate of Return (IRR)
- Net Present Value (NPV)
- Profitability Index (PI)

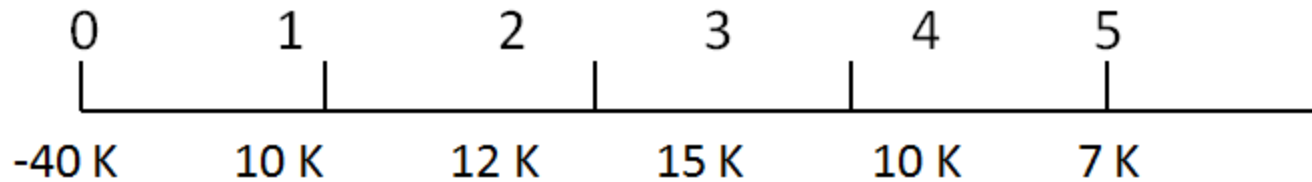
Independent Project

- For this project, assume that it is independent of any other potential projects that Basket Wonders may undertake.

Independent

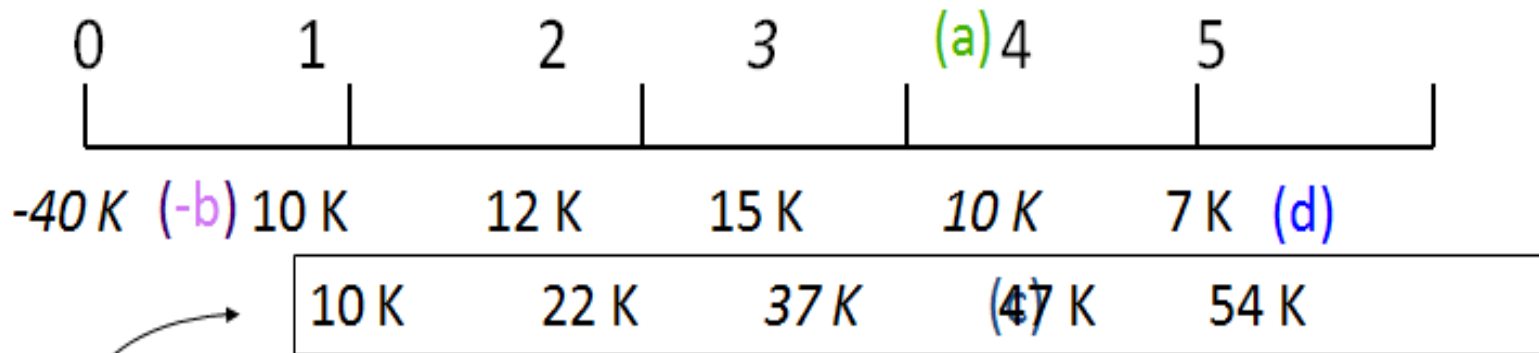
A project whose acceptance (or rejection) does not prevent the acceptance of other projects under consideration.

Payback Period (PBP)



PBP is the period of time required for the cumulative expected cash flows from an investment project to equal the initial cash outflow.

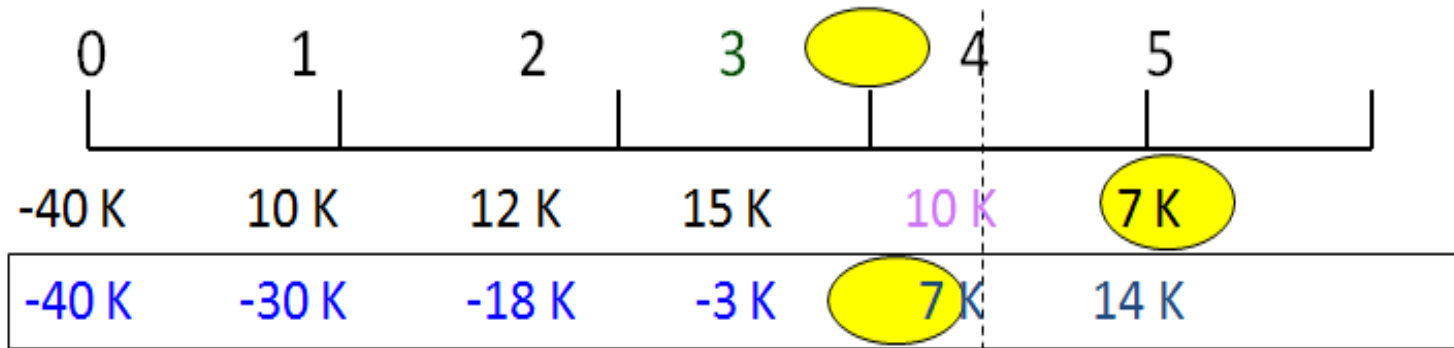
Payback Solution (#1)



Cumulative
Inflows

$$\begin{aligned}
 \text{PBP} &= a + (b - c) / d \\
 &= 3 + (40 - 37) / 10 \\
 &= 3 + (3) / 10 \\
 &= 3.3 \text{ Years}
 \end{aligned}$$

Payback Solution (#2)



Cumulative
Cash Flows

$$\begin{aligned}
 \text{PBP} &= 3 + (3\text{K}) / 10\text{K} \\
 &= 3.3 \text{ Years}
 \end{aligned}$$

Note: Take absolute value of last negative cumulative cash flow value.

PBP Acceptance Criterion

The management of *Basket Wonders* has set a maximum PBP of **3.5 years** for projects of this type.

Should this project be accepted?

Yes! The firm will receive back the initial cash outlay in less than 3.5 years.

[**3.3 Years** < **3.5 Year Max.**]

PBP Strengths and Weaknesses

Strengths:

- Easy to use and understand
- Can be used as a measure of liquidity
- Easier to forecast ST than LT flows

Weaknesses:

- Does not account for TVM
- Does not consider cash flows beyond the PBP
- Cutoff period is subjective

Internal Rate of Return (IRR)

IRR is the discount rate that equates the present value of the future net cash flows from an investment project with the project's initial cash outflow.

$$ICO = \frac{CF_1}{(1+IRR)^1} + \frac{CF_2}{(1+IRR)^2} + \dots + \frac{CF_n}{(1+IRR)^n}$$

Internal Rate of Return (IRR)

The management of *Basket Wonders* has determined that the **hurdle rate** is **13%** for projects of this type.

Should this project be accepted?

No! The firm will receive **11.57%** for each dollar invested in this project at a cost of **13%**. [**IRR < Hurdle Rate**]

Internal Rate of Return (IRR)

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Should this project be accepted?

No! The firm will receive **11.57%** for each dollar invested in this project at a cost of **13%**. [**IRR < Hurdle Rate**]

IRR Strengths and Weaknesses

Strengths:

- Accounts for TVM
- Considers all cash flows
- Less subjectivity

Weaknesses:

- Assumes all cash flows reinvested at the IRR
- Difficulties with project rankings and Multiple IRRs

Net Present Value (NPV)

NPV is the present value of an investment project's net cash flows minus the project's initial cash outflow.

$$NPV = \frac{CF_1}{(1+k)^1} + \frac{CF_2}{(1+k)^2} + \dots + \frac{CF_n}{(1+k)^n} - ICO$$

Net Present Value (NPV) solution

Basket Wonders has determined that the appropriate discount rate (k) for this project is 13%.

$$\begin{aligned}
 \text{NPV} = & \frac{\$10,000}{(1.13)^1} + \frac{\$12,000}{(1.13)^2} + \frac{\$15,000}{(1.13)^3} + \\
 & \frac{\$10,000}{(1.13)^4} + \frac{\$7,000}{(1.13)^5} - \$40,000
 \end{aligned}$$

Net Present Value (NPV) solution

$$\text{NPV} = \$10,000(\text{PVIF}_{13\%,1}) + \$12,000(\text{PVIF}_{13\%,2}) + \\ \$15,000(\text{PVIF}_{13\%,3}) + \$10,000(\text{PVIF}_{13\%,4}) + \\ \$7,000(\text{PVIF}_{13\%,5}) - \$40,000$$

$$\text{NPV} = \$10,000(.885) + \$12,000(.783) + \$15,000(.693) \\ + \$10,000(.613) + \$7,000(.543) - \$40,000$$

$$\text{NPV} = \$8,850 + \$9,396 + \$10,395 + \\ \$6,130 + \$3,801 - \$40,000 \\ = -\$1,428$$

The management of *Basket Wonders* has determined that the required rate is 13% for projects of this type.

Should this project be accepted?

No! The NPV is negative. This means that the project is reducing shareholder wealth.

[*Reject* as $NPV < 0$]

NPV Strengths and Weaknesses

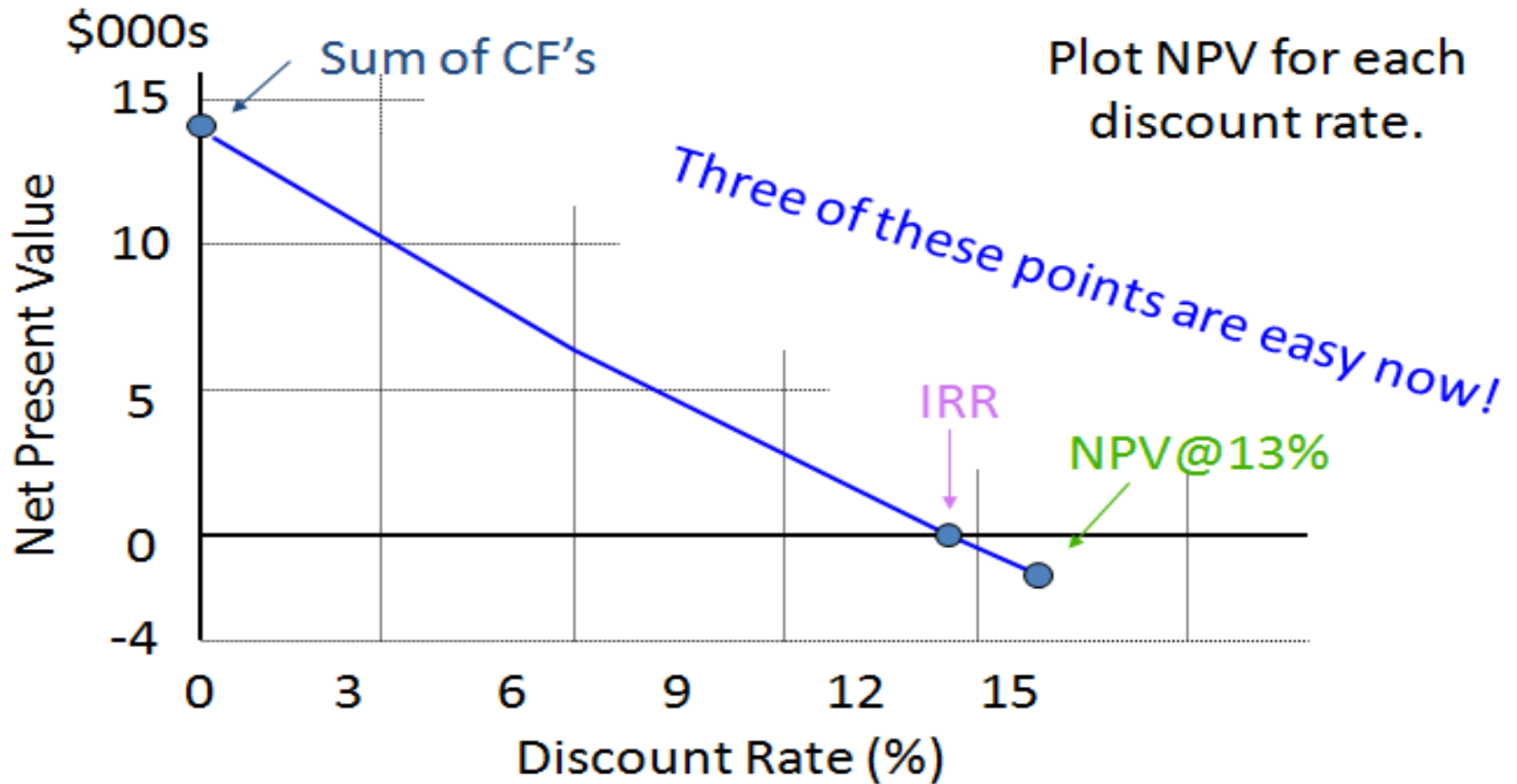
Strengths:

- Cash flows assumed to be reinvested at the hurdle rate.
- Accounts for TVM.
- Considers all cash flows.

Weaknesses:

- May not include managerial options embedded in the project.

Net Present Value Profile



Profitability Index (PI)

PI is the ratio of the present value of a project's future net cash flows to the project's initial cash outflow.

Method #1:

$$PI = \left[\frac{CF_1}{(1+k)^1} + \frac{CF_2}{(1+k)^2} + \dots + \frac{CF_n}{(1+k)^n} \right] \div ICO$$

<< OR >>

Method #2: $PI = 1 + [NPV / ICO]$

PI Acceptance Criterion

$$\begin{aligned} \text{PI} &= \$38,572 / \$40,000 \\ &= .9643 \text{ (Method \#1, 13-34)} \end{aligned}$$

Should this project be accepted?

No! The **PI** is less than 1.00. This means that the project is not profitable.

[*Reject* as $PI < 1.00$]

PI Strengths and Weaknesses

Strengths:

- Same as NPV
- Allows comparison of different scale projects

Weaknesses:

- Same as NPV
- Provides only relative profitability
- Potential Ranking Problems

Capital Rationing occurs when a constraint (or budget ceiling) is placed on the total size of capital expenditures during a particular period.

Example: Julie Miller must determine what investment opportunities to undertake for *Basket Wonders (BW)*. She is limited to a **maximum expenditure of \$32,500 only** for this capital budgeting period.

Sensitivity Analysis

A type of “what-if” uncertainty analysis in which variables or assumptions are changed from a base case in order to determine their impact on a project’s measured results (such as NPV or IRR).

- Allows us to change from “*single-point*” (i.e., revenue, installation cost, salvage, etc.) estimates to a “*what if*” analysis
- Utilize a “base-case” to compare the impact of individual variable changes
 - E.g., Change forecasted sales units to see impact on the project’s NPV

Cost of Capital Components

1. Debt
2. Preferred
3. Common Equity
4. WACC

Cost of Debt

- **Method 1:** Ask an investment banker what the coupon rate would be on new debt.
- **Method 2:** Find the bond rating for the company and use the yield on other bonds with a similar rating.
- **Method 3:** Find the yield on the company's debt, if it has any.

Component Cost of Debt

- Interest is tax deductible, so the after tax (AT) cost of debt is:

$$\begin{aligned} r_{d \text{ AT}} &= r_{d \text{ BT}}(1 - T) \\ &= 10\%(1 - 0.40) = 6\%. \end{aligned}$$

- Use nominal rate.
- Flotation costs small, so ignore.

Cost of Debt

- What's the cost of preferred stock?

$P_p = \$113.10$; $10\%Q$; $\text{Par} = \$100$; $F = \$2$.

Use this formula

$$r_{ps} = \frac{D_{ps}}{P_n}$$

$$= \frac{0.1(\$100)}{\$113.10 - \$2.00}$$

$$= \frac{\$10}{\$111.10} = 0.090 = 9.0\%$$

Cost of Equity

- **Method 1:** CAPM: $r_s = r_{RF} + (r_M - r_{RF})b$
 $= r_{RF} + (RPM)b.$
- **Method 2:** DCF: $r_s = D_1/P_0 + g.$
- **Method 3:** Own-Bond-Yield-Plus-Risk
 Premium: $r_s = r_d + \text{Bond RP}.$

Find r_s using the own-bond-yield-plus-risk-premium method.
 ($r_d = 10\%$, $RP = 4\%$.)

$$r_s = r_d + RP$$

$$= 10.0\% + 4.0\% = 14.0\%$$

This $RP \neq \text{CAPM } RP_M.$

Produces ballpark estimate of $r_s.$

Cost of Equity

- What's the DCF cost of equity, r_s ?
Given: $D_0 = \$4.19$; $P_0 = \$50$; $g = 5\%$.

$$r_s = \frac{D_1}{P_0} + g = \frac{D_0(1+g)}{P_0} + g$$

$$= \frac{\$4.19(1.05)}{\$50} + 0.05$$

$$= 0.088 + 0.05$$

$$= 13.8\%.$$

WACC-Weighted Average Cost of Capital



$$\begin{aligned} \text{WACC} &= W_d r_d(1 - T) + W_p r_p + W_c r_s \\ &= 0.3(10\%)(0.6) + 0.1(9\%) + 0.6(14\%) \\ &= 1.8\% + 0.9\% + 8.4\% \\ &= 11.1\% \end{aligned}$$

Factors influence a company's WACC



- Market conditions, especially interest rates and tax rates.
- The firm's capital structure and dividend policy.
- The firm's investment policy.
- Firms with riskier projects generally have a higher WACC.

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UNIT– III

CAPITAL STRUCTURE DECISIONS

CAPITAL STRUCTURE DECISIONS

- Capital structure vs. financial structure
- Capitalization
- Financial leverage
- Operating leverage
- Composite leverage
- Earnings before interest and tax
- Earning Per Share Analysis
- Indifference Point/Break even analysis of financial leverage
- Capital structure theories: the Modigliani miller Theory, NI, NOI theory and traditional Theory: a critical appraisal.

Introduction:

- Capital structure in simple words refers to debt equity ratio of a company.
- In other words it refers to the proportion of debt in the investments of the company. It is important for a company to have an appropriate capital structure.

Meaning of capitalization:

- In broad sense, capitalization is synonymous with financial planning, covering decisions regarding the amount of capital to be raised, the relative proportions of the various classes of securities to be issued and the administration of capital.

In its narrow sense, capitalization means the amount at which a firm's business can be valued, the sum total of all long-term securities issued by a company and the surpluses not meant for distribution.

Definition of capitalization:

1. **According to Doris**, “Capitalization is the total accounting value of the capital stock, surplus in whatever form it may appear and long-term debts”
2. **According to A.S.Dewing**, “ The term capitalization or the valuation of the capital includes the capital stock and debts”.

3. [According to A.F.Lincoln](#), “capitalization refers to the sum of the outstanding stocks and funded obligations which may represent wholly fictitious values”.
4. [According to G.W.Gerstenberg](#), “ For all practical purposes, capitalization means the total accounting value of all capital regularly employed in the business”.
5. [According to Pearson and Hunt](#), “ The term capitalization is used to mean the total of the funds raised on a long term basis, whether debt, preferred, equity or common equity. The common equity, of course, includes all values belonging to that interest and not merely stated value of the common stock”.

6. According to W.H. Husband and D.C.Dockerary, “capitalization includes the amount of capital to be raised, the securities through which is to be raised and the relative proportion of various classes of securities to be issued and also the administration of capital”.

Estimation of Capital Requirement:

The financial manager should keep in mind the future requirements of funds for expansion and growth of the company, while estimating the capital needs. On the other hand, while estimating the capital requirements of the newly promoted company, the financial manager should give due consideration to the following factors.

1. Expenses for Promotion:

Required in case of a new company, these include expenses incurred on discovery of business idea and examine its viability, registration of the company, establishment of organization, commencement of business.

2. Cost of Fixed Assets:

Fixed assets including land and building, plant and machinery, furniture and fixtures etc., need a careful capital requirements estimation.

3. Cost of Current Assets:

This is the capital required for financing the acquisition of current assets such as stocks, debtors, bills receivables, prepaid expenses etc.

4. Cost of Financing:

Every company has to incur a huge amount of expenditure for raising finance which include advertisement, listing, brokerage, commission etc.

5. Cost of Fictitious Assets:

Most of the companies require to pay huge amount for purchase of intangible assets such as goodwill, patents, trademarks and copyrights etc.

6. Cost of Sustenance and Development:

- While in the initial years, a business may need funds to meet its losses.
- In later years, it needs funds for diversification, expansion and growth, as well as for replacement and renovation of old fixed assets, modernization, innovation, research and development.

1.Trading on Equity:

- The word equity denotes the ownership of the company.
- Trading on equity means taking advantage of equity share capital to borrowed on reasonable basis.
- It refers to additional profits that equity shareholders earn because of issuance of debentures and preference shares.
- It is based on the thought that if the rate of dividend on preference capital and the rate of interest on borrowed capital is lower than the general rate of company's earnings, equity shareholders are at advantage which means a company should go for a judicious blend of preference shares, equity shares as well as debentures.
- Trading on equity becomes more important when expectations of shareholders are high.

2. Degree of Control:

- In a company, it is the directors who are so called elected representatives of equity shareholders.
- These members have got maximum voting rights in a concern as compared to the preference shareholders and debenture holders.
- Preference share holders have reasonably less voting rights while debenture holders have no voting rights.
- If the company's management policies are such that they want to retain their voting rights in their hands, the capital structure consists of debenture holders and loans rather than equity shares.

3. Flexibility in Financial Plan:

- In an enterprise, the capital structure should be such that there is both contractions as well as relaxation in plans.
- Debentures and loans can be refunded back as the time requires.
- While equity capital cannot be refunded at any point which provides rigidity to plans.
- Therefore, in order to make the capital structure possible, the company should go for issue of debentures and other loans.

4. Choice of Investors:

- The company's policy generally is to have different categories of investors for securities.
- Therefore, a capital structure should give enough choice to all kind of investors to invest.
- Bold and adventurous investors generally go for equity shares and loans and debentures are generally raised keeping into mind conscious investors.

5. Capital Market Condition:

- In the lifetime of the company, the market price of the shares has got an important influence.
- During the depression period, the company's capital structure generally consists of debentures and loans.
- While in period of Boom and Inflation, the capital should consist of share capital generally equity shares.

6. Period of Financing:

- When company wants to raise finance for short period, it goes for loans from banks and other institutions; while for long period it goes for issue of shares and debentures.

7. Cost of Financing:

- In a capital structure, the company has to look to the factor of cost when securities are raised.
- It is seen that debentures at the time of profit earning of the company prove to be a cheaper source of finance as compared to equity shares where equity shareholders demand an extra share in profits.

8. Stability of Sales:

- An established business which has a growing market and high sales turnover, the company is in position to meet fixed commitments.
- Interest on debentures has to be paid regardless of profit.
- Therefore, when sales are high, thereby the profits are high and company is in better position to meet such fixed commitments like interest on debentures and dividends on preference shares.
- If company is having unstable sale, then the company is not in position to meet fixed obligations. So, equity capital proves to be safe in such cases.

9. Size of a Company:

- Small size business firms capital structure generally consists of loans from banks and retained profits.
- While on the other hand, big companies having goodwill, stability and an established profit can easily go for issuance of shares and debentures as well as loans and borrowings from financial institutions.
- The bigger size, the wider is total capitalization.

CAPITAL STRUCTURE

Financial manager should develop an appropriate capital structure, which is helpful to maximize shareholders wealth. This can be possible when all factors which are relevant to the company's capital structure and properly analyzed, balanced and considered.

1. Profitability:

The company should make maximum use of leverage at a minimum cost. In other words, it should generate maximum returns to owners without adding additional cost.

2. Flotation Cost :

- It is the cost involved in issuing a security or a debt.
- If such cost is too high for new issue of any component of capital structure, then the use of such a source of fund should be minimized.

3. Flexibility:

- Flexible capital structure means it should allow the existing capital structure to change according to the changing conditions with out increasing cost.
- It should be possible for the company to provide funds whenever needed to finance its possible activities.
- The company should be able to raise funds whenever the need arises and also retire debts whenever it becomes too costly to continue with particular source.

4. Solvency:

- The use of excessive debt threatens the solvency of the company. Debt should be used till the point where debt does not add significant risk, otherwise use of debt should be avoided.

5. Control:

- The capital structure should involve minimum dilution of the control of the company.
- A company that issues more and more equity, dilutes the power of existing shareholders as number of shareholders increases.
- Also raising of additional funds through public issue may lead to dilution of control.

6. Cost of Capital:

- If the cost of any component of capital structure of the company like interest payment on debts is very high then it can increase the overall cost of the capital of the company.
- In such case the company should minimize the use of that component of capital structure in its total capital structure in its total capital structure.

CAPITAL STRUCTURE

- The term capital structure is used to represent the proportionate relationship between debt and equity.
- The various means of financing represent the financial structure of an enterprise. The left-hand side of the balance sheet (liabilities plus equity) represents the financial structure of a company. Traditionally, short-term borrowings are excluded from the list of methods of financing the firm's capital expenditure.

While making the Financing Decision...

- How should the investment project be financed?
- Does the way in which the investment projects are financed matter?
- How does financing affect the shareholders' risk, return and value?
- Does there exist an optimum financing mix in terms of the maximum value to the firm's shareholders?
- Can the optimum financing mix be determined in practice for a company?
- What factors in practice should a company consider in designing its financing policy?

Financial Leverage

- The use of the fixed-charges sources of funds, such as debt and preference capital along with the owners' equity in the capital structure, is described as financial leverage or gearing or trading on equity.
- The financial leverage employed by a company is intended to earn more return on the fixed-charge funds than their costs. The surplus (or deficit) will increase (or decrease) the return on the owners' equity. The rate of return on the owners' equity is levered above or below the rate of return on total assets.

Measures of Financial Leverage

1. Debt ratio
 2. Debt–equity ratio
 3. Interest coverage
- The first two measures of financial leverage can be expressed either in terms of book values or market values. These two measures are also known as measures of capital gearing.
 - The third measure of financial leverage, commonly known as coverage ratio. The reciprocal of interest coverage is a measure of the firm's income gearing.

1. The primary motive of a company in using financial leverage is to magnify the shareholders' return under favorable economic conditions. The role of financial leverage in magnifying the return of the shareholders' is based on the assumptions that the fixed-charges funds (such as the loan from financial institutions and banks or debentures) can be obtained at a cost lower than the firm's rate of return on net assets (RONA or ROI).
2. EPS, ROE and ROI are the important figures for analyzing the impact of financial leverage.

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Theories of Capital Structure

1. Net Income (NI) Theory
2. Net Operating Income (NOI) Theory
3. Traditional Theory
4. Modigliani-Miller (M-M) Theory

Net Income (NI) Theory

1. This theory was propounded by “David Durand” and is also known as “Fixed ‘Ke’ Theory”.
2. According to this theory a firm can increase the value of the firm and reduce the overall cost of capital by increasing the proportion of debt in its capital structure to the maximum possible extent.
3. It is due to the fact that debt is, generally a cheaper source of funds because:
 - (i) Interest rates are lower than dividend rates due to element of risk,
 - (ii) The benefit of tax as the interest is deductible expense for income tax purpose.

Computation of the Total Value of the Firm

Total Value of the Firm (V) = S + D

Where,

$$S = \text{Market value of Shares} = \frac{\text{EBIT}-I}{K_e} = \frac{E}{K_e}$$

D = Market value of Debt = Face Value

E = Earnings available for equity shareholders

K_e = Cost of Equity capital or Equity capitalization rate.

Computation of the Overall Cost of Capital or Capitalization Rate



$$K_o = \frac{\text{EBIT}}{V}$$

Where,

K_o = Overall Cost of Capital or Capitalization Rate

V = Value of the firm

EBIT = Earnings Before Interest and Tax

Case Study

K.M.C. Ltd. Expects annual net income (EBIT) of Rs.2,00,000 and equity capitalization rate of 10%. The company has Rs.6,00,000; 8% Debentures. There is no corporate income tax.

- (A) Calculate the value of the firm and overall (weighted average) cost of capital according to the NI Theory.
- (B) What will be the effect on the value of the firm and overall cost of capital, if:
 - (i) The firm decides to raise the amount of debentures by Rs.4,00,000 and uses the proceeds to repurchase equity shares.
 - (ii) The firm decides to redeem the debentures of Rs. 4,00,000 by issue of equity shares.

Net Operating Income Theory

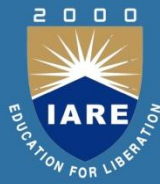
- This theory was propounded by “David Durand” and is also known as “Irrelevant Theory”.
- According to this theory, the total market value of the firm (V) is not affected by the change in the capital structure and the overall cost of capital (K_o) remains fixed irrespective of the debt-equity mix.

Assumptions Net Operating Income Theory



- The split of total capitalization between debt and equity is not essential or relevant.
- The equity shareholders and other investors i.e. the market capitalizes the value of the firm as a whole.
- The business risk at each level of debt-equity mix remains constant. Therefore, overall cost of capital also remains constant.
- The corporate income tax does not exist.

Computation of the Total Value of the Firm



$$V = \frac{\text{EBIT}}{K_o}$$

Where,

K_o = Overall cost of capital

EBIT = Earning Before Interest and Tax

Market Value of Equity Capital

$$S = V - D$$

Where,

S = Market Value of Equity Capital

V = Value of the Firm

D = Market value of the Debt

Cost of Equity Capital

$$K_e = \frac{EBIT - I}{S} \times 100$$

Where,

K_e = Equity capitalization Rate or Cost of Equity

I = Interest on Debt

S = Market Value of Equity Capital

$EBIT$ = Earnings Before Interest and Tax

Traditional Theory

- This theory was propounded by Ezra Solomon.
- According to this theory, a firm can reduce the overall cost of capital or increase the total value of the firm by increasing the debt proportion in its capital structure to a certain limit. Because debt is a cheap source of raising funds as compared to equity capital.

Effects of Changes in Capital Structure on 'Ko' and 'V'

As per Ezra Solomon:

- **First Stage:** The use of debt in capital structure increases the 'V' and decreases the 'Ko'.
- ✓ Because 'Ke' remains constant or rises slightly with debt, but it does not rise fast enough to offset the advantages of low cost debt.
- ✓ 'Kd' remains constant or rises very negligibly.

Effects of Changes in Capital Structure on 'Ko' and 'V'

- **Second Stage:** During this Stage, there is a range in which the 'V' will be maximum and the 'Ko' will be minimum.
 - ✓ Because the increase in the 'Ke', due to increase in financial risk, offset the advantage of using low cost of debt.
- **Third Stage:** The 'V' will decrease and the 'Ko' will increase.
 - ✓ Because further increase of debt in the capital structure, beyond the acceptable limit increases the financial risk.

Computation of Market Value of Shares & Value of the Firm



- $S = \frac{\text{EBIT} - I}{K_e}$
- $V = S + D$
- $K_o = \frac{\text{EBIT}}{V}$

Modigliani-Miller Theory

- This theory was propounded by Franco Modigliani and Merton Miller.
- They have given two approaches
 - ✓ In the Absence of Corporate Taxes
 - ✓ When Corporate Taxes Exist

In the Absence of Corporate Taxes

- According to this approach the 'V' and its 'Ko' are independent of its capital structure.
- The debt-equity mix of the firm is irrelevant in determining the total value of the firm.
- Because with increased use of debt as a source of finance, 'Ke' increases and the advantage of low cost debt is offset equally by the increased 'Ke'.
- In the opinion of them, two identical firms in all respect, except their capital structure, cannot have different market value or cost of capital due to Arbitrage Process.

Assumptions of M-M Approach

- Perfect Capital Market
- No Transaction Cost
- Homogeneous Risk Class: Expected EBIT of all the firms have identical risk characteristics.
- Risk in terms of expected EBIT should also be identical for determination of market value of the shares
- Cent-Percent Distribution of earnings to the shareholders
- No Corporate Taxes: But later on in 1969 they removed this assumption.

When Corporate Taxes Exist

- M-M's original argument that the 'V' and 'Ko' remain constant with the increase of debt in capital structure, does not hold good when corporate taxes are assumed to exist.
- They recognized that the 'V' will increase and 'Ko' will decrease with the increase of debt in capital structure.
- They accepted that the value of levered (VL) firm will be greater than the value of unlevered firm (Vu).

Computation

- Value of Unlevered Firm

$$V_u = \frac{EBIT(1 - T)}{K_e}$$

- Value of Levered Firm

$$V_L = V_u + D_t$$

Where,

- V_u : Value of Unlevered Firm
- V_L : Value of Levered Firm
- D : Amount of Debt
- t : tax rate

EPS and ROE Calculations

$$\text{Earnings per share} = \frac{\text{Profit after tax}}{\text{Number of shares}}$$

$$\text{EPS} = \frac{\text{PAT}}{N} = \frac{(\text{EBIT} - \text{INT})(1 - T)}{N}$$

$$\text{Return on equity} = \frac{\text{Profit after tax}}{\text{Value of equity}}$$

$$\text{ROE} = \frac{(\text{EBIT} - \text{INT})(1 - T)}{E}$$

For calculating ROE either the book value or the market value equity may be used.

Analyzing Alternative Financial Plans: Constant EBIT



The firm is considering two alternative financial plans:

- (i) Either to raise the entire funds by issuing 50,000 ordinary shares at Rs 10 per share, or
- (ii) To raise Rs 250,000 by issuing 25,000 ordinary shares at Rs 10 per share and borrow Rs 250,000 at 15 per cent rate of interest.

The tax rate is 50 per cent.

Effect of Financial Plan on EPS and ROE: Constant EBIT

	<i>Financial Plan</i>	
	<i>All-equity (Rs)</i>	<i>Debt-equity (Rs)</i>
1. Earnings before interest and taxes, EBIT	120,000	120,000
2. <i>Less: Interest, INT</i>	0	37,500
3. Profit before taxes, PBT = EBIT – INT	120,000	82,500
4. <i>Less: Taxes = T (EBIT – INT)</i>	60,000	41,250
5. Profit after taxes, PAT = (EBIT – INT) (1 – T)	60,000	41,250
6. Total earnings of investors, PAT + INT	60,000	78,750
7. Number of ordinary shares, N	50,000	25,000
8. EPS = (EBIT – INT) (1 – T)/N	1.20	1.65
9. ROE = (EBIT – INT) (1 – T)/E	12.0%	16.5%

Interest Tax Shield

- The interest charges are tax deductible and, therefore, provide tax shield, which increases the earnings of the shareholders.

$$\text{Interest tax shield} = \text{Tax rate} \times \text{Interest}$$

Effect of Leverage on ROE and EPS

Favourable

$$ROI > i$$

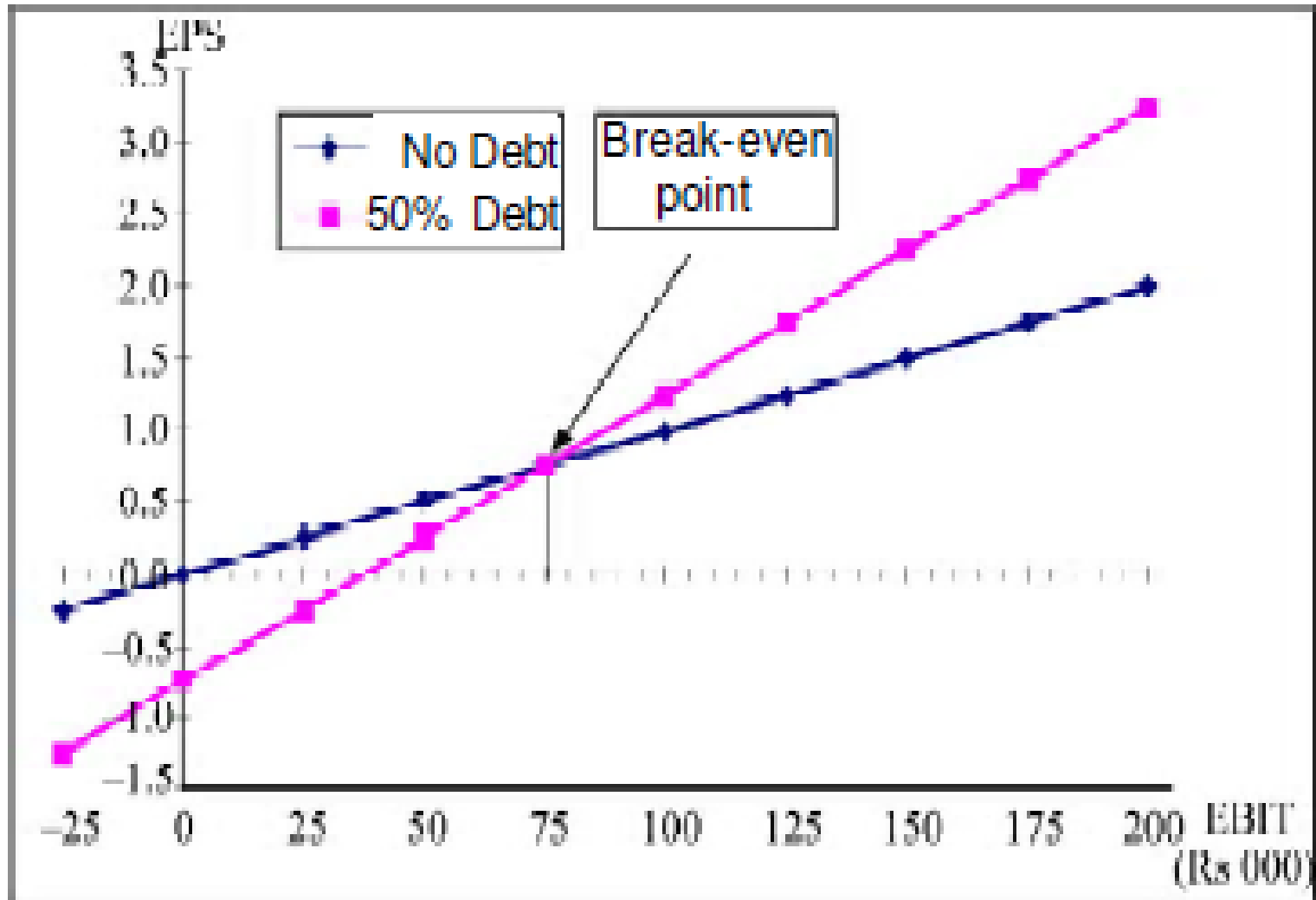
Unfavourable

$$ROI < i$$

Neutral

$$ROI = i$$

EBIT-EPS chart-Example



Calculation of indifference point

- The EPS formula under all-equity plan is

$$\text{EPS} = \frac{(1-T) \text{EBIT}}{N_1}$$

- The EPS formula under debt–equity plan is:

$$\text{EPS} = \frac{(1-T) (\text{EBIT} - \text{INT})}{N_2}$$

- Setting the two formulae equal, we have:

$$\frac{(1-T) \text{EBIT}}{N_1} = \frac{(1-T) (\text{EBIT} - \text{INT})}{N_2}$$

Calculation of indifference point

- Sometimes a firm may like to make a choice between two levels of debt. Then, the indifference point formula will be:

$$\frac{(1-T)(EBIT-INT_1)}{N_1} = \frac{(1-T)(EBIT-INT_2)}{N_2}$$

- The firm may compare between an all-equity plan and an equity-and-preference share plan. Then the indifference point formula will be:

$$\frac{(1-T)(EBIT)}{N_1} = \frac{(1-T)EBIT - PDIV}{N_2}$$

Operating Leverage

- Operating leverage affects a firm's operating profit (EBIT).
- The degree of operating leverage (DOL) is defined as the percentage change in the earnings before interest and taxes relative to a given percentage change in sales.

$$\text{DOL} = \frac{\% \text{ Change in EBIT}}{\% \text{ Change in Sales}}$$

$$\text{DOL} = \frac{\Delta \text{ EBIT}/\text{EBIT}}{\Delta \text{ Sales}/\text{Sales}}$$

Degree of Financial Leverage

- The degree of financial leverage (DFL) is defined as the percentage change in EPS due to a given percentage change in EBIT –

$$DFL = \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}}$$

$$DFL = \frac{\Delta \text{ EPS/EPS}}{\Delta \text{ EBIT/EBIT}}$$

Combining Financial and Operating Leverages

- Operating leverage affects a firm's operating profit (EBIT), while financial leverage affects profit after tax or the earnings per share.
- The degrees of operating and financial leverages is combined to see the effect of total leverage on EPS associated with a given change in sales.
- The degree of combined leverage (DCL) is given by the following equation –

$$= \frac{\% \text{ Change in EBIT}}{\% \text{ Change in Sales}} \times \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}} = \frac{\% \text{ Change in EPS}}{\% \text{ Change in Sales}}$$

- Another way of expressing the degree of combined leverage is as follows –

$$DCL = \frac{Q(s - v)}{Q(s - v) - F} \times \frac{Q(s - v) - F}{Q(s - v) - F - INT} = \frac{Q(s - v)}{Q(s - v) - F - INT}$$

Financial Leverage and the Shareholders' Risk



- The variability of EBIT and EPS distinguish between two types of risk—operating risk and financial risk.
- Operating risk can be defined as the variability of EBIT (or return on total assets).
- The environment—internal and external—in which a firm operates determines the variability of EBIT.
- The variability of EBIT has two components –
 - ✓ Variability of sales
 - ✓ Variability of expenses
- The variability of EPS caused by the use of financial leverage is called financial risk.
- Financial risk is an avoidable risk if the firm decides not to use any debt in its capital structure.

Risk-Return Trade-off

- If the firm wants higher return (EPS or ROE) for the shareholders for a given level of EBIT, it will have to employ more debt and will also be exposed to greater risk (as measured by standard deviation or coefficient of variation).
- In fact, the firm faces a trade-off between risk and return.
- Financial leverage increases the chance or probability of insolvency.



UNIT– IV

DIVIDEND DECISIONS

DIVIDEND DECISIONS

- Dividends and value of the firm
- Relevance of dividends
- The MM hypothesis and Factors determining dividend policy
- Dividends and valuation of the firm
- The basic models in declaration and payment of dividends
- Bonus shares, Rights issue, share-splits
- Major forms of dividends: cash and bonus shares
- The theoretical backdrop: dividends and valuation, Major theories centered on the works of GORDON, WALTER and LITNER.
- A brief discussion on dividend policies of Indian companies
- Working capital management: components of working capital, gross vs. net working capital, determinants of working capital needs, the operating cycle approach.

Dividend Policies involve the decisions, whether-

- To retain earnings for capital investment and other purposes; or
- To distribute earnings in the form of dividend among shareholders; or
- To retain some earning and to distribute remaining earnings to shareholders.

OBJECTIVES of Dividend Policy

1. Net Earnings of the dividend policy
2. Retained Earnings
3. Dividend Payment

Factors affecting the Dividend Policy

- 1) Firm's investment opportunities and financial needs
- 2) Shareholder's Expectations
- 3) Constraints on Paying Dividend

1) Firm's investment opportunities and financial needs



1. Firm should tailor their dividends policy to their long-term investment opportunities to have maximum flexibility and avoid financial frictions and cost of raising external funds.
2. When they don't have any specific investment opportunities they invest in short term securities yielding nominal returns.

2) Shareholder's Expectations

1. Shareholders' preference for dividends or capital gains may depend on dividends and capital gains.
2. The ownership concentration in a firm may define the shareholders' expectations.
3. Closely held company where shareholders are small and homogeneous and management usually knows the expectations of shareholders.
4. Where in widely held company, number of shareholders are very large. So, they have diverse desire regarding dividends and capital gains.

2) Shareholder's Expectations

5. Small shareholders are not frequent purchasers of the shares. They have small numbers of shares in few companies with the expectations of dividend income.
6. Retired and old persons will purchase shares from their regular income so that they choose regular and liberal dividends paying company.
7. Wealthy investors are much concerned about with the dividend policy followed by a company. They have definite way of investment policy to maximize their wealth and minimize taxes
8. Institutional investors purchase large blocks of shares to hold them for relatively long periods of time.

CONSTRAINT ON PAYING DIVIDEND

1. Legal restrictions
2. Liquidity
3. Financial Conditions
4. Access to Capital Market
5. Restrictions in Loan Agreement
6. Inflation
7. Control

1. LEGAL RESTRICTIONS

- Evolve within legal framework
- The directors are not legally compelled to declare dividend

2. LIQUIDITY

- Payment of dividend means cash outflow.
- There might be adequate earning but insufficient cash to pay
- Cash position and overall liquidity > ability to pay dividend
- Two conditions of firm :- Mature firm & growing firm

3. FINANCIAL CONDITION AND BORROWING CAPACITY

- It depends on its use of borrowings and interest charges payable .
- Higher degree of FL makes company vulnerable to change in earnings, there more base is on equity.
- Steady growing firm cash flows and less investment opportunities , might follow high dividend policy inspiteof having debt
- Growing firm to pay dividend borrow funds. This might not be sound. It reduces financial flexibility.

4. ACCESS TO CAPITAL MARKET

- Company if insufficient with cash can also pay dividend through raising debt and equity in capital market.
- Good goodwill in market would easily raise fund
- If the company has an easy access to market it provides flexibility to the management in paying dividend as well as meeting corporate obligations.
- Soundness of the company cash position determines its access to capital market.
- Thus, Ability to raise fund in capital market > ability to pay dividend even if its not liquid.

5. RESTRICTION IN LOAN AGREEMENT

- Terms and conditions of lender can also restrict the dividend policy in order to safeguard their interest they would be receiving in future, who has lower profitability and liquidity.
- If higher is the debt , or If liquidity is low prohibition can be there.
- When the restriction put, the company is forced to retain earnings and have low payout.

6. INFLATION

- Accounting is based on historical cost, Thus

7. CONTROL

- The management control over the company can also influence dividend policy. Large dividend affects cash position. As a result, the company will issue new shares to raise fund to finance its investment. The power of existing will be diluted if they don't buy additional shares issued.
- Under these conditions, the payment of dividend may be retained to finance the firm investment opportunities.

Cash Dividend:

- Companies mostly pay dividends in cash.
- A company should have enough cash while declaring dividend in its absences arrangement should be made to borrow fund.
- Same way, when the company follows a stable dividend policy, it should prepare a cash budget for the coming period to indicate the necessary funds, which would be needed to meet the regular dividend payments of the company.
- It is relatively difficult to make cash planning in anticipation of dividend needs when an unstable policy is followed.

Cash Dividend:

- The cash account and the reserve account of a company will be reduced when the cash dividend is paid.
- Thus, both the total asset and the net worth of the company are reduced when the cash dividend is distributed.
- The market price of the shares drops in most cases by the amount of the cash dividend distributed.

Bonus Shares:

- Bonus shares is the distribution of shares free of cost to the existing company.
- In India, bonus shares are issued in addition to the cash dividend and not in lieu of cash dividend. Hence companies in India may supplement cash dividend by bonus issues.
- The bonus shares are distributed proportionately to the existing shareholder. Hence there is no dilution of ownership.

Bonus Shares:

- The declaration of bonus shares will increase the paid up share capital and reduce the reserve and surplus of the company.
- The total net worth (paid up capital + surplus) is not affected by the bonus issue.
- In fact, a bonus issue represents a recapitalization of reserve and surplus.
- It is merely an accounting transfer from reserves and surplus to paid-up capital.

Bonus Shares:

- According to Oxford English Dictionary bonus means “ an extra dividend to the shareholders in a joint stock company from surplus profits”.
- This extra dividend may be paid in the form of cash or shares.
- When it is paid in the form of shares, the shares so issued are termed as bonus shares.
- Bonus shares are, therefore, “ shares allotted by capitalization of the reserves or surplus of a corporate enterprise”.

Bonus Shares:

- Issue of bonus shares results in conversion of the company's profits into share capital.
- It is, therefore, also termed as capitalization of company's profits.
- Such shares are issued to the equity shareholders in proportion to their holdings of the equity share capital of the company.
- Issue of bonus shares does not affect the total capital structure of the company.
- It is simply a capitalization of that portion of shareholder's equity which is represented by reserves and surplus.
- It is also does not affect the total earnings of the shareholders.

ADVANTAGES OF ISSUE OF BONUS SHARES

ADVANTAGES TO COMPANY:

i) Conversion of Cash:

The bonus shares allows the company to declare a dividend without using up the cash that may be used to finance the profitable investment opportunities within the company and thus company maintain its liquidity position.

ii) Under financial Difficulty and Contractual Restrictions:

When a company faces stringent /severe/strict cash difficulty and is not in a position to distribute dividend in cash or where certain restrictions to pay dividend in cash are put under loan agreement, the only way to satisfy the shareholders or to maintain the confidence of the shareholders is the issue of bonus.

iii) Remedy for under-Capitalization:

- In the state of under capitalization, the rate of dividend is very much high, in order to lower down the rate of dividend, the company issues bonus shares instead of paying dividend in cash.
- Thus, issue of bonus shares is one of remedies to overcome the position of under- capitalization.

iv) Widening the Share Market:

- If the market value of a company' s shares is very high, it may not appeal to small investors.
- By issuing bonus shares, the rate of dividend is lowered down and consequently share price in the market is also brought down to a desired level to speed up the activity in the share market.
- Now small investors may get an opportunity to invest funds in low priced shares.

ADVANTAGES OF ISSUE OF BONUS SHARES

v) Economical Issue of Securities:

- The cost of issue of bonus shares is the minimum because no underwriting commission, brokerage etc., is to be paid on this type of issue.
- Existing shareholders are allocated bonus shares in proportion to their present holdings.

2. ADVANTAGES TO THE INVESTORS:

Tax Benefits:

- Receipt of stock dividend as compared to cash dividend generally results in tax advantage to the shareholders.
- When dividend is received in cash, it is included in his income and taxed at usual income tax rates.
- However, stock dividend is not so taxable.

2. ADVANTAGES TO THE INVESTORS:

i) Tax Benefits:

- The shareholders may sell the bonus shares received by him in case he is in the need of funds.
- The profit made by him on the sale of such shares will be deemed as a capital gain and will be subject to lower rate of income tax.

ii) Indication of Higher Future Profits:

- Issue of bonus shares is generally an indication of higher future profits.
- This is because a company declares a bonus issue only when its earnings are expected to increase.
- In the absence of any such increase, the earnings per share shall get diluted /weak which is not desirable.

2. ADVANTAGES TO THE INVESTORS:

iii) Increase in Future Dividends:

- The shareholders will get extra dividends in future even if the existing cash dividend per share is continued.
- For example: A company pays Rs. 5 cash dividend per share and declares a bonus issue of one share for five shares held by the shareholders.
- In such case a holder of 100 shares will get 20 shares as bonus shares. His total share holding in the company after the bonus issue would be 120 shares. In case the company continues to pay Rs. 5 per share as such dividend in future also, he will get Rs. 600 as dividend in place of Rs.500 received by him earlier.

2. ADVANTAGES TO THE INVESTORS:

iv) Higher Psychological value:

- Issue of bonus shares is usually received positively in the market.
- This tends to create greater demand for the company's shares.
- As a matter of fact, the share prices of the company may rise in the stock exchange after issue in place of falling.

3. ADVANTAGES TO SHAREHOLDERS:

i) Tax Saving:

- The stock dividend is not taxable as income in the hands of shareholders while cash dividend is taxable as ordinary income.

3. ADVANTAGES TO SHAREHOLDERS:

ii) Marketability of shares:

- Shareholders who are in the need of money sell their stock dividend and pay capital gain taxes which is usually less than the income tax on cash dividend.
- Thus, by issuing bonus shares, marketability of shares is increased.

iii) Higher Future Profits of the Company:

- The payment of stock dividend is normally interpreted by shareholders as an indication of higher profitability.
- Stock dividend is generally declared by the directors of the company only when they expect rise in earnings to offset the additional outstanding shares.
- Thus, it may convey some information which may have a favorable impact on the value of shares.

3. ADVANTAGES TO SHAREHOLDERS:

iv) Increased Future Dividend:

- If a company has been following a policy of paying a fixed rate of dividend and continues it after issuing bonus shares, the shareholders will get larger amount of cash dividend in future.
- Moreover, it may have a favorable effect on the value of shares.

v) Psychological Value:

- The declaration of stock dividend may have a favorable psychological effect on shareholders.
- It gives an impression of prosperity of the company.
- It helps to increase the capital value of shares in the market.

i) Shareholders Wealth Remains Unaffected:

- Bonus shares are considered valuable by a majority of shareholders.
- But, actually, there is no change in the wealth of the shareholders, in real terms.
- It is simply a division of the existing corporate pie into a larger number of pieces.
- Shareholders' proportional ownership and control does not change.
- But, it has a psychological impact on the shareholders.

2. Costly to Administer:

- Company has to print more share certificates and post them to thousands of shareholders.
- With the increase in capital, more shareholders may come into existence as the existing shareholders may sell some of the shares.
- With the introduction of D mat, cost of administration has reduced.
- However, by and large, in all, the cost of administration increases.

SHARE SPLIT

- A share split is a method to increase the number of outstanding shares through a proportional reduction in the par value of the share and thus shareholders total funds remain unaltered.

REVERSE SPLIT

- When the prices of shares fall, the company may want to reduce the number of its share outstanding to increase the market price.
- The reduction of the number of outstanding shares by increasing per share par value is known as a reverse split.

BUYBACK OF SHARES

- The buy back of shares is the repurchase of its own shares by a company.
- Until recently the buy back of shares by companies in India was prohibited under section 77 of the Indian Companies Act 1999.
- As a result, a company in India can now buy back its own shares.

BUYBACK OF SHARES - CONDITIONS

- A company buying back its shares will not issue fresh capital, except bonus issue, for the next 12 months.
- The company will state the amount to be used for the buyback of shares and seek price approval of shareholders.
- The buyback of shares can be affected only by utilizing the free reserves, viz., reserves not specifically earmarked for some purpose.
- The company will not borrow funds to buy back shares.
- The shares bought under the buyback schemes will be extinguished and they cannot be reissued.

There are two methods of the shares buyback in India.

- A company can buy its shares through authorized brokers on the open markets. The reason for the buy back was that the company wanted to signal to the shareholders that it would reward its shareholders by returning surplus cash to them.
- The company can make a tender offer, which will specify the purchase price, the total amount and the period within which shares will be bought back.

BUYBACK OF SHARES - EFFECTS

- Buy back will be financially beneficial for the company, the buying shareholders and the remaining shareholders. As we have explained, the bought up shares will be extinguished and will not be reissued. This will permanently reduce the amount of equity capital and the number of outstanding shares.
- If the company distributed surplus cash and it maintains its operating efficiency, EPS will increase.
- The share price will increase as P/E ratio is expected to remain same after the buy back.
- Due to this companies with existing low debt-equity ratio will be able to move to their target capital structure.

ADVANTAGES OF BUY-BACK SHARES

- Return of surplus cash to shareholders
- Increase in the share value
- Increase in the temporarily undervalued share price
- Achieving the target capital structure
- Consolidating control
- Tax savings by companies
- Protection against hostile takeovers

DRAWBACKS OF THE BUY-BACK

- Not an effective defense against takeover
- Shareholders do not like the buyback
- Loss to the remaining shareholders
- Signal of low growth opportunities.

LINTNER'S MODEL

- He found out that firms generally think in terms of proportion of earnings to be made out investment requirements are not considered for modifying the patterns of dividend behavior.
- Thus firms generally have target payout ratios in view while determining change in dividend per share.

EPS = EXPECTED PER SHARE P = TARGET PAYOUT RATIO



- $DIV1 = p \text{ EPS1}$
- The dividend change
- $Div1 - Div0 = p \text{ EPS1} - Div0$
- Lintner suggested the following formula:
- $Div1 - Div0 = b(p \text{ EPS1} - Div0)$



UNIT– V

MANAGEMENT OF CURRENT ASSETS

MANAGEMENT OF CURRENT ASSETS

- Management of cash
- Basic strategies for cash management
- Cash budget, cash management techniques/processes;
- Management of receivables and management of inventory
- The importance of current assets management in working capital planning
- Planning of working capital
- Financing of working capital through bank finance and trade credit
- Recommendations of Tandon and Daheja committee on working capital, cases.

Cash Management Model

A number of mathematical model have been to develop to determined the optimal cash balance.

Two of such model are as follow;

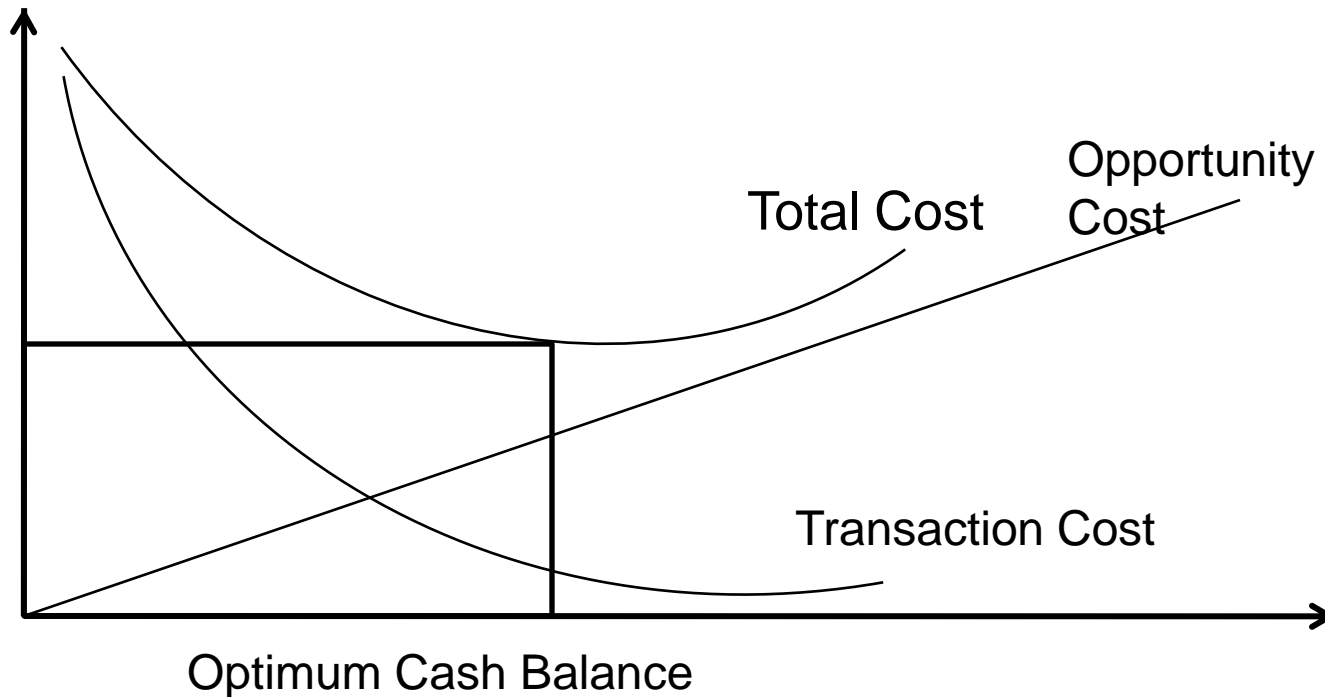
- William J. Baumol's inventory model
- M. H. Miller and Daniel Orr's Stochastic model

Baumol's model of cash management-

Trades off between opportunity cost or carrying cost or holding cost & the transaction cost. As such firm attempts to minimize the sum of the holding cash & the cost of converting marketable securities in to cash.

Helps in determining a firm's optimum cash balance under certainty

William J. Baumol's Inventory model



(Baumol's Model : Tradeoff Between Holding cost and transaction cost)

William J. Baumol's Inventory model



Assumptions:

- Cash needs of the firm is known with certainty
- Cash Disbursement over a period of time is known with certainty
- Opportunity cost of holding cash is known and remains constant
- Transaction cost of converting securities into cash is known and remains constant

William J. Baumol's Inventory model

Algebraic representation of William J. Baumol's Inventory model

$$C = \sqrt{\frac{2AxF}{O}}$$

C = Optimum Balance

A = Annual Cash Distribution

F = Fixed Cost Per Transaction

O = Opportunity Cost Of Holding

William J. Baumol's Inventory model

Uses

The **Baumol's model** enables companies to find out their desirable level of cash balance under certainty. The **Baumol's model of cash management** theory relies on the tradeoff between the liquidity provided by holding money (the ability to carry out transactions) and the interest foregone by holding one's assets in the form of non-interest bearing money. The key variables of the demand for money are then the nominal interest rate, the level of real income which corresponds to the amount of desired transactions and to a fixed cost of transferring one's wealth between liquid money and interest bearing assets

William J. Baumol's Inventory model

Evaluation of the model

- Helpful in determining optimum level of Cash holding
- Facilitates the finance manager to minimize Carrying cost and Maintain Cash
- Indicates idle cash Balance Gainful employment
- Applicable only in a situation of certainty in other words this model is deterministic model

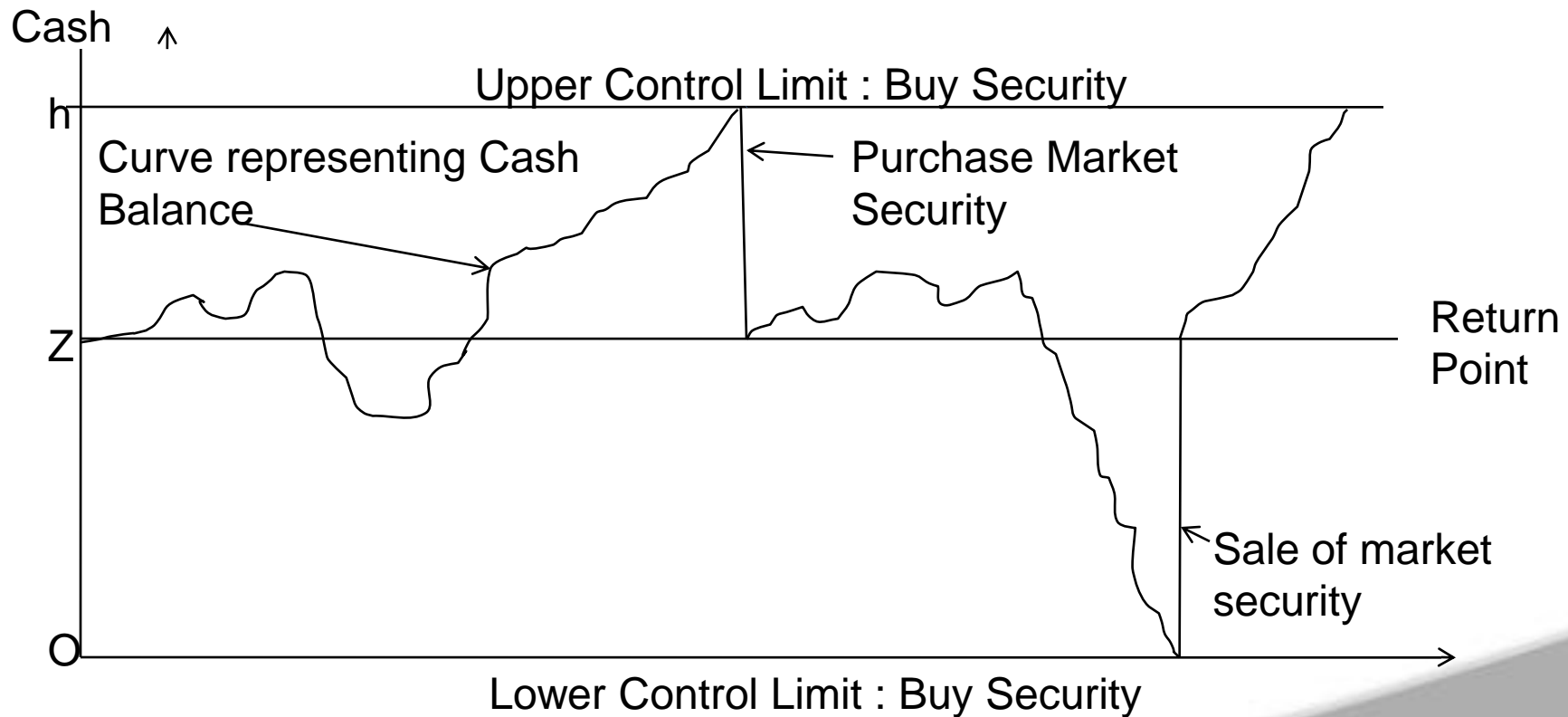
Overview

The **Miller and Orr model of cash management** is one of the various cash management models in operation. It is an important cash management model as well. It **helps** the present day **companies to manage** their **cash while taking into consideration the fluctuations in daily cash flow.**

Description

- As per the Miller and Orr model of cash management the companies let their cash balance move within two limits
 - a) Upper Control limit
 - b) Lower Control Limit

Miller – Orr Cash Management Model



M. H. Miller and Daniel Orr's Stochastic Model

Explanation For the Diagram

- Along with a return point when the cash balance touches the upper Control limit (h), the marketable security is purchased to the extent till it reaches normal cash balance (Z)
- In the same manner when the cash balance touches lower limit (o), the firm Will Sell the Marketable security to the extent till it reaches normal cash Balance (Z)

M. H. Miller and Daniel Orr's Stochastic Model

Computation of Miller – Orr Model of Cash Management

$$\text{Spread (Z)} = \frac{(3/4 * \text{Transaction cost} * \text{Variance of Cash Flow})^{1/3}}{\text{Interest Rate}}$$

$$\text{Return Point} = \text{Lower limit} + \frac{\text{Spread (Z)}}{3}$$

$$\text{Variance of Cash Flow} = (\text{Standard Deviation})^2 \text{ or } (\sigma)^2$$

M. H. Miller and Daniel Orr's Stochastic Model

Benefits

- Allows for net cash flow in a random fashion.
- Transfer can take place at any time and are instantaneous with a fixed transfer cost.
- Produce control limit can be used as basis for balance management

Limitations

- May prove difficult to calculate.
- Monitoring needs to be calculated for the organizations benefits becomes a tedious Work.

Application

- Finding out the approximate prices at which the salable securities could be sold or bought
- Deciding the minimum possible levels of desired cash balance
- Checking the rate of interest
- Calculating the SD (Standard Deviation) of regular cash flows

Evaluation of the Model

- This Stochastic model can be employed even in extreme uncertainty
- When the cash flow fluctuate violently in short period it will give optimal result
- Finance Manager can apply this model in highly unpredictable situation

Managing inventory is a juggling act.

Excessive stocks can place a heavy burden on the cash resources of a business.

Insufficient stocks can result in lost sales, delays for customers etc.

INVENTORIES INCLUDE

- RAW MATERIALS
- Work In Progress
- FINISHED GOODS

FACTORS INFLUENCING INVENTORY MANAGEMENT

- ❖ Lead Time
- ❖ Cost of Holding Inventory
 - ✓ Material Costs
 - ✓ Ordering Costs
 - ✓ Carrying Costs
 - ✓ Cost of tying-up of Funds
 - ✓ Cost of Under stocking
 - ✓ Cost of Overstocking
- ❖ Stock Levels
 - ✓ Reorder Level
 - ✓ Maximum Level
 - ✓ Minimum Level
 - ✓ Safety Level / Danger Level

FACTORS INFLUENCING INVENTORY MANAGEMENT

- ❖ Variety Reduction
- ❖ Materials Planning
- ❖ Service Levels
- ❖ Obsolete Inventory and Scrap
- ❖ Quantity Discounts

MANAGING INVENTORIES EFFICIENTLY DEPENDS ON TWO QUESTIONS

1. How much should be ordered?
2. When it should be ordered?
 - The first question “how much to order” relates to ECONOMIC ORDER QUANTITY and
 - The second question “when to order” arises because of uncertainty and relates to determining the RE-ORDER POINT

ECONOMIC ORDER QUANTITY [EOQ]

The ordering quantity problems are solved by the firm by determining the EOQ (or the Economic Lot Size) that is the optimum level of inventory.

There are two types of costs involved in this model.

1. Ordering costs
2. Carrying costs

The EOQ is that level of inventory which MINIMIZES the total of ordering and carrying costs.

ECONOMIC ORDER QUANTITY [EOQ]

ORDERING COSTS	CARRYING COSTS
❖ Requisitioning	❖ Warehousing
❖ Order Placing	❖ Handling
❖ Transportation	❖ Clerical Staff
❖ Receiving, Inspecting & Storing	❖ Insurance
❖ Clerical & Staff	❖ Deterioration & Obsolescence

EOQ FORMULA

For determining EOQ the following symbols are used

C = Consumption /Annual Usage / Demand

Q = Quantity Ordered

O = Ordering Cost per Order

I = Inventory Carrying Cost (as a % on P)

P = Price per Unit

TC = Total Cost of Ordering & Carrying

$$\sqrt{2 CO / PI}$$

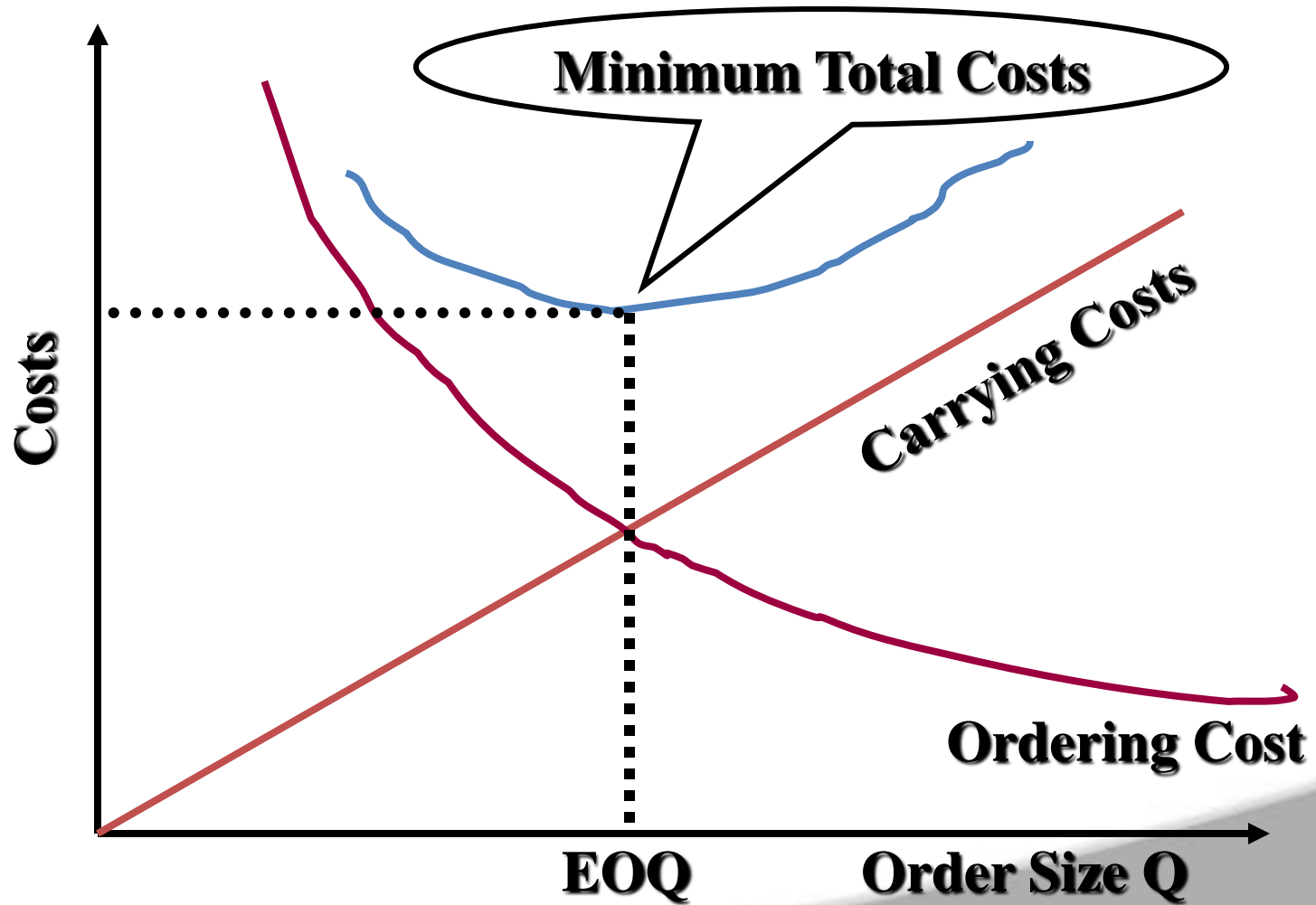
EOQ FORMULA

Total Cost of ordering & carrying inventory are equal to (TC) =

$$\frac{C}{Q} \times O + \frac{Q}{2} \times P \times I$$

TC is minimized at EOQ

EOQ – GRAPHICAL APPROACH



SELECTIVE CONTROL OF INVENTORY

Different classification methods



Classification	Basis
ABC [Always Better Control]	Value of items consumed
VED [Vital, Essential, Desirable]	The importance or criticality
FSN [Fast-moving, Slow-moving, Non-moving]	The pace at which the material moves
HML [High, Medium, Low]	Unit price of materials
SDE [Scarce, Difficult, Easy]	Procurement Difficulties
XYZ	Value of items in storage

MANAGEMENT OF RECEIVABLES

- Receivables (Sundry Debtors) result from CREDIT SALES.
- A concern is required to allow credit in order to expand its sales volume.
- Receivables contribute a significant portion of current assets.
- But for investment in receivables the firm has to incur certain costs (opportunity cost and time value)
- Further, there is a risk of BAD DEBTS also.
- It is, therefore very necessary to have a proper control and management of receivables.

OBJECTIVES

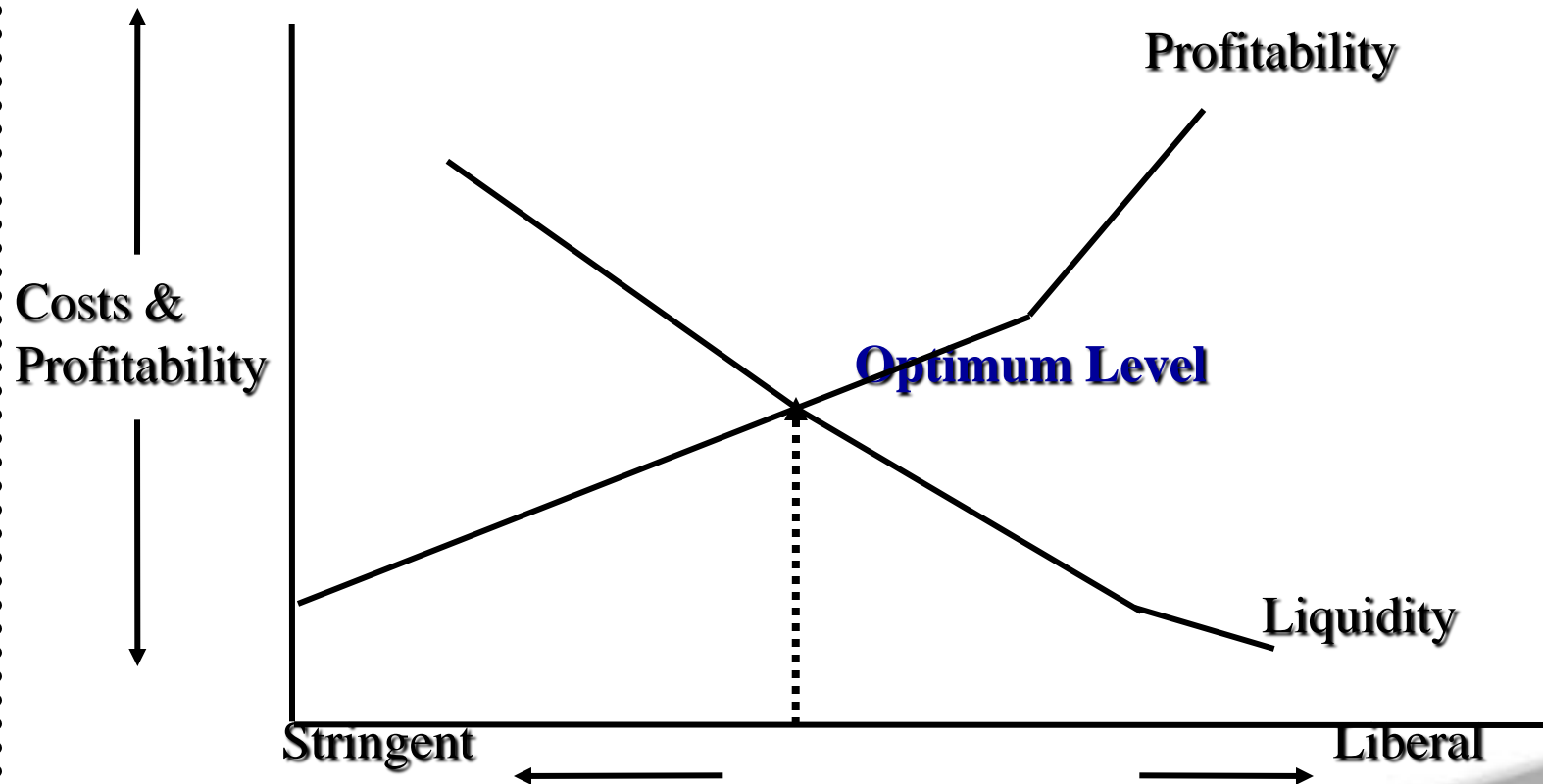
The objective of Receivables Management is to take sound decision as regards to investment in Debtors.

In the words of BOLTON S E., the objective of receivables management is “ to promote sales and profits until that point is reached where the return on investment in further funding of receivables is less than the cost of funds raised to finance that additional credit”

DIMENSIONS OF RECEIVABLES MANAGEMENT



OPTIMUM LEVEL OF INVESTMENT IN TRADE RECEIVABLES



- The collection of BOOK DEBTS can be monitored with the use of average collection period and ageing schedule.
- The actual average collection period is compared with the standard collection period to evaluate the efficiency of collection so that necessary corrective action can be initiated and taken.

THE AGEING SCHEDULE HIGHLIGHTS THE DEBTORS ACCORDING TO THE AGE OR LENGTH OF TIME OF THE OUTSTANDING DEBTORS.

The following table presents the ageing schedule

AGEING SCHEDULE

Outstanding Period	O/s Amount of Debtors	% of Debtors
0 – 30 Days	5,00,000	50
31 – 40 Days	1,00,000	10
41 – 60 Days	2,00,000	20
61 – 90 Days	1,00,000	10
Over 60 Days	1,00,000	10
Total	10,00,000	100

Guidelines for Effective Receivables Management



1. Have the right mental attitude to the control of credit and make sure that it gets the priority it deserves.
2. Establish clear credit practices as a matter of company policy.
3. Make sure that these practices are clearly understood by staff, suppliers and customers.
4. Be professional when accepting new accounts, and especially larger ones.
5. Check out each customer thoroughly before you offer credit. Use credit agencies, bank references, industry sources etc.
6. Establish credit limits for each customer... and stick to them.

Guidelines for Effective Receivables Management



7. Continuously review these limits when you suspect tough times are coming or if operating in a volatile sector.
8. Keep very close to your larger customers.
9. Invoice promptly and clearly.
10. Consider charging penalties on overdue accounts.
11. Consider accepting credit /debit cards as a payment option.
12. Monitor your debtor balances and ageing schedules, and don't let any debts get too large or too old.

- Managing inventory is a juggling act.
- Excessive stocks can place a heavy burden on the cash resources of a business.
- Insufficient stocks can result in lost sales, delays for customers etc.

INVENTORIES INCLUDE

- RAW MATERIALS
- WIP
- FINISHED GOODS

- ❖ Lead Time
- ❖ Cost of Holding Inventory
 - ✓ Material Costs
 - ✓ Ordering Costs
 - ✓ Carrying Costs
 - ✓ Cost of tying-up of Funds
 - ✓ Cost of Under stocking
 - ✓ Cost of Overstocking

❖ Stock Levels

- ✓ Reorder Level
- ✓ Maximum Level
- ✓ Minimum Level
- ✓ Safety Level / Danger Level

❖ Materials Planning

❖ Service Levels

❖ Obsolete Inventory and Scrap

❖ Quantity Discounts

❖ Variety Reduction

INVENTORY MANAGEMENT TECHNIQUES

MANAGING INVENTORIES EFFICIENTLY DEPENDS ON TWO QUESTIONS

1. How much should be ordered?

2. When it should be ordered?

- The first question *“how much to order”* relates to **ECONOMIC ORDER QUANTITY** and
- The second question *“when to order”* arises because of uncertainty and relates to determining the **RE-ORDER POINT**

WORKING CAPITAL MANAGEMENT



- Working capital may be regarded as the life blood of a business.
- A study of working capital is of major importance to internal and external analysis because of its close relationship with current day-to day operations of a business.
- Funds are also needed for short term purposes for the purchase of raw-materials, payment of wages and other day-to-day expenses etc.
- These funds are known as working capital.

WORKING CAPITAL MANAGEMENT



- In simple words, working capital refers to that part of the firm's capital, which is required for financing short term or current assets such as marketable securities, debtors and investors.
- In the words of SHUBIN, “ Working capital is the amount of funds necessary to cover the cost of operating the enterprise.”
- In broad sense, working capital represents the total of currents. In other words it is gross working capital. When current liabilities exceed the current assets it is referred as negative working capital.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



1. NATURE OR CHARACTER OF BUSINESS:

- The working capital requirements of a firm basically depend upon the nature of its business.
- Public utility undertakings like electricity, water supply, and railway need very limited working capital because they offer cash sales only and supply services, not products and as much no funds are tied up in inventories and receivables.
- On the other hand trading and financial firms require less investment in in fixed assets but have to invest large amounts in current assets like inventories, receivables and cash such as they need large amount of working capital.
- The manufacturing undertakings also require sizable/substantial working capital along with fixed investments.
- Generally speaking it may be said that public utility undertaking require small amount of working capital, trading and financial firms require relatively very large amount, whereas manufacturing undertakings require substantial working capital between these two extremes.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



2. SIZE OF BUSINESS / SCALE OF OPERATIONS

- The working capital requirements of a concern are directly influenced by the size of its business which may be measured in terms of scale of operations.
- Greater the size of a business unit, generally large will be the requirement of working.
- However, in some cases even a smaller concern may need more resources and other economic disadvantages of small size.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



3. Production Policy:

- In certain industries the demand is subject to wide fluctuations due to seasonal variations.
- The requirement of working capital, in such cases depend upon the production policy.
- The production could be kept either steady by accumulating inventories during slack periods with a view to meet high demand during peak season.
- If the policy is to keep production steady by accumulating inventories it will require higher working capital.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



4. MANUFACTURING PROCESS / LENGTH OF PRODUCTION

- In manufacturing business, the requirements of working capital in direct proportion to length of manufacturing process.
- Longer the process period of manufacture, larger is the amount of working capital.
- The longer the manufacturing time, the raw-materials and other suppliers have to be carried for a longer period in the process with progressive increment of labor and services costs before the finished product is finally obtained.
- Therefore, there are alternative process of production, the process with shortest production period should be chosen.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



5. SEASONAL VARIATION

- In certain industries raw material is not available throughout the year.
- They have to buy raw materials in bulk during the season to ensure an uninterrupted flow and process them during the entire year.
- A large amount is, thus blocked in the form of material inventories during such season, which gives rise to more working capital requirements.
- Generally, during the busy season, a firm requires larger working capital than in the slack season.

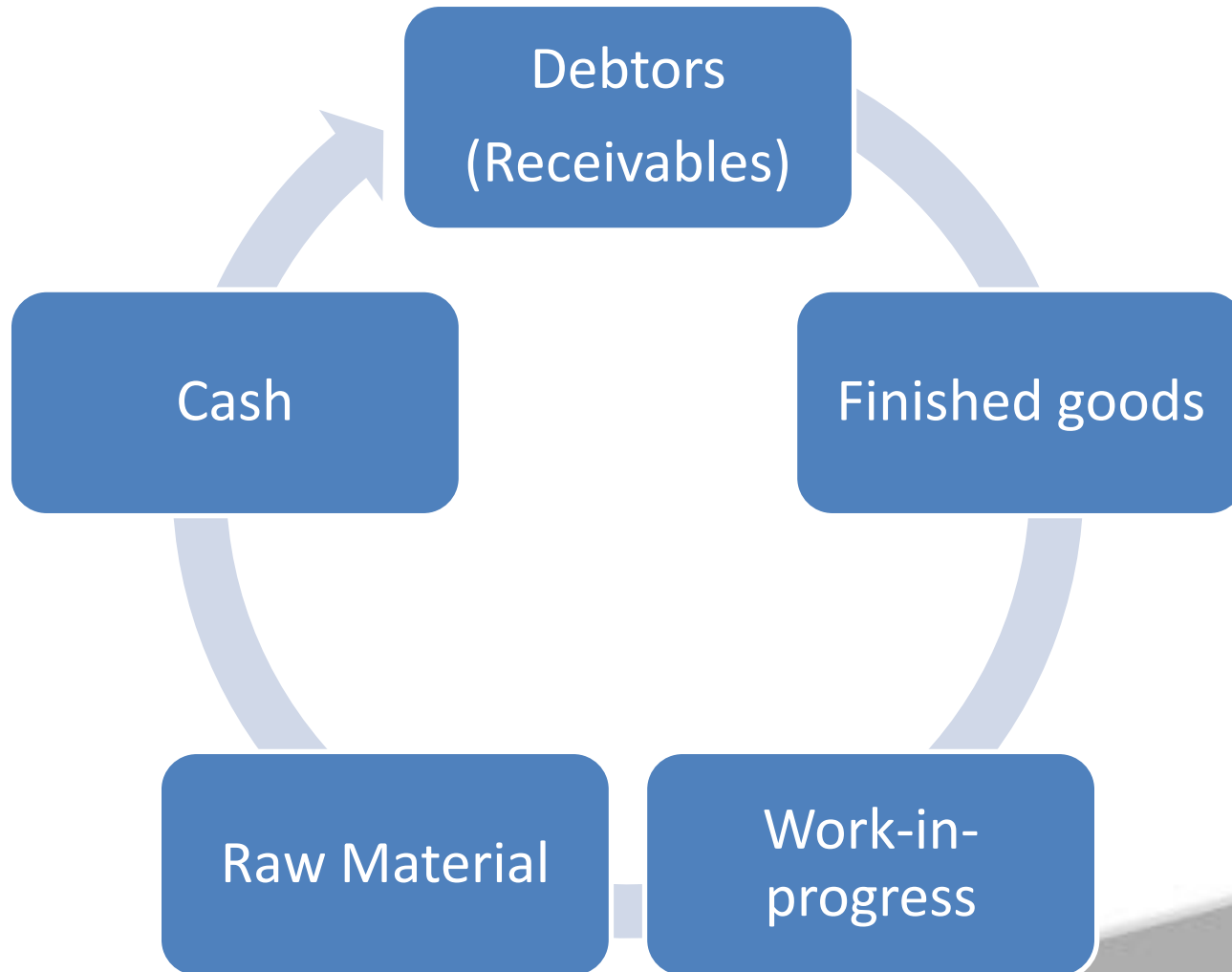
FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



6. WORKING CAPITAL CYCLE

- In a manufacturing concern the working capital cycle starts with the purchase of raw material and ends with the realization of cash from the sale of finished products.
- This cycle involves purchase of raw materials and stores, its conversion into stock of finished goods through work-in-progressive increment of labour and service costs, conversion of finished goods into sales, debtors and receivables and ultimately realization of cash and this cycle continues again from cash to purchase of raw materials and so on.
- The speed with which the working capital completes one cycle determines the requirements of working capital-longer the period of the cycle larger is the requirement of working capital.

WORKING CAPITAL CYCLE



FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



7. CREDIT POLICY:

- The credit policy of a concern in its dealing with debtors and creditors influence considerably the requirements of working capital.
- A concern that purchases its requirements on credit and sells its products/ services on cash requires lesser amount the working capital.
- On the other hand, a concern is buying its requirements for cash and allowing credit to its customers, shall need up in debtors or bills receivables.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



8. RATE OF STOCK TURNOVER

- There is a high degree of inverse co-relationship between quantum of working capital and the velocity or speed with which the sales are affected.
- A firm having a high rate of stock turnover will need lower amount of working capital as compared to a firm having a low rate of turnover.
- For example: In case of precious stone dealers, the turnover is very low.
- They have to maintain a large variety of stocks and the movement of stocks is very low.
- Thus, the working capital requirements of such a dealer shall be higher than that of provision store.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



9. Business cycle

- Business cycle refers to alternate expansion and contraction in general business activity.
- In a period of boom i.e., when the business is prosperous, there is a need for larger amount of working capital due to increase in sales, rise in prices, optimistic expansion of business etc.
- On the contrary in times of depression i.e., when there is a down swing of the cycle, the business contracts, sales decline, difficulties are faced in collections from debtors and firms may have a large amount of working capital lying idle.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



10. RATE OF GROWTH OF BUSINESS

- The working capital requirements of a concern increases with the growth and expansion of its business activities.
- Although, it is difficult to determine the relationship between growth in the volume of business and the working capital of a business, yet it may be concluded that for normal rate of expansion in the volume of business, we may have retained profits to provide for more working capital but in fast growing concerns, we shall require larger amount of working capital.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



11. EARNING CAPACITY AND DIVIDEND POLICY

- Some firms have more earning capacity than others due to quality of their products, monopoly conditions etc.
- Such firms with high earning capacity may generate cash profits from operations and contribute to their working capital.
- The dividend policy of a concern also influences the requirements of its working capital.
- A firm that maintains a steady high rate of cash dividend irrespective of its generation of profits needs more working capital than the firm that retains larger part of its profits and does not pay so high rate of cash dividend.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENT



12. PRICE LEVEL CHANGES

- Changes in the price level also affect the working capital requirements.
- Generally, the rising prices will require the firm to maintain larger amount of working capital as more funds will be required to maintain the same current assets.
- The effect of rising prices may be different for different firms.
- Some firms may be affected much while some others may not be affected at all by the rise in the prices.

13. OTHER FACTORS

- Certain other factors such as operating efficiency, management ability, irregularities of supply, import policy, asset structure, importance of labor, banking facilities etc., also influence the requirements of working capital.

NEED OF WORKING CAPITAL



- The need of working capital cannot be over emphasized.
- Every business need some amount of working capital.
- The need of working capital arises due to the time gap between production and realization of cash from sales. There is an opening cycle involved in the sales and realization of cash. There is a time gap in purchase of raw material and production, production and sales and sales and realization. Thus working g capital needs the following purposes:
 - For the purchase of raw material, components and spares.
 - To pay wage and salaries.
 - To incur day to day expenses and overhead cost.
 - To maintain the inventories of raw materials, work-in-progress, stores, spares and finished goods.
 - To provide credit facilities to the customers.
 - To meet selling costs as packaging, advertising etc.

1. Solvency of business:

- Adequate working capital helps in maintaining solvency of the business by providing uninterrupted flow of production.

2. Goodwill:

- Sufficient working capital enables a business concern to make prompt payments and hence helps in creating and maintaining goodwill.

3. Easy loans:

- A concern having adequate working capital, high solvency and good credit standing can arrange loans from banks and other on easy and favorable terms.

4. CASH DISCOUNTS:

- Adequate working capital also enables a concern to avail cash discounts on the purchases and hence it reduces costs.

5. REGULAR SUPPLY OF RAW MATERIALS:

Sufficient working capital ensures regular supply of raw materials and continuous production.

6. Regular payment of salaries, wages and other day-to-day commitments:

A company which has ample working capital can make regular payment of salaries, wages and other day-to-day commitments which raises the morale of its employees, increases their efficiency, reduces wastages and costs and enhances production and profits.

7. EXPLOITATION OF FAVORABLE MARKET CONDITIONS:

Only concerns with adequate working capital can exploit favorable market conditions such as purchasing its requirements in bulk when prices are lower and by holding its inventories for higher prices.

IMPORTANCE OF WORKING CAPITAL



8. ABILITY TO FACE CRISIS:

- Adequate working capital enables a concern to face business crisis in emergencies such as depression because during such periods, generally, there is much pressure on working capital.

9. QUICK AND REGULAR RETURN ON INVESTMENTS:

- Every investor wants quick and regular returns on his investments.
- Sufficiency of working capital enables a concern to pay quick and regular dividends to its investors as there may not be much pressure to plough profits.
- This gains the confidence of its investors and created a favorable market to raise additional funds.

10. HIGH MORALE:

- Adequacy of working capital creates an environment of security and confidence which increases the efficiency of firm.

WORKING CAPITAL

Working Capital refers to that part of the firm's capital, which is required for financing short-term or current assets such as cash, marketable securities, debtors and inventories.

Funds thus, invested in current assets keep revolving fast and are constantly converted into cash and this cash flows out again in exchange for other current assets.

Working Capital is also known as revolving or circulating capital or short-term capital.

KINDS OF WORKING CAPITAL



Significance of Gross WC



- **Optimum investment in CA**

Investment in CA must be adequate CA investment should not be inadequate or excessive inadequate WC can disturb production and can also threaten the solvency of firm , if it fails to meet its current obligation excessive investment in CA should be avoided , since it impairs firms profitability

- **Financing of CA**

Need for WC arises due to increasing level of business activity & it is to provided quickly some time surplus fund may arises which should be invested in Short term securities , they should not be kept idle

Significance of Net Working Capital

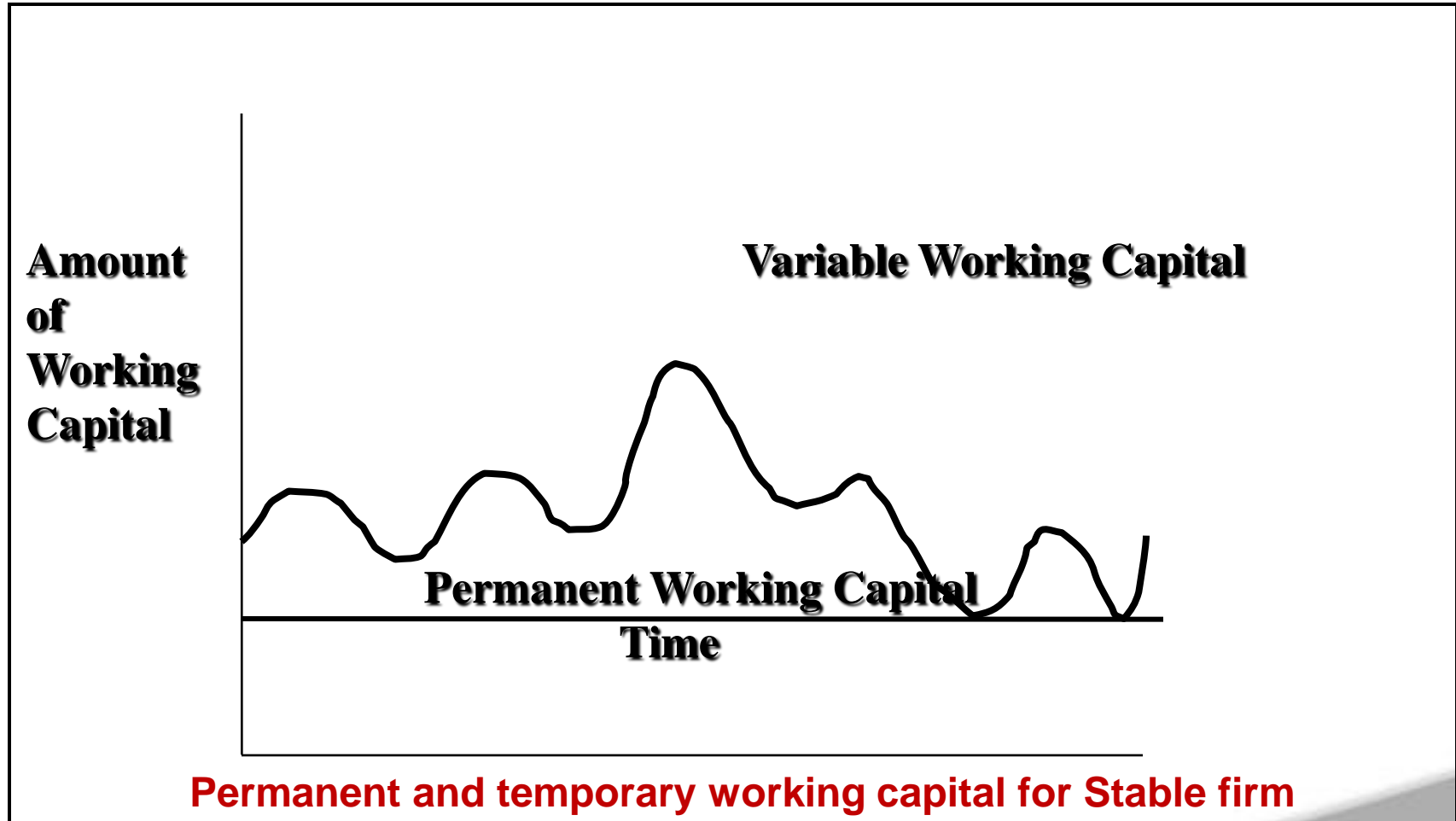
- **Maintaining Liquidity position**

For maintaining liquidity position there is a need to maintain CA sufficiently in excess of CL

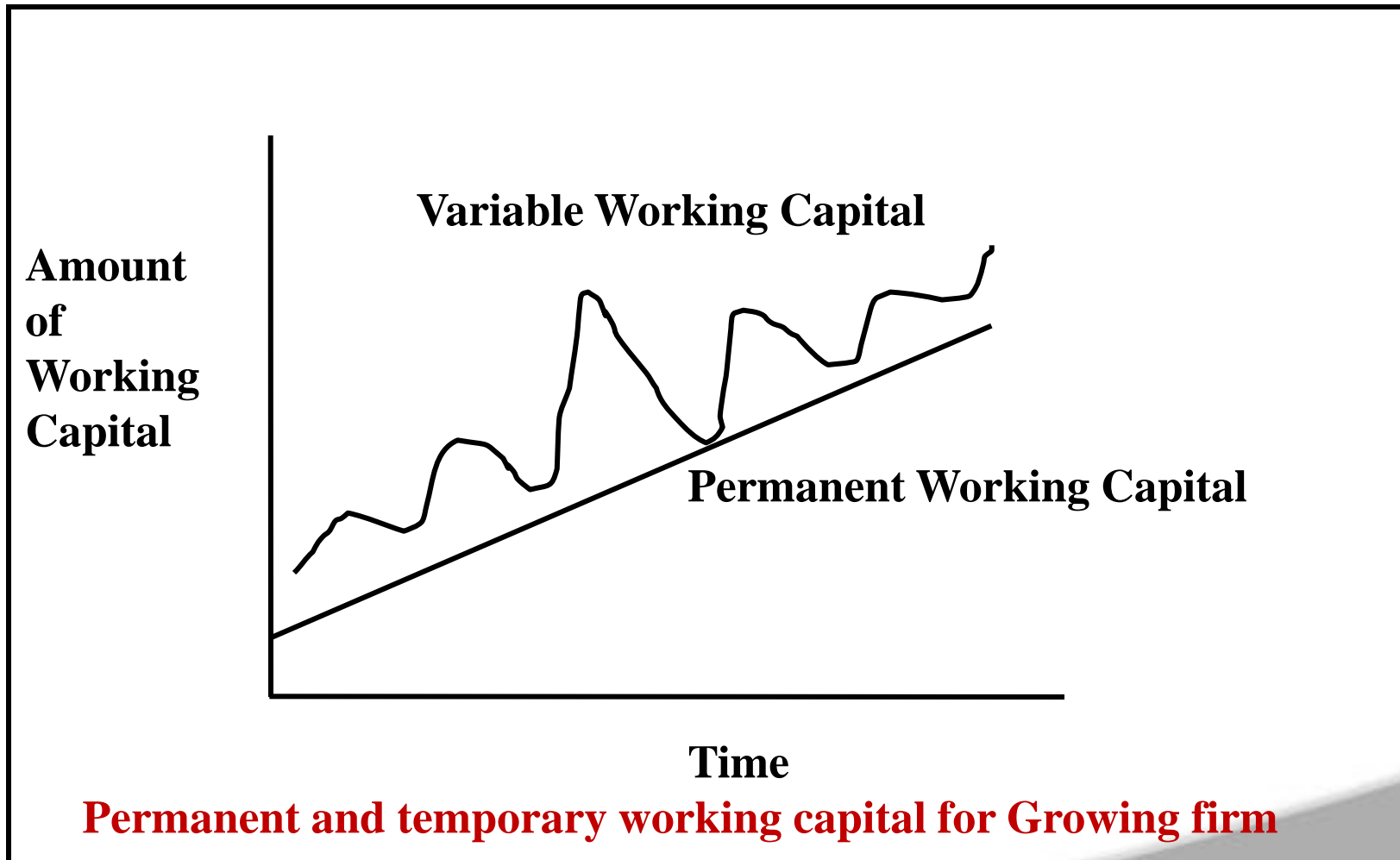
- **Judge Financial Soundness of a firm**

The Net working capital helps creditors and investors to judge financial soundness of a firm

Difference between permanent & temporary working capital



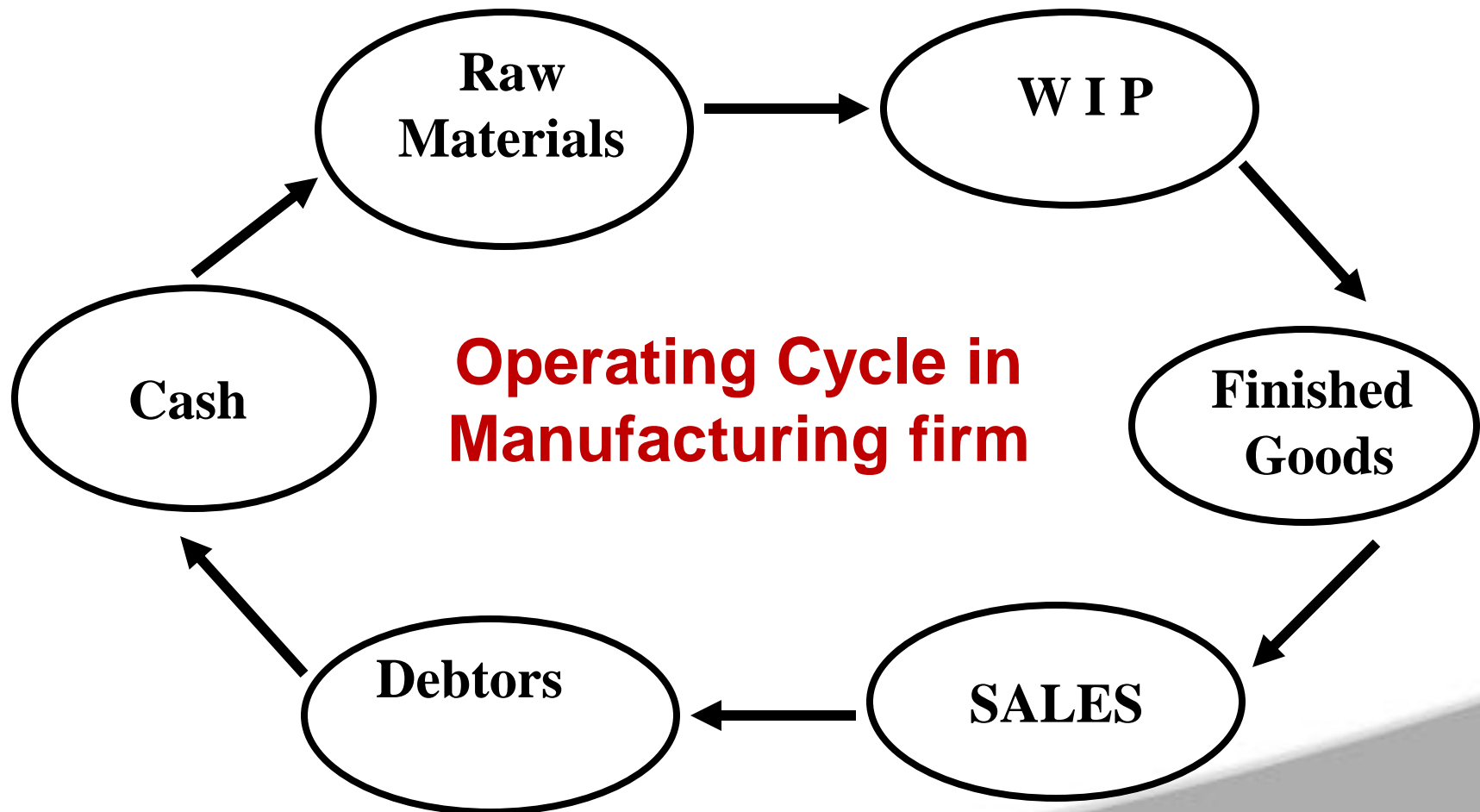
Difference between permanent & temporary working capital



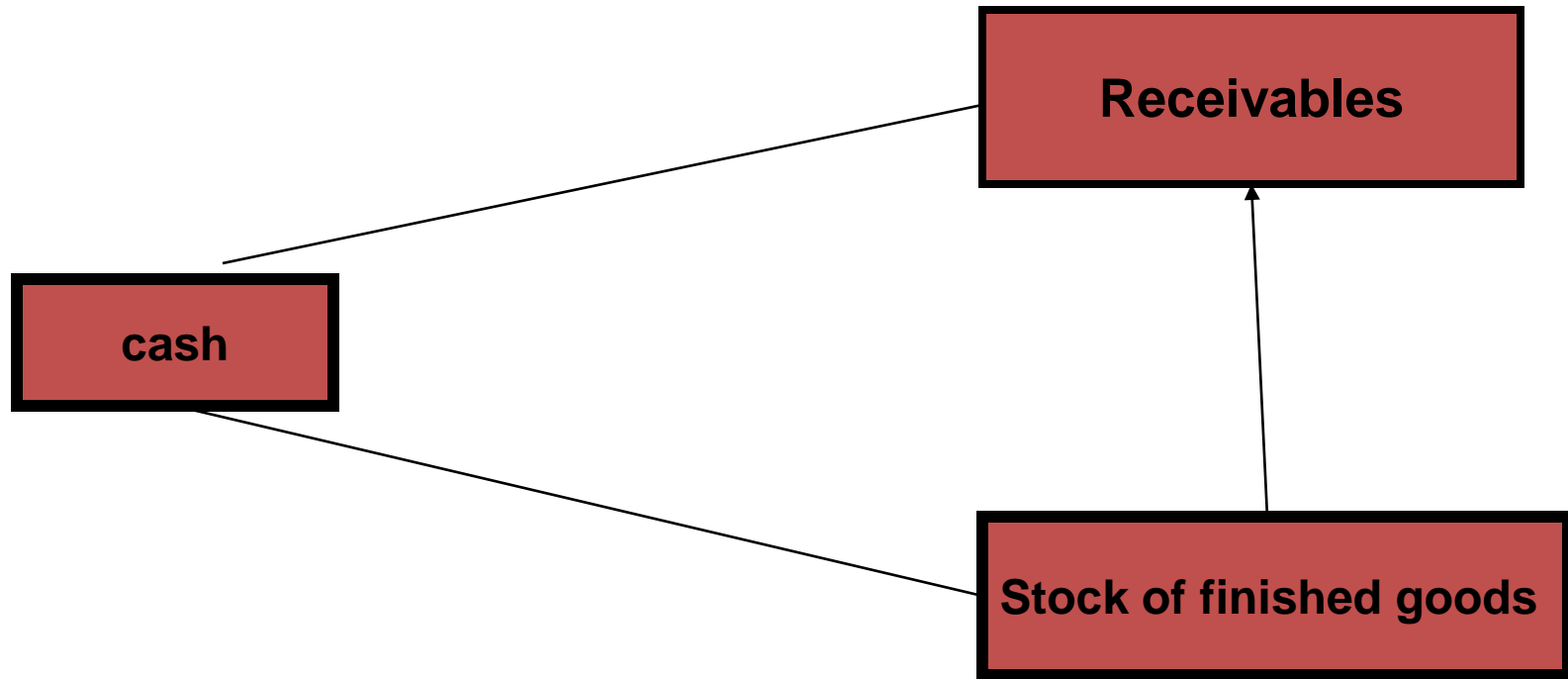
Operating cycle concept

- Maximization of share holder's wealth of a firm is possible only when there are sufficient return from the operations
- Successful sales activity is necessary for earning profit sales do not convert into cash immediately
- There is invisible time lap between the sale of good and receipt of cash
- The time taken to convert raw material into cash is known as operating cycle
- Conversion of cash into raw material
- Conversion of raw material into work in progress
- Conversion of Work in progress into finished goods
- Conversion of finished good into Sales (Debtors and cash)

Operating cycle concept



Operating cycle of Non Manufacturing Firm



Formula for calculating Operating cycle for Manufacturing firm

- $OC = ICP + ARP$
- OC = Operating cycle
- ICP = Inventory Conversion period
- ARP = Account Receivable Period

$$ICP = \frac{\text{Average Inventory}}{\text{Cost of good sold / 365}}$$

$$ARP = \frac{\text{Average Account Receivable}}{\text{Sales / 365}}$$

CASH CONVERSION CYCLE

The amount of time a firm's resources are tied up calculated by subtracting the average payment period from the operating cycle the time period between the date a firm pays its supplier and the date it receives cash from its customer

$$CCC = OC - APP$$

$$AAI = \frac{\text{Average Inventory}}{\text{Cost of good sold / 365}}$$

$$ARP = \frac{\text{Average Account Receivable}}{\text{Annual Sales / 365}}$$

$$APP = \frac{\text{Account Payable Period}}{\text{Cost of good sold / 365}}$$

CALCULATE CCC (CASH CONVERSION CYCLE)



- Average use of Inventory 80 days
- Account receivable collection period 50 days
- Account payable period is 40 days

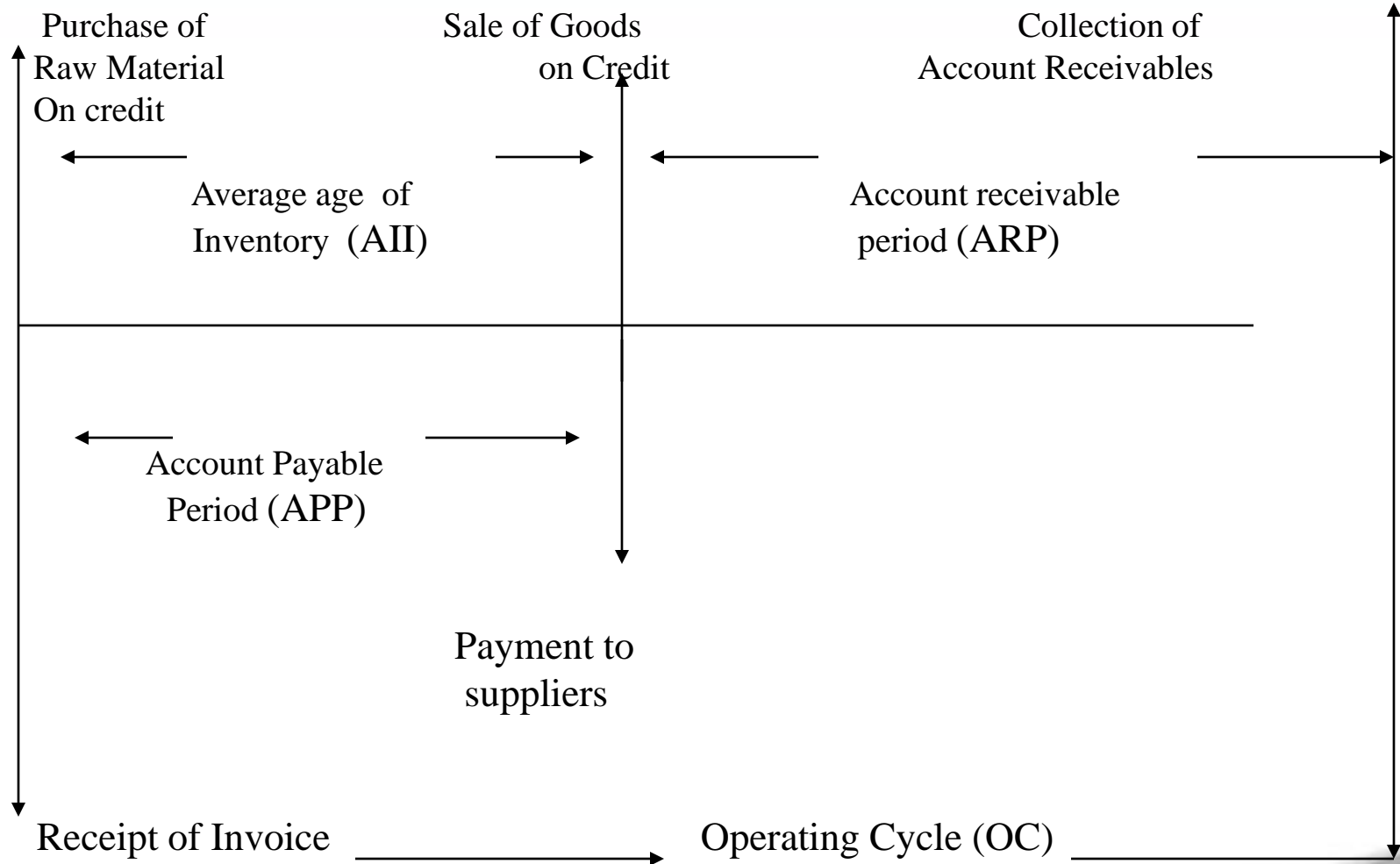
$$CCC = OC - APP$$

$$OC = AAI + ARP$$

$$80 + 50 = 130$$

$$CCC = 130 - 40 = 90 \text{ days}$$

CALCULATE CCC (CASH CONVERSION CYCLE)



Cash Conversion cycle

FORECASTING / ESTIMATION OF WORKING CAPITAL REQUIREMENTS



Factors to be considered

- Total costs incurred on materials, wages and overheads
- The length of time for which raw materials remain in stores before they are issued to production.
- The length of the production cycle or WIP, i.e., the time taken for conversion of RM into FG.
- The length of the Sales Cycle during which FG are to be kept waiting for sales.
- The average period of credit allowed to customers.
- The amount of cash required to pay day-to-day expenses of the business.
- The amount of cash required for advance payments if any.
- The average period of credit to be allowed by suppliers.
- Time – lag in the payment of wages and other overheads

PROFORMA - WORKING CAPITAL ESTIMATES



1. TRADING CONCERN

STATEMENT OF WORKING CAPITAL REQUIREMENTS

Particulars	Amount (Rs.)
<i>Current Assets</i>	
(i) Cash	----
(ii) Receivables (For.....Month's Sales)----	----
(iii) Stocks (For.....Month's Sales)-----	----
(iv) Advance Payments if any	----
<i>Less : Current Liabilities</i>	
(i) Creditors (For..... Month's Purchases)-	----
(ii) Lag in payment of expenses	<u>-----</u>
WORKING CAPITAL (CA – CL)	xxx
<i>Add : Provision / Margin for Contingencies</i>	-----
NET WORKING CAPITAL REQUIRED	xxx

1. MANUFACTURING CONCERN



STATEMENT OF WORKING CAPITAL REQUIREMENTS

Amount (Rs.)

Current Assets

(i) Stock of R M(formonth's consumption)

(ii)Work-in-progress (for...months)

(a) Raw Materials

(b) Direct Labour

(c) Overheads

(iii) Stock of Finished Goods (for ...month's sales)

(a) Raw Materials

(b) Direct Labour

(c) Overheads

(iv) Sundry Debtors (for ...month's sales)

(a) Raw Materials

(b) Direct Labour

(c) Overheads

(v) Payments in Advance (if any)

(iv) Balance of Cash for daily expenses

(vii)Any other item

Less : Current Liabilities

(i) Creditors (For..... Month's Purchases)

(ii) Lag in payment of expenses

(iii) Any other

WORKING CAPITAL (CA – CL) xxxx

Add : Provision / Margin for Contingencies

NET WORKING CAPITAL REQUIRED

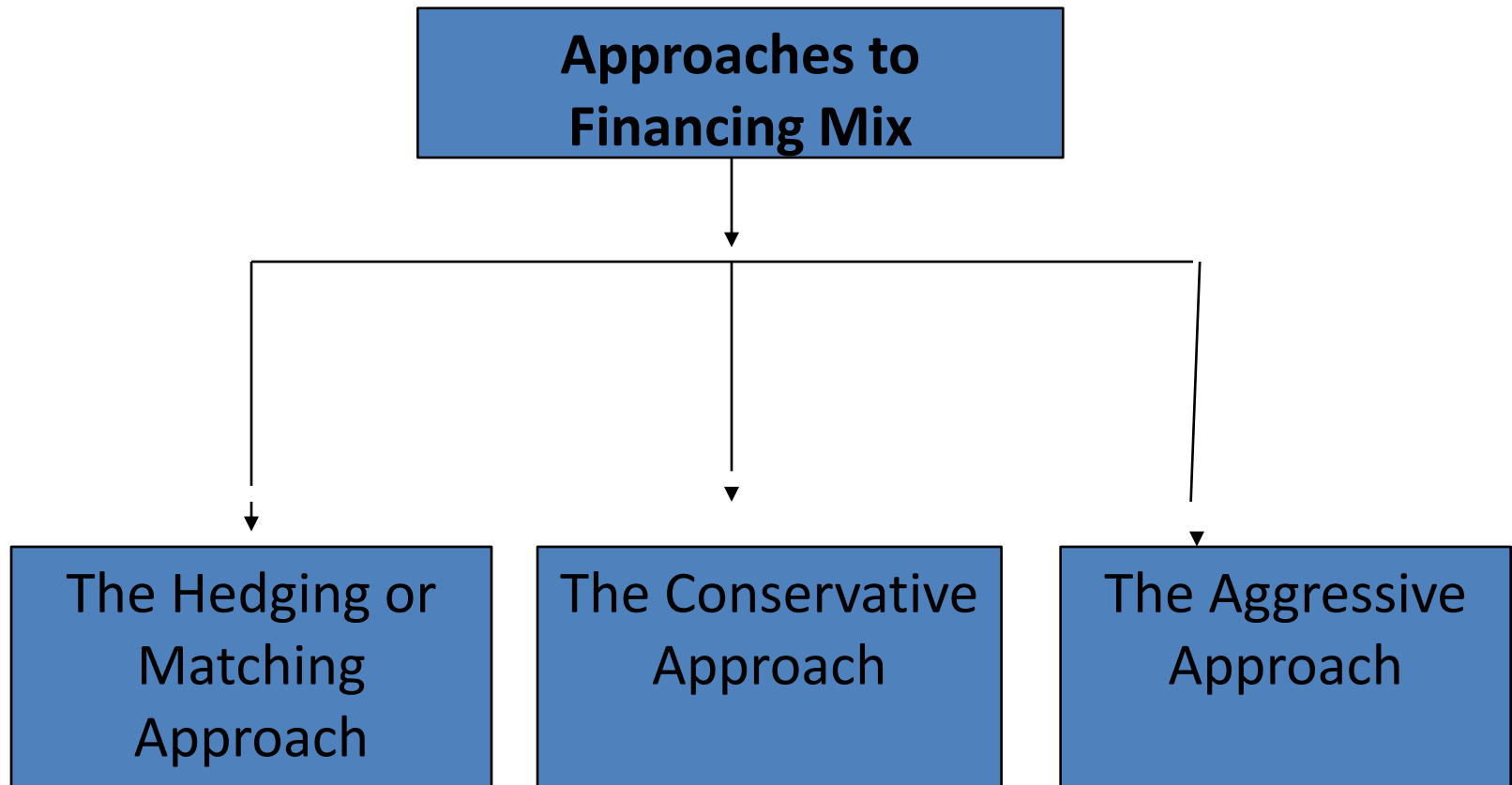
XXX

Points to be remembered while estimating Working Capital



- (1) Profits should be ignored while calculating working capital requirements for the following reasons.
 - (a) Profits may or may not be used as working capital
 - (b) Even if it is used, it may be reduced by the amount of Income tax, Drawings, Dividend paid etc.
- (2) Calculation of WIP depends on the degree of completion as regards to materials, labor and overheads. However, if nothing is mentioned in the problem, take 100% of the value as WIP. Because in such a case, the average period of WIP must have been calculated as equivalent period of completed units.
- (3) Calculation of Stocks of Finished Goods and Debtors should be made at cost unless otherwise asked in the question.

Working Capital Financing Mix



Important recommendations and directives have stemmed from these groups.

- Tandon committee.
- Daheija committee.
- Chore committee.
- Marathe committee.

Tandon committee



- Reserve Bank of India setup a committee under the chairmanship of Shri P.L. Tandon in July 1974.
- The practices of most of the banks are still influenced by tandon committee recommendations though financial liberalization occurred in 1990s.

Tandon committee

The terms of reference of the Committee were

1. To suggest guidelines for commercial banks to follow up and supervise credit from the point of view of ensuring proper end use of funds and keeping a watch on the safety of advances.
2. To suggest the type of operational data and other Information that may be obtained by banks periodically from the borrowers and by the Reserve Bank of India from the leading banks.
3. To make suggestions for prescribing inventory norms for the different industries, both in the private and public sectors and indicate the broad criteria for deviating from these norms.

4. To make recommendations regarding resources for financing the minimum working capital requirements ;
5. To suggest criteria regarding satisfactory' capital structure and sound financial basis in relation to borrowings ;
6. To make recommendations as to whether the existing pattern of financing working capital requirements by cash credit/overdraft system etc., requires to be modified, if so, to suggest suitable modifications

Recommendations:

- Norms of current asset.
- Maximum permissible bank finance.
- Emphasis on loan systems.
- Periodic information and reporting system.

Norms for current assets

They defined the norms(15 industries) for

- Raw materials
- Stock in progress
- Finished goods
- Receivables

Tandon committee

Maximum permissible bank finance (MPBF)

Three methods for determining MPBF

- Method 1: $MPBF = 0.75(CA - CL)$
 - *Method 2: $MPBF = 0.75(CA) - CL$*
 - Method 3: $MPBF = 0.75(CA - CCA) - CL$
-
- CA- current asset,
 - CL- current liabilities,
 - CCA- core current assets (permanent component of working capital)

Tandon committee

Current Assets Rs.(in millions)

Raw material	18
Work in process	5
Finished goods	10
Receivables(including Bills Discounted)	15
Other current assets	2
	—
	50
	—

Current Liabilities

Trade Creditors -	12
Other current liabilities -	3
Bank borrowings (including Bills discounted)-	25
	—
	40
	—

MPBF for Mercury Company Limited as per above methods are:

Method 1: $0.75(CA-CL) = 0.75(50-15) = \text{Rs.}26.25$ million

Method 2: $0.75(CA)-CL = 0.75(50)-15 = \text{Rs.}22.5$ million

Method 3: $0.75(CA-CCA)-CL = 0.75(50-20)-15 = \text{Rs.}7.5$ million

Method 2 is adopted.

Tandon committee

Emphasis on loan system

Only a portion of MPBF must be cash credit component and the balance must be in the form of working capital demand loan.

Periodic information and report system

Quarterly information system-form I

- Estimate production and sale for current and ensuing quarter.
- The estimate of current asset and liabilities for the ensuing quarter.

Tandon committee

Quarterly information system-form II

- Production and sales during current year and for the latest completed year.
- Asset and liabilities for the latest completed year.

Half yearly operating statements- form III

- Actual and estimated operating performance for the half year ended.

Half yearly operating statements- form IIIB

- Actual and estimated sources and uses of funds for the half year ended.

Dahejia committee(1968)

Existing deficiencies:

- It is the borrower who decides how much would borrow, the banker does not decide how much he would lend and is, therefore not in a position to do credit sales.
- The bank credit is treated is considered s first source of finance.
- Amount of credit extended is based on the amount of securities available and not the level of operations of the borrower.

Present practice

Assessment of working capital requirement:

- *Projected balance sheet method.*
- *Cash budget method*
- *Turnover method*

Current ratio norm:

- *1.33 is considered only as benchmark and banks do accept a lower current ratio.*

Present practice

Emphasis on loan system

Bulk of the working capital limit is in the form of working capital demand loan and only a small portion in cash credit component.

Financial follow up results:

- FFR I- simplified form of form II used under tandon. Has to be submitted on quarterly basis.
- FFR II- simplified form of form III. Has to be submitted in half yearly basis.



THANK Q