**Module-1**

**INTRODUCTION TO FINANCIAL MANAGEMENT**

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**Introduction: Meaning of finance, Business finance, Finance function, Organization structure of finance department, Financial management, Goals of financial management, Financial decisions- Types of financial decisions, Role of financial manager, Financial planning, principles of sound financial planning, Steps in financial planning, factors influencing a sound financial plan.**

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**Introduction**

Finance is the life blood of business as well as a key aspect in individuals’ day to day life. Finance is the study of how people and businesses evaluate their commitments and raise capital to fund them. What is finance? What are the forms of financial activities? How are they related to the firms’ other activities? Under the free economy system, the growth of the economy depends on firms’ ability to achieve economic objectives. Business firms and governments are formed on the provision of goods and services to society. Regarding this function, private businesses play a major role. A business concern requires finance to meet their requirements. Any kind of economic activity depends on finance. Hence, it is called the life blood of a business organization. Whether the business organization is small or ordinary, small or micro, they require finance to meet their requirements. This finance can also be called capital, investment, fund etc, but each term has a different meaning.

**Meaning of Finance:**

Finance is defined as the study and discipline of money, concerned with how individuals and firms allocate resources of the time when it is required.

**According F.W.Panish** “Finance may be defined as the position of money of the time it is wanted”.

**According Britannica** “Finance, financing is the process of raising funds or capital for any kind of expenditure. It is the process of channelizing various funds in the form of existing loans or invested capital to those economic entities that most need them or can put them to the most productive.

Thus, finance is defined as the cost of managing money, which includes activities like investing, committing, locating, estimating, borrowing, lending, budgeting, retaining and safety.

**Business finance:**

     Finance is the bedrock of every business organization, whether it is small, or medium or micro. It refers to the capital fund employed a business. It is required for day to day business operations like purchasing assets, goods, raw materials and for performing all other economic activities.

     To understand what business finance is we must know what business finance is? We must know that it includes operations concerning procurement of corpus funds for meeting firms' financial needs and objectives.

**According to Bannock,** “the term business finance refers to the provision of money for commercial use”.

**According to Guthman and Dougal,**

“Business finance can be broadly defined as the activity concerned with planning, raising, controlling, administering of the funds used in the business.”

**Finance function:**

Finance is the animating force or indispensable factor of any business. Without proper financial resources, no business can run smoothly. Business finance is concerned with the financial problems of an enterprise. The finance processes related to planning, raising and administering of funds or financial resources in business are called Business finance.

The Finance function refers to the practices and activities directed towards planning, raising, and administering of funds or financial resources used in business. The functions are oriented towards procuring and maintaining financial resources to generate profits. Thus, the finance function in business refers to the activity or practice intended to acquire and manage economic resources to generate profit.

**Types of finance functions or decisions**

There are four major types of finance functions or decisions; such are investment, liquidity, financing and dividend decisions.

1. **Investment decisions:** It means the act of committing money, effort, and time to something to make profit or get an advantage. In business, investment decisions revolve around capital budgeting decisions. It helps to analyze the investment opportunities, specifically long term projects associated with the cash flow payback period. The internal rate of return, net present value and profitability index are the popular methods to determine the profit potential.
2. **Liquidity Decision:** It means the fact of being available in the form of money rather than investments or property. In other words, it is a company’s ability to convert assets to cash as it describes how easily an asset can be bought or sold without losing its value. Liquidity decisions generally spin around working capital decisions and management. The lack of liquidity creates problems like financial crises and insolvencies.
3. **Financing Decision:** It means money that a person or company barrows for a particular purpose. It is the process of providing funds for business activities. The financing decisions spin around the capital structure of the business organization. It always focuses on maintaining a good capital structure ratio. The mix of equity and debt of an entity is called capital structure. Capital structure plays a key role in the growth and performance of the firm.
4. **Dividend decision:** A dividend is the distribution of a company's profits to its shareholders. Corporations can share their profits with the shareholders in the form of dividends. The dividend decision relates to how much profit the company is to be distributed to the shareholders. This decision should be taken keeping in mind the overall objectives of maximizing shareholder's wealth.

**Organization structure of finance department:**

In an organization, a finance department manages a firm's long term and short term operations. Finance using overseas in flow and out flow of funds, budget preparation, cash management, financing, accounting and reporting and other finance related functions of the organization.

Figure:1 Organization structure of finance department

* **Bored of Directions:** The group of people whose shareholders choose to manage a company or organization. These people are elected by the shareholders to represent their interests.
* **Chief Executive officer:** The CEO is the person who is accountable for the company’s business decisions like operations, marketing, business development, finance and human resources. It is the top position and responsible for implementing the plans and policies, improving the company’s financial strength.
* **Vice presidents:** Individuals in a vice president role often oversee internal staff and operations to ensure the company meets all of its necessary targets. A Vice President of finance is responsible for leveling the finance development and managing accountants and other finance team members.
* **Chief Financial Officer:** A CEO is the senior level executive or manager responsible for accessing the financial functions and operations and the entire organization. He holds the top financial position in an organization.
* **Controller:** A controller is a person who is responsible for all account related activities within a business organization, including high level management accounting, financial and tax accounting. He usually reports to the CEO.
* **Treasurer:** A treasurer is the person or individual responsible for the treasury of a business organization. Cash management, liquidity management, risk management and corporate finance are key functions of the company treasurer.
* **Internal Auditor:** An internal auditor is a skilled professional for providing independent and objective evaluation of company financial and operational business activities.

**Financial Management:**

Financial management means the management of funds of a business or an organization in order to accomplish the economic objectives of the firm. The Webster dictionary defines the term finance is the science on study of the management of funds or the system that includes the circulation of money, granting credit, making investments, and provision of banking facilities.

Meaning of Financial Management: Financial Management is the activity concerned with forecasting, raising, utilizing, controlling, administrating funds useful in business.

Definitions of Financial Management

**In the words of Howard and Upton,** “Financial management as an application of general managerial principles to the area of financial decision-making.”

**In the views of Joshep and Massie,”** Financial management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations.”

**In the views of Weston and Brigham,** financial management “is an area of financial decision-making, harmonizing individual motives and enterprise goals”.

**Goals of Financial Management**

  Efficient and effective financial management requires the existence of some objectives or goals. Because we, as an organization, need to analyze financial decisions. A judgment has to be taken as made in light of some standards. A financial manager is responsible for economic decisions to bring effective financial management to the business organization. His decisions should be gainful to the investors, shareholders and company.

  The goals of financial management can be classified in many ways. Official goals, operative goals and operational goals are one classification. Official goals are the general aims of the organization. Maximization of return on investment and market value per share may be termed as official goals of financial management. Operative goals indicate what the organization is really attempting to do. They are focused and help on choice making.

* **Profit maximization:** Profit maximization is the short run or long run tendency of business firms to maximize returns. The profit maximization objective of financial management means that all economic decisions are made with a view to maximizing the return of the firm.
* **Wealth maximization:** Wealth maximization is the concept of increasing a firm's net worth to increase the value of shares. It is also known as net worth maximization. It is the shareholder's wealth due to an increase in the value of shares.
* **Value maximization:** Value maximization is the key financial objective of the firm. It says that financial executives should make all financing decisions so as to increase the total long run market value of the enterprise.
* **Maintenance of liquidity:** Liquidity means a company’s ability to convert assets to cash. Mainly, liquidity in the business plays a key role in the organizational performance with the help of proper financial management. The manager can easily monitor the liquidity in the company.
* **Optimization:** With proper financial management, the firm can use the available funds in an efficient manner. The financial manager can make proper plans for allocation and use of funds in various operational activities of the business.
* **Improved efficiency:** Good financial management is also helpful in the efficiency of the workforce of the organization. If the financial resources are effectively allocated, then they will improve their efficiency. Thus, the organization will achieve the desired objectives.
* **Creating reserves:** The business environment is dynamic in nature. It is full of uncertainties, like change in climate, natural calamity, and technology etc. To overcome these issues, the company should maintain sufficient reserves.

**Role of financial manager**

In the modern management era, financial management has come a long way from the conventional business finance perspective. As the economy is globalized and world economic resources are being topped in a globalized economy, the plenty of opportunities available to finance professionals or managers have no limits. The following are the important functions or roles of the   financial manager.

* **Financial analysis planning and forecasting:** Financial managers play a key role in financial analysis. It is the process of evaluating businesses, proposals, budgets, and other finance-related decisions to determine their performance and suitability. Estimating the required amount of funds employed in the business firm. Determining the size of a firm and the required investment is crucial.
* **Investment decisions:** Financial manager plays a key role in investment decisions. It refers to the allocation of financial resources to different operational activities. Financial managers opt for the most suitable assets or investment opportunities based on risk profiles, investment objectives, and return expectations. The investment decision is spun around capital budgeting decisions.
* **Capital structure decisions:** Corporate financial managers working with capital structure decisions have a significant role in corporate financial management. These are long-term decisions involving the acquisition, retention, and redemption of funds at different time periods. It is concerned with the combination of different sources of long term funds such as debt and equity capital.
* **Management of financial resources:** Every business organization will have a framework or process in place for planning, organizing, directing, controlling, and monitoring its financial resources and activities in order to accomplish the goals of the business. Corporate financial managers frame the financial plans and policies for the management of financial resources.
* **Risk Management:** The business environment is always dynamic in nature. It involves risks and uncertainties. Risk management is the process of identifying, assessing, evaluating, analyzing and controlling financial, legal, strategic and security risks to an organization's investment and earnings. The financial manager is capable of assuming the risk involved in financing decisions.
* **Financial planning**: Financial planning is the process of assessing the economic goals of individuals or business organizations. Financial Planning is the pre-determined course of action which is concerned with estimating the financial requirements and determining its competition. It is a framework in relation to procurement, investment and administration of funds of an enterprise.

**Meaning of financial planning**

A financial plan is a document that details a firm’s current financial circumstances and their short- and long-term economic goals. It includes strategies to achieve those goals.

Financial planning involves a thorough evaluation of firms’ economic situation (income, expenditure, debt, and retained earnings) and expectations for the future.

Principles of sound financial planning

A sound financial plan is necessary for the success of any business enterprise. It entails guidelines, policies and procedures for integrating the various functional areas of the business. A sound financial plan helps in forecasting the fundamental needs, such as managing business risks, revenue and spending, and debt reduction. Some of the important principles of sound financial planning are:  (1) Simplicity (2) Foresight (3) Flexibility (4) Optimum use of funds (5) Liquidity (6) Anticipation of contingencies and (7) Economy.

* **Simplicity:** From a layman's perspective, a sound financial plan should provide a simple and easily manageable financial structure. Simplicity’ is an essential point which helps the promoters and the operation in acquiring the needed finances. It's also easy to work out a simple fiscal plan.
* **Foresight:** Provision for the future, the act or power of foreseeing or keen Foresight must be used in planning. The needs for capital must be estimated as accurately as possible. A plan visualized without foresight may cause risks for the company, if it fails to meet the needs for both fixed and working capital. In simple words, foresight means that besides the needs of ‘today’, the necessities of ‘tomorrow’ should also be kept in view.
* **Liquidity:** It means the fact of being available in the form of money rather than investments or property. In other words, it is a company’s ability to convert assets to cash as it describes how easily an asset can be bought or sold without losing its value. A sound financial plan helps in liquidity decisions. It generally spins around working capital decisions and management.
* **Anticipation:** Financial planners should visualize emergency situations while framing their financial plan. The financial manager kept some surplus funds for meeting unforeseen events. It is better to anticipate the contingencies in advance.
* **Flexibility:** The business environment is always dynamic in nature. It involves risks and uncertainties. Financial readjustments often become necessary. The financial plan must be easily adaptable according to the changing dimensions in the business environment. There should be flexibility in financial plans.
* **Optimization:** The funds or finance should not be only adequate. But it should also be productive. Financial plans should prevent wasteful use of economic resources, avoid idle capacity and ensure proper and optimum utilization of funds to build up the earning capacity of the firm.
* **Economy:** The mobilized financial resources should not impose a disproportionate burden on the company. The raised capital and its cost should be related to the earning capacity. While raising the funds, the cost of capital should be minimal.

**Steps in financial planning**

The perfect investment strategy and expert financial advice will determine how the business live today and sustain in future. There are six steps to develop a business financial plan and to carry out firm’s fund management. The following are the key steps in financial planning.

1. **Identify firms' current financial situation:** The first stage of business firms’ financial planning process is to identify firms' current financial situation. This step constitutes assessment of firms’ financial situation and areas to reflect on financial condition. Such as budgeting, financial commitments and expenses, tax standing and strategies, current investments or saving reserves, emergency funds to cover catastrophes, and other financial obligations.
2. **Determine firms’ Financial Goals:** Once the firm identifies their current financial situation; they are most likely to achieve them. Highlighting the financial objective serves as an important aspect of financial planning. The sole purpose of this step is to differentiate firms’ financial needs from wants. The goals or objectives may range from spending a firm’s surplus revenue to developing a long-lasting investment program.
3. **Identify Alternatives for Investment:** After a thorough understanding of organizations’ financial needs has been taken and all the appropriate financial objectives have been confirmed, the next thing is to identify the investment alternatives like equity, debt and other external barrowings. The objectives would be focused on achieving firms’ short and long term financial goals.
4. **Evaluate Alternatives:** The proposed suggestions are then further assessed. This is the chance to discuss the alternatives and take necessary actions based on firms’ current financial situation, financial standings and personal interests. Based on a financial planner’s recommendations, those can be altered and revised. Alternatives can be closed down based on the decisions by financial managers.
5. **Decision and Implementing:** Financing decisions means providing funds for business activities. Once the finance manager feels with the recommendations and feels good to proceed, the implementation of the plan will be carried out. This step of the financial planning process can be considered as an action plan to achieve your short or long term goals.
6. **Review and monitor the plan:** Financial planning is an on-going and dynamic process and it’s unlikely that firms’ financial situation will remain the same throughout life. An organization needs to assess its financial decisions periodically as changed legal, economic and social factors will require you to alter your decisions to fit into your new situation.

**Factors influencing a sound financial plan**

Financial planning and decision making plays a key role in the field of financial management. The Capitalization, financial structure, leverage, capital structure, and financial forecasting are the key areas of financial planning in the organization. The following determining factors of a sound financial plan.

* **Objectives:** Goals of financial planning should be consistent and achievable. Financial plans and its objectives should match with overall objectives of the business.
* **Organization requirements:** A sound financial plan should take care of the organizations present and future financial requirements. Like contingencies, asset replacement, business expansion, and diversification etc.
* **Cost of capital:** One of the key factor which influences a financial plan of the business is Cost of capital. While raising funds from different sources, the financial planner needs to consider the cost of funds and the companies’ ability to pay.
* **Solvency and liquidity:** The organizations’ Solvency and liquiditypositionis alwaysa key factorinfluencing on sound financial plan**.** The financing on different avenues, which are likely to give maximum return on investment. More over sufficient cash should always to available to meet the requirement of the enterprise.
* **Capital structure:** Corporate financial managers working with Capital structure decisions have a significant role in corporate financial plans. The company has to maintain proper capital structure with optimum mix of equity and debt.

**Conclusion**

The financial management of an organization determines the goals, formulates the guidelines and procedures, implements the plan, and allocates the budgets related to all economic activities of a business. Financial management is a key functional area of management guided by several principles that the financial professionals or executives should follow by ensuring that the funds of a company are appropriately invested. The investment decisions come with the critical analysis of the outcome where different financial profitability and market ratios are used in establishing the stability of a firm.

**MODEL QUESTIONS**

1. What is finance?
2. What is financial management?
3. What is financial planning?
4. Discuss various types of financial decisions.
5. Explain various factors influencing a sound financial plan.
6. Discuss the role of financial manager.

**Module-2**

**TIME VALUE OF MONEY**

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**Meaning, Need, Future Value (Single Flow, Uneven Flow & Annuity); Present Value (Single Flow – Uneven Flow & Annuity); Doubling Period; Concept of Valuation- Valuation of Bonds, Debentures and Shares (Simple Problems)**

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**Introduction**

Individuals or potential investors prefer to receive money today rather than the same amount of money received tomorrow. Because a sum of money once committed on a profitable avenue, grows over time. For example, surplus money deposited into a fixed deposit in a bank earns a fixed rate of interest over time. The interest is added to the principle of the power of earning potential of money.

**Meaning of time value of money (TVM)**

**Jason Fernando** definesthe time value of money (TVM) is the concept that a sum of money is worth more now than the same sum will be at a future date due to its earnings potential in the interim.

The time value of money (TVM) is the relationship between today's sum of money and the same sum of money valued tomorrow.

Thus, the time value of money serves as the basic foundation of all notions of finance. It impacts public finance, consumer finance, and corporate finance. The time value of money is the outcome of the concept of interest.

**Need of time value of money**

Time value of money is mostly used in the finance world. Based on the time value concept, financing decisions are made to maximize the return on investments. The time value of money is one of the most popular and often used important methods or concepts in economics and finance disciplines. It is a widely accepted conceptual theory that there is greater advantage to receiving a sum of money today than an identical sum in the future. It needed as follows.

* **Investment decisions:** It is the decision to make an investment of funds for long-term purposes. The time value of money helps to calculate the cash flow over a period of time by considering the present value of its future cash flow.
* **Financing decisions:** It is the decision to determine the optimum capital structure of the organization. While procuring the funds from equity, debt or any other external borrowing. The time value of money helps to calculate the cost of capital from different sources.
* **Operational decisions:** This concept helps in cash management. It is used in evaluation of creditors and debtors cycle, under current asset management.

**Future value**

Future value is a value of a financial commitment or investment or asset on a specific date in future. James Chen defines the future value (FV) as the value of a current asset at a future date based on an assumed rate of growth.

**Simple annual interest**

If the investment earns simple interest, the calculation of the future value is as follows.

Where FV= Future value

PV= Present Value

r = simple rate of interest

n = number of years

**Illustration-1:** Assume if you invested Rs.1,000 for five years with 10% simple interest, paid annually What would be the value of money after 5 years?

**Solution:** Given PV= 1,000 FV=? , = 10 % (0.1), n= 5 years

**Illustration-2:** Mrs. Nanda invested Rs.10,000 for five years with 9% simple interest paid annually**.** What would be the value of money after 5 years?

**Solution:** Given PV= 10,000 FV=? , = 9 % (0.09), n= 5 years

**Future value of single flow**

The future value of a single flow implies that if money is invested today, how much will the worth of money be at a specified rate of interest? The future value is calculated by using the following formula.

Where FV= Future value

PV= Present Value

r = Rate of interest

n = number of years

**Illustration: 3** Mr. X deposited Rs.5,000 in a savings account that earns an annual compounding interest of 7%. What would be the value of money after 10 years?

**Solution:** Given PV= 5,000 FV=? , = 7%(0.07) , n= 10 years

**FV**

**Illustration: 4** Mr. Girish made an investment of Rs.1000 for 5 years in a post office savings account with 10% compounding interest. What would be the future value after 5 years?

**Solution:** Given PV= 1,000 FV=? , = 10 % (0.1), n= 5 years

**FV**

**Illustration: 5** what would be the future value in 10 years of Rs.10,000 if we invest today of an annual interest rate of 5%?

**Solution:** Given PV= 10,000 FV=? , = 5 % (0.05), n= 10 years

**FV**

**Future value of uneven cash flow**

When a cash flow is uneven, the future values of the uneven stream are calculated by finding future value each individual cash flow and add them up finally.

**Where**

FVUC= Future value of uneven cash flow

CFn= Cash flows of different years.

r = Rate of interest

n = number of years

**Illustration: 6** Mrs.Sangeeta is expected to receive Rs.1,000 at the end of the first year, Rs.800 at the end of the second year, Rs.1,100 at the end of the third year, Rs. 700 at the end of the fourth year, and Rs.1,050 at the end of the fifth year. It may be possible to reinvest received cash flows at an annual interest rate of 12%. To find the future value of the cash flow stream.

**Solution:**

FV of CF1 = Rs.1,000 × (1+0.12) (5-1) = Rs.1,573.52

FV of CF2 = Rs. 800 × (1+0.12) (5-2) = Rs.1,123.94

FV of CF3 = Rs.1,100 × (1+0.12) (5-3) = Rs.1,379.84

FV of CF4 = Rs. 700 × (1+0.12) (5-4) = Rs.784.00

FV of CF5 = Rs.1,050 × (1+0.12) (5-5) = Rs.1,050.00

Thus, the total future value of the uneven cash flow stream is Rs.**5,911.30**

**Illustration: 7** Mr.Harshit is expected to receive Rs.10,000 at the end of the first year, Rs.8,000 at the end of the second year, Rs.11,000 at the end of the third year, Rs. 7,000 at the end of the fourth year, and Rs.10,500 at the end of the fifth year. It may be possible to reinvest received cash flows at an annual interest rate of 12%. To find the future value of the cash flow stream.

**Solution:**

FV of CF1 = Rs.10,000 × (1+0.12) (5-1) = Rs.15,735.2

FV of CF2 = Rs. 8,000 × (1+0.12) (5-2) = Rs.11,239.4

FV of CF3 = Rs.11,000 × (1+0.12) (5-3) = Rs.13,798.4

FV of CF4 = Rs. 7,000 × (1+0.12) (5-4) = Rs.7,840

FV of CF5 = Rs.10,500 × (1+0.12) (5-5) = Rs.10,500

Thus, the total future value of the uneven cash flow stream is Rs.59,113.

**Future value of annuity**

Future value of annuity is the value of a series of recurring payments or deposits of a certain date in future. It is a worth of series of payments in future.

Where FVA= Future value of annuity

A= annuity amount

r = rate of interest

n = number of periods/years

**Illustration: 8** Mr.Aradhya decides to invest Rs.125,000 per year for the next five years in an annuity they expect to compound at 8% per year. What will be the expected future value?

**Solution:** Given A= 1,25,000 FVA=? , = 8%(0.08) , n= 5 years

**Illustration: 9** Mr.Adwik decides to invest Rs.2,50,000 per year for the next six years in an annuity they expect to compound at 9% per year. What will be the expected future value?

**Solution:** Given A= 2,50,000 FVA=? , = 9%(0.09) , n= 6 years

**Present value**

Present value is the current value of future sum of money or series of cash flows at specified rate of return. The future sum of money is discounted at specific rate.

**Present value of single flow**

Present value of single flow refers to how much single future cash flow will be worth today.

Where FV= Future value

PV= Present Value

r = simple rate of interest

n = number of years

**Illustration: 10** A potential investor should pay for an investment yielding Rs.9,000 cash flow in 6 years, assuming rate of return is 15%.determine present value.

**Solution:** Given FV= 9,000 PV=? , = 15%(0.15) , n= 6 years

**Illustration: 11** Mrs.Jyothi expects to earn Rs.50,000 lump sum in five years time. If the discount rate is 8.25%. What is the present value?

**Solution:** Given FV= 50,000 PV=? , = 8.52%(0.0825),n= 5years

**Illustration: 12** Find the present value of Rs.10,000 receivable after 6 years at the discount rate of 6%.

**Solution:** Given FV= 10,000 PV=? , = 6%(0.06),n= 6years

**Present value of uneven cash flow**

When a cash flow is uneven, the present values of the streams are calculated by finding the present value of each cash flow and adding them up.

**Where**

PVUC= Present value of uneven cash flow

CFn= Cash flows of different years.

r = Rate of interest

n = number of years

**Illustration:13** The cash flows of Company ABC Ltd for next five years are Rs.15,000; Rs.18,500; Rs.21,000; Rs.25,000 and Rs.29,500. Assume the discount rate is 15.75%. Now, calculate the Present value of these uneven cash flows.

**Solution:**

= 12,959 + 13,808 + 13,541+ 13,926 + 14,197

PVUC **= Rs.68,431**

**Illustration:14** The cash flows of Company XYZ for next five years are Rs.3,000; Rs.3,700; Rs.4,200; Rs.5,000 and Rs.5,900. Assume the discount rate is 15.75%. Now, calculate the PV of these uneven cash flows.

**Solution:**

= 2,586.2 + 2,748.8 + 2,690.5+ 2,760.9 + 2,809.5

**PVUC = Rs.13,596**

**Present value of annuity**

[Julia Kagan](https://www.investopedia.com/contributors/53409/) defines the present value of an annuity is the current value of future payments from an annuity, given a specified rate of return, or discount rate. The higher the discount rate, the lower the present value of the annuity. The present value of an annuity refers to how much money would be needed today to fund a series of future annuity payments.

**where:**

PVA = Present value of an annuity stream

A = Amount of each annuity payment

*r* = Interest rate (also known as discount rate)

*n* = Number of periods in which payments will be made​

**Illustraion:15** Assume a person has the opportunity to receive an annuity that pays Rs.50,000 per year for the next 25 years, with a 6% discount rate, or take a Rs.650,000 lump-sum payment. Which is the better option?

**Solution:** Given A= 50,000 PVA=? , = 6%(0.06),n= 25years

Given this information, the annuity is worth Rs.10,832 less on a time-adjusted basis, so the person would come out ahead by choosing the lump-sum payment over the annuity.

**Illustraion:16** Assume Mr.X has the opportunity to receive an annuity that pays Rs.25,000 per year for the next 20 years, with a 5% discount rate, or take a Rs.3,00,000 lump-sum payment. Which is the better option?

**Solution:** Given A= 25,000 PVA=? , = 5%(0.05),n= 20years

Given this information, the annuity is worth Rs.11,250 more on a time-adjusted basis, so the person would come out ahead by choosing the annuity.

**Doubling period:** Doubling time refers to the time period required to double the value or size of investment. It is a concept popularly used to estimate the number of years required to double the invested money of a predetermined annual rate of return. Rule 72 is a simple mathematical formula to compute the time will take to double the investment value based on rate of return. It can be expressed simply as

**Years of double =**

**Ilustration:17** Let's say you invest Rs.1,000 at a 9.2% annual rate of return, which is the average stock market return for the last 10 years. Calculate doubling period.

**Years of double =**

**=**

**=**

This means that your initial Rs.1,000 investment will be worth Rs.2,000 in about 7.8 years.

**Valuation of bonds or debentures**

A bond is a form of loan that provides external credits to finance long term investments. In corporate arena it is a debt instruments issued by corporate body for raining capital.

[Jason Fernando](https://www.investopedia.com/contributors/53746/) A bond is a fixed-income instrument that represents a loan made by an investor to a borrower (typically corporate or governmental).

Adam Hayes defines Bond valuation is a technique for determining the theoretical fair value of a particular bond. Bond valuation includes calculating the present value of a bond's future interest payments, also known as its cash flow, and the bond's value upon maturity, also known as its face value or par value.

**Coupon rate:** The coupon rate is fixed interest rate that investor earns periodically, which is paid semi annually. It can be calculated by using the following formula.

**Where**,

C= Future cash flow/ coupon rate

r= discount rate / YTM

t= number of periods

**Face value:** Face value refers to the bond value when it is issued. It is the price pays at the time of maturity. It can be calculating by using the following formula.

**Where**,

C= Face value of the bond

r= discount rate

T= Time of maturity

**Illustration: 18** A corporate bond Rs.1000 with an annual interest rate of 5%, payments for 2 years and after which bond matured and principle must be repaid. Assume YTM is 3 %.

**Solution:** Given F= Rs. 1,000, Coupon rate= 5%, (Semiannual 2.5%), C= 2.5% x 1,000= Rs. 25, T= YTM 3% / 2 semiannual = 1.5%.

**= 94.66**

Therefore total value of the bond is Rs.1036.84

**Illustration: 19** A corporate bond Rs.2000 with an semi annual interest rate of 5%, payments for 2 years and after which bond matured and principle must be repaid. Assume YTM is 3 %.

**Solution:** Given F= Rs. 2,000, Coupon rate= 5%, (Semiannual 2.5%), C= 2.5% x 2,000= Rs. 50, T= YTM 3% / 2 semiannual = 1.5%.

Therefore total value of the bond is Rs.2076.33

**Valuation of shares**

Valuation of shares means, it is process of computing the intrinsic value of shares of a company. The following formula can be used to compute the intrinsic value of shares.

**Illustration: 20** From the following particulars calculate Intrinsic value of equity shares. 4,000 Equity Shares of ` 100 fully paid, Building Rs.3,50,000, Furniture Rs.3,000, Stock Rs.4,50,000, Investment Rs. 3,35,000, Debtors Rs.2,80,000, Bank Rs.60,000, Creditors Rs.48,000, Preference Share Capital Rs.1,00,000.

**Solution:**

Net Assets available to Equity Shareholders= Total Assets-Liablities- Preference Share Capital

= 14,78,000- 48,000- 1,00,000 = 13,30,000

**Illustration: 21** The following particulars are available in respect of NH Limited:

1. 60% preference shares of ` 100 each fully paid and 4,500 equity shares of ` 10 each fully paid.
2. External liabilities: 7,850
3. Total Assets 1,01,000

**Solution:**

Net Assets available to Equity Shareholders= Total Assets-Liablities- Preference Share Capital

= 1,01,000 – 7,850 - 45,000 = 48,150

**MODEL QUESTIONS**

1. What is time value of money?
2. What is future value?
3. What is present value?
4. What is doubling period?
5. From the following particulars calculate intrinsic value of equity shares. 8,000 Equity Shares of ` 100 fully paid, Building Rs.7,00,000, Furniture Rs.6,000, Stock Rs.9,00,000, Investment Rs. 6,70,000, Debtors Rs.5,60,000, Bank Rs.1,20,000, Creditors Rs.96,000, Preference Share Capital Rs.2,00,000.
6. A relative has offered to give you Rs.8,000 and asks if you would rather receive the money today or wait two years. To ensure that getting the Rs.8,000 today is worth more than if you waited, you can calculate its future value. If you decide to take the Rs.8,000 and invest in an account at an annual rate of 6%. Calculate future value.
7. You receive a cash bonus, but your employer gives you two options: receive Rs.16,000 right now or Rs.20,000 two years from now. You need to determine whether investing the Rs.16, 000 today will give you more money than the Rs.20,000 in two years. If you invest the Rs. 16,000 into an account that earns 12% annual interest. Calculate future value.

**Module-3**

**FINANCING AND DIVIDEND DECISIONS**

**-------------------------------------------------------------------------------------**

**Financing Decision: Sources of Long-Term Finance- Meaning of Capital Structure, Factors influencing Capital Structure, Optimum Capital Structure – EBIT, EPS Analysis, and leverages – Problems. Dividend Decision: Meaning & Determinants of Dividend Policy, Types of Dividends, Bonus Shares (Meaning only)**

**-------------------------------------------------------------------------------------**

**Introduction**

Finance gross root level requirement of any economic activity which is having profit motive. In the joint stock form of organization financial decision play a significant role in operational level. So it is importance to know what financial decision really mean. It means money that a person or company barrows for a particular purpose. It is process of providing funds for business activities. The financing decisions spin around capital structure of the business organization.

It always focuses on maintaining good capital structure ratio. The mix of equity and debt of an entity are called capital structure. Capital structure plays a key role in growth and performance of the firm. The financing decision is about the amount of finance to be procured from various long-term sources, this determines the various sources of capital, as well as it also provides the cost of each source of capital. Financing decisions refer to the decisions that companies need to take regarding what proportion of equity and debt capital to have in their capital structure. This plays a very important role in financing its assets, investment-related decisions, and shareholder value creation.

Financing decisions

Dividend decisions

Financing decisions

Liquidity decisions

Investment decisions

Maximization of Wealth value and profit of firm

**Investment decisions:** It means the act of committing money, efforts, and time into something to make profit or get an advantage. In business, investment decision revolves around the capital budgeting decisions. It helps to analyze the investment opportunities, specifically long term projects associated with cash flows payback period. Internal rate of return, net present values and profitability index are the popular methods to determine the profit potential.

**Liquidity Decision:** It means the fact of being available in the form of money rather than investments or property. In other words it is a company’s ability to covert assets to cash as it describes how easily an asset can be bought or sold without losing a its value. Liquidity decisions generally spin around working capital decisions and management. The lack of liquidity creates problems like financial crisis and insolvencies.

**Financing Decision:** It means money that a person or company barrows for a particular purpose. It is process of providing funds for business activities. The financing decisions spin around capital structure of the business organization. It always focus on maintaining good capital structure ratio. The mix of equity and debt of an entity are called capital structure. Capital structure plays a key role in growth and performance of the firm.

**Dividend decision:** A dividend is the distribution of a company profits to its shareholders. Corporations can share their profits to the shareholders in the form of dividend. The dividend decision relates to how much profit of the company is to be distributed to the shareholders. This decision should be taken keeping in mind the overall objectives of maximizing shareholders wealth.

**Sources of long-term finance**

A source of finance means the approaches for mobilization or raising various kind of finance to the industrial units. Sources of finance state that how the corporate or industrial unit is new or existing. It needs funds to meet the fixed or working capital requirements such replacement or purchase of new assets, buildings, raw materials, and day-to-day operational expenditures. Long term financing refers to financing by credit or loan or borrowing for more than one or two years by issuing equity shares, preference shares, or corporate bonds for company expansions and diversifications. Capital market, special financial institution, banks, non-banking financial companies, retained earnings and foreign investment and external borrowings are the main sources of long- term finances for companies.

**Equity Capital:** Equity Capital is the most frequently preferred long term source of finance in corporate financing. It is an interest free capital of the company raised by the public. The company may raise funds through IPO or private placement.

**Preference Capital:** Another important long term source of finance for companies is preference capital. Preference shareholders have preferential rights over equity shareholders, while declaring dividend by the company.

**Debentures:** It is a long-term debt instrument issued by companies or government or joint stock companies to meet the financial requirements. The issuing companies are liable to pay fixed rate of interest to the debenture holders.

**Term loans**: A term loan is secured financial credit, provides borrowers with a lump sum of cash on specific borrowing terms. These secured loans are normally meant for established businesses with sound financial strength.

**Retained earnings:** Retained earnings are the amount of part profit a company has left over after paying all its direct and indirect expenses, costs, income taxes and its interest and dividends to shareholders. This represents the portion of the company's reserved profit that can be used, for instance, to invest in new equipment, R&D, and marketing.

**Capital structure**

Capital structure refers to the specific combination of debt and equity used by a company to finance company’s long term projects and operations.

**According Alicia Tuovila**

“Capital structure is the particular combination of [debt](https://www.investopedia.com/terms/d/debt.asp) and [equity](https://www.investopedia.com/terms/e/equity.asp) used by a company to finance its overall operations and growth”.

“Capital structure means the type of securities to be issued and proportionate amounts that make up the capitalisation.” **– C W Gerstenberg**

**Keown et al.** defined capital structure as, 'balancing the array of funds sources in a proper manner, i.e. in relative magnitude or in proportions'.

**Factors influencing Capital Structure**

It is peremptory to consider some significant determinants of corporate capital structure. The financing decisions of business organization are critical to the long-run sustainability of their operational activities. The financial objectives of the firm like profit, wealth and value maximization including returns to owners and all stakeholders mainly depends on organization’s financing decisions. The following are the key influencing factors of corporate capital structure.

**Profitability:** It is measurable profit of the business organization with its expenses. Profit making is the sole objective business activity. It is a comparison between profit before interest and tax, total assets, and leverage. The optimum capital structure hypothesizes the significance of profitability.

**Cost of capital:** The cost incurred while raising the capital from various sources of financing is referred to as the cost of capital. A corporate entity needs to generate adequate revenue so that the cost of capital can be met and the projects can be financed.

**Degree of control:** Equity shareholders are the real owners of the company; tend to have more rights over a company in comparison to debenture and preference shareholders. The capital structure of the company will be determined by the kind of shareholders and the limitations in their voting rights.

**Government policies:** The capital structure is also affected by the fiscal and monetary policies of the government. Any changes in fiscal and monetary policies result in modifications in the capital structure decisions of the company.

**Capital market condition:** In company’s capital structure decisions, the market price of the shares has got an important influence. During the recession period, the corporate capital structure generally consists of debentures and loans.

**Sizes of a company**- Small business firms capital structure generally consists of loans from financial institutions and retained earnings. Large companies having market position, and established earnings can easily go for public issue of shares and debenture. The bigger the size, the wider is total capitalization.

**Total assets**: The asset tangibility is the key factor of capital structure decisions. Total assets of the organization create confidence while barrowing funds from external sources. It can serve as a collateral security. Hence there is a positive association between asset tangibility and capital structure decisions.

**Business growth:** Growth prospects of the firm serve as opportunity channel for sustainability. The growth in terms of total assets and market capitalization creates a confidence while barrowing funds from external sources. Hence there is a positive association between business growth and capital structure decisions.

**Liquidity**: It considers how business organizations are behaved while addressing its financial obligations towards outsiders. It is defined as a ratio of current assets over its current liabilities. Hence there is a direct correlation between Liquidity and capital structure decisions.

**EBIT and EPS analysis**

One of the fundamental valuation technique used by potential investors to evaluate the financial position of the firm is EBIT and EPS analysis. Simply EBIT- EPS analysis examines the impact of financial leverage on the EPS with varying levels of EBIT or under alternative financial plans. The EBIT-EBT analysis is the method that studies the leverage, i.e. comparing alternative methods of financing at different levels of EBIT. Simply put, EBIT- EPS analysis examines the effect of financial leverage on the EPS with varying levels of EBIT or under alternative financial plans. The EBIT-EPS analysis gives the best ratio of debt to equity which the businesses can use to find an optimum balance in their debt and equity structure. The following is the algorithm to calculate EPS.

**Income Statement**

|  |  |
| --- | --- |
| **Particulars** | **Rs** |
| Revenue | XXX |
| **Less**: Cost of goods sold(COGS) | **XXX** |
| Gross profit | XXX |
| **Less**: Operating expenses | **XXX** |
| Earnings before interest tax and depreciation(EBITD) | XXX |
| **Less**: Depreciation | **XXX** |
| Operating profit(EBIT) | XXX |
| **Less**: Interest | **XXX** |
| Earnings before tax(EBT) | XXX |
| **Less**: Tax | **XXX** |
| Earnings After Tax(EAT) | XXX |
| **Less**: Preference dividend | **XXX** |
| Earnings available to Equity Shareholders | XXX |

**Illustration: 22 XYZ Ltd has an EBIT of Rs.6,40,000. Its capital structure is given as under.**

|  |  |
| --- | --- |
| Equity share capital Rs.10 each | Rs.8,00,000 |
| 13% preference share capital | Rs.2,00,000 |
| 9 % debentures | Rs.4,00,000 |
| Tax rate is 50% |  |

**Calculate EPS**

**Income Statement**

|  |  |
| --- | --- |
| **Particulars** | **Rs** |
| Operating profit(EBIT) | 6,40,000 |
| **Less**: Interest(4,00,000 x 9/100) | 36,000 |
| Earnings before tax(EBT) | 6,04,000 |
| **Less**: Tax | 3,02,000 |
| Earnings After Tax(EAT) | 3,02,000 |
| **Less**: Preference dividend(2,00,000x13/100) | 26,000 |
| Earnings available to Equity Shareholders | 2,76,000 |

**Illustration: 23 Nirmala Industry has an EBIT of Rs.2,72,000. Its capital structure is given as under.**

|  |  |
| --- | --- |
| Equity share capital Rs.100 each | Rs.20,00,000 |
| 10% preference share capital | Rs.4,00,000 |
| 9 % debentures | Rs.16,00,000 |
| Tax rate is 50% |  |

**Calculate EPS**

**Income Statement**

|  |  |
| --- | --- |
| **Particulars** | **Rs** |
| Operating profit(EBIT) | 2,72,000 |
| **Less**: Interest(16,00,000 x 9/100) | 1,44,000 |
| Earnings before tax(EBT) | 1,28,000 |
| **Less**: Tax | 64,000 |
| Earnings After Tax(EAT) | 64,000 |
| **Less**: Preference dividend(4,00,000x10/100) | 40,000 |
| Earnings available to Equity Shareholders | 24,000 |

A company is contemplating to raise additional fund of Rs. 20,00,000 for setting up a

project. The company expects EBIT of Rs. 8,00,000 from the project.Following alternative

plans are available:

(a) To raise Rs. 20,00,000 by way of equity share of Rs. 10 each.

(b) To raise Rs. 10,00,000 by way of equity shares and Rs. 10,00,000 by way of debt @

10%.

(c) To raise Rs. 6,00,000 by way of equity and rest Rs. 14,00,000 by way of preferences

shares @ 14%.

(d) To raise Rs. 6,00,000 by equity shares

Rs. 6,00,000 by 10% debt.

Rs. 8,00,000 by 14% Preference shares.

The company is in 60% tax bracket which option is best?

**Leverages:**  In literal sense the leverage means use something to maximum advantage. Means the organization needs to leverage its key resources. Use barrowed capital for expecting the profits made to be greater than the interest payable. Webster defines the leverage as the use of credit to enhance one’s speculative capacity. Adam Hayes defines Leverage is an investment strategy of using borrowed money—specifically, the use of various financial instruments or borrowed capital—to increase the potential return of an investment.

**Types of leverages**

Leverage is of three types operating leverage, financial leverage, and combined leverage.

**Financial leverage**

A company is contemplating to raise additional fund of Rs. 20,00,000 for setting up a

project. The company expects EBIT of Rs. 8,00,000 from the project.Following alternative

plans are available:

(a) To raise Rs. 20,00,000 by way of equity share of Rs. 10 each.

(b) To raise Rs. 10,00,000 by way of equity shares and Rs. 10,00,000 by way of debt @

10%.

(c) To raise Rs. 6,00,000 by way of equity and rest Rs. 14,00,000 by way of preferences

shares @ 14%.

(d) To raise Rs. 6,00,000 by equity shares

Rs. 6,00,000 by 10% debt.

Rs. 8,00,000 by 14% Preference shares.

The company is in 60% tax bracket which option is best?

Financial leverage is the investment strategy with the use of barrowed or debt capital to invest in purchase of asset with the intention that the capital gain from that purchased new asset will exceed cost of barrowings.

Barrowed/ Debt funds

Funds Procurement

Corporate or

Companies

Use profits for repayment

Intended to raise income more than barrowed cost

**Illustration: 24** A company has the following capital structure.

|  |  |
| --- | --- |
| Equity share capital Rs.10 each | Rs.2,50,000 |
| 15 % debentures  Total | Rs.2,50,000  Rs.5,00,000 |
| Operating profit (EBIT) | Rs.1,00,000 |

Calculate Financial Leverage

**Solution:**

**Income Statement**

|  |  |
| --- | --- |
| **Particulars** | **Rs** |
| Operating profit(EBIT)  **Less**: Interest(2,50,000 x 15/100)  Earnings before tax(EBT) | 1,00,000  37,500  62,500 |

**Operating leverage:** Operating leverage helps to analyze the relationship between company operations and company revenue. This ratio tells about how much operating revenue increases with increase in sales revenue. It is firms’ ability to utilizing its fixed expenses to get better returns. The operating leverage can be calculated as following.

**Illustration: 25** From the fallowing information calculate operating leverage.

|  |  |
| --- | --- |
| Sales (300000 Units @ Rs.4 per unit) | Rs.12,00,000 |
| Variable cost per units Rs.2  Fixed cost | Rs.6,00,000  Rs.1,00,000 |
| Interest charges | Rs.50,000 |

**Solution**

**Income Statement**

|  |  |
| --- | --- |
| **Particulars** | **Rs** |
| Sales (300000 Units @ Rs.4 per unit)  **Less**: Variable cost Rs.2 per unit  Contribution  **Less**: Fixed cost  **EBIT** | 12,00,000  6,00,000  6,00,000  1,00,000  **5,00,000** |

**Combined leverage**: It is a combination of financial and operating Leverage. A combined leverage is a summarized leverage ratio. It is the combined effect of operating leverage and the financial leverage. This ratio can be used to help determine the most optimal level of financial and operating leverage to use in any firm. The combined leverage can be calculated as fallowing.

**Illustration: 26** From the fallowing information calculate operating leverage.

|  |  |
| --- | --- |
| Sales | Rs.5,00,000 |
| Variable cost  Fixed cost | Rs.3,00,000  Rs.75,000 |
| Interest charges | Rs.37,500 |

**Solution:**

Contribution = Sales- variable cost

= 5,00,000-3,00,000

**= 2,00,000**

EBT= Contribution- Fixed cost- Interest

= 2,00,000- 75,000-37,500

**= 87,500**

**Dividend decision:** A dividend is the distribution of a company profits to its shareholders. Corporations can share their profits to the shareholders in the form of dividend. The dividend decision relates to how much profit of the company is to be distributed to the shareholders. This decision should be taken keeping in mind the overall objectives of maximizing shareholders wealth.

**Concept of dividend and dividend policy**

**Cambridge dictionary** defines dividend as “A part of the profit of a company that is paid to the people who own shares in it” **Adam Hayes** defines “A dividend is the distribution of a company's earnings to its shareholders”.

**McLaney** described “dividends as rewards to shareholders in the form of distribution of profits from the previous or current year”.

**According to Baker and Powell “**Dividend policy refers to the payment policy used by the management when determining the amount and patterns of distribution to shareholders over a period of time”.

**Sead** described the Dividend policy determines the ratio between the earnings distributed to shareholders and the earnings retained in the company

**Determinants of Dividend Policy**

There are several factors which influence the dividend policy, the most important of which are the following: (a) legal rules, (b) liquidity position, (c) debt obligations, (d) rate of expansion of assets, (e) profit rate, (f) stability of earnings, (g) access to capital markets.

**Legal rules:** One of the key factors that determine the extent to which the corporate body will pay out dividends are legal aspects. This rules state that dividends must be paid out from the earnings (profit)

**Liquidity position**: One of the factors influencing dividend policy of companies is its liquidity condition. Profits that are reserved in retained earnings are usually invested in the fixed assets needed for work. Usually if they have an immediate need for additional funds. In such condition, the company can choose not to pay out cash dividends.

**Debt obligations:** Dividend policy is also affected by Debt obligations. Debt obligations, especially when a long-term borrowing is involved, frequently restrict the ability of the company to pay cash dividends.

**Rate of expansion of assets:** Company's dividend policy also depends on the rate of expansion of assets. The higher the need for assets and equipments, the higher the possibility that the company will retain earnings rather than paying them out.

**Profit rate:** Profit rate also determines dividend policy. The expected rate of return on assets determines the relative attractiveness of paying out dividends to shareholders or of using them in company.

**Stability of earnings:** Stability of earnings is also one of the factors which determine dividend policy. The company that has relatively stable earnings is often able to make assessment of its future earnings. It is therefore more likely that such company will pay out a larger percentage of its earnings to its shareholders.

**Access to capital markets**: Access to capital markets also effects dividend policy. Understandably, an easier access to capital markets and a wider range of alternative sources of financing make the pursuit of dividend policy easier

**Types of dividend**

Dividend policy determines the relationship between the earnings distributed to shareholders and the earnings retained in the company. Even though retained earnings are one of the most important funding sources used for financing company’s growth, the accrued dividends represent stakeholders' cash flows.

**Cash dividend**: These are the most common types of dividends and are paid out in the form of cash to the shareholders.

**Stock dividend:** Company’s may opt to declare dividend in the form of stock or shares instead of cash.

**Scrip dividend:** It means a promise made by issuing company to pay dividend to shareholders’ at a later date.

**Property dividend:** It means paying dividend by giving assets or inventories to shareholders, instead of paying cash.

**Bonus shares:** A bonus issue, also known as a scrip issue or a capitalization issue, is an offer of free extra shares to existing shareholders. A company may decide to distribute further shares as an alternative to increasing the dividend payout. For example, a company may give one bonus share for every five shares held.

**MODEL QUESTIONS**

1. What is financing decision?
2. What is capital structure?Explain factors influencing capital structure.
3. What is dividend?Explain types of dividends
4. What is dividend policy? Explain the determinants of Dividend Policy
5. A company has the following capital structure.

|  |  |
| --- | --- |
| Equity share capital Rs.10 each | Rs.5,00,000 |
| 15 % debentures  Total | Rs.5,00,000  Rs.10,00,000 |
| Operating profit (EBIT) | Rs.2,00,000 |

Calculate Financial Leverage

1. It is the start of a new accounting year. ABC Ltd wants to find their EBIT using last year's income statement. ABC Ltd’s net income was Rs.56,780. They paid Rs.2,000 in interest and Rs. 4,000 in taxes.
2. Harshit Ltd has made the following transactions in the financial year ending on March 2023.

* The total sales revenue of the company was Rs.1,000,000
* Total Purchases were Rs.550,000
* Opening and closing inventory was Rs.50,000 & Rs.70,000 respectively.
* Salary & wages paid were Rs.150,000
* Rent Paid was Rs.60,000
* Depreciation expenses were Rs.30,000
* Interest expenses were Rs.20,000
* Taxes paid were Rs.30,000

calculate EBIT from the above figures.

1. NH Ltd has Sales revenue during the financial year 2019-20 as per the income statement is Rs.500,000. During the current financial year, the company’s cost of goods sold is Rs.200,000; operating expense is Rs.100,000, Interest expense is Rs.25,000, tax expense is Rs.20,000, and the net profit is Rs.155,000. Compute the EBIT of the company.

**Module-4**

**INVESTMENT DECISION**

**-------------------------------------------------------------------------------------**

**Meaning and Scope of Capital Budgeting, Features & Significance, Techniques –Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return and Profitability Index (Problems)**

**-------------------------------------------------------------------------------------**

**Introduction**

Investment decision means the act of committing money o funds, efforts, time into something to make profit or get an advantage. In business investment decision revolves around capital budgeting decisions. It helps to analyze the investment opportunities, specifically long term projects associated cost outflows. Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return and Profitability Index are the popular methods to determine the profit potential of the projects.

**Meaning of Capital Budgeting**

Capital budgeting is the process of identifying the key business project proposals, forecasting project cash flows, analyzing and evaluating the feasibility of the projects, choosing suitable projects, and implementing and reviewing the results.

**According to Baker and Powell** “the capital budgeting is the process, involves six stages: identifying project proposals, estimating project cash flows, evaluating projects, selecting projects, implementing projects and performing a post-completion audit”.

**According to Gitman et al**. capital budgeting as “the process of evaluating and selecting long term investment consistent with the firm owners’ goal of wealth maximization”

**According to Segelod** “capital budgeting is the procedures, routines, methods and techniques used to select investment opportunities, develop initial ideas into specific investment proposals, evaluate and select a project, and control the investment project to assess forecast accuracy”.

**Scope and significance of capital budgeting**

Capital Budgeting is a technique used for financing decision making of the long term investment which provides the required returns in the future years. Generally, the capital budgeting decisions are highly connected with long term financial commitments. The Scope of Capital budgeting decisions are described as follows.

1. **Use of Modern technology**

The modern industrial era is completely updated with new instruments and equipments. In production and manufacturing The manual production function is replaced by updated technology. The technological advancement leads to reduce costs. The lower operating costs lead to increase the future cash inflows on the investment. Capital Budgeting decision is factor while adopting new mechanization of process.

1. **Expansion and diversification Decisions**

Business expansion and diversification are key indicators of organizational growth and performance. A business organization can expand and diversify its operation by increasing volume of production and sales revenue. For expansion and diversification, a company can purchase new equipments and machinery, construct additional building, takeover of other business etc. For these financing functions capital budgeting techniques are essential..

1. **Replacement Decision**

Business environment is always dynamic in nature. Due to its changing environment a company can replace an outdated equipments with a new updated equipments by considering latest technology. It helps to minimize the operating costs and increase the productivity. Such technology replacement decision will be evaluated in terms of savings in operating costs.

1. **Buy or Lease Decision**

Cost minimization is the key objective of the business organization. While taking investment decisions about fixed asset, it can be purchased or arranged on lease or rental basis. The purchase of fixed assets requires large amount initially. If the same asset is arranged on lease or rental basis, the company can commit fewer amounts initially. So capital budgeting techniques are useful in buy or lease Decision

1. **Selection of alternative**

Capital budgeting techniques are very much helpful in selection of alternative. If a company decides to replace its machinery with new machine, financial manager need analyze the alternatives. For example two types of machines are available to perform a same task. The cost of each machine differs from one another. The pros and cons of buying each machine are evaluated for selection of best one. In this context Capital budgeting technique helps in such selections.

**Features of Capital budgeting**

**Large Investments**: Capital budgetingis the process of evaluating and selecting long term investment project proposals. It involves huge expenditures of high value which makes it a key functional area of the management.

**Business Risk**: Investment decisions are basically involves high risks. In order to take decisions which involve huge financial burden can be risky for the organization.

**Firms Competitive Strength**: The company’s future is depends on investment decisions. Planned and strategic investing can improve firms’ competitiveness, whereas a wrong financial commitment may lead to [business](https://theinvestorsbook.com/business.html) failure.

**Complexity**: When the organizations’ growth prospect is depends on capital budgeting decisions, it becomes difficult for the company management to take optimum solution to grab the most appropriate investment avenue.

**High returns**: Any investment decision taken by the business organization is made with the perspective of earning desirable returns in the long run.

**Affects Cost Structure**: The capital budgeting decisions affects company’s’ cost structure. for instance, it may increase the fixed cost such as insurance charges, interest, depreciation, rent, etc.

**Techniques of capital budgeting**

Capital budgeting is a convoluted and laborious process. For a financial decision maker, it requires a lot of financial expertise and skills. Following are the various techniques required to determine the capital budgeting of a new project:

**Pay-back Period**

Pay-back period is the time required to recoup the initial investment in a project. Payback period is period of time taken to recover its initial cost of investment in a project.

**Advantages of Pay-back Period**

1. It is easy to calculate.
2. It is easy to understand
3. It gives quick results i.e. the time needed to recover initial investment.

**Limitations of Pay-back Period**

1. It doesn’t consider the time value of money.

2. It doesn’t consider the investment total profitability

3. It doesn’t consider the social or environmental benefits.

**Accept /Reject criteria:** If the actual pay-back period is less than the predetermined pay-back period, the project would be accepted. If not, it would be rejected.

**Illustration: 27** A Project cost is Rs. 60,000 and the cash inflows are Rs. 20,000, the expected life of the project is 5 years. Calculate the pay-back period.

**Solution**

**Illustration: 28** A project costs Rs. 10,00,000 and yields annually a profit of Rs. 1,50,000 after depreciation @ 12.5 % but before tax at 50%. Calculate the pay-back period**.**

**Solution**

Profit after depreciation - 1,50,000

Tax 50% - 75,000

75,000

Add depreciation

(12.5% on 10,00,000) - 1,25,000

Cash inflow 2,00,000

**Illustration: 29** A project requires an initial cash outflow of Rs. 50,000. The cash inflows for 6 years are Rs. 10,000, Rs. 16,000, Rs. 20,000, Rs. 24,000, Rs. 14,000 and Rs. 6,000. Calculate the pay-back period**.**

**Solution**

|  |  |  |
| --- | --- | --- |
| Year | Cash Inflows (Rs.) | Cumulative Cash Inflows (Rs.) |
| 1 | 10,000 | 10,000 |
| 2 | 16,000 | 26,000 |
| 3 | 20,000 | 46,000 |
| 4 | 24,000 | 70,000 |
| 5 | 14,000 | 84,000 |
| 6 | 6,000 | 90,000 |

The above calculation reveals that in 3 years Rs. 46,000 recovered Rs. 4,000 is balance. In the 4th year the cash inflow is Rs. 24,000. It means the pay-back period is three to four years, calculated as follows.

**Illustration: 30** ABC Ltd. is evaluating a project requiring an initial cash outflow of `1,05,000 and expected to generate cash inflows for four years are Rs. 40,000, Rs.30,000, Rs.30,000, and Rs.10,000. Calculate the pay-back period**.**

**Solution**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | | Cash Inflows (Rs.) | | Cumulative Cash Inflows(Rs.) | |
| 1 | | 40,000 | | 40,000 | |
| 2 | | 30,000 | | 70,000 | |
| 3 | | 30,000 | | 1,00,000 | |
| 4 | | 10,000 | | 1,10,000 | |

The above calculation reveals that in 3 years Rs. 1,00,000 recovered Rs. 5,000 is balance. In the 4th year the cash inflow is Rs. 10,000. It means the pay-back period is three to four years, calculated as follows.

**Accounting Rate of Return**

In investment decision the rate of return is a central concept in financial analysis. The accounting rate of return, also known as average rate of return, or ARR is a financial ratio used in capital budgeting decisions. The Accounting Rate of Return helps to measure the expected profitability from any capital outlay. The accounting rate of return (ARR) is a central concept in financial analysis, that reflects the average rate of return expected on an investment or outlay, compared to the initial investment's cost.

***Merits***

1. It is easy to calculate
2. It is easy to understand
3. It is based on the accounting returns.

***Demerits***

1. It ignores the time value of money.

2. It ignores the reinvestment opportunity of a project.

**Accept/Reject criteria**

If the actual accounting rate of return is more than the predetermined required rate of return, the project would be accepted. If not it would be rejected.

**Illustration: 31** An AB enterprise is considering a project that has an initial investment of 5,00,000 and it would generates revenue for the next five years. Expected revenue per year: 1,40,000 calculate the ARR.

**Solution**

**Illustration: 32** An initial investment of Rs.2,60,000 is expected to generate annual cash inflow of Rs.64,000 for 6 years. Depreciation is allowed on the straight line basis. The project will generate scrap value of 21,000 at end of the 6th year. Calculate its accounting rate of return.

**Solution**

**Illustration: 33** Mrs.Nirmala started a new project. She expects annual revenue of Rs.1,00,000 for the next ten years, and the estimated cost for project is 40,000. The initial investment for this new project is 4,00,000. Based on this information, you are required to calculate the accounting rate of return.

**Solution**

**Illustration: 34** ST Ltd looking for new investments for replacing existing machinery. The new machine cost is Rs.26, 00,000, and annual revenue is Rs.4, 50,000. The machine would incur yearly maintenance of Rs.1, 00,000. Specialized staff estimated wages would be Rs.1,50,000 annually. The estimated life of the machine is of 15 years, and it shall have scrap value Rs.2, 50,000.

**Solution**

Average expenses = 1, 00,000+ 1,50,000+

**= 4,06,667**

Average Annual Profit =4, 50,000- 4,06,667

**= 43,333**

**= 1.67%**

**Net Present Value**

“Net present value is the present value of the cash inflows and outflows at the discounted rate of a specific project compared with initial investment,” it’s a method of computing return on investment for a project or expenditure. The net present value (NPV) can also be called as net present worth (NPW) of a series of cash inflows or outflows occurring at different time intervals. Jason Fernando defines “Net present value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows over a period of time”. It is used in capital budgeting to analyze the profitability of a investment on project.

**where:** *r*= Required return or discount rate

*t*= Number of time periods​

**NPV Decision Rule**

The present value of cash inflows is greater than the present value of cash outflows, and then it is a good investment.

**Merits**

1. It considers the time value of money.

2. It identifies the total benefits arising out of the proposal.

3. It is the most suitable technique while selecting projects.

**Demerits**

1. It is difficult to understand and calculate.

2. It requires the discounting factors for calculation of present values.

**Illustration**: **35** From the following information, calculate the net present value @ 10% of the two projects and recommend which of the two projects should be accepted.

|  |  |  |
| --- | --- | --- |
| Particulars | Project A | Project B |
| Initial Investment | Rs. 40,000 | Rs. 60,000 |
| Estimated Life | 5 years | 5 years |
| Scrap Value | Rs. 2,000 | Rs. 4,000 |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
|  | Rs. | Rs. | Rs. | Rs. | Rs. |
| Project A | 10,000 | 20,000 | 20,000 | 6,000 | 4,000 |
| Project B | 40,000 | 20,000 | 10,000 | 6,000 | 4,000 |

**Solution**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | **Cash inflows** | | **PV@10%** | **PV of Cash inflows** | |
| **Project X** | **Project Y** | **Project X** | **Project Y** |
| 1 | 10,000 | 40,000 | 0.909 | 9,090 | 36,360 |
| 2 | 20,000 | 20,000 | 0.826 | 16,520 | 16,520 |
| 3 | 20,000 | 10,000 | 0.751 | 15,020 | 7,510 |
| 4 | 6,000 | 6,000 | 0.683 | 4,098 | 4,098 |
| 5 | 4,000 | 4,000 | 0.621 | 2,484 | 2,484 |
| Scrap value | 1,000 | 2,000 | 0.621 | 1,242 | 2,484 |
| Total present value  Initial investments | | | | 48,454 | 69,456 |
| 40,000 | 60,000 |
| **Net present value** | | | | **8,454** | **9,456** |

Project Y is recommended.

**Illustration**: **36** XYZ Ltd intends to purchase a new machine. Managerial accountants have analyzed the production capacity of the new machine and anticipate that is will bring in Rs.10,000 of cash inflows every year for the next 8 years. The new machine costs Rs.30,000 and the current market rate of interest is 12 percent. Calculate net present value.

**Solution**

|  |  |  |  |
| --- | --- | --- | --- |
| **Years** | **Cash Inflows** | **12% Interest** | **PV of**  **Cash Flows** |
| 1 | 10,000.00 | 0.893 | 8,930.00 |
| 2 | 10,000.00 | 0.780 | 7,800.00 |
| 3 | 10,000.00 | 0.712 | 7,120.00 |
| 4 | 10,000.00 | 0.635 | 6,350.00 |
| 5 | 10,000.00 | 0.570 | 5,700.00 |
| 6 | 10,000.00 | 0.507 | 5,070.00 |
| 7 | 10,000.00 | 0.452 | 4,520.00 |
| 8 | 10,000.00 | 0.404 | 4,040.00 |
| Totals | 70,000.00 |  | 40,600.00 |
| Price paid for new machine | | | 30,000.00 |
| **Net Present Value of New Machine** | | | **10,600.00** |

**Illustration**: **37** The MST Co Ltd., intends to replace the old machine with new machine. Two alternative machines (X and Y) have been recommended, each having an initial cost of Rs.8,00,000 and requiring of Rs.40,000 an additional working capital at the end of 1st year. Earnings after taxation are expected to be follows. Calculate net present value

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Cash flow** | | **PV factor @10%** |
| **Machine X** | **Machine Y** |
| 1 | 80,000 | 2,40,000 | 0.909 |
| 2 | 2,40,000 | 3,20,000 | 0.826 |
| 3 | 3,20,000 | 4,00,000 | 0.751 |
| 4 | 4,80,000 | 2,40,000 | 0.683 |
| 5 | 3,20,000 | 80,000 | 0.621 |

**Solution**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | **Cash inflows** | | **PV@10%** | **PV of Cash inflows** | |
| **Machine X** | **Machine Y** | **Machine X** | **Machine Y** |
| 1 | 80,000 | 2,40,000 | 0.909 | 72,720.00 | 2,18,160 |
| 2 | 2,40,000 | 3,20,000 | 0.826 | 1,98,240.00 | 2,64,320 |
| 3 | 3,20,000 | 4,00,000 | 0.751 | 2,40,320.00 | 3,00,400 |
| 4 | 4,80,000 | 2,40,000 | 0.683 | 3,27,840.00 | 1,63,920 |
| 5 | 3,20,000 | 80,000 | 0.621 | 1,98,720.00 | 49,680 |
| Total present value  Initial investments | | | | 9,65,120.00 | 9,96,480 |
| 8,40,000.00 | 8,40,000 |
| **Net present value** | | | | **1,25,120.00** | **1,56,480** |

**Internal Rate of Return**

Internal rate of return (IRR) is the discount rate at which a to estimate the profitability of potential investments. Project’s returns become equal to its initial investment. In other words, it attains a break-even point where the total cash inflows completely meet the total cash outflow. Kellison, Stephen defines Internal Rate of Return as “It is the interest rate at which the net present value of the future cash flows is equal to the initial investment”. Thus the internal rate of return (IRR) is the expected annual rate of growth of a financial commitment. The formula for computing the internal rate of return is as under.

Where,

LR = Lower Rate

HR = Higher Rate

NPV=Net present value

I= Initial investment/Cost

**Merits**

1. It considers the time value of money.
2. It doesn’t consider the required rate of return.
3. It gives the optimal rate of return.

**Demerits**

1. It involves complicated procedures.
2. Multiple rates may be confusing for investment decisions.

**Illustration**: **38** From the following information Calculate the internal rate of return of an investment of `2,72,000 which generates the following cash inflows:

|  |  |
| --- | --- |
| Year | Cash Inflows (in `) |
| 1 | 60,000 |
| 2 | 80,000 |
| 3 | 1,20,000 |
| 4 | 60,000 |
| 5 | 40,000 |

Discount cash flows by 10%.

**Solution**

|  |  |  |  |
| --- | --- | --- | --- |
| Years | Cash Inflows | Discounting factor at 10% | Present Value of Net Cash Flows |
| 1 | 60,000 | 0.909 | 54,540.00 |
| 2 | 80,000 | 0.826 | 66,080.00 |
| 3 | 1,20,000 | 0.751 | 90,120.00 |
| 4 | 60,000 | 0.683 | 40,980.00 |
| 5 | 40,000 | 0.621 | 24,840.00 |
| **Total present value** | | | **2,76,560.00** |

The present value at 10% comes to `2,76,560 which is more than the initial investment. Therefore, a higher discount rate is suggested, say, 12%.

|  |  |  |  |
| --- | --- | --- | --- |
| Years | Cash Inflows | Discounting factor at 12% | Present Value of Net Cash Flows |
| 1 | 60,000 | 0.893 | 53,580.00 |
| 2 | 80,000 | 0.780 | 62,400.00 |
| 3 | 1,20,000 | 0.712 | 85,440.00 |
| 4 | 60,000 | 0.635 | 38,100.00 |
| 5 | 40,000 | 0.570 | 22,800.00 |
| **Total present value** | | | **2,62,320.00** |

The internal rate of return is, thus, more than 10% but less than 12%. The exact rate can be obtained by using the formula:

**IRR**

**Illustration**: **39** From the following information Calculate the internal rate of return of an investment of `5,44,000 which generates the following cash inflows:

|  |  |
| --- | --- |
| Year | Cash Inflows (in `) |
| 1 | 1,20,000 |
| 2 | 1,60,000 |
| 3 | 2,40,000 |
| 4 | 1,20,000 |
| 5 | 80,000 |

Discount cash flows by 10%.

|  |  |  |  |
| --- | --- | --- | --- |
| Years | Cash Inflows | Discounting factor 10% | Present Value of Net Cash Flows |
| 1 | 1,20,000 | 0.909 | 1,09,080.00 |
| 2 | 1,60,000 | 0.826 | 1,32,160.00 |
| 3 | 2,40,000 | 0.751 | 1,80,240.00 |
| 4 | 1,20,000 | 0.683 | 81,960.00 |
| 5 | 80,000 | 0.621 | 49,680.00 |
| **Total present value** | | | **5,53,120.00** |

The present value at 10% comes to `5,53,120 which is more than the initial investment. Therefore, a higher discount rate is suggested, say, 12%.

|  |  |  |  |
| --- | --- | --- | --- |
| Years | Cash Inflows | Discounting factor 12% | Present Value of Net Cash Flows |
| 1 | 1,20,000 | 0.893 | 1,07,160.00 |
| 2 | 1,60,000 | 0.780 | 1,24,800.00 |
| 3 | 2,40,000 | 0.712 | 1,70,880.00 |
| 4 | 1,20,000 | 0.635 | 76,200.00 |
| 5 | 80,000 | 0.570 | 45,600.00 |
| **Total present value** | | | **5,24,640.00** |

The internal rate of return is, thus, more than 10% but less than 12%. The exact rate can be obtained by using the formula:

**IRR**

**Profitability Index**

The profitability index (PI), can also be called as value investment ratio (VIR) or profit investment ratio (PIR), describes an index that indicates the relationship between the costs and benefits of a proposed investments.

**Acceptance Rule**

Accept the project when PI is greater than one. (PI > 1)

Reject the project when PI is less than one. (PI < 1)

**Illustration**: **40** Harshit & Co has the following potential investment alternatives:

|  |  |  |
| --- | --- | --- |
| **Project** | **NPV** | **Initial Investment** |
| A | 5,00,000 | 15,00,000 |
| B | 15,00,000 | 50,00,000 |
| C | 10,00,000 | 10,00,000 |
| D | 20,00,000 | 60,00,000 |
| E | 12,00,000 | 35,00,000 |

Rank the projects based on profitability index and suggest the projects that should be feasible.

**Solution**

**Profitability indices of each project:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Project** | **Profitability Index** | | **Rank** |
| A | 1 + 5,00,000/15,00,000 | = 1.33 | 3 |
| B | 1 + 15,00,000 /50,00,000 | = 1.30 | 5 |
| C | 1 + 10,00,000 /10,00,000 | = 2.00 | 1 |
| D | 1 + 20,00,000 /60,00,000 | = 1.33 | 4 |
| E | 1 + 12,00,000 /35,00,000 | = 1.34 | 2 |

Project C is suggested

**Illustration**: **41** The initially outlay of a project is Rs.1,00,000 and it generates cash flows of Rs.40,000, Rs.30,000, Rs.50,000, and Rs.20,000 in four years. The discount rate is 10%. profitability index.

|  |  |  |  |
| --- | --- | --- | --- |
| Years | Cash Inflows | Discounting factor 10% | Present Value of Net Cash Flows |
| 1 | 40,000 | 0.909 | 36,360.00 |
| 2 | 30,000 | 0.826 | 24,780.00 |
| 3 | 50,000 | 0.751 | 37,550.00 |
| 4 | 20,000 | 0.683 | 13,660.00 |
| **Total present value** | | | **1,12,350.00** |

**Conclusion**

The capital Budgeting plays a significant role in organizations’ Investment and financing decisions. Generally capital Budgeting helps the organization in taking economic decisions. When there is no proper financial planning regarding the growth of the project, there is always the risk or uncertainty of the sudden cost increase, delay in the completion of the project, regulatory complications, and time, raw material constraints etc. Thus, every business organization should have the proper capital budgeting steps taken place well in advance before initiating any large capital project.

**MODEL QUESTIONS**

1. What is capital budgeting?Explain its features & significance,
2. What is Payback Period?
3. Briefly explain the scope of capital budgeting.
4. Assume that a project requires an outlay of Rs 50,000 and yields annual cash inflow of Rs 12,500 for 7 years. Calculate the payback period for the project.
5. Calculate the payback period of an investment proposal, requires an initial cash outlay of Rs. 350000/- and it generates cash inflow of Rs. 50000 every years for next 10 years.
6. Suppose that a project requires a cash outlay of Rs 20,000, and generates cash inflows of Rs 8,000; Rs 7,000; Rs 4,000; and Rs 3,000 during the next 4 years. What is the project’s payback?

**Module-5**

**WORKING CAPITAL MANAGEMENT**

**-------------------------------------------------------------------------------------**

**Working Capital Concept of Working Capital, Significance of Adequate Working Capital, Types of Working Capital, Problems of Excess or Inadequate Working Capital, Determinants of Working Capital, Sources of Working Capital, Estimation of Working Capital (Simple Problems)**

**-------------------------------------------------------------------------------------**

**Introduction**

As the industrial economy gets out of the credit crunch- a condition where financial assistance is either not available or expensive to barrow, certain aspects need to be analyze under the roof of working capital, one of the most significant key reason is the improper management of working capital which consequently results in to liquidity problem, many business organizations are faced with the problem of getting adequate funds readily available to meet their current operational needs, therefore, there is an urgent need for business organizations to maintain an adequate liquidity through proper management of working capital to meets its day to day financial needs of the business.

**Meaning of Working Capital**

The term working capital simply refers to the hold of current assets over current liabilities. A working capital of a firm can be referred to as firm’s financial commitment in current assets, such as, cash and cash equivalent, account receivables, short term or marketable securities and inventories.

**According to John J. Hampton,** “Working capital may be defined as all the short-term assets used in daily operations.”

**According to Shubin**, “Working capital is the amount of funds necessary to cover the cost of operating the enterprise.”

**According to C. W. Gerstenberg**, “Working capital is the excess of current assets over current liabilities.”

**Concept of Working Capital**

According to Van Horne, Wachowicz, “There are two major concepts of working capital net working capital and gross working capital. The difference between current assets and current liabilities is called net working capital. On the other hand, gross working capital means the firm’s investment in current assets, marketable securities, receivables and inventory.” In the broad sense, the term working capital refers to the gross working capital and represents the amount of funds committed in short term investments. Thus the gross working capital is the amount of funds employed in total current assets of the enterprise. Current assets are those assets which can be converted into cash within a short period of normally within one accounting year.

**Significance of Adequate Working Capital,**

The requirement of Working capital impacts many functional aspects of business organization, from paying wages to employees, vendors, and clients and planning for sustainable long-run growth and development. In short, working capital is the fund available to meet firms’ current, short-term financial obligations.The Significance of Adequate Working Capital is described as follows.

* Adequate working capital helps in maintaining uninterrupted flow of production without any hurdles.
* Adequate working capital helps in maintaining regularity in making prompt payments and hence it helps in creating reputation
* A concern having sufficient circulating capital, with good financial condition can barrow loans from external sources.
* Adequate working capital ensures regular supply of raw materials.
* Adequate circulating capital enables a firm to face business risks in emergencies.

**Types of Working Capital**

**Temporary Working Capital**

Name itself says’ that Temporary working capital is the circulating capital required by the organization for a particular period. For example, in the festive season if demand is high, firm needs fund to meet seasonal demand in market.

**Permanent Working Capital**

Permanent working capital can also be called as fixed working capital or hardcore working capital, or minimum working capital required to perform the business activities smoothly. In other words  the part of working capital which is permanently fixed up in the current assets to carry out the business activities smoothly**.**

**Gross & Net Working Capital**

Gross working capital is the amount of total assets of the organization. These assets are basically includes, Cash, Accounts Receivable, Marketable Securities like stocks, Short-Term Investments. The networking capital of the business organization is the variation between gross working capital and current liabilities.

**Negative Working Capital**

If an organization holds excess of current liabilities over current assets, this shortfall or deficit is known as negative working capital. It arises when the current liabilities exceed the short-term assets.

**Reserve Working Capital**

If a business enterprise maintains surplus working capital called as reserve working capital. Businesses use such surplus working capital as a contingency for unexpected market situations. It a short term capital made by the business enterprises to meet the uncertainties.

**Regular Working Capital**

Regular working capital is the minimum amount of capital required for day-to-day business operations. For example, making a monthly payment of staff salaries and wages.

**Seasonal Working Capital**

This the amount of working capital required for a business organization during the particular season of the year. For fulfilling the seasonal demands, organization needs to maintain a seasonal working capital. It is also type of reserve working capital to meet sudden change and seasonal fluctuations in the demand.

**Problems of Excess or Inadequate Working Capital**

**Unproductive** **funds**: Excessive circulating Capital is the surplus, unproductive or idle funds which earn no profits for the business and thus the business organization cannot get a proper rate of return on its financial commitments.

**Lag in payments:** A business firm which has insufficient circulating capital cannot pay its short-term financial obligations in time. Thus, it will lose its goodwill and shall not be able to get external credit facilities.

**Unnecessary** **expenditure**: When there is a surplus or excessive working capital, it may lead to inessential purchasing and accumulation of inventories causing more chances of waste and inessential expenditure. It leads to create higher incidence of bad debts.

**Lack of marketability:** It becomes difficult for the concern to get competitive advantage of favorable market conditions and undertake profitable projects due to lack of working capital.

**Determinants of Working Capital**

Working capital management plays a significant role in a firm’s profitability, risk management and value creation. is a key element in the growth and performance of every business concern. The proper and effective management of circulating capital helps to value creation in firms, improper management of working capital, destroy firms’ reputation and it can lead to the eventual solvency of the firm. The search for the determinants that influence working capital management has, become a key exercise embarked upon by both managers and finance executives in the organization. The following are the key Determinants of Working Capital.

**Determinants of Working Capital**

**Nature of business**

Working capital requirements of a business organization are specifically related to the type of the business. Hence, the nature of the business determines the amount working capital required. Processing industries, for instance, invest in fixed assets short term assets. Trading concerns by default they have maintain sufficient amount of cash, inventories and accounts receivables. They will have low need for working capital.

**Firm size**

Theoretically, there is a association between the size of a organization and working capital requirements. Large scale industries are expected to have a greater amount of financial commitments in working capital due to their varied day-to-day operational activities.

**Sales growth**

Sales growth is one of the key determinants of working capital requirements in every business concern. It affects working capital because the need of working capital of every enterprise depends on its quantum of sales.

**Profitability**

There is a positive significant relationship between profit and working capital requirement. Firms that have higher profits are likely going to invest their surplus funds into long-term NPV projects. Firms with more profit they have greater attention to proper working capital Management.

**Leverage**

Leverage is one of the determinants that influence the circulating capital requirement of a firm. It is observed that already leveraged firms are always very careful not to increase their leverage level thus they attempt as much as possible to keep investment on current asset to lower limits.

**Level of economic activities**

The activities of the particular economy certainly have an effect on the operations of the business organization. Thus economic activities of a country either booming or slowdown, determines the working capital requirements. For instance, firm’s availability of cash is expected to increase during booming period and the vice versa.

**Operating cycle**

Operating cycle is one of the determinants that influence the circulating capital requirement of a firm. Operating cycle measures the period taken by the firm to collect its receivables and sell its inventory. If the time is higher will leads working capital requirements.

**Sources of Working Capital**

Sources of working capital can be spontaneous, short term and long-term. Spontaneous working capital includes mainly trade credit such as the sundry creditor, bills payable, and notes payable. Short-term sources are tax provisions, dividend provisions, bank overdraft, cash credit, trade deposits, public deposits, bill discounting, short-term loans, inter-corporate loans, and commercial paper. Long-term sources are retained profits, provision for depreciation, share capital, long-term loans, and debentures.

**Estimation of Working Capital**

To calculate the working capital requirements, we can use the following formula.

Working Capital (WC) = Current Assets (CA) – Current Liabilities (CL).

**Percentage of Sales Method:** Sales growth is one of the key determinants of working capital requirements in every business concern. It affects working capital because the need of working capital of every enterprise depends on its quantum of sales. Percentage of sales method is based on the assumption that the level of working capital for any firm is directly associated to its sales value.

**Illustration: 42** XYZ ltd has the following information for the year ended 30.6.2021

|  |  |  |  |
| --- | --- | --- | --- |
| **Liabilities** | **Rs** | **Assets** | **Rs** |
| Equity share capital | 4,00,000 | Fixed assets | 6,00,000 |
| 8% debentures | 2,00,000 | Inventories | 2,00,000 |
| Reserves and surplus | 1,00,000 | Debtors | 1,40,000 |
| Long term loan | 1,00,000 | Cash In hand | 20,000 |
| Creditors | 1,60,000 |  |  |
| **Total** | **9,20,000** | **Total** | **9,20,000** |

Sales for the year ended 30.06.2021 amounted to Rs.20,00,000 and estimated sales in 2021-22 is Rs.24,00,000.You are required to estimate the working capital requirements for the year 2021-22

**Solution**

**Estimation of working capital requirements**

|  |  |  |  |
| --- | --- | --- | --- |
| **Particulars** | **Actual 2021** | **% to Sales** | **Estimated 2021-22** |
| Sales | 20,00,000 | 100 | 24,00,000 |
| Current Assets |  |  |  |
| Inventories | 2,00,000 | 10 | 2,40,000 |
| Debtors | 1,40,000 | 7 | 1,68,000 |
| Cash in hand | 20,000 | 1 | 44,000 |
| **Total Current assets(A)** | **3,60,000** | **18** | **4,32,000** |
| Current liabilities |  |  |  |
| Creditors | 1,60,000 | 8 | 1,92,000 |
| **Total Current Liabilities(B)** | **1,60,000** | **8** | **1,92,000** |
| **Working capital(A-B)** | **2,00,000** | **10** | **2,40,000** |

**Illustration: 43** NH ltd. has the following information for the year ended 30.6.2020

|  |  |  |  |
| --- | --- | --- | --- |
| **Liabilities** | **Rs** | **Assets** | **Rs** |
| Equity share capital | 6,00,000 | Fixed assets | 8,00,000 |
| 8% debentures | 3,00,000 | Stock | 3,00,000 |
| Reserves and surplus | 1,50,000 | Bills receivable | 2,40,000 |
| Long term loan | 1,50,000 | Cash In hand | 60,000 |
| Bills payable | 2,00,000 |  |  |
| **Total** | **14,00,000** | **Total** | **14,00,000** |

Sales for the year ended 30.06.2021 amounted to Rs.30,00,000 and estimated sales in 2021-22 is Rs.34,00,000.You are required to estimate the working capital requirements for the year 2020-21.

**Solution**

**Estimation of working capital requirements**

|  |  |  |  |
| --- | --- | --- | --- |
| **Particulars** | **Actual 2020** | **% to Sales** | **Estimated 2020-21** |
| Sales | 30,00,000 | 100 | 34,00,000 |
| Current Assets |  |  |  |
| Stock | 3,00,000 | 10 | 3,40,000 |
| Bills receivable | 2,40,000 | 8 | 2,72,000 |
| Cash in hand | 60,000 | 2 | 68,000 |
| **Total Current assets(A)** | **6,00,000** | **20** | **6,80,000** |
| Current liabilities |  |  |  |
| Bills payable | 2,72,000 | 9.07 | 3,08,380 |
| **Total Current Liabilities(B)** | **2,72,000** | **9.07** | **2,72,000** |
| **Working capital(A-B)** | **3,28,000** | **10.93** | **3,71,680** |

**Operating Cycle Method:**

Operating cycle is one of the determinants that influence the circulating capital requirement of a firm. Operating cycle measures the period taken by the firm to collect its receivables and sell its inventory. If the time is higher will leads working capital requirements. The calculation working capital requirements is based upon the operating cycle concept of working capital. The cycle starts with the purchase of raw material and other factors of production and the sale of finished goods.

**Illustration**: **44** Prepare a statement of working capital requirement from the following information of Harshit traders.

|  |  |
| --- | --- |
| Estimated annual sales revenue (2,00,000 Units) | Rs.16,00,000 |
| Selling price | Rs.8 per unit |
| % of net profit on sales | 25% |
| Average credit period allowed to customers | 8 weeks |
| Average credit period allowed by suppliers | 4 weeks |
| Average Stock holding in terms of sales requirement | 12 weeks |
| Allow 10% contingencies |  |

**Solution**

**Estimation of working capital requirements**

|  |  |
| --- | --- |
| **Particulars** | **Rs.** |
| Current Assets |  |
| Stock(12,00,000 x 12/52 | 2,76,924 |
| Debtors(12,00,000 x 8/12) | 1,84,616 |
| **Total Current assets(A)** | **4,61,540** |
| Less: Current liabilities |  |
| Creditors (12,00,000 x 4/12) | 92,308 |
| **Total Current Liabilities(B)** | **92,308** |
| Net working capital(A-B) | 3,69,232 |
| **Add 10% contingencies** | **36,924** |
| **Working capital(A-B)** | **4,06,156** |

Working note:

1. Profit= 25% of 16,00,000 =4,00,000
2. Cost of sales=16,00,000 - 4,00,000=12,00,000

**Illustration**: **45** Find out the working capital requirement from the following information :

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Production during the year | | 1,20,000 units | | |
| Selling Price | | Rs. 10 per unit. | | |
| Raw Material | | 60% | | |
| Wages | | 10% | | |
| Overheads | | 20% | | |
| Raw Material storage period | | 2 months | | |
| Work in process storage period | | 1 months | | |
| Finished goods storage period | | 3 months | | |
| Credit allowed by suppliers | | 2 months | | |
| Credit allowed to customers | | 3 months | | |
| Minimum cash balance desired | | Rs. 40,000 | | |
| Wages and overheads paymen | | 1 month | | |
| Production per month | (1,20,000÷12) | | 10,000 units |
| Selling Price |  | | Rs. 10.00 per unit |
| Raw Material | 60% | | Rs. 6.00 per unit |
| Wages | 10% | | Rs. 1.00 per unit |
| Overheads | 20% | | Rs. 2.00 per unit |

**solution**

|  |  |  |
| --- | --- | --- |
| **Estimation of working capital requirements** | | |
| **Particulars** | **Rs.** | **Rs.** |
| **I. Current Assets:** |  |  |
| Cash Balance | 20,000 |  |
| Raw Material (5,000 × Rs. 3 × 2) | 30,000 |  |
| **Work in Process:** |  |  |
| Raw Material (10,000 × Rs 6 × 1) | 60,000 |  |
| Wages (10,000 × Rs. 1 × 1) | 10,000 |  |
| Overheads (10,000 × Rs.2 × 1) | 20,000 |  |
| Finished goods (10,000 × Rs. 9 × 3) | 1,27,000 |  |
| Debtors (10,000 × Rs. 9 × 3) | 1,27,000 |  |
| **Total Current Assets:(A)** | **3,94,000** | **3,94.000** |
| **II. Current Liabilities :** |  |  |
| Creditors (10,000 × Rs. 6 × 2) | 1,80,000 |  |
| Wages (10,000× Rs. 1 × 1) | 10,000 |  |
| Overheads (10,000 × Rs. 2 × 1) | 20,000 |  |
| **Total Current Liabilities(B)** | **2,10,000** | **2,10,000** |
| **Net Working Capital (A–B)** |  | **1,66,250** |

**Illustration**: **46** Estimate the working capital requirement from the following information:

Estimated Cost per Unit of Production

|  |  |
| --- | --- |
| Amount per Unit (Rs. ) | |
| Raw Materials | 100 |
| Direct Labour | 40 |
| Overheads | 80 |

|  |  |
| --- | --- |
| The following is the additional information: | |
| Selling price per unit | Rs. 240 |
| Level of activity | 1,04,000 units per annum |
| Raw Materials in stock | average 4 weeks |
| Finished Goods in Stock | average 4 weeks |
| Credit allowed by Suppliers | average 4 weeks |
| Credit allowed to Debtors | average 8 weeks |
| Lag in payment of Wages | average 1 1/2 weeks. |

Work in progress [Assume 100% stage of completion of materials and 50 per cent for labour and overheads: average 2 weeks, Cash at Bank is expected to be Rs. 50,000. Assume that production is sustained during 52 weeks of the year.

|  |  |  |
| --- | --- | --- |
| **Estimation of working capital requirements** | | |
| **Particulars** | **Rs.** | **Rs.** |
| **I. Current Assets:** |  |  |
| Cash Balance | 50,000 |  |
| Raw Material (2000 × 4 × 100) | 8,00,000 |  |
| **Work in Process:** |  |  |
| Raw Material (2000 × 2 × 100) | 4,00,000 |  |
| Wages (2000 × 2 × 40) 50% | 80,000 |  |
| Overheads (2000 × 2 × 80) 50% | 1,60,000 |  |
| Finished goods (2000 × 4 × 220) | 17,60,000 |  |
| Debtors (2000 × 8 × 220) | 35,20,000 |  |
| **Total Current Assets:(A)** | | 67,70,000 |
| **II. Current Liabilities :** |  |  |
| Creditors (2000 × 4 × 100) | 8,00,000 |  |
| Outstanding Wages (2000 × 40 × 1.5) | 1,20,000 |  |
| **Total Current Liabilities(B)** | | 9,20,000 |
| **Net Working Capital (A–B)** | | 58,50,000 |

Working Notes:

1. Annual production is 1,04,000 units and year is consisting of 52 weeks. So, the weekly production is 2000 units.
2. (ii) Debtors have been taken at cost of production.

**MODEL QUESTIONS**

1. What is working capital? Explain the types of working capital.
2. Explain the problems of excess or inadequate working capital.
3. Explain determinants of working capital.
4. Prepare an estimate of working capital requirement from the following information of a trading concern.

* Projected annual sales 10,000 units Selling price Rs. 10 per unit,
* Percentage of net profit on sales 20%,
* Average credit period allowed to customers 8 Weeks, Average credit period allowed by suppliers 4 Weeks,
* Average stock holding in terms of sales requirements 12 Weeks,
* Allow 10% for contingencies

1. Prepare an estimate of working capital requirement from the following information of a trading concern.
   * Projected annual sales Rs. 6,50,000
   * Percentage of net profit on sales 25%

* Average credit period allowed to debtors 10 Weeks
* Average credit period allowed by creditors 4 Weeks
* Average stock holding in terms of sales requirements 8 Weeks
* Allow 20% for contingencies

1. Performa cost sheet of a company provides the following particulars:

**Elements of cost**

Material 35%

Direct Labours 25%

Overheads 20%

Further particulars available are:

(i) It is proposed to maintain a level of activity of 2,50,000 units.

(ii) Selling price is Rs. 10/- per unit

(iii) Raw materials are to remain in stores for an average period of one month.

(iv) Finished foods are required to be in stock for an average period of one month.

(v) Credit allowed to debtors is 3 months.

(vi) Credit allowed by suppliers is 2 months.

You are required to prepare a statement of working capital requirements.

1. NH Ltd. is engaged in large scale retail business. From the following information you are required to forecast their working capital requirements.

* Projected Annual Sales Rs. 130 lakhs
* Percentage of net profit on cost of sales 25%
* Average credit period allowed to debtors 8 weeks.
* Average credit period allowed by creditors 4 weeks.
* Average stock carrying 8 weeks (in terms of sales requirements).
* Add : 10% to computed figures to allow for contingencies.

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