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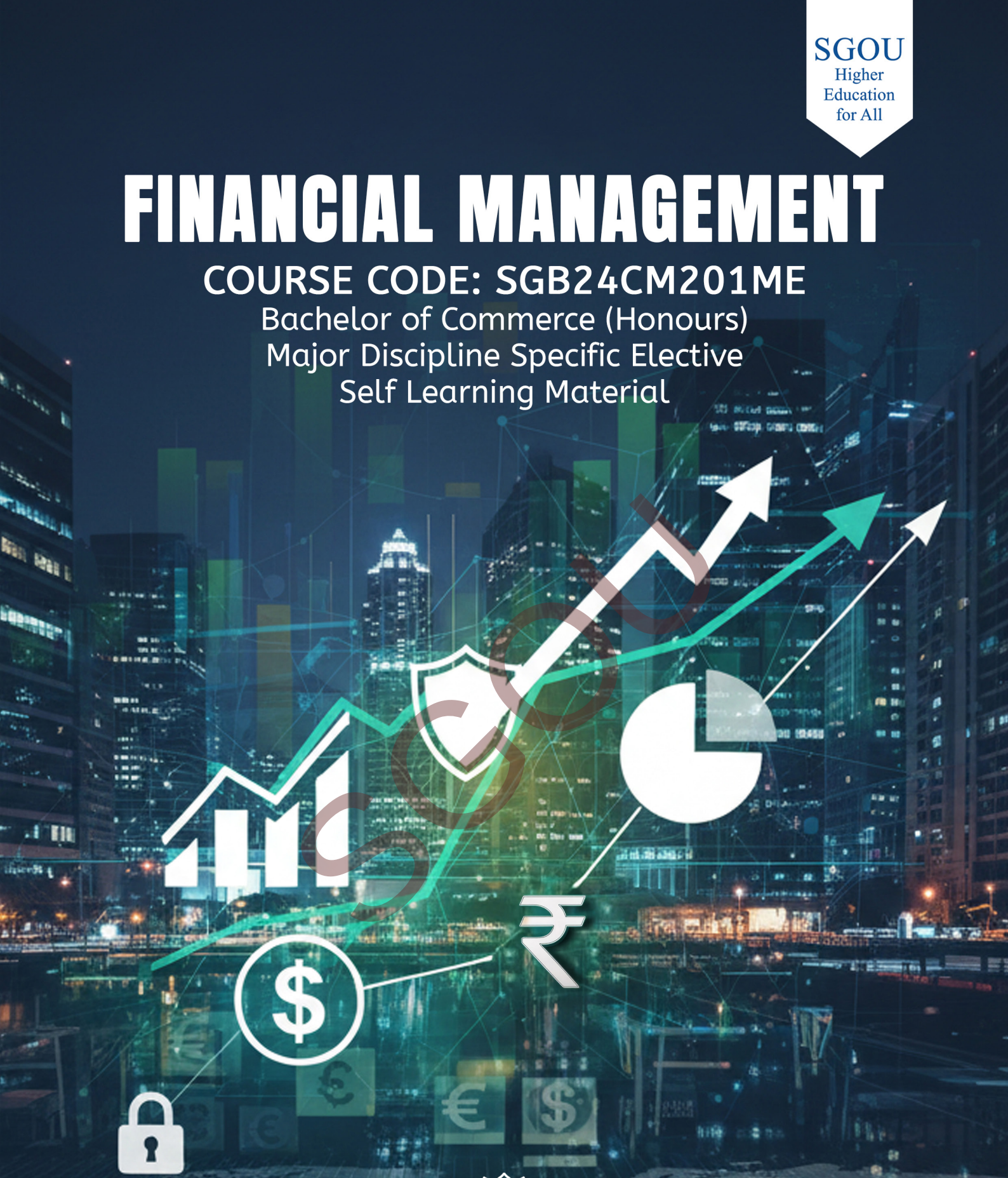
FINANCIAL MANAGEMENT

COURSE CODE: SGB24CM201ME

Bachelor of Commerce (Honours)
Major Discipline Specific Elective
Self Learning Material



SREENARAYANAGURU OPEN UNIVERSITY

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The State University for Education, Training and Research in Blended Format, Kerala

Vision

To increase access of potential learners of all categories to higher education, research and training, and ensure equity through delivery of high quality processes and outcomes fostering inclusive educational empowerment for social advancement.

Mission

To be benchmarked as a model for conservation and dissemination of knowledge and skill on blended and virtual mode in education, training and research for normal, continuing, and adult learners.

Pathway

Access and Quality define Equity.

Financial Management

Course Code: SGB24CM201ME

Semester - IV

Four Year Undergraduate Programme
Bachelor of Commerce (Honours)
Major Discipline Specific Elective
Self Learning Material

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MESSAGE FROM VICE CHANCELLOR

Dear Learner,

It is with great pleasure that I welcome you to the Four Year BCom Programme offered by Sreenarayanaguru Open University.

Established in September 2020, our university aims to provide high-quality higher education through open and distance learning. Our guiding principle, 'access and quality define equity', shapes our approach to education. We are committed to maintaining the highest standards in our academic offerings.

Our university proudly bears the name of Sreenarayanaguru, a prominent Renaissance thinker of modern India. His philosophy of social reform and educational empowerment serves as a constant reminder of our dedication to excellence in all our academic pursuits.

The Four Year BCom Programme covers all relevant areas aligned with modern business practices and economic principles. We have incorporated the latest trends in commercial studies to ensure a comprehensive and up-to-date curriculum. Moreover, the programme encompasses flexible options for learners to choose from a range of Ability Enhancement Courses, Multi-disciplinary Courses, Value Added Courses, and Skill Enhancement Courses, complemented by discipline-oriented Advanced and Additional Advanced Courses.

Our teaching methodology combines three key elements: Self Learning Material, Classroom Counselling, and Virtual modes. This blended approach aims to provide a rich and engaging learning experience, overcoming the limitations often associated with distance education. We are confident that this programme will enhance your understanding of commercial principles and practices, preparing you for various career paths and further academic pursuits.

Our learner support services are always available to address any concerns you may have during your time with us. We encourage you to reach out with any questions or feedback regarding the programme.

We wish you success in your academic journey with Sreenarayanaguru Open University.

Best regards,

Dr. Jagathy Raj V.P.
Vice Chancellor
Sreenarayanaguru Open University

01-02-2026

Contents

BLOCK 1

Introduction to Finance

Unit 1
Introduction

Learning Outcomes

After completing this unit, the learner will be able to:

- ◊ comprehend the meaning and definition of finance.
- ◊ analyse the scope of finance.
- ◊ aware of the meaning of business finance.
- ◊ explain the role of a finance manager in an organisation.
- ◊ describe the concept of finance functions.

Prerequisite

Ravi starts a small stationery shop near a college. In the beginning, he invests his own savings to rent the shop, purchase goods, and arrange basic facilities. Very soon, he realises that running the shop is not only about selling products but also about managing money wisely.

Ravi must decide how much money to keep aside for daily expenses, how much to spend on buying new stock, and whether he should borrow money from a bank to expand his business. When he borrows money, he has to pay interest on it. If he uses his own money, he bears the risk of loss. These decisions help Ravi understand the meaning of finance. As the business grows, Ravi notices that finance covers many activities such as planning future expenses, arranging funds, using funds efficiently, and controlling unnecessary spending. This helps him understand the scope of finance.

Later, Ravi plans to open another shop. For this, he prepares a plan to arrange funds from banks and personal savings. This

activity relates to business finance, which deals with raising and managing funds for business activities. To handle these responsibilities efficiently, Ravi appoints a finance manager. The finance manager plans the funds required, decides the best sources of finance, ensures proper use of money, and maintains financial discipline in the organisation. This explains the role of a finance manager.

All these activities estimating financial needs, procuring funds, utilising funds, and controlling finances are known as finance functions. Through Ravi's journey, we can clearly understand the basic concepts of finance in a practical and simple manner.

Keywords

Finance, Private Finance, Public Finance, Business Finance, Finance Manager, Investment Decision, Liquidity Decision, Capital Structure

Discussion

1.1.1 Meaning and definition of Finance

Finance is one of the fundamental needs for starting any business. Just like other resources, financial resources are normally in short supply. Nonetheless, the need for finance is permanent since it forms an integral part of performing any business activities. Therefore, businesses must manage their finances effectively. Furthermore, a steady source of funds and efficient financial management are required throughout the life of a business and even in situations where a business is sold or wound up. Therefore, funds should be managed and controlled according to the set procedures and tracked at all phases of the lifecycle of a business. In this unit, we will examine the meaning and definition of finance, the scope of finance, the meaning of business finance, and the role of a finance manager.

The word finance comes from an old French word 'Fine', which means to pay, settle, or finish. Finance refers to the study and management of money, investments, and other financial instruments. It involves activities such as savings, borrowing, lending, budgeting, and forecasting. Finance refers to the handling and utilisation of money in the most optimal manner, either for individual needs, business expansion, or government initiatives. It encompasses all money-related activities such as planning, controlling, and decision-making, among others.

According to Khan and Jain, "Finance is the art and science of managing money". L. J. Gitman quoted as, "Finance can be defined as the art and science of managing money. Finance is concerned with the process, institutions, markets, and instruments involved in the transfer of money among and between individuals, businesses, and governments."

According to Schall & Hally, "Finance is a body of facts, principles, and theories dealing with raising and using money by individuals, businesses, and governments.

1.1.1.1 Classification of finance

Finance can be broadly classified into two. They are;

1. **Private Finance** – Involves handling the finances of an individual or household, including activities like saving, borrowing, and planning expenses.
2. **Public Finance** – Public finance involves the government's management of money to promote development and public welfare. It includes how different levels of government, such as central, state, or local bodies, raise revenue through taxes, fees, and fines, and how these funds are utilised for the overall benefit of society.

1.1.1.2 What is Business Finance?

The term finance is composed of two words, namely (i) business, (ii) finance. It is important to grasp the significance for getting more understanding. The word business means a "state of being busy. The term finance means the provision of money at the time when it is required. After studying the meaning of the terms business and finance, we can clarify the concept of business finance. It is a process or activity focused on obtaining funds, utilising them, and allocating profits within a business organization

According to Wheeler, "Business finance is that business activity which is concerned with the acquisition and conversion of capital funds in meeting financial needs and overall objectives of a business enterprise.

According to Guthmann and Dougall, "Business finance can broadly be defined as the activity concerned with planning, raising, controlling, and administering the funds used in the business.

1.1.2 Scope of Finance

Finance encompasses all activities involved in the planning, acquisition, management, and regulation of funds for individuals or organisations. It is essential for managing day-to-day operations as well as for making long-term strategic decisions. The scope of finance covers:

a. Personal finance: involves independently handling one's financial resources to build wealth and achieve financial objectives. This includes budgeting, saving, investing, taxes, insurance, retirement, and estate planning.
b. Corporate finance: involves the methods by which companies acquire, allocate, and oversee funds to enhance shareholder value. This field encompasses capital budgeting, management of working capital, the structure of capital, dividends, and mergers and acquisitions.

c. Public finance: pertains to the income and expenditures of countries, along with their tax regulations. It includes government budgets, the management of public debt, the provision of public goods, transfer payments, and subsidies.

d. Investment finance: focuses on driving assets and utilising financial instruments to meet investors' return objectives. It includes asset valuation, portfolio management, and investment approaches for individuals, companies, and institutions.

e. Financial system: Entities, marketplaces, tools, and regulations that distribute financial resources within an economy. Encompasses banks, insurance companies, capital markets, stock markets, payment systems, and central banks.

f. International finance: The macroeconomic elements related to global trade, capital movements, and foreign commerce among nations. Covers foreign exchange markets, balance of payments, exchange rate systems, and financing for global trade.

1.1.3 Finance Functions

Although finance operations can be identified easily, they are often closely linked with other business functions such as manufacturing and marketing, making it difficult to separate them. Finance primarily deals with raising funds (financing), using those funds effectively (investment), and returning profits to shareholders (dividends). These are the core responsibilities of financial management.

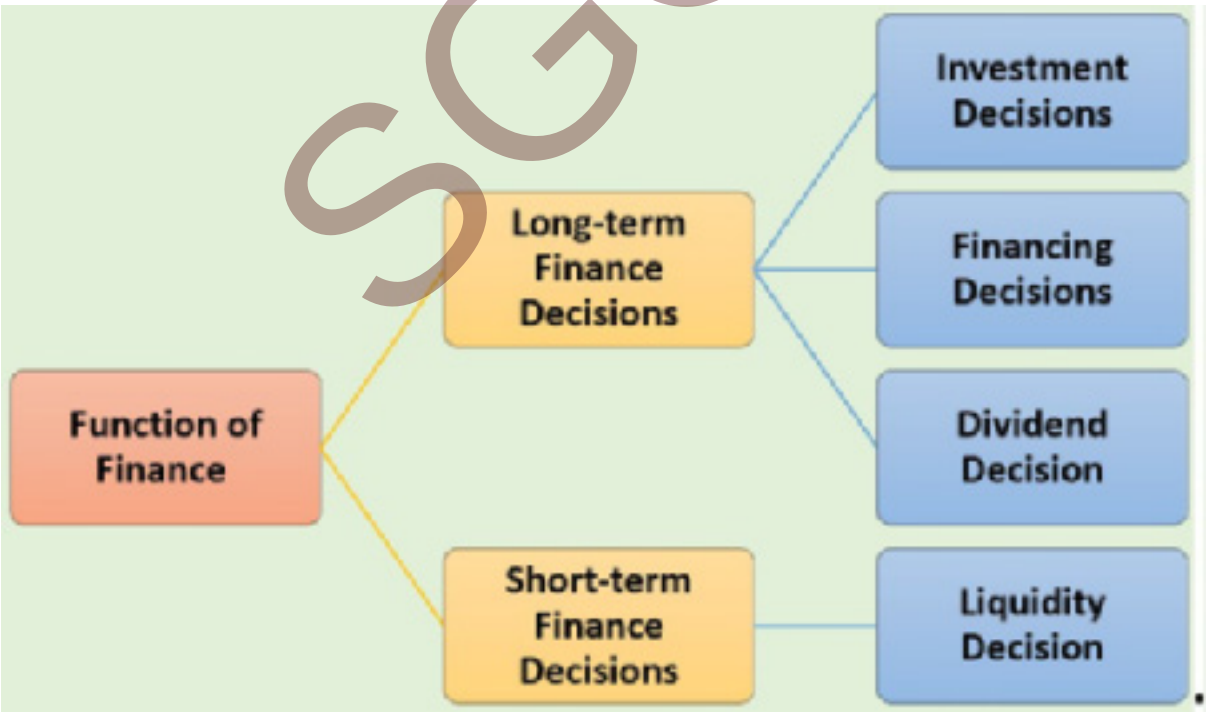

Figure 1.1.2 Functions of Finance

A key part of this is managing the balance between incoming and outgoing cash flows, known as liquidity decision, which is essential for maintaining financial stability. In fact, ensuring proper liquidity is one of the most critical financial functions of any organisation.

Finance decisions are broadly categorised into:

Long-term financial decisions

a. Long-term asset-mix or investment decision
b. Capital-mix or financing decision
c. Profit allocation or dividend decision

Short-term financial decisions

a. Short-term asset-mix or liquidity decision

A company usually carries out its financial activities simultaneously and on an ongoing basis, rather than in a fixed order. To carry out these financial functions successfully, proper planning, management, and execution are essential. The financial foundation of a business largely depends on shareholder equity, commonly known as shares. Any financial decision that enhances the value of these shares benefits the shareholders. Hence, when managing financial activities, the financial manager should aim to maximise the market value of the company's shares.

1.1.3.1 Long-term finance decisions

Long-term financial activities and decisions typically extend beyond one year and can significantly influence a company's long-term growth and value. Since these decisions are closely aligned with the company's overall strategic goals, they are usually made with the involvement of top-level management.

1. Investment decision

The investment decision function focuses on capital budgeting and managing cash flows. Capital budgeting involves evaluating potential long-term investment opportunities and their expected cash flows to assess their profitability. The goal is to ensure that the investments made will yield adequate, and ideally maximum, returns for the business over time.

2. Financing decision

Expertise in making financing decisions helps achieve an optimal capital structure, improved business performance, and long-term growth. Financing functions involve determining the timing and method of raising funds for business operations, such as choosing between equity and debt. The combination of debt and equity used by a company is known as its capital structure. Financing decisions aim to maintain healthy capital structure ratios.

3. Dividend decision

Companies distribute a portion of their profits to shareholders as dividends. There are various types of shares, dividends, and dividend policies. A company's approach to dividends can significantly impact its market value and stock price. Therefore, the dividend decision, which involves determining how much of the net profit to distribute as dividends and how much to retain, is a key financial function.

1.1.3.2 Short-term finance decisions

Short-term financial functions involve decisions and actions taken to manage a company's day-to-day financial requirements, typically within a period of less than one year. These decisions usually include managing current assets and liabilities, securing short-term loans, and investing surplus funds in short-term opportunities.

1. Liquidity decision

Liquidity decisions mainly focus on managing and maintaining working capital. This involves effective handling of current assets to ensure the business remains operational, following the going concern principle. Insufficient liquidity can lead to financial difficulties and even insolvency, while excess liquidity may also pose risks. Therefore, maintaining a proper balance between current assets and current liabilities is crucial.

1.1.4 Role of a Finance Manager

The responsibilities of a financial manager have evolved significantly over time. In today's modern organizations, they play a key role in carrying out financial activities. Their position as part of the senior management team has grown in both scope and importance, especially in dealing with complex financial challenges. The role now goes far beyond traditional tasks like record-keeping, preparing reports, and securing funds when needed. Today, financial managers are responsible for guiding the company's financial direction and participating in key decisions about capital allocation. In this expanded role, they must ensure that the company's resources are used efficiently to influence its size, profitability, growth, risk management, and long-term survival all of which impact the overall value of the business. To succeed in this role, financial managers need a deep understanding of the scope and responsibilities within financial management. This strategic decision-making role is a relatively recent development; just three decades ago, financial managers were not typically considered a central part of top-level decision-making. Therefore, understanding the core duties of a financial manager is essential to recognising how their role has evolved in modern organisations.

◊ **Financial forecasting and planning**

A financial manager must assess the financial requirements of the business, including how much capital is needed to acquire various assets. This includes estimating the funds required for purchasing fixed assets as well as covering working capital needs. Planning for future financial needs is a key responsibility, along with determining how to obtain and effectively utilise these funds.

◊ **Acquisition of funds**

Once financial planning is completed, the next step is to arrange the necessary funds. There are several sources available for raising capital, such as issuing shares and debentures, or borrowing from financial institutions and commercial banks. Choosing the right source is a critical decision because selecting an unsuitable option can lead to future problems. Therefore, it is important to carefully evaluate the advantages and disadvantages of each source before making a final choice.

◊ **Investment of funds**

Funds must be utilized in the most efficient manner. It's important to compare the cost of obtaining these funds with the expected returns, and priority should be given to options that offer higher returns. Capital budgeting techniques can assist in choosing the right investment projects. The goal of maximizing profits can only be achieved when funds are used effectively and are not left idle. While making investment decisions, a financial manager should always consider the principles of safety, liquidity, and soundness.

◊ **Helping in valuation decisions**

In today's competitive industrial environment, many mergers and consolidations are taking place. A finance manager plays a key role in supporting management by helping with valuations during such processes. To do this effectively, the finance manager must be familiar with different methods of valuing shares and other assets to ensure accurate and fair valuations.

◊ **Maintain proper liquidity**

Every business must maintain a certain level of liquidity to handle its daily operations. Cash is the most reliable form of liquidity, needed for buying raw materials, paying employees, and covering various operational expenses. It is the responsibility of the finance manager to assess the required level of liquidity is necessary and ensure that liquid assets are managed efficiently to avoid any shortage of funds.

◊ **Management of cash, receivables, and inventory**

A finance manager is required to determine the quantum of working capital and manage its various components, such as cash, receivables, and inventories. On the other hand, he has to ensure sufficient availability of such assets as and when required, and on the other there should be no surplus or idle investment.

◊ **Disposal of surplus**

A finance manager is also responsible for the effective use of surplus funds. They must decide the portion of the profits that should be retained for future growth and expansion, and the portion that should be distributed to shareholders as dividends.

◊ **Performance evaluation and financial control**

Performance evaluation is considered a key responsibility of the finance manager and serves as the foundation for financial control. By regularly comparing actual costs, revenues, profits, and investments with the budgeted figures, the finance manager can make informed decisions regarding future strategies and actions.

Recap

- ◊ Finance is the art and science of managing money.
- ◊ Finance includes activities such as saving, borrowing, lending, budgeting, and forecasting.
- ◊ Business finance is a process or activity focused on obtaining funds, utilising them, and allocating profits within a business organisation.
- ◊ Scope of finance includes personal finance, corporate finance, public finance, investment finance, financial system, and international finance.
- ◊ Role of a finance manager covers financial forecasting and planning, acquisition of funds, investment of funds, helping in valuation decisions, maintaining proper liquidity, management of cash, receivables, and inventory.
- ◊ Finance function covers investment decision, financing decision, dividend decision, liquidity decisions

Objective Questions

1. What does finance refer to?
2. What are the two types of finance?
3. The combination of debt and equity used by a company is known as?
4. What are short-term finance decisions?
5. What is the goal of investment decisions?
6. What are liquidity decisions?
7. What are the classifications of functions of finance?

Answers

1. Finance is the art and science of managing money
2. Public finance and private finance
3. Capital structure

4. Short-term financial functions involve decisions and actions taken to manage a company's day-to-day financial requirements, typically within a period of less than one year
5. The goal of investment decision is to ensure that the investments made will yield adequate, and ideally maximum, returns for the business over time.
6. Liquidity decisions mainly focus on managing and maintaining working capital.
7. Long-term finance decision and short-term finance decision.

Self-assessment Questions

1. What is finance? Define business finance
2. Explain the types of finance
3. Explain the scope of finance
4. Discuss the role of a financial manager.
5. What are the classifications of finance functions
6. Explain the dividend decision.

Assignments

1. Visit a firm and identify the various roles and responsibilities performed by the financial manager of that firm.
2. Discuss the major areas of finance. How are they interrelated?
3. Visit a business enterprise and write a brief note about the main factors to consider when making financial decisions in that organization
4. Point out the classification of the finance function

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Unit 2
Goals of financial management

Learning Outcomes

After completing this unit, learners will be able to:

- ◊ comprehend the concept of financial management
- ◊ analysis of profit maximisation and shareholders' wealth maximisation
- ◊ differentiate between profit maximisation and wealth maximisation as financial goals.

Prerequisite

Meera owns a small garment manufacturing unit. In the early years, her main objective is to earn as much profit as possible. To increase profits, she reduces production costs by using cheaper raw materials and cuts spending on employee training. Although the profits look high in the short term, customer complaints increase and employee morale declines. Over time, sales start falling. This situation helps Meera understand the limitations of profit maximisation.

Realising the problem, Meera adopts a broader approach to managing her business finances. She begins planning her finances carefully, invests in better-quality materials, improves working conditions for employees, and spends on modern machinery. These decisions require careful planning, allocation, and control of funds, which together represent financial management.

Instead of focusing only on immediate profits, Meera now aims to increase the long-term value of her business. As product quality improves and customer trust grows, the company's reputation strengthens, leading to steady growth in sales and

higher market value. This reflects the objective of shareholders' wealth maximisation, where the focus is on long-term value rather than short-term gains.

Through Meera's experience, learners can clearly understand the concept of financial management and the difference between profit maximisation and wealth maximisation as financial goals.

Keywords

Financial Management, Profit Maximization, Wealth Maximization, Shareholders' Wealth Maximisation

Discussion

Finance is a vital requirement for starting any business. Like other resources, money is limited, but the demand for it is constant because it is essential for carrying out all business activities. That's why finance is crucial for businesses and must manage their financial resources wisely. A business not only needs enough funds at the starting stage but also requires effective financial management throughout its entire life, even when the business is being sold or closed down. Therefore, it's important to manage, regulate, and monitor funds at every stage of the business process.

The main aim of financial management is to plan and control a company's financial resources. By understanding the principles of financial management, individuals can make better and more informed financial decisions. In this unit, we will examine the basics of financial its management, its meaning, definition, profit maximization, shareholders' wealth maximization, and the differences between profit maximization and wealth maximization

1.2.1 Meaning and Definitions of Financial Management

1.2.1.1 Meaning

Financial management is the process of carefully planning, organizing, directing, and controlling a business's financial activities. It focuses on how funds are obtained and how they are used effectively. The goal is to ensure whether the company maintains financial stability, meets its expenses, and achieves its long-term goals.

In simpler terms, financial management means handling the company's money wisely from budgeting, spending, investing and saving so that the business remains profitable and secure in both the short and long term.

1.2.1.2 Definitions

According to H. Guthman and Dougall, Financial management is "the activity concerned with planning, raising, controlling, and administering funds used in the business."

According to J.F. Brandley, Financial management is "that area of business management devoted to a judicious use of capital and a careful selection of the source of capital to enable a spending unit to move in the direction of reaching the goals."

According to Massie, Financial management is "the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations.

1.2.2 Nature of Financial Management

The management of finances is a fundamental aspect of every business. It involves securing physical resources, overseeing production activities, paying suppliers, etc, for the smooth functioning of the business. Below are the key characteristics or features of financial management

a. **Optimal Use of Resources:** Financial management helps ensure that money and other resources are used wisely, avoiding waste and focusing on areas that generate the best results.
b. **Better Planning and Budgeting:** It supports setting clear financial goals, creating budgets, and predicting future income and expenses. This helps in making well-informed decisions.
c. **Managing Cash Flow:** By keeping track of money coming in and going out, financial management helps maintain enough cash to cover daily needs and avoid shortages.
d. **Boosting Profits:** Through effective cost control and investment decisions, it helps increase overall earnings and improve financial performance.
e. **Handling Financial Risks:** It allows organisations to identify and respond to potential financial threats, such as market changes or bad debts, reducing their impact
f. **Meeting Legal Requirements:** Proper financial management ensures accurate records, tax payments, and compliance with financial regulations, avoiding legal trouble.
g. **Supporting Long-Term Growth:** It provides a solid foundation for future growth, helping businesses expand and invest wisely without overextending themselves

1.2.3 Goals of Financial Management

Financial management is essential for guiding a company's development and long-term success. It focuses on making well-planned financial decisions that help allocate resources efficiently and enhance the value of the owner's investment. Primarily,

profit maximisation and wealth maximisation are the fundamental goals of financial management.

1.2.3.1 Profit Maximisation

The primary goal of any economic activity is to generate profit, and the same applies to business enterprises also. A business mainly operates with the intention of earning profits, which serve as an indicator of its efficiency and performance. Profit maximization is a traditional and limited approach that focuses solely on increasing the company's profits to the highest possible level. Profit maximization has several characteristics. They are:

1. It is often referred to as the maximisation of earnings per share, as it focuses on increasing the overall profitability of business operations.
2. Since the primary objective of any business is to earn profit, this approach explores all potential methods to enhance the company's profit levels.
3. Profit serves as an indicator of a business's efficiency, reflecting the overall performance and financial condition of the enterprise.
4. The goal of profit maximisation contributes to lowering business risks, as higher profits can strengthen the company's financial stability and resilience.

Example:

Popular corporations like Apple Inc. and McDonald's successfully adopt measures in an effort to achieve maximum profits. Apple manages to be highly profitable through the provision of high-end priced products, establishing high brand loyalty, and concentrating on high-margin products such as the iPhone and MacBook. It also reduces the cost of production through outsourced manufacturing and increases earnings through services such as the App Store and subscriptions. Conversely, McDonald's maximises its profits by conserving costs through bulk buying and a general franchise system. It adjusts its menu to meet the flavour of the regions and gains from having significant control over outlet real estate property, thus eliminating high rental expenses. These strategies help both companies increase revenues while controlling costs, concisely demonstrating the idea of profit maximisation.

Favourable Arguments about Profit Maximisation

There are several key reasons why profit maximisation is considered an important goal for a business:

1. Primary Objective: The core purpose of any business is to earn profit.
2. Performance Indicator: Profit serves as a key measure of how efficiently a business is operating.
3. Risk Reduction: Higher profits help lower the financial risks faced by the business.

4. Source of Capital: Profit is the main internal source of funding for further investment and growth.

5. Social Contributions: A profitable business can also contribute to society by creating jobs and paying taxes.

Unfavourable Arguments about Profit Maximisation

Despite its importance, the profit maximisation goal has been criticised for several reasons:

1. Exploitation: It may lead to the exploitation of workers and customers to cut costs or raise prices.

2. Unethical Practices: The drive for higher profits can encourage unethical behaviour, such as corruption or unfair trade practices.

3. Inequality: It can result in unequal treatment of stakeholders like consumers, suppliers, and shareholders, favouring some over others.

4. Not considering the long-term survival of the business: Profit maximization emphasizes short-term gains and often ignores long-term objectives such as business sustainability, customer loyalty, employee welfare, and innovation, which are essential for the continued existence of the firm.

5. Ignores risk and uncertainty: The concept assumes certainty in costs, prices, and output, whereas in reality, businesses operate under conditions of risk and uncertainty due to changing market demand, competition, technological changes, and economic fluctuations.

1.2.3.2 Wealth maximisation or shareholders' wealth maximisation (SWM)

Wealth maximisation is viewed as an inclusive financial goal compared to profit maximisation. It emphasises enhancing the long-term market value of shareholders' investments. This objective takes into account important elements such as risk, cash flow, and the time value of money.

Wealth maximisation is a modern approach that incorporates the latest innovations and advancements in the business sector. The term "wealth" refers to the value held by shareholders or individuals associated with the business. It is also known as value maximisation or net present value maximisation. This objective is widely recognised and accepted across the business world.

Wealth maximisation is the process of enhancing a company’s overall worth over the long term, with the primary objective of increasing the market value of shareholders' equity, or in other words, the value of the company’s shares in the stock market.

Examples:

Amazon invests heavily in research and development (R&D) and long-term projects, even if it means sacrificing short-term profits. Over time, this approach has significantly increased Amazon's stock price and market valuation.

Tesla focuses on innovation in electric vehicles and clean energy, increasing its brand value and stock price, thereby maximising shareholder wealth

Favourable Arguments about Wealth Maximisation

(i) Wealth maximisation is considered more effective than profit maximisation, as its primary goal is to enhance the value or wealth of the shareholders.

vi. This approach evaluates the difference between the value generated and the costs involved in running the business, giving a clear measure of the organisation's true worth.

vii. It takes into account both the time factor and the risk associated with the business.

viii. Wealth maximisation supports the optimal use and allocation of resources.

ix. It also aligns with and supports the broader economic interests of society.

Unfavourable Arguments about Wealth Maximisation

i. Wealth maximisation presents a theoretical or idealistic view of business operations, which may not always align with the realities of modern business practices.

ii. In essence, wealth maximisation is simply another form of profit maximisation, just under a different name.

iii. This approach can lead to conflicts between owners and management.

iv. It often results in the management exclusively enjoying certain advantages.

v. The core purpose of the wealth maximisation objective is ultimately to increase profits.

vi. Wealth maximisation can only be achieved if the business maintains a profitable position.

Table 1.1.1 Differences between Profit Maximisation and Wealth Maximisation

Basis	Profit Maximization	Wealth Maximization
Time Frame	Emphasises short-term gains	Focuses on long-term value creation
Primary Goal	Aims to increase immediate profits	Aims to enhance shareholders' overall wealth
Risk Management	Not considering potential risks and uncertainties	Considers risk and uncertainty in decision-making
Time Value of Money	Does not consider the time value of money	Considers the time value of money
Effect on Business	May encourage unethical or harmful business practices	Promotes stable and responsible long-term growth
Examples	Reducing expenses to maximise current profits	Investing in innovation or R&D to ensure future profitability

Recap

- ◊ Financial management is the process of carefully planning, organising, directing, and controlling a business's financial activities
- ◊ Profit maximisation and wealth maximisation are the fundamental goals of financial management
- ◊ Profit maximisation is a traditional and limited approach that focuses solely on increasing the company's profits to the highest possible level.
- ◊ The term "wealth" refers to the value held by shareholders or individuals associated with the business
- ◊ Wealth maximisation is also known as value maximisation or net present value maximisation
- ◊ Wealth maximisation emphasises enhancing the long-term market value of shareholders' investment
- ◊ Wealth maximisation is the process of enhancing a company's overall worth over the long term

Objective Questions

1. What are the goals of financial management?
2. Wealth maximisation is also known as?
3. What is the primary goal of profit maximisation?
4. What is Financial Management?
5. What is short term financial goals?
6. What is time value of money?
7. Profit maximisation is also known as?
8. Expand SWM.

Answers

1. Profit maximisation and wealth maximisation
2. Value maximisation or net present value maximisation
3. Aims to increase immediate profits
4. Financial management is the process of planning, organising, directing and controlling business financial activities.
5. Business objectives aims to achieve within a short period.
6. Sum of money available today is worth more than the same amount received in the future.
7. Maximisation of earnings per share
8. Shareholders' wealth maximisation

Self-assessment Questions

1. What is financial management?
2. Explain the goals of financial management.
3. Describe the favourable and unfavourable arguments for profit maximisation?
4. Write a note on the differences between profit maximisation and wealth maximisation.
5. What are the characteristics of profit maximisation?

6. Explain wealth maximisation with an example?
7. Explain the nature of financial management
8. Define financial management?

Assignments

1. Differentiate between profit maximisation and wealth maximisation as goals of financial management. Which one is more appropriate in the modern business environment, and why?
2. Why is profit maximisation considered a limited or traditional goal of financial management? Discuss its limitations with examples.
3. Define financial management. What are its primary goals?
4. Explain how the goal of wealth maximisation aligns with the interests of shareholders.
5. Define the concept of profit maximisation. Discuss its relevance as a business objective in the modern economic environment.

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2

BLOCK

Investment Decision

Unit 1
Investment decision

Learning Outcomes

After completing this unit, learners will be able to:

- ◊ comprehend the meaning of an investment decision.
- ◊ explain capital budgeting.
- ◊ analysing the significance and steps involved in capital budgeting

Prerequisite

Ravi ran a small but busy electronics repair shop in his neighbourhood. Over time, the shop became so popular that customers often had to wait in long queues, and some walked away due to limited space. Ravi had managed to save ₹5 lakhs from his profits and faced a crucial choice: should he open a new branch in another area, upgrade his current shop with advanced tools and a more spacious layout, or keep the money in a fixed deposit for steady but low returns?

After analysing his options, Ravi decided to upgrade his existing shop, renting a larger space and investing in modern repair equipment and better seating for customers. As a result, he could serve more clients efficiently, improve service quality, and increase his daily revenue. Within a year, his income had risen substantially, allowing him to open a second branch in a nearby town.

This decision demonstrates a strategic investment choice, where Ravi used his resources effectively to expand his business and achieve long-term financial growth.

Keywords

Investment Decision, Capital Budgeting, Replacement Decision, Diversification Decision, Expansion Decision

Discussion

Investment decisions represent a crucial component of financial management. They involve directing a company's resources toward long-term assets or projects with the primary aim of enhancing the overall value of the firm. These decisions are strategic and carry lasting impacts on the business. Essentially, investment decisions are made by shareholders or senior management regarding the amount of capital to be committed to potential business opportunities. Selecting the appropriate assets or ventures in which to invest forms the core of these decisions. In this unit, we are dealing with investment decisions, capital budgeting, the significance of capital budgeting, and the process of capital budgeting.

2.1.1 Meaning of Investment Decision

An investment decision is the act of deciding how to use or utilise available money or resources in a way that will produce future income or benefits. It involves analysing different aspects such as launching a new project, purchasing assets, or investing in financial instruments, and choosing the one that is expected to give the best returns over time.

2.1.2 Objectives of Investment Decisions

The main aim of investment decisions is to use resources effectively to earn returns over time. This involves selecting projects or assets that offer the best possible return in relation to the level of risk. The end objective is to enhance shareholder wealth by boosting the overall value of the company. The following are the main objectives of investment decisions:

a. Maximisation of Shareholder Wealth

The main goal of investment decisions is to maximise shareholder wealth by selecting investments that offer the highest returns. Companies put money into projects that enhance their overall value, resulting in increased share prices and dividends for shareholders

b. Optimal Utilisation of Resources

Effective allocation of financial resources guarantees that capital is directed toward projects with the greatest potential returns. Businesses need to be clear about investing in low-performing assets or unnecessary costs. For example, when a technology company

considers upgrading its IT infrastructure, it must evaluate whether the investment will enhance productivity and lead to increased profits.

c. Risk Minimisation

Every investment involves some level of risk, so financial managers need to select investments that strike a balance between risk and return. Diversifying investments across different markets or asset types helps reduce potential losses and risks.

d. Profit Maximisation

Investments should enhance overall profitability by either increasing revenue or cutting costs. Focusing on profit maximisation helps businesses stay competitive and sustainable. For example, a retail business investing in e-commerce platforms can attract more customers, increase sales, and lower the costs linked to maintaining physical stores.

e. Maintaining Liquidity

Investment decisions must not hinder the company's ability to meet its short-term financial commitments, such as paying employees, suppliers, and debts. Ensuring sufficient liquidity supports uninterrupted business operations. For example, a manufacturing company that heavily invests in new machinery without keeping adequate cash reserves may face difficulties covering immediate costs like buying raw materials.

f. Long-term Growth and Sustainability

Investment decisions should prioritise sustainable growth over the long term rather than focusing purely on immediate profits. Companies need to invest in innovation, technology, and expanding into new markets to maintain their competitive edge. For example, an automobile company investing in electric vehicle (EV) technology is positioning itself for long-term success as the industry moves toward eco-friendly transportation.

g. Cost Efficiency

Selecting cost-effective investment options is essential for maximising profitability. Businesses must carefully assess the return on investment (ROI) to ensure that the expenses incurred do not exceed the benefits gained.

h. Consistency with Business Strategy

Investments should support the company's broader strategic objectives, such as diversification, innovation, or market growth. For example, when a pharmaceutical company invests in research and development for new drug formulations, it aligns with its strategic focus on innovation and maintaining a strong market position.

i. Optimising Capital Structure

Investment decisions must strike a balance between debt and equity financing to

reduce the overall cost of capital and improve financial efficiency. Excessive reliance on debt can lead to high interest expenses, while too much equity may dilute ownership. For example, a real estate company deciding whether to finance a project with a bank loan or by issuing new shares. The decision needs to be carefully considered in terms of its implications on the financial health and long-term profitability of the company.

2.1.3 Importance of Investment Decision

a. Long-Term Growth of the Company

Investment choices can have a strong impact on a company's long-term growth and competitiveness. like selecting projects and allocating resources in the right areas can enhance growth, profitability, and market position.

b. Firm's Risk Profile

Investment choices directly affect a company's exposure to financial and operational risks. High-risk investments, such as entering a new and untested market with a new product, can result in losses if customer demand falls short. Conversely, a more cautious approach, like expanding a proven product line, can help reduce risk.

c. Require a Significant Financial Commitment

Investment decisions typically involve allocating large sums of money, making them a vital part of a company's financial planning. Such major investments must be carefully assessed, as they can influence cash flow and the overall financial health of the company. For example, a telecom company investing in 5G technology must allocate billions for network development, spectrum licenses, and equipment, making it a highly impactful and strategic choice.

d. Hard to Reverse

Once a company has invested, it is often expensive or difficult to reverse. Many investments involve long-term deals or assets like buildings and equipment. For example, if a factory is built in one country and needs to move later, the company may face high costs and legal issues.

e. Present Money for Future Gains

Investment decisions require spending money now to earn benefits later. This means companies must carefully check if the future returns are worth the cost. For example, an online business that automates its warehouse may take years to recover the money through better efficiency and reduced labour costs.

f. Involves Long-Term Assets

Most investments are made in things that last a long time, such as machinery, buildings, or technology. These assets can't be easily sold, so the decision must be well thought out. For example, a transport company buying electric vehicles hopes to save money on fuel in the long run, even though the initial cost is high.

g. Returns Come Over Time

Investments usually bring profits over several years, not immediately. So, companies must think about how much the money is worth over time. For example, a solar energy project might take years to earn back its cost, but it offers long-term savings and environmental benefits.

2.1.4 Types of Investment Decision

Investment decisions can be categorised into three main types:

1. Expansion Decisions

Expansion decisions involve investing in new projects or expanding existing operations for the growth of the business. These decisions are often made to capture new markets, increase production capacity, or introduce new products.

Example: A smartphone manufacturer decides to invest $500 million in building a new production facility to meet the growing demand for its products. This expansion decision aims to increase the company's production capacity and market share.

2. Replacement Decisions

Replacement decisions involve replacing old or obsolete assets with new ones to improve efficiency, reduce costs, or maintain competitiveness. These decisions are often driven by technological advancements or the wear and tear of existing assets.

Example: A logistics company replaces its old fleet of delivery trucks with new, fuel-efficient vehicles. The new trucks reduce fuel costs and maintenance expenses, improving the company's profitability. This is a replacement decision because it involves upgrading existing assets.

3. Diversification Decisions

Diversification decisions involve investing in new products, services, or markets to reduce risk. By diversifying, a company can spread its risk across different areas, reducing its dependence on a single product or market.

Example: A company that manufactures soft drinks decides to invest in the bottled water business. This diversification reduces the company's reliance on the soft drink market, which may be subject to changing consumer preferences or health concerns.

So, we have learned about investment decisions. Next, we are going to learn capital budgeting. An investment decision is what project should we invest in? Capital budgeting is "how do we evaluate and choose the best project to invest in?

2.1.5 Capital Budgeting

2.1.5.1 Meaning of capital budgeting

A company's investment decisions are commonly known as capital budgeting or capital expenditure decisions. These involve determining how to allocate current resources most efficiently toward long-term assets, with the expectation of receiving benefits over several years. Long-term assets are those that influence the company's operations for more than one year. Such investment decisions often include replacing, upgrading, expanding, or acquiring these assets.

2.1.5.2 Definition of capital budgeting

Capital budgeting may be defined as the decision-making process by which a firm evaluates the purchase of major fixed assets, including buildings, machinery, equipment, etc. It deals with major investment proportions, which are essentially long-term projects. It is concerned with the allocation of a firm's scarce financial resources among the available market opportunities.

According to Lynch, "Capital budgeting consists of planning of available capital for the purpose of maximising the long-term profitability of the concern."

2.1.6 Features of capital budgeting

a. Long-Term in Nature

Capital budgeting deals with investments that influence a company's operations over many years. These are not short-term decisions, but commitments to projects like constructing facilities or buying high-cost machinery that shape the future direction of the business.

b. Requires Major Financial Commitment

These decisions involve a considerable outlay of funds. Because such investments use a large portion of a company's capital, a wrong decision can result in serious losses. Therefore, companies conduct thorough evaluations before proceeding.

c. Not Easily Reversed

Once a capital investment is made, reversing it is either impossible or very costly. For example, selling a specialised machine or cancelling a construction project may not recover the full amount spent. This makes capital budgeting a high-stakes decision-making process.

d. Long-Term Impact on Profit

The outcome of a capital budgeting decision can significantly affect a business's future earnings. A wise investment can enhance profitability, while a poor one can harm the company's financial health for many years.

e. Emphasis on Cash Flow

Rather than focusing only on accounting profits, capital budgeting prioritises actual cash movement, both inflows and outflows. This helps assess the real value of an investment and ensures liquidity is managed properly.

f. Involves Risk and Future Uncertainty

Predicting future returns is never guaranteed. Market fluctuations, technological changes, government regulations, and other unpredictable factors can impact the success or failure of an investment. Risk assessment is a vital part of capital budgeting.

g. Supports Long-Term Planning

Capital budgeting plays an essential role in achieving the company's future goals. It helps managers to make informed choices about expanding operations, entering new markets, or upgrading infrastructure in line with the organisation's strategic vision.

2.1.7 Significance of capital budgeting

1. Capital budgeting is a critical component of financial decision-making, helping organisations to plan long-term investments effectively.
2. It gives financial managers a structured way to assess and compare the profitability and feasibility of different projects before investing.
3. The process helps uncover potential risks and uncertainties associated with various investment options, aiding in better decision-making.
4. Capital budgeting ensures a balanced use of funds by avoiding situations where too much or too little is invested in a project.
5. It provides the management with the ability to monitor and control spending on capital projects, leading to more efficient use of funds.
6. Ultimately, the effectiveness of capital budgeting decisions influences how well a business utilises its resources, impacting its long-term success and growth.

2.1.8 Capital Budgeting Process

The capital budgeting process includes:

1. Identifying the investment opportunities
2. Requesting investment proposals
3. Making decisions on capital budget projects
4. Preparation and Appropriation in Capital Budgeting
5. Implementation of Capital Budgeting

6. Performance review

1. Identifying the investment opportunities

Identifying the investment opportunities is the initial step in the capital budgeting process. After identifying the investment opportunities, the company's capital budgeting committee determines the expected sales. The investment opportunities that fit the sales targets are determined. The identification of the most suitable investment opportunities is facilitated by constant observation of the external environment to better grasp the investment opportunities. The company strategy relies on the SWOT analysis and employee recommendations on investment opportunities.

2. Requesting investment proposals

After identifying investment opportunities, the second step is to allocate investment proposals. Proposals are considered for assessment by different authorised individuals in the organisation. They are then presented to the capital budgeting committee to ensure bids are provided as per specifications. The investment proposals are categorised based on expansion, welfare investment, replacement, etc. Categorisation of proposals assists in decision-making and makes budgeting and control easier.

3. Making decisions on capital budget projects

This is a role for executives who will make decisions on which investments must be made from the given opportunities for investment. The power of sanctions available to them affects the decision-making process.

4. Preparation and Appropriation in Capital Budgeting

After the decision is taken regarding the investments of capital budgeting, the investment expenditures are categorised into larger and smaller investments. When the amount of an investment is small and sanctioned at the lower management level, which are usually covered by blanket appropriations to allow for quick action.

5. Implementation of Capital Budgeting

After all of the preparatory procedures have been done, the investment proposals are put into action. The investment proposals are translated into tangible projects. The implementation process presents various challenges to the management staff. Successful implementation involves proper formulation of the project and utilisation of the responsibility accounting principle. Some network techniques, such as the critical path method (CPM) and program evaluation and review technique (PERT), are applicable in utilising capital budgeting projects.

6. Performance review

The final and most significant step in capital budgeting is a performance review of the capital budgeting projects. To do this, the management needs to compare the actual outcomes with the estimated outcomes. This should be done when operations become stable.

Recap

- ◊ An investment decision is the act of deciding how to use available money or resources in a way that will produce future income or benefits.
- ◊ A company's investment decisions are commonly known as capital budgeting or capital expenditure decisions.
- ◊ Capital budgeting involves determining how to allocate current resources most efficiently toward long-term assets, with the expectation of receiving benefits over several years.
- ◊ Investment decisions can be classified into expansion, replacement, and diversification decisions.
- ◊ Critical path method (CPM) and program evaluation and review technique (PERT) are techniques for evaluating capital budgeting.
- ◊ Capital budgeting deals with investments that influence a company's operations over many years. These are not short-term decisions.

Objective Questions

1. What is investment decision?
2. Capital budgeting is also known as?
3. What is expansion decision?
4. What are the types of investment decisions?
5. What is diversification decision?
6. Expand PERT.
7. What are the two techniques used for evaluating capital budgeting projects?
8. Capital budgeting deals with investments that influence a company's operations over many years. True or false.

Answers

1. Act of deciding how to use or utalise available money in a way that will produce future income or benefits.

2. Capital expenditure decisions.
3. Expansion decision involve investing in new projects or expanding existing operations for the growth of the business.
4. Expansion, replacement, diversification
5. Diversification decision involves investing in new products, services or markets to reduce risk.
6. Programme evaluation and review technique.
7. PERT and CPM
8. True

Self-assessment Questions

1. What are investment decisions?
2. Define capital budgeting.
3. What are the types of investment decisions?
4. Explain the steps involved in capital budgeting.
5. Explain the significance of capital budgeting.

Assignments

1. Explain the classification of investment decisions with suitable examples.
2. Mention any five features of capital budgeting.
3. What are the steps involved in the capital budgeting process?
4. Explain the importance of investment decisions.
5. What is an investment decision? Explain its meaning with an example.

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Unit 2

Techniques of Investment Decision

Learning Outcomes

After studying this unit, learners will be able to:

- ◊ comprehend the techniques of capital budgeting.
- ◊ analyse discounted and non-discounted techniques or methods for capital budgeting.
- ◊ evaluate the payback period method, the discounted payback, and the accounting rate of return method.
- ◊ calculate the net present value method, the internal rate of return, and the profitability index method.

Prerequisite

Investment decisions are critical for the growth and success of any business. Companies aim to use their funds efficiently to maximize profits and support future expansion. Before making any investment, it is important to evaluate whether the project will be beneficial. This requires a careful analysis of the costs involved and the expected returns. Two important factors to consider when assessing an investment are profit and cash flow. Profit shows the earnings remaining after expenses, while cash flow reflects the actual inflow and outflow of money in the business. Both are essential for understanding the true value of an investment.

There are several methods for evaluating investment proposals, broadly categorized into discounted and non-discounted methods. This unit focuses on widely used capital budgeting techniques, including:

- ◊ Payback period method
- ◊ Discounted payback period
- ◊ Accounting rate of return (ARR)

- ◊ Net present value (NPV)
- ◊ Internal rate of return (IRR)
- ◊ Profitability index (PI)

Keywords

Investment decision, Payback period, Discounted payback, Accounting rate of return, Net present value, Internal rate of return, Profitability index.

Discussion

2.2.1 Evaluation of Investment Decision

The evaluation of an investment involves three key steps:

a. Estimating cash flows

b. Estimating the required rate of return.

c. Applying a decision rule to make the final choice.

Investment decision rules, also known as capital budgeting techniques or investment evaluation criteria, are used to assess the economic value of a project.

A strong appraisal method should have the following characteristics:

i. It should account for all cash flows to determine the project's true profitability.

ii. It should provide a clear and objective way to differentiate between good and bad projects.

iii. It should allow for ranking projects based on their true profitability.

iv. It should prioritise larger cash flows over smaller ones and earlier cash flows over later ones.

v. It should help select the project that maximises shareholder wealth from mutually exclusive projects.

vi. It should be applicable to any investment project, regardless of others.

Various methods have been proposed to assess the viability of investment projects, with two main types: discounted cash flow and non-discounted cash flow methods. The discounted cash flow method considers the time value of money, whereas non-discounted cash flow methods do not.

The following are the popular investment evaluation criteria used by businesses to evaluate their proposals;

A. Non-discounted Cash Flow Methods (Traditional methods)

1. Payback (PB)

2. Discounted payback

3. Accounting Rate of Return (ARR)

B. Discounted Cash Flow (DCF) methods (Modern methods)

1. Net present value (NPV)

2. Internal rate of return (IRR)

3. Profitability index (PI)

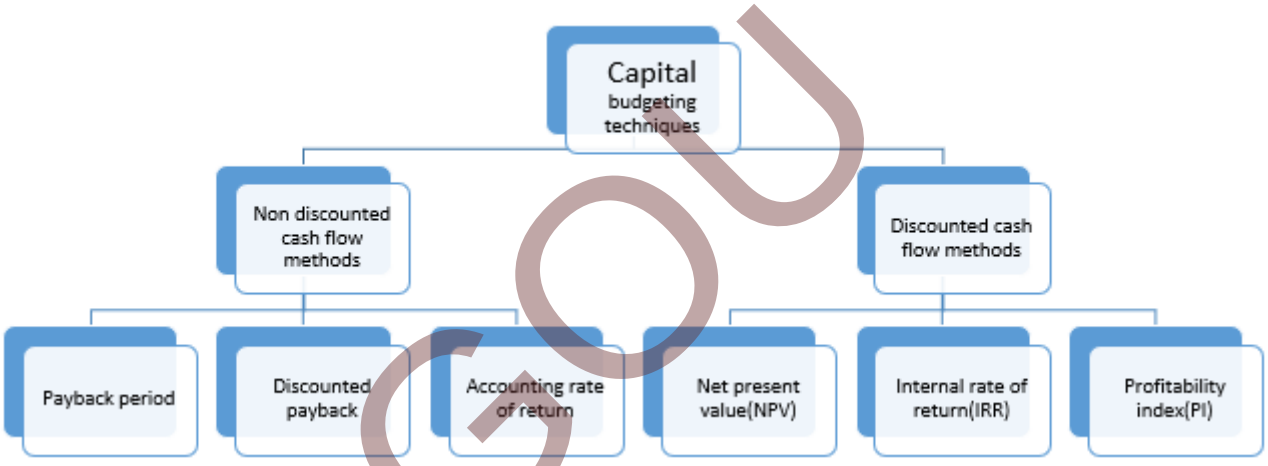

Fig 2.2.1 Capital Budgeting Techniques

2.2.1.1 Non-discounted Cash Flow methods

The non-discounted method of capital budgeting disregards the time value of money, meaning it assumes that all future cash flows are worth the same as current money. This approach is often referred to as conventional techniques. Within the non-discounted cash flow methods, there are three main ways to evaluate investments: the payback method, the discounted payback method, and the accounting rate of return (ARR).

2.2.1.1.1 Payback period method

The payback period method refers to the time required to recover the initial investment in a project. The basic principle is that the quicker a project repays its initial costs, the more favourable it is. Companies often set a maximum acceptable payback period. If the payback period is less than or equal to this specified period (denoted as 'n' years), the project is considered worthwhile. Projects with payback periods longer than 'n' years are typically viewed as undesirable.

The payback period can be computed in the following manner

7. Determine the yearly net profits before accounting for depreciation but after deducting taxes; these are referred to as annual cash inflows.

8. Divide the initial cost of the project by the annual cash inflow

$$\text{Pay-back period} = \frac{\textit{Initial outlay of the project or original cost of the asset}}{\textit{Annual cash inflow}}$$

Illustration 2.2.1

A project costs ₹200000, and yields an annual cash inflow of ₹40000 for 8 years. Calculate the payback period?

Step 1- initial investment-₹200000

Step 2- annual cash inflow- ₹40000

$$\text{Payback period} = \frac{\textit{Initial oulay of the project}}{\textit{Annual cash inflow}}$$

$$= \frac{200000}{40000} = 5 \text{ years}$$

Illustration 2.2.2

A project costs ₹1000,000 and yields annually a profit of ₹ 160,000 after depreciation at 12%. But before the tax of 50%. Calculate the payback period.

Profit before tax = 160000

Less tax @50% = 80000 (160000*50/100)

Profit after tax = 80000 (160000-80000)

Add depreciation @12 % on Rs 1000000 = 120000

Profit before depreciation but after tax or annual cash inflow

=200000 (80000+120000)

$$\text{Payback period} = \frac{\textit{Initial oulay of the project}}{\textit{Annual cash inflow}}$$

$$= \frac{1000000}{200000} = 5 \text{ years}$$

Advantages of payback period methods

i. It is easy to understand and use, requiring no complex calculations and involving minimal hidden assumptions.

ii. It serves as a basic and practical approach to handling risks.

iii. It is a reasonable method, especially when the firm faces liquidity issues

Disadvantages of the payback period method

1. Ignore the cash flow beyond the payback period:
2. This method ignores the cash flow beyond the payback period, and hence, the profitability of the project is not considered.
3. Does not take the time value of money: This method does not take the time value of money. Cash flows occurring at different periods are treated alike.
4. Ignores the cost of capital
5. Difficulty in determining the payback period methods
6. Ignores return on capital employed
7. Ignores risk differences

2.2.1.1.2 Improvement to payback period

1. Post payback profitability index

One of the serious limitations of the payback period method is that it does not take into account the cash inflows earned after the payback period, and hence, the true profitability of the project cannot be assessed. Hence, the post-payback profitability method was developed by taking into account the profit earned after the payback period.

$$Post\ payback\ profitability\ index = \frac{Post\ payback\ profits}{Investment} * 100$$

2. Post-payback reciprocal method

Post-payback reciprocal method is employed to estimate the internal rate of return generated by the projects. Post-payback reciprocal can be calculated as follows:

$$\text{Post pay back reciprocal} = \frac{Annual\ cash\ inflow}{Total\ investment}$$

3. Discounted payback period

One major drawback of the payback period method is that it ignores the time value of money. To address this issue, the Discounted Payback Period method was introduced. Unlike the traditional approach, this method calculates the payback period by considering the present value of cash inflows. In this approach, the payback period is defined as the length of time required for the cumulative discounted cash inflows to equal the initial investment or present value of cash outflows.

Illustration 2.2.3

A project is estimated to cost ₹ 15000. The expected cash inflows are:

Year	Cash inflow	Present value factor at 10%
1	5000	0.909
2	8000	0.826
3	6000	0.751
4	3000	0.683
5	7000	0.621

Compute the discounted payback period.

Year	Cash inflow	Present value factor	Discounted cash inflow	Cumulative cash inflows
1	5000	0.909	4545	4545
2	8000	0.826	6608	11153
3	6000	0.751	4506	15659
4	3000	0.683	2049	17708
5	7000	0.621	4347	22055

Discounted payback period = Years before full recovery + (Unrecovered cost at start of the year/Cash flow during the year)

$$= 2 + \frac{3847}{4506}$$

= 2.85 years

Note: Initial Investment = ₹15,000

Cumulative discounted inflow by the end of 2nd year = ₹11,153

Unrecovered amount at start of Year 3 = ₹15,000 - ₹11,153 = ₹3,847

Discounted inflow in the 3rd year = ₹4,506.

Illustration 2.2.4

Compute the following for the project below:

1. Payback period
2. Post payback period
3. Post payback profit
4. Post -back profitability index

Initial outlay- 200000

Estimated life -5 years

Earnings after tax but before depreciation:

1st year- 50000

2nd year-60000

3rd year-40000

4th year-35000

5th year-65000

Answer:

Year	Earnings after tax but before depreciation	Cumulative earnings after tax but before depreciation
1	50000	50000
2	60000	110000
3	40000	150000
4	50000	200000
5	65000	265000

- ◊ Payback period = 4th th year
- ◊ Post payback period = life of the project – payback period
- ◊ = 5-4 = 1 year
- ◊ Post payback profit = 65000
- ◊ Post payback profitability index = $\frac{post\ pay\ back\ profit}{investment}$ x 100

$= \frac{65000}{200000} * 100$

= 32.5 %

2.2.1.1.3 Accounting Rate of Return

The Accounting Rate of Return (ARR) is an investment evaluation method that helps assess how profitable an investment is. It indicates the percentage return, based on accounting profits, that an investor can expect in relation to the amount invested. This method is also called the ***Average Rate of Return***. The average rate of return is the percentage rate of return expected on an investment or assets as compared to the initial cost.

Under this method, various projects are ranked on the basis of rate of return, and the one with the highest rate of return is accepted. There are two approaches in the

calculation of ARR

1. Based on the original investment in the project

$$\text{ARR} = \frac{Average\ \ Annual\ Earnins\ From\ The\ Project}{Original\ \ Investment\ in\ \ The\ \ Project} \text{ X } 100$$

2. Based on the average investment in the project

$$\text{ARR} = \frac{Average\ Annual\ Earnings\ From\ the\ Project}{Average\ Investment\ in\ the\ Project} \text{ X } 100$$

***Average annual profits/earnings** $= \frac{Total\ profits}{Number\ of\ years}$

Where:

a) Average annual earnings means the total of expected annual earnings after depreciation and tax divided by the number of years.

b) Original investment means the total cost of the project till commissioning, minus salvage value, if any

Average investment means:

1. Where there is no salvage value $= \frac{original\ cost\ of\ the\ projet}{2}$
2. Where there is a salvage value $= \left(\frac{\boldsymbol{original\ cost - salvage\ value}}{\mathbf{2}}\right)$ + Salvage value

Illustration 2.2.5

The estimated cost of a project is ₹300000. The returns after depreciation and tax during the life of the assets are estimated to be 100000, ₹150000, ₹125000, ₹75000, and₹ 60000.

Calculate the average rate of return (ARR)

Answer:

Initial investment = ₹ 300000

Estimated life of the project = 5 years

Total earnings = 100000+150000+125000+75000+60000

= ₹ 510000

Average earnings $= \frac{510000}{5} = 102000$

Average investment $= \frac{total\ investment}{2}$

$$= \frac{300000}{2} = ₹150000$$

Average rate of return:

a. Based on original investment $= \frac{102000}{300000} * 100 = 34\%$

b. Based on average investment $= \frac{102000}{150000} * 100 = 68\%$

Illustration 2.2.6

A project is estimated to cost ₹ 700000 with a salvage value of ₹40000 after its normal economic life of 5 years. The annual earnings after depreciation and tax are expected to be uniform at ₹ 50000. Calculate ARR?

Solution

Average earnings = 50000

Net investment = 700000-40000=660000

Average investment $= \left(\frac{original\ cost - salvage\ value}{2}\right)$ + Salvage value

$= \left(\frac{700000 - 40000}{2}\right) + 40000$

$= 684000$

Average rate of return:

a. Original investment method $= \frac{50000}{660000} * 100$

$=7.57\%$

b. Average investment method $= \frac{50000}{684000} * 100$

$=7.3\%$

Advantages of the average rate of return

1. The average rate of return is easy to calculate and simple to understand.
2. ARR takes into account the entire earnings of the project during its entire economic life
3. This method is based on the concept of earnings after tax and depreciation.
4. ARR gives importance to profitability rather than liquidity
5. This is the only method that considers the accounting concept of profit for calculating the rate of return.
6. This method is used to measure the current performance of the firm

Disadvantages of the average rate of return

1. In this method, it does not consider the time value of money
2. It is not suitable for all projects
3. It ignores the time life span of various investments
4. There is no uniformity in this approach.

2.2.1.2 Discounted cash flow methods

One of the serious drawbacks of non-discounted cash flow is that it doesn't consider the time value of money. It led to the development of the discounted cash flow method. The discounted cash flow method considers the time value of money for analysing the profitability of investment projects**.**

The following are the different methods used for evaluating the investment projects under the discounted cash flow method:

2.2.1.2.1 Net present value method

Net present value is the difference between the present value of cash inflows and the present value of cash outflows. The net present value method of capital budgeting considers the time value of money.

NPV = Present value of cash inflows - Present value of cash outflows

The Net Present Value (NPV) of a project is determined by adding the present values of all cash flows, both incoming (positive) and outgoing (negative). A project should be accepted if the NPV is positive, as it indicates profitability, and rejected if the NPV is negative, suggesting a potential loss.

Decision Rule:

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

The calculation of NPV involves the following steps:

1. First and foremost, an appropriate rate of interest must be identified as the minimum acceptable rate of return, often referred to as the cut-off rate or discount rate. This rate represents the lowest return an investor is willing to accept; any return below this threshold is considered unworthy of investment.
2. Compute the present value of the total investment outlay, cash flow at the determined discount rate.

3. Compute the present value of total investment proceeds. Cash inflows, at the above-determined discount rate.

4. Calculate the net present value of each project by subtracting the present value of cash inflows from the present value of cash outflows.

5. If the net present value is positive or zero, when the present value of cash inflows either exceeds or is equal to the present value of cash outflows, the proposal may be accepted. But if the present value of inflows is less than the present value of cash outflows, the proposal should be rejected.

Illustration 2.2.7

From the following information, calculate the net present value of the 2 projects and suggest which of the 2 projects should be accepted, assuming a discount rate of 10%.

	Project X	**Project Y**
Initial investment	₹ 40000	₹ 50000
Estimated life	5 years	5 years
Scrape value	₹4000	₹2000

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

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Project X	8000	15000	5000	6000	4000
Project Y	25000	15000	10000	7000	3000

Solution:

Calculation of net present value

Project X

Year	**Cash flows**	**Present value of Re 1@10% (discount factor) using present value tables**	**Present value of net cash flows**
1	8000	0.909	7272
2	15000	0.826	12390
3	5000	0.751	3755
4	6000	0.683	4098
5	4000	0.621	2484
Scrap	4000	0.621	2484
			32483

Present value of all cash inflows = 32483

Less: Present value of initial investment = 40000

Net present value = -7517

Project Y

Year	Cash flows	Present value of Re 1@10% (discount factor) using present value tables	Present value of net cash flows
1	25000	0.909	22725
2	15000	0.826	12390
3	10000	0.751	7510
4	12000	0.683	8196
5	5000	0.621	3105
Scrap	2000	0.621	1242
			55168

Total present value of cash inflows - 55168

Less: Present value of initial investment -50000

Net present value = 5168

The NPV of project X is a negative figure, and project Y is a positive value. Which means if we select project X, there is a potential chance of loss. So, select project Y because it has a positive return.

Illustration 2.2.8

A project with the following information is under active consideration:

Initial investment - ₹ 80000

Estimated life - 4 years

Annual cash inflow – ₹30000 (before depreciation and after tax)

Investment criterion - NPV

Rate of discount -10%

Advise the management regarding the acceptability of the project.

PV factor at 10%: 0.909, 0.826, 0. 751, 0.683.

Answer:

Year	PV factor @10%	Cash inflow	Present value
1	0.909	30000	27270
2	0.826	30000	24780
3	0.751	30000	22530

4	0.683	30000	20490
			₹95070

Present value of cash inflows : ₹95070

less: Initial investment : ₹80000

Net present value : **₹15070**

Advantages of the net present value method:

1. Considers Time Value of Money (TVM)

NPV recognises that a rupee today is worth more than a rupee in the future due to inflation, risk, and opportunity cost. By discounting future cash flows, NPV ensures that returns are evaluated in present terms, leading to more accurate and realistic investment decisions.

2. Measures True Profitability

Unlike methods like the Payback Period, which only focus on recovering the initial investment, NPV measures the actual profitability by calculating the net value that an investment adds. A positive NPV indicates that the project will generate returns above the cost of capital, hence increasing overall wealth.

3. Considers All Cash Flows

The NPV method includes **every cash inflow and outflow** over the entire project duration. This comprehensive approach ensures that no part of the project's financial impact is ignored, leading to better evaluation compared to methods that only consider partial cash flows.

Disadvantages of the net present value method

1. **Cash Flow Estimation**: Although the NPV method is simple to apply when future cash flows are known, in reality, accurately predicting these cash flows is challenging due to uncertainty and market fluctuations.

2. **Determining the Discount Rate**: In practical scenarios, it is often difficult to determine the exact discount rate to be used in NPV calculations, which can affect the reliability of the results.

3. **Mutually Exclusive Projects**: When comparing alternative projects that are mutually exclusive, especially those with different lifespans or when there's a limitation on available funds, extra care is required, as the NPV method may not always provide clear or accurate decisions.

4. **Project Ranking**: The ranking of investment options using the NPV method can vary depending on the discount rate applied, meaning it does not always offer consistent rankings across different rates.

2.2.1.1.2 Internal Rate of Return (IRR) Method

The internal rate of return (IRR) of a project is the discount rate at which the net present value (NPV) becomes zero. It takes into account both the amount and the timing of cash flows. Terms such as yield on investment, marginal efficiency of capital, return over cost, and time-adjusted rate of return are also commonly used to describe the IRR method.

The following are the steps involved in the calculation of IRR.

1. Compute the present value of cash inflows. The present value of cash inflows is calculated by using a rate of discount.
2. Compute NPV by deducting the present value of cash inflows from the present value of cash outflows
3. If the NPV is positive, apply a higher rate for calculating the present value of cash inflows.
4. If the higher NPV rate still gives a positive NPV, increase the discount rate further until the NPV becomes negative.
5. If NPV is negative at this higher rate, the IRR lies between these two rates and is calculated by using the following formula:

$$IRR = Lower\ Rate + \frac{NPV\ at\ Lower\ Rate}{PV\ at\ Lower\ Rate - PV\ at\ Higher\ Rate} \times (Higher\ Rate - Lower\ Rate)$$

Or we can simplify this equation into:

IRR= $A + \frac{C}{C-D}(B - A)$

Where,

IRR= Internal rate of return

A=Lower trial rate

B=higher trial rate

C=NPV at a lower rate

D=NPV at a higher rate

Illustration 2.2.8

Find out the IRR from the details furnished below:

Cost of the project- ₹45000

Expected annual inflow-₹ 15000 each

Life of the project- 5 years

PV factor at 10% 0.909, 0.826, 0.751, 0.683, 0.621

PV factor at 15% 0.870, 0.756, 0.658, 0.572, 0.497

PV factor at 20% 0.833, 0.694, 0.579, 0.482, 0.402

Solution

Year	Cash inflow	First trial @10%		Second trial @15%	
		PV factor	Present value	PV factor	Present value
1	15000	0.909	13635	0.87	13050
2	15000	0.826	12390	0.756	11340
3	15000	0.751	11265	0.658	9870
4	15000	0.683	10245	0.572	8580
5	15000	0.621	9315	0.497	7455

	₹100000		₹56850		₹40425
		Less: cost	45000		45000
		NPV	11850		-4575

The initial investment of ₹45000 lies between the present value of inflows at 10% and 15% and therefore, the actual rate will be between these two limits.

By applying the formula of interpolation:

IRR= $A + \frac{C}{C-D}(B - A)$

$= 10 + \frac{11850}{11850-(-4575)} * (15 - 10)$

$= 10 + \frac{11850}{11850+4575} * 5$

=10+3.60

=13.36%

2.2.1.1.3 Profitability index

The Profitability Index (PI) is a financial tool that shows the relationship between the present values of a project's expected cash inflows and its present value of cash outflows. It helps assess how much value a project generates for each unit of investment.

A higher PI indicates that the present value of returns is greater than the investment cost, suggesting the project is profitable. If the PI is more than 1, the project is considered worthwhile; if it is less than 1, the project may lead to a loss. This index is especially useful in comparing different investment options when funds are limited, as it helps in selecting the most efficient use of capital.

$$\text{Profitability index} = \frac{\textit{present value of cash inflows}}{\textit{present value of cash outflows or initial investment}}$$

Decision Rule:

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

Advantages of the profitability index:

i. **Considers Time Value of Money:** The PI method factors in the time value of money, which means it acknowledges that money received today is more valuable than the same amount received in the future due to its earning potential.

ii. **Measures Profitability Relatively:** It provides a relative assessment of a project's profitability by comparing benefits (cash inflows) to costs (cash outflows) in present value terms.

iii. **Helps in Investment Decision Making:** This ratio indicates how much value or return is generated for every rupee invested, making it easier to choose between multiple investment options.

Disadvantages of the profitability index

i. **Not Suitable for Indivisible Projects Under Capital Constraints:** The PI method is less effective when investment funds are limited, and projects can't be split into smaller, manageable parts.

ii. **May Lead to Ignoring More Profitable Combinations:** Sometimes, it might prioritise one large project with a high NPV, which could prevent the selection of multiple smaller projects that, together, would generate a greater overall NPV.

iii. **Can Overlook Better Combined Returns:** In certain cases, choosing a project with a slightly lower PI might make it possible to take up another project later, resulting in a better total return than selecting only the one with the highest PI.

Illustration 2.2.8

Rank projects X and Y based on the profitability index and provide your recommendation.

Year	Cash flow	
	Project X	Project Y
Initial investment	₹40000	₹15000
Cash inflows		
1	15000	8500
2	25000	5000
3	12500	6000
4	0	2000

The details are given below:

Discount rate 12% PV factor at 12%:0.893, 0.797, 0.712 and 0.636

Answer

Year	Project X			Project Y		
	PV factor @12%	Project X	Present value	PV factor @12%	Project Y	Present value
1	0.893	15000	13395	0.893	8500	7591
2	0.797	25000	19925	0.797	5000	3985
3	0.712	12500	8900	0.712	6000	4272
4	0.636	0	0	0.636	2000	1272
PV of cash inflows			42220			17120

Profitability index $= \frac{present\ value\ of\ cash\ inflows}{initial\ investment}$

Project X$= \frac{42220}{40000} = 1.055$ Rank 2

Project Y$= \frac{17120}{15000} = 1.141$ Rank 1

Recommendations: The PI for both project X and project Y is greater than 1. So, both are acceptable, but the PI for project Y (ranked 1st) is greater than that of project X. Hence, project Y is recommended for acceptance.

Recap

- ◊ Pay back refers to the time required to recover the initial investment in a project
- ◊ Accounting rate of return is also known as average rate of return.
- ◊ NPV is the difference between present value of cash inflows and present value of cashout flows.
- ◊ NPV is positive, project should be accepted.
- ◊ NPV is negative, project should be rejected.
- ◊ IRR is the discount rate at which NPV becomes zero.
- ◊ PI is the relationship between present value of cash inflows and present value of cash outflows.

Objective Questions

1. What do you mean by Capital budgeting?
2. What do you call a long-term investment decision?
3. Mention some types of discounted cash flow methods?
4. What is NPV?
5. What is the acceptance rule for the NPV method?
6. What is the acceptance rule for the IRR method?
7. What is the time value of money?
8. What is payback?

Answers

1. Capital budgeting is the process of evaluating and selecting long-term investments
2. Capital budgeting
3. Net present value, internal rate of return, profitability index

4. Difference between the present value of cash inflows and the present value of cash outflows.
5. The investment project is accepted if its net present value is positive (NPV > 0) and rejected if the net present value is negative (NPV< 0) when using the NPV method.
6. Using the IRR technique, the accept-or-reject rule states that a project should be approved if its IRR is greater than the opportunity cost of capital (r > k).
7. A sum of money is worth more today than the same amount in the future.
8. The Payback Period is the time taken for an investment or project to recover its initial cost from its cash inflows.

Assignments

1. A project costs Rs 800000 and yields annually a profit of Rs 80000 after depreciation at 10 % p.a, but before tax at 50%. Calculate the payback period.
2. Calculate the internal rate of return for the project X. The details of the project are as under;

   Initial cost – Rs 25000

Year	cash inflows (year-wise)			
	1	2	3	4
₹	3000	5000	4000	10000
Present value factor at 10%	0.909	0.826	0.751	0. 683
Present value factor at 12%	0.893	0.797	0.712	0. 636

3. A company plans to invest ₹10, 00,000 in a project. The project will generate the following profit after tax and depreciation over 5 years:

Year	Profit after Tax and Depreciation (₹)
1	80,000
2	90,000
3	1,20,000

4	1,60,000
5	2,00,000
Total	6,50,000

At the end of 5 years, the plant and machinery will have a salvage value (resale value) of ₹1, 20,000.

Calculate ARR.

4. Critically evaluate the strengths and limitations of the NPV method in capital budgeting decisions.

5. Explain how risk and uncertainty are handled in capital budgeting decisions. What methods are used to incorporate risk?

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BLOCK 3

Financing Decision

Unit 1
Sources of finance

Learning Outcomes

After completing this unit, the learner will be able to:

- ◊ examine how firms access capital in the real world
- ◊ compare the various sources of finance
- ◊ describe the features of various sources of finance used by the company
- ◊ explain warrants, convertible securities, and depository receipts

Prerequisite

Finance is the lifeblood of every business organization, as it enables firms to start operations, expand activities, adopt new technologies, and sustain long-term growth. In the real business environment, companies must carefully decide how to raise funds by selecting appropriate sources of finance that balance cost, risk, control, and flexibility. These financing decisions have a direct impact on a firm's profitability, capital structure, and overall financial stability.

This unit provides a foundational understanding of how firms access capital in practice and the rationale behind choosing different sources of finance. It introduces learners to traditional and modern financing instruments, including equity, debt, and hybrid securities. Special emphasis is placed on warrants, convertible securities, and depository receipts, which have gained importance in contemporary financial markets due to globalization and financial innovation.

By studying this unit, learners will be equipped to compare various sources of finance, understand their key features,

and evaluate their suitability for different business situations. This knowledge is essential for analysing corporate financing strategies and understanding how companies mobilize funds in domestic and international markets.

Keywords

Equity, Warrants, Depository Receipts, Convertibles

Discussion

As businesses grew in size and complexity, the need for larger capital investments, diversified ownership, and limited risk exposure led to the emergence of joint stock companies. In such companies, ownership is divided into shares, and shareholders enjoy limited liability, meaning their personal assets are not at risk beyond the value of their investment in the company. This structure enables businesses to raise substantial capital by issuing equity and debt instruments. Equity instruments, such as ordinary shares, preference shares, warrants, and convertible securities, represent ownership in the company and vary in terms of risk, return, and control. Debt instruments, including term loans and debentures, allow companies to borrow funds with a promise of repayment and fixed interest, without diluting ownership. Additionally, institutional finance and global funding mechanisms like ADRs (American Depository Receipts) and GDRs (Global Depository Receipts) have broadened the scope of corporate financing, enabling firms to access both domestic and international capital markets. Understanding these financial structures is crucial for effective business management and strategic growth.

3.1.1 Sources of Finance

Sources of finance refer to the various methods a business uses to obtain funds needed to support its operations, growth, and investment activities. These funds are essential for financing both day-to-day expenses and long-term strategic goals. Financial managers must carefully assess the most suitable source of finance based on factors such as cost, risk, repayment terms, control implications, and the time period for which the funds are needed. Finance may be mobilized by short-term and long-term sources. A short-term source of finance is needed to meet the operational expenditure of the business concern and will be repayable within one year. It includes Bank Credit, Customer Advances, Trade Credit, Factoring, Public Deposits, and Money Market Instruments.

The long-term investment decisions of a firm involve the acquisition of fixed assets. They have to be financed using long-term sources of finance. When the finance is mobilized with a large amount and the repayment period is more than five years, it may be considered as a long-term source. The main sources of long-term finance fall into two broad groups:

I. Internal and

II. External

The internal sources of long-term funds of an existing company consist of depreciation charges and retained earnings. The depreciation charges are normally used to replace the concerned assets only. In that way, the only internal source available for companies is retained earnings. The external sources of long-term funds comprise of equity, debt, institutional finance, and hybrid sources such as preference shares, convertibles, and warrants. Besides these, ADRs and GDRs are classified as external sources of equity finance used by companies to raise capital from international investors.

3.1.1.1 External Sources of Long-term Finance

A. Equity shares

Equity capital, as a long-term source of finance, represents ownership capital, as equity shareholders jointly hold the ownership of the company. They enjoy the return and share the risk associated with it. However, their liability is limited to their capital contribution. Equity share capital is also known as ordinary share capital because, when compared to preference share capital, it does not have any preference in the payment of dividends and repayment of capital. The rate of dividend on equity shares relies on the profits of the company. These shareholders take risks both regarding dividends and repayment of capital. Equity share capital cannot be redeemed during the lifetime of the company.

Features of Equity shares

Equity shares have certain unique features that distinguish them from other shares and securities

1. Maturity: equity shares are the source of permanent capital to the company and cannot be redeemed during the lifetime of the company. Equity shareholders can demand repayment of their capital only at the event of liquidation of the company. But equity shares are repaid only after setting off all other claims, including those of preference shareholders.

2. Claim on income: Equity shareholders have a residual claim on the income of the company. They have a claim on the income left after paying dividends to preference shareholders. They may not have anything if profit is not left after meeting all other obligations. Even if the company has sufficient profits after meeting all other obligations, the equity shareholders do not have the privilege to legally force the company to pay dividend to them. The decision on payment of dividend to equity shareholders is left to the discretion of the directors of the company as per the Companies Act 1956.

3. Claim on assets: At the event of liquidation of the company, the assets are used primarily to meet the claims of the creditors and preference shareholders. But everything left after meeting such claims belongs to the equity shareholders.

4. Right to control: equity shareholders are the real owners of the company. They have control over the operations of the company and have voting rights at the meeting of the company. The control is in the hands of the board of directors, who are elected by the equity shareholders.

5. Pre-emptive right: A preemptive right is a rule that protects equity shareholders by allowing them to buy new shares before anyone else when a company issues more stock. This helps them keep the same ownership percentage in the company and avoid losing control or voting power. Example: If you own 10 out of 100 company shares (10%), and the company sells 50 new shares, your preemptive right lets you buy 5 of those new shares first so you can stay at 10% ownership.

6. Limited liability: Even though equity shareholders are the real owners of the company, their liability is limited to their capital contribution.

Advantages

1. Equity shares can be issued without any charge on the assets of the company
2. It is a source of permanent capital and can not be repaid during the lifetime of the company.
3. Equity shareholders are the real owners of the company and have voting rights.
4. These shareholders do not create any obligation to pay a fixed dividend.
5. At the time of profits, equity shareholders will gain more through increased dividends and capital appreciation.

Disadvantages

1. If the company solely depends on equity financing, it cannot enjoy the benefits of trading on equity.
2. During the period of high profits, high dividend is paid to equity shareholders, leading to an increase in the market value of shares and thereby speculation.
3. Investors who prefer fixed income will not choose equity shares.
4. Equity shares can not be redeemed during the lifetime and which may cause overcapitalization
5. Equity shares may create obstacles in the management by their interference.

B. Hybrid Form of Financing

A hybrid form of financing has the characteristics of both debt and equity. The important hybrid sources of financing are: i) Preference share capital ii) convertibles and iii) warrants.

1. Preference shares

Preference shares, as the name indicates, enjoy preference over equity shareholders on payment of dividend and repayment of capital. In the case of payment of dividend, whenever the company has distributable profits, the dividend is first paid on preference share capital. While repaying the capital at the time of liquidation, after paying the outside creditors, the preference share capital is repaid. A preference shareholder does not have voting rights, thereby they have no control over management.

Preference share capital is considered as a hybrid form of financing as it includes some attributes of equity and some attributes of debt financing. It resembles equity in the sense that i) payment of preference dividend is not obligatory (payment of dividend is left to the discretion of directors) ii) preference dividend is payable only out of distributable profits iii) preference dividend is not a tax -tax-deductible expense. At the same time, preference share capital has certain features of debt financing: i) The dividend rate of preference share capital is fixed like the interest rate on debentures ii) The claim of preference shareholders is prior to equity shareholders, iii) preference shareholders do not have the voting rights and iv) preference capital is usually repaid.

Features of preference shares

1. Maturity: Preference shares generally resemble equity shares in their maturity period. These are irredeemable, and the company is required to repay the preference share capital at the time of liquidation. At the time of liquidation, the company will repay preference share capital after the settlement of creditors, but before paying back the equity shareholders.

2. Claims on income: The rate of dividend of preference shareholders is fixed. Preference shareholders have preference over equity shareholders in the payment of dividends. But, similar to equity shareholders, the preference shareholders also cannot legally demand payment of dividends or distribution of earnings.

3. Claims on assets: preference shares have preference in the repayment of capital over equity shareholders at the time of liquidation. At the time of winding up, the claim of preference shareholders is settled before equity shareholders. But they are not the real owners of the company and have no rights on the surplus assets of the company.

4. Control: Preference shareholders do not have voting rights, and because of this, they do not have control over the management of the company. However, as per section 87 of the Companies Act, 1956, preference shareholders have voting power in a resolution that directly impacts the rights attached to their preference shares.

5. Hybrid form of security: Preference shares represent a hybrid form of security as they have some features of equity and debt.

Advantages of Preference Shares

1. There is no statutory requirement to distribute dividends to preference shareholders.
2. The risk of financial strain due to redemption is minimal, as preference shares can be redeemed only from profits or from the proceeds of a new issue of shares (either equity or preference).
3. Preference share capital is usually treated as part of the company's net worth, thereby improving its overall credit standing.
4. Under normal conditions, preference shareholders do not possess voting rights, so the control of existing shareholders remains unaffected.
5. Since no assets are pledged to preference shareholders, the company's mortgageable assets remain unencumbered.

Disadvantages of Preference Shares

1. Compared to debt financing, preference capital is a costlier source of funds because dividends on preference shares are not tax-deductible like interest on debt, and an additional dividend distribution tax may also apply.
2. Although companies are not legally bound to pay preference dividends, such dividends often accumulate and must be paid in arrears.
3. In comparison with equity shareholders, preference shareholders enjoy a prior claim on the company's assets and profits.
4. Preference shareholders gain voting rights if the company fails to pay dividends on their shares for a certain period.

Types of Preference Shares

Preference shares are of the following types:

a. Cumulative Preference Shares:

These shares give their holders the right to receive dividends even for years when the company did not earn enough profit to declare them. The unpaid dividends accumulate over time and must be paid out when the company later earns sufficient profits. For example, if a company cannot pay dividends in 1994 and 1995 but makes profits in 1996, it must first pay the pending dividends for 1994 and 1995 before paying the 1996 dividend. The right to these unpaid dividends continues until they are fully settled.

b. Non-Cumulative Preference Shares:

Shareholders holding these shares are entitled to dividends only if the company makes profits in that particular year. If dividends are not declared in any year, shareholders cannot claim them later; the right to such an unpaid dividend lapses.

c. Redeemable Preference Shares:

Generally, a company's share capital is repaid only when it is liquidated. However, if permitted by its Articles of Association, a company can issue redeemable preference shares, which allow repayment of the capital after a specified period. Certain legal restrictions apply: these shares must be fully paid up, and redemption can only be made from company profits or the proceeds of a new share issue. These safeguards ensure that the company's financial stability is not weakened by the redemption.

d. Irredeemable Preference Shares:

These are shares that cannot be repaid during the company's lifetime and are redeemable only upon its liquidation.

e. Participating Preference Shares:

Holders of these shares not only receive a fixed dividend but may also share in the company's surplus profits. After paying them their fixed dividend and distributing a reasonable dividend to equity shareholders, any remaining profits are shared between both classes of shareholders. The specific method of dividing these surplus profits is outlined in the company's Articles of Association.

f. Non-Participating Preference Shares:

These shareholders are entitled only to a fixed rate of dividend and have no right to share in any additional profits earned by the company.

g. Convertible Preference Shares:

Owners of these shares are granted the option to convert their preference shares into equity shares after a certain period. This conversion right must be explicitly stated in the company's Articles of Association.

h. Non-Convertible Preference Shares:

These preference shares do not carry any right of conversion into equity shares and remain preference shares throughout their term.

C. Convertibles

Convertibles are financial instruments such as bonds, debentures, or preference shares that can be converted into equity shares at the option of the holder. The most common type of convertible security is the convertible debenture, which allows investors to convert their holdings into equity shares at a predetermined price and within a specified timeframe. Such debentures provide investors with the advantage of initially being secured creditors of the company, while also offering the option to become shareholders if the company performs well and offers attractive returns.

Convertible securities may be either fully convertible or partly convertible, and may include buyback provisions. Fully convertible debentures are entirely converted

into equity shares after a certain period defined at the time of issuance. In contrast, partly convertible debentures are only partially converted into equity shares, with the remaining portion being non-convertible and redeemed after a specified duration.

D. Warrants

A warrant is a long-term financial instrument issued by a company that grants the holder the right to purchase a specific number of the company's ordinary shares at a predetermined price within a set time frame. Warrants are typically issued along with bonds or preference shares, primarily to make the new issue more attractive to investors.

Warrants can be either detachable or non-detachable. A detachable warrant can be traded independently of the bond or preference share it was originally issued with, while a non-detachable warrant must remain attached and cannot be sold separately. Warrant holders do not have voting rights or the right to receive dividends; however, once they exercise their option and purchase the company's ordinary shares, they obtain all the rights of ordinary shareholders.

At the time of issue, a warrant generally holds little or no value. It gains value when the market price of the company's ordinary shares exceeds the fixed (exercise) price at which the holder can purchase the shares. Therefore, the market value of a warrant depends on both the market price of the ordinary shares and the exercise price.

E. Debt capital

The term 'creditorship securities', also known as debt capital, refers to debentures or bonds, which hold a significant position in a company's financial structure. A debenture or bond serves as a formal acknowledgment of a debt, represented by a certificate issued by a company under its official seal, confirming the amount it owes to the holder. In India, there is no practical difference between debentures and bonds, as the two terms are used interchangeably. Including such creditorship securities as a source of company financing helps to lower the overall cost of capital, thereby enhancing shareholder earnings. Firms can obtain long-term debt mainly by raising term loans or issuing debentures.

1. Debentures

A company can obtain long-term funds by borrowing from the public, typically through the issuance of debentures. A debenture serves as a formal acknowledgment of the company's debt to its holders. According to Thomas Evelyn, "a debenture is a document under the company's seal which provides for the payment of a principal sum and interest thereon at regular intervals, which is usually secured by a fixed or floating charge on the company's property or undertaking and which acknowledges a loan to the company's property or undertaking and which acknowledges a loan to the company". A debenture holder is a creditor of the company. A fixed rate of interest is paid to debenture holders.

Features of Debentures

1. Trustee: When a company offers debentures to the investing public, a trustee is appointed through a trust deed. This trustee is typically a bank, financial institution, or insurance company. The trustee's primary responsibility is to safeguard the interests of debenture holders by ensuring that the borrowing company meets all its contractual commitments.

2. Security: In India, most debenture issues are secured by a mortgage on the company's immovable assets and a floating charge on its other properties. However, some companies occasionally issue unsecured debentures, which are treated as deposits under the Companies Act.

3. Interest rate: Debentures can have a fixed, floating, or zero rate of interest. In India, fixed-rate debentures are the most commonly issued type. The interest on these debentures is generally paid twice a year, in two equal semi-annual installments

4. Maturity and redemption: Corporate debt can be classified as short-term, medium-term, or long-term. Short-term debt usually matures in less than one year, while medium-term debentures have a maturity period of one to five years. Long-term debentures generally mature within five to fifteen years. Financial markets, however, are typically unfavorable toward debentures with a maturity of over 15 to 20 years. Medium-term debentures are commonly redeemed through a single (bullet) payment, whereas long-term debentures are repaid in installments over two to three years.

5. Call and Put feature: Debentures may include a call option, allowing the issuing company to redeem them at a predetermined price before their maturity date. In some cases, debentures also carry a put option, which grants the investor the right to demand repayment at specific times and at pre-agreed prices.

6. Convertibility: A company may issue convertible debentures, allowing debenture holders the option to convert them into equity shares. The conversion ratio and the timeframe within which the conversion can take place are determined and disclosed at the time of issue.

Advantages of debentures

1. Interest paid on debentures is treated as a deductible expense for tax purposes, while dividends on equity and preference shares are distributed from profits remaining after tax.

2. Using debt financing does not dilute ownership or control, as lenders do not possess voting rights in the company.

3. Creditors do not share in the company's growth in value, since their returns are confined to fixed interest payments and repayment of principal.

4. The maturity period of a debt instrument can be structured to match the time frame for which the company requires funds.

5. In the event of a sharp decline in the firm's value, shareholders can choose to default on debt payments, effectively transferring ownership of the company to the creditors.

6. The costs incurred in issuing debt are generally much lower than those associated with raising equity or preference share capital.

7. Since debt repayments are typically fixed in nominal terms, borrowing can offer protection against periods of high expected inflation.

8. Having debt obligations tends to impose financial discipline on the company's management.

9. It is often simpler for management to convey confidential or proprietary information about the firm's future prospects to private lenders than to investors in public capital markets.

Disadvantages

1. Debt financing requires the firm to make fixed payments of interest and principal. Inability to fulfill these obligations can result in serious financial distress and may even push the company toward bankruptcy.

2. Using debt increases the firm's financial leverage, which - according to the Capital Asset Pricing Model (CAPM), leads to a higher cost of equity.

3. Loan agreements often include restrictive covenants that constrain the company's financial and operational flexibility.

4. When actual inflation is lower than anticipated, the real (inflation-adjusted) cost of debt becomes higher than initially expected.

F. Term Loan

Term loans, also called term finance, are a form of debt financing typically repayable within a period of up to 10 years. They are primarily used to fund the purchase of fixed assets or to cover part of working capital requirements. Unlike short-term bank loans, which are meant to meet immediate working capital needs and are usually self-liquidating within a year, term loans are designed for longer-term financial commitments.

Features of Term Loan

1. F**ixed or Variable Interest**: Term loans charge interest on the borrowed amount, which can be either fixed or variable. A fixed interest rate remains constant throughout the loan tenure, providing predictable repayment amounts and making financial planning easier. A variable (or floating) interest rate changes according to market conditions, such as benchmark rates set by banks or central authorities

2. **Repayment Period**: Term loans are usually repaid over 1 to 10 years, depending on the asset's cost and useful life, with shorter periods for smaller or quickly depreciating assets and longer periods for high-value, long-term investments.

3. **Purpose-Specific**: Generally used for long-term projects rather than short-term working capital.

4. **Security**: Term loans typically represent secured borrowing. Usually, assets that are financed with the proceeds of the term loan provide the prime security. Other assets of the firm may serve as collateral security

5. **Structured Repayment**: The interest and principal repayment on term loans are definite obligations that are payable irrespective of the financial situation of the firm. Payments are scheduled, often as EMIs (Equated Monthly Installments) covering both principal and interest.

Advantages

1. Term loans provide a predictable repayment schedule, helping businesses plan their finances effectively.
2. They allow businesses to invest in long-term growth and expansion projects.
3. Secured term loans usually have lower interest rates compared to unsecured credit.
4. The loan amount and tenure can often be tailored to match the project's requirements.

Disadvantages

1. Most term loans require collateral, putting assets at risk in case of default.
2. They increase the long-term financial liability of a business.
3. Fixed repayment obligations may strain cash flow during periods of low revenue.
4. The total interest paid over time can be significant, especially for long-term loans.

3.1.2 Institutional Finance

Institutional finance refers to funds provided by financial institutions such as banks, insurance companies, development banks, investment funds, and other government or non-government agencies to individuals or businesses for various financial needs. It is an important source of finance, especially for businesses that require large amounts of capital for expansion, modernization, or long-term projects.

At the national level, the key financial institutions include the Industrial Finance Corporation of India (IFCI), the Industrial Development Bank of India (IDBI), the Industrial Credit and Investment Corporation of India (ICICI), and the Industrial Investment Bank of India Limited (IIBI). In addition to these, there are 18 State Financial Corporations (SFCs) and 28 State Industrial Development and Investment Corporations operating at the state level. Besides these specialized institutions, other organizations such as commercial banks, industrial cooperatives, small industries development corporations, the Unit Trust of India (UTI), the Life Insurance Corporation (LIC), and

the National Industrial Development Corporation (NIDC) also play an important role in providing financial support for the growth and development of industries across the country

Beyond these, there are some international financing institutions like the World Bank and its affiliates, such as the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), and the Asian Development Bank. All these institutions provide finance to industries either through their member countries or directly to enterprises. These source of finance offers some advantages:

1. Availability of finance for development schemes
2. Reasonable security requirements
3. Availability of finance during periods of depression
4. Easy repayment facility
5. Underwriting facility

3.1.3 Depository Receipts

Depository receipts are negotiable receipts that evidence the deposit of foreign securities. These receipts are easily transferable and are typically traded on stock exchanges. The most common forms are American Depository Receipts (ADRs) and Global Depository Receipts (GDRs). ADRs are listed on stock exchanges in the United States, while GDRs are generally traded on European exchanges. Each depository receipt corresponds to a certain number of underlying shares held by a custodian in the issuing company's home country.

Advantages to Issuers

1. Gain access to capital from markets outside the company's home country.
2. Widen and diversify the company's shareholder base.
3. Create opportunities to boost the domestic share price through increased global demand.
4. Improve liquidity by expanding the market size.
5. Increase the company's international visibility and recognition.
6. Support mergers and acquisitions by using the receipts as a form of acquisition currency

Advantages to Investors

1. Facilitates diversification into foreign markets
2. Eliminates cross-border custody safekeeping charges
3. Provides enhanced accessibility of research, price and trading information
4. Receives dividend payment in home currency.

Recap

- ◊ Sources of finance refer to the various methods a business uses to obtain funds needed to support its operations, growth, and investment activities
- ◊ The internal sources of long-term funds of an existing company consist of depreciation charges and retained earnings
- ◊ The external sources of long-term funds comprise of equity, debt, institutional finance, and hybrid sources such as preference shares, convertibles and warrants.
- ◊ Equity capital as a long-term source of finance represents ownership capital.
- ◊ Preference shares, as the name indicates, enjoy preference over equity shareholders on payment of dividend and repayment of capital
- ◊ Convertibles are financial instruments such as bonds, debentures, or preference shares that can be converted into equity shares at the option of the holder.
- ◊ A warrant is a long-term instrument that gives the holder the right to buy a company's shares at a fixed price within a specified period.
- ◊ 'Creditorship securities or debt capital refer to debentures and bonds that form a key part of a company's financial structure.
- ◊ Institutional finance refers to funds supplied by banks, insurance companies, development banks, and other financial institutions to meet individual or business needs.
- ◊ Depository receipts are negotiable receipts which evidence the deposit of foreign securities.

Objective Questions

1. The main purpose of a pre-emptive right is to?
2. In which matters do preference shareholders have priority over equity shareholders?
3. Which financial instruments can be converted into equity shares at the holder's option?
4. Sources of finance that combine features of debt and equity are called?
5. Funds provided by banks, insurance companies, and investment funds are called as?

6. What type of shares represent ownership in a company?
7. Depository receipts listed on US stock exchanges is known as?
8. GDR stands for?
9. A long-term instrument that gives the right to buy shares at a fixed price is called?

Answers

1. Protect existing shareholders from dilution of ownership
2. Dividend payment and capital repayment
3. Convertibles
4. Hybrid source of finance
5. Institutional finance
6. Equity shares
7. American Depository Receipts
8. Global Depository Receipts
9. Warrants

Self-assessment Questions

1. What is equity share capital, and explain how it differs from preference shares?
2. What is the pre-emptive right of equity shareholders?
3. Explain why preference share capital is considered as a hybrid form of financing?
4. Define debentures?
5. Explain the types of preference shares.
6. What is institutional finance?

7. Differentiate between ADRs and GDRs.
8. How does depository Receipts benefit both the investor and the issuing company?

Assignments

1. Discuss the strategic advantages of hybrid instruments for both companies and investors.
2. A shareholder owns 10% of a company. The company plans to issue additional shares to raise capital.

   a) Explain the concept of pre-emptive rights and how it protects existing shareholders.

   b) Illustrate, with calculations, how the shareholder can maintain their 10% ownership if the company issues 50 new shares.

   c) Discuss the importance of pre-emptive rights in protecting shareholder control and voting power.
3. Describe a scenario where issuing warrants would be more advantageous than issuing ordinary shares.

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Suggested Reading

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Unit 2
Cost of capital

Learning Outcomes

After completing this unit, learners will be able to:

- ◊ get an overview of the concept and significance of cost of capital
- ◊ able to compute the cost of specific sources of capital
- ◊ calculate WACC using book value weights and market value weights

Prerequisite

Ravi, a newly appointed management trainee in the finance department of Tata Motors Limited, was assigned the task of evaluating the company's cost of capital for a proposed electric vehicle manufacturing project, and through this exercise he learned that the company raised funds from multiple sources such as equity shareholders, long-term debt, and retained earnings, each carrying its own cost; while analysing debt, Ravi observed that although debentures carried a fixed interest rate, the effective cost was lower due to tax benefits, making debt a relatively cheaper source of finance, whereas equity capital and retained earnings involved higher expected returns because shareholders bore greater risk and expected compensation through dividends and capital appreciation; by combining the costs of these individual sources in proportion to their contribution to the capital structure, Ravi calculated the Weighted Average Cost of Capital (WACC) using both book value and market value weights and realized that WACC represents the minimum rate of return the new project must generate to create value for the company, thereby understanding that cost of capital is not merely a numerical calculation but a crucial financial benchmark guiding long-term corporate investment decisions.

Keywords

cost of capital, cost of debt, cost of equity, WACC

Discussion

Every business needs money to start or grow, but raising money comes at a cost. The cost of capital refers to the price a business pays for using different sources of funds. These include cost of debt, cost of preference share capital, cost of equity and cost of retained earnings. To make smart financial decisions, businesses calculate the Weighted Average Cost of Capital (WACC), which is the overall average cost of all funds used, weighted by their proportion. WACC acts as a benchmark: a project or business must earn at least this return to satisfy lenders, investors, and owners, ensuring sustainable growth and profitability.

Cost of capital for a firm may be defined as the cost of obtaining funds, i.e., the average rate of return that the investors in a firm would expect for supplying funds to the firm. In the words of Hunt, William and Donaldson, "Cost of capital may be defined as the rate that must be earned on the net proceeds to provide the cost elements of the burden at the time they are due".

James C. Van Horne defines cost of capital as, "a cut-off rate for the allocation of capital to investments of projects. It is the rate of return on a project that will leave unchanged the market price of the stock."

According to Solomon Ezra, "Cost of capital is the minimum required rate of earnings or the cut-off rate of capital expenditures."

From the definitions given above, we can conclude three basic aspects of the concept of cost of capital:

(i) Cost of capital is not a cost as such. In fact, it is the rate of return that a firm requires to earn from its projects.

(ii) It is the minimum rate of return. The cost of capital of a firm is the minimum rate of return that will at least maintain the market value of the shares.

(iii) cost of capital comprises three components:

(a) the expected normal rate of return at zero risk level, say the rate of interest allowed by banks;

(b) the premium for business risk; and

(c) the premium for financial risk on account of pattern of capital structure.

It can be represented as:

Cost of Capital = Risk-Free Return + Business Risk Premium + Financial Risk Premium

3.2.1 Business Risk and Financial Risk

The cost of capital not only represents the minimum return a business must earn but also reflects the risk associated with its operations and financial decisions. The overall risk faced by a business can be divided into two main types as follows:

- ◊ Business risk
- ◊ Financial risk

Business risk refers to the uncertainty associated with the day-to-day operations of a business. It is influenced by factors such as market demand, competition, costs of raw materials, and technological changes. For instance, if you open a small ice cream shop in your town. On a hot summer day, business is booming, but during the winter months, fewer customers visit. Additionally, a new ice cream shop opens nearby, offering lower prices and new flavors. Even though you manage your costs well, these uncertainties in sales, competition, and customer preferences affect your business's profits. This uncertainty about whether your business will earn the expected profits is called business risk. It arises from factors inherent to the nature of the business, like demand fluctuations, competition, or operational challenges. The higher the uncertainty, the higher the business risk.

Financial risk is the risk that comes from using borrowed money (debt) in the business. When you take a loan, you must pay interest regularly, whether your business earns profit or not. For example, if you borrowed ₹2,00,000 to expand your ice cream shop, you must pay the bank interest every month, even if it rains and you make fewer sales. The pressure of paying fixed interest and loan instalments adds financial risk.

Both these risks, business risk and financial risk, affect the cost of capital. If your business has high risk (either in operations or borrowing), investors and lenders will expect a higher return to compensate for the danger of losing their money. This will increase your cost of capital because you must offer them more profit or interest to attract their money. Therefore, the higher the risk, the higher the cost of capital for the business.

3.2.2 Risk and cost of capital

Cost of capital is the reflection of investors' expected risk and return level. It represents the minimum return that investors expect for providing their funds to the business, considering the level of risk they are taking. If the business fails to offer this expected return, investors may choose to invest their money elsewhere where the return justifies the risk involved. For example, shareholders investing in private securities expect a higher return compared to Government securities because they bear more risk because such as no guaranteed returns and possible loss of capital. Therefore, the cost of capital reflects not only the required return but also the confidence of investors in the company's ability to generate sufficient profits to meet their expectations. A higher

risk perceived by investors usually demands a higher cost of capital, while a stable and low-risk business may enjoy a lower cost of capital.

3.2.3 Significance of Cost of Capital

The cost of capital is crucial for a business because it serves as a reference point for financial decision-making. A company needs to earn at least this return to cover the expenses of the funds it utilizes. It helps determine whether a new project should be undertaken. If the expected returns are lower than the cost of capital, the project should be rejected. It also assists in selecting the most suitable source of financing, such as deciding between bank loans or issuing shares. In essence, the cost of capital ensures that the business generates sufficient returns to satisfy both lenders and investors while enhancing its overall market value. The significance of the cost of capital can be highlighted as follows:

1. Investment Decisions: A business uses cost of capital as a benchmark. It invests in projects that give returns higher than this cost. Otherwise, the project is rejected.
2. Helps in Financial Decisions: It helps a firm to decide whether to raise money through equity, debt, or retained earnings, depending on which source is cheaper.
3. Performance Measurement: It helps to measure the performance of the company. If the business earns more than the cost of capital, it is doing well.
4. Helps in Shareholder Wealth Maximization: If the firm earns more than its cost of capital, the value of shares increases, which is good for shareholders.
5. Risk Assessment: Cost of capital also reflects the risk of the business. The higher the risk, the higher the expected return (cost).

3.2.4 Classification of Cost

For the purpose of computing the cost of capital accurately, it is essential to classify costs into different categories. This helps in identifying the relevant costs applicable to particular financial decisions, such as capital budgeting, capital structure planning, or working capital management.

1. Historical Cost and Future Cost

Historical Cost refers to the cost that has already been incurred in the past. It is recorded in the books of accounts. Future Cost is the cost that is expected to occur in the future. It is estimated for decision-making.

2. Specific Cost and Composite Cost

Specific Cost relates to the cost of a particular source of finance, such as equity, debt, or preference share capital. Composite Cost (also called Weighted Average Cost of

Capital - WACC) represents the average cost of the various sources of finance used by the firm, weighted according to their share in total capital.

3. Explicit Cost and Implicit Cost

Explicit Cost is the direct cost associated with raising capital. It is the discount rate that equates the present value of cash inflows with the present value of cash outflows. Implicit Cost (or Opportunity Cost) refers to the return foregone by using the funds in a particular way rather than in the next best alternative.

4. Average Cost and Marginal Cost

Average Cost is the weighted average of the costs of all sources of capital, such as debt, equity, and preference shares. It represents the total cost of capital employed by the firm. Marginal Cost is the cost of obtaining one additional unit of capital. It reflects the cost of new or incremental financing needed for a new project.

3.2.5 Computation of Cost of Capital

For the computation of the cost of capital, the calculation can be classified into two main approaches:

- ◊ Specific Cost of each source of funding and
- ◊ Weighted Average Cost of Capital (WACC)

3.2.5.1 Specific Cost of Capital:

This refers to the cost associated with each specific source of finance, such as equity shares, preference shares, debentures, or retained earnings. The cost for every source is determined individually. It includes the following:

a. Cost of debt capital

b. Cost preference shares

c. Cost of equity

d. Cost of retained earnings

a. Cost of debt

A business can raise funds in various ways, including taking loans. It may borrow money from banks or from the public by issuing debt instruments such as bonds, debentures, or certificates of deposit for a specific period and at a fixed rate of interest. These securities can be issued at par (equal to their face value), at a discount (below face value), or at a premium (above face value). When determining the cost of debt, the key factor to consider is the interest payable to lenders, as this represents the return they expect on their investment. The cost of debt is the effective rate a company pays on its borrowed funds, such as loans or bonds. In simpler terms, it's the interest rate the company must pay to lenders for using their money.

Debts can be of two types based on how they are repaid:

i. Irredeemable Debts – These do not have a fixed repayment date.

ii. Redeemable Debts – These are repaid after a fixed period.

i. Cost of irredeemable debt

Irredeemable debentures, often called perpetual debentures or perpetual debt, have no specified maturity date. They are generally repaid only upon the company's liquidation or winding up, or if the company chooses to redeem them at its own discretion. In this case, the company continues to pay interest indefinitely without returning the principal amount to the lenders. The cost of irredeemable debt refers to the rate of return that investors expect to receive on the funds they have provided, which is generally indicated by the coupon rate, the fixed interest rate printed on the bond or debenture. This coupon rate represents the before-tax cost of debt, or the return expected by lenders prior to accounting for tax savings. However, since interest payments on debt are tax-deductible expenses, the actual or after-tax cost of debt becomes lower once tax benefits are considered. To calculate this, the before-tax interest rate is adjusted by the company's tax rate. Additionally, companies can issue such debt instruments at par (face value), at a discount (below face value), or at a premium (above face value).

Before tax cost of debt can be computed as follows:

After tax cost of debt is computed as follows:

$k_i = \frac{1}{NP}$

Where

k_i - before tax cost of debt

NP - Net proceeds of debenture/bond

I - Annual interest payment

After tax cost of debt is computed as follows:

$k_d = \frac{1}{NP}(1\text{-}t)$

k_d - Cost of debt after tax

I - Annual interest payment

NP - Net proceeds of debenture/bond

t - Tax rate

Net proceeds of debenture mean issue price minus total cost of issuing securities. When a company issues new securities like shares or debentures, it has to bear some extra expenses. These expenses are called floatation costs. They include things like:

◊ Fees paid to underwriters or stock brokers,

- ◊ Legal and administrative charges,
- ◊ Registration fees,
- ◊ Printing costs, and other related charges.

These costs are necessary to make the new securities available to investors in the market.

Illustration 3.2.1

A company issues ₹5,00,000 worth of 10% Debentures of ₹1,000 each. The corporate tax rate is 25%. You are required to calculate the after-tax cost of debt (Kd) in the following cases:

(a) When debentures are issued at:

i. Par

ii. 10% Discount

iii. 10% Premium

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

Where,

I = annual interest =10 % of 1000=100T= tax rate = 25%

NP = Net Proceeds

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

Case	Issue Price	Net Proceeds (₹)	Calculation	After-Tax Cost of Debt (K_d)
(i) Issued at Par	₹1,000	1,000	(100 × (1−0.25)) ÷ 1,000 = 75 ÷ 1,000	7.5%
(ii) Issued at 10% Discount	₹900	900	(100 × (1−0.25)) ÷ 900 = 75 ÷ 900	8.33%
(iii) Issued at 10% Premium	₹1,100	1,100	(100 × (1−0.25)) ÷ 1,100 = 75 ÷ 1,100	6.82%

ii. Cost of redeemable debt

Redeemable debt is a type of debt that the company must repay after a certain period. Until then, the company pays interest regularly (usually every year or every month). To find the after-tax cost of this type of debt, both the interest payments and any gain or loss

from issuing or repaying the debt (at par, discount, or premium) must be considered. The company may issue and/or redeem this debt at its face value (par), at a discount, or at a premium.

Equation to compute after tax cost

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

I = Interest payment

NP = Net proceeds of debentures

RV = Redeemable value of debt

t = Tax rate

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

Equation to compute before tax

$$K_d = \frac{I+\frac{RV-NP}{n}}{\frac{RV+NP}{2}}$$

K_d = Cost of debt (before tax)

I = Annual Interest Payment

RV = Redeemable Value (the amount that will be repaid at maturity)

NP = Net Proceeds from the issue of debt (issue price minus any flotation costs)

n = Number of years to maturity

Illustration 3.2.2

AB Ltd has issued ₹80,000 worth of 10% debenture with a face value of ₹100 each. The company bears an issue cost (flotation charge) of 3% on the face value. These debentures are to be redeemed at a premium of 8% after 8 years. Interest is payable annually. If the applicable corporate tax rate is 30%, calculate the after-tax cost and before tax cost of these debentures to the company.

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

- ◊ Face Value (F): ₹100
- ◊ Net proceeds: ₹100 – 3% flotation cost = ₹97
- ◊ Interest Rate (R): 10% of Face Value = ₹10 per year
- ◊ Redemption Value (RV): ₹100 + 8% premium = ₹108
- ◊ Number of Years (n): 8 years
- ◊ Corporate Tax Rate (T): 30%

Before tax cost of debt

$$K_d = \frac{10 + \frac{(108-97)}{8}}{\frac{(108+97)}{2}}$$

$$K_d = \frac{10 + 1.375}{102.5} = \frac{11.375}{102.5} = 0.1109$$

$$K_d = 11.09\%$$

After tax cost of debt

$$K_d(\text{after tax}) = \frac{10 \times 0.7 + \frac{108-97}{8}}{\frac{108+97}{2}}$$

= 8.17 %

b. Cost of Preference Capital

Unlike debt, there exist certain challenges in measuring the cost of preference capital. When a company takes on debt, it is legally required to pay interest on that debt, and this interest forms the basis for calculating the cost of borrowing. But this is not the case with preference capital. A company is not legally bound to pay dividends on preference shares. Even when dividends are paid, they are not treated as an expense in the profit and loss account; instead, they are considered an appropriation of profits to preference shareholders.

Because of this, some may think that preference dividends are not a real cost to the company, but this is not correct. The cost of preference capital is determined by the returns expected by investors. While a company is not legally required to pay preference dividends every year, in practice, they are usually paid when profits allow. Missing these payments does not cause bankruptcy, but it can raise concerns for equity shareholders.

If preference dividends are not paid, preference shareholders may gain voting rights and influence the company's management. Most preference shares are cumulative, so any unpaid dividends accumulate and must be paid before any dividends can be given to equity shareholders. This can limit the company's ability to raise additional funds from preference or ordinary shares. Additionally, if both preference and equity shareholders do not receive dividends, the market value of the company's ordinary shares may decline.

For these reasons, companies generally try to pay preference dividends regularly, except in cases where they are facing losses or cash shortages. Preference capital can be divided into two types:

i. Irredeemable preference shares and

ii. redeemable preference shares

i. Irredeemable preference shares

Irredeemable preference shares are preference shares that do not have a fixed repayment date. The company is not obliged to return the capital during its lifetime, and these shares are typically repaid only in the event of liquidation or winding up of the company.The value of irredeemable preference shares is determined similarly to a bond or debenture (or any other perpetuity). To calculate the price of such preference share, you take the annual preference dividend and divide it by the market rate of return or by the net proceeds obtained from issuing the share.

The formula to calculate the cost of an irredeemable preference share is:

$$\text{Cost of preference share } (K_p) = \frac{\text{Preference Dividend}}{\text{Net Proceeds or Market price}}$$

Illustration 3.2.3

D Ltd has issued preference shares with a face value of ₹100 each, carrying a fixed dividend of 15%. These shares are currently trading in the market at ₹95. The company has no plans to redeem these shares, making them irredeemable.

Calculate the cost of preference share capital to the company.

- ◊ Face Value (FV): ₹100
- ◊ Dividend Rate: 15%
- ◊ Market Price (MP): ₹95
- ◊ Preference Dividend: ₹100 × 15% = ₹15

$$\text{Cost of preference share } (K_p) = \frac{\text{Preference Dividend}}{\text{Net Proceeds or Market price}}$$

= 15/95

=0.1578 or 15.78 %

ii. Redeemable Preference Shares

In practice, companies also issue redeemable preference shares, which means preference shares that have a fixed maturity period. These shares can be redeemed by the company after a specified time. While calculating the cost of redeemable preference shares, it is important to consider both the maturity period and the redemption value of these shares.

The cost of redeemable preference shares can be estimated using the following formula:

$$K_p = \frac{D+\frac{RV-NP}{N}}{\frac{RV+NP}{2}}$$

Where

K_p = Cost of preference share capital

D = Annual preference dividend

RV = Redeemable value of share

NP = Net proceeds (issue price minus flotation cost)

N = Number of years to maturity

Illustration 3.2.4

XYZ Ltd has issued ₹100 face value preference shares offering a 15% dividend rate. These shares are redeemable at ₹120 after 5 years. The company issued these shares at ₹95 each (net proceeds).

Calculate the cost of redeemable preference share capital to the company.

- ◊ Face Value (FV): ₹100
- ◊ Dividend Rate: 15%
- ◊ Dividend (D): ₹100 × 15% = ₹15
- ◊ Redeemable Value (RV): ₹120
- ◊ Net Proceeds (NP): ₹95
- ◊ Maturity Period (N): 5 years

$$K_p = \frac{D + \frac{(RV - NP)}{N}}{\frac{(RV + NP)}{2}}$$

$$K_p = \frac{15 + \frac{(120 - 95)}{5}}{\frac{(120 + 95)}{2}}$$

$$K_p = \frac{15 + \frac{25}{5}}{\frac{215}{2}}$$

$$K_p = \frac{15 + 5}{107.5}$$

$$K_p = \frac{20}{107.5} = 0.1860 \text{ or } 18.60\%$$

C. Cost of Equity Share Capital

A common belief is that equity capital, raised by issuing shares to owners, is cost-free because companies are not legally obliged to pay dividends to ordinary shareholders. Unlike loans or preference shares, which require fixed interest or dividend payments, dividends on equity shares are not fixed and can vary.

However, equity capital is not without cost due to its opportunity cost. Investors expect returns. Either through dividends or capital appreciation, as compensation for the risk they undertake. If a company does not provide a fair return, the market price of its shares will fall, as investors will seek better returns elsewhere.

In a competitive capital market, the current share price reflects what return investors expect from the company. This expected return is the cost of equity capital for the business because the company must earn at least this much to satisfy its shareholders and keep the share price stable.

Various techniques for computing cost equity share capital are as follows:

Fig 3.2.1 Cost of Equity Share Capital

I. Dividend Price Approach

The Dividend Price Approach, often referred to as the Dividend Valuation Model (DVM), is a simple method to estimate the cost of equity capital. This approach assumes that the dividend paid per share remains constant year after year, with no growth or decline. It calculates the cost of equity by relating the expected dividend to the current market price of the share.

$$\text{Cost of Equity (Ke)} = \frac{D}{P}$$

- **D** = Expected Annual Dividend per Share
- **P** = Current Market Price per Share

This result shows the return (in percentage) that shareholders expect to earn from the dividends they receive based on the current share price.

Illustration 3.2.5

N Ltd. has issued equity shares that currently sell in the stock market for ₹120 per share. The company pays a constant dividend of ₹10 per share every year. Calculate the cost of equity capital using the Dividend Price Approach.

Ke = D/P

10/120 = 0.083 or 8.3 %

ii. Earning Price Approach

The Earning Price Approach is another method used to calculate the cost of equity capital. According to this method, the cost of equity is the rate that connects (or "discounts") the company's future earnings per share (EPS) to the present market price of the share. This method assumes that the company's earnings will remain constant in the future.

$$\text{Cost of Equity (Ke)} = \frac{D}{P}$$

E = Earnings per Share (EPS)

P = Current Market Price per Share

This tells us what return shareholders are expecting based on the company's earnings, not dividends.

Illustration 3.2.6

N Ltd. has an earnings per share (EPS) of ₹15. The current market price of the share is ₹150. Calculate the cost of equity using the Earning Price Approach.

$$\text{Ke} = \frac{E}{P} = \frac{15}{150} = 0.10 \text{ or } 10\%$$

iii. Growth Approach

The Growth Approach is used to calculate the cost of equity capital when dividends are expected to grow at a constant rate every year. This method assumes that dividends, earnings, and the share price will all increase steadily over time at the same growth rate.

$$\text{Ke} = \frac{D_1}{P_0 - F} + g$$

Where

Ke = Cost of equity

D_1 = Expected dividend for the next year

P_0 = Current market price per share

F = Flotation cost per share

g = Expected constant growth rate of dividends

If no new shared are issued (or no flotation cost is involved), then

$$\text{Ke} = \frac{D_1}{P_0} + g$$

Illustration 3.2.7

KK Ltd. is expected to pay a dividend of ₹5 per share next year (D_1 = ₹5). The current market price of its share is ₹120 (P_0 = ₹120). Dividends are expected to grow at

a rate of 3% per year (g = 3%). There is no flotation costs involved.

$$K_e = \frac{D_1}{P_0} + g$$

$$K_e = \frac{5}{120} + 0.03$$

$$K_e = 0.0417 + 0.03 = 0.0717 \text{ or } 7.17\%$$

The cost of equity capital for KK Ltd. is 7.17%. This means the company must earn at least 7.17% to meet shareholder expectations, considering the annual growth in dividends.

IV. Realized Yield Approach

In this method, the average return earned by shareholders over the past few years is taken as the expected return for the future. It uses the actual dividend payments received by equity shareholders to calculate the cost of equity capital. Although this approach gives a direct way to find the cost of capital, it assumes unrealistically that the company's risk and shareholders' expected returns will remain the same. It also assumes that shareholders will reinvest at the same return rate, and that the market price of shares will not change much.

$$\text{Cost of Equity (Ke)} = \frac{\text{Average Dividend per Share}}{\text{Current Market Price per Share}} \times 100$$

Illustration 3.2.8

A company has paid the following dividends per share over the past 3 years:

- ◊ Year 1: ₹4
- ◊ Year 2: ₹5
- ◊ Year 3: ₹6

Current Market Price per Share = ₹50

Calculate cost of equity according to realized yield approach.

$$\text{Average Dividend} = \frac{4+5+6}{3} = ₹5$$

$$\text{Ke} = \frac{5}{50} \times 100 = 10\%$$

V. The Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) is a technique used to determine the cost of equity capital, representing the return investors expect for investing in a company's shares. This approach states that a share's return is based on two components: a risk-free rate and a risk premium. The risk-free rate refers to the return earned from a secure investment, such as government bonds, which carry virtually no risk of loss. The risk

premium is the additional return investors demand for bearing the risk associated with investing in the company's shares.

This method also uses a factor called Beta (β), which shows how much the price of a company's share moves compared to the whole stock market. If Beta is 1, the share's movement is the same as the market. If Beta is more than 1, the share is riskier and changes more than the market. If Beta is less than 1, the share is safer and changes less than the market. CAPM only considers systematic risk, which is the market-related risk that cannot be avoided even if the investor invests in many different companies. It does not consider unsystematic risk, which is the risk related to a particular company and can be reduced through diversification.

$$Ke = Rf + \beta(Rm - Rf),$$

where Ke is the cost of equity, Rf is the risk-free rate, β is the Beta value of the share, and Rm is the expected market return.

For example, suppose a company's share has a risk-free return of 6%, which means an investor can earn 6% safely by investing in government bonds. The expected return from the overall market is 10%, and the share has a Beta value of 1.5. Beta shows how much the share's price moves in relation to the market. If we use the CAPM formula to calculate the cost of equity, it will be:

Where,

Rf = 6 %

Rm = 10 %

$$K_e = 0.06 + 1.5(0.10 - 0.06)$$

$$K_e = 0.06 + 1.5(0.04)$$

$$K_e = 0.06 + 0.06 = 0.12 \text{ or } 12\%$$

So, the expected return or cost of equity for this company is 12%. This means the company must offer at least a 12 % return to its shareholders to make the investment worthwhile, considering the level of market risk involved.

Illustration 3.2.9

A company's share has a Beta (β) of 1.2. The risk-free rate of return is 6%, and the expected market return is 12%. Calculate the cost of equity using the CAPM approach.

Risk-free rate (Rf) = 6%

Expected market return (Rm) = 12%

Beta (β) = 1.2

$$Ke = Rf + \beta(Rm - Rf),$$

$K_e = 6 + 1.2(12-6)$

= 6+7.2 = 13.2 %

Cost of equity: CAPM VS Dividend-Growth model

Basis of Comparison	Capital Asset Pricing Model (CAPM)	Dividend Growth Model (DGM)
Concept	Considers the relationship between risk and return to determine the cost of equity.	Estimates the cost of equity based on expected dividends and their constant growth rate.
Formula	Ke = Rf + Beta (Rm - Rf)	$Ke = \frac{D_1}{P_0 - F} + g$
Consideration of Risk	Explicitly includes risk through beta and market premium.	Does not directly account for risk; assumes risk is reflected in dividends.
Applicability	Suitable for listed companies where beta and market data are available.	Applicable only to companies paying regular and stable dividends.
Assumptions	Assumes a linear relationship between risk and return.	Assumes dividends grow at a constant rate forever and growth < required return.
Complexity	More complex and market-based.	Simple and easy to use when data is available.
Realism	More realistic and flexible as it considers actual market behavior.	Less realistic due to its constant growth assumption.

d. Cost of Retained Earnings

Retained earnings or ploughing back of earnings are an important source of finance within the company. These are the profits that are not given to shareholders as dividends but are kept in the business for future use. When the company keeps back these earnings, shareholders lose the chance to earn income in the form of dividends. This lost income is called an opportunity cost, as shareholders could have invested this money elsewhere to earn a return. So, the cost of retained earnings represents this opportunity cost to shareholders. It is the return that shareholders expect to earn if the company had paid the profits as dividends and they had invested it somewhere else.

Accordingly, the cost of retained earnings is calculated in the same manner as the cost of equity, as it reflects shareholders' required rate of return. However, while computing the cost of retained earnings, adjustments may be made for factors such as income tax, brokerage, commission, or other related costs, if such information is available. In the absence of these details, the cost of equity is taken as the cost of retained earnings.

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

Where,

K_r = Cost of retained earnings

D = Expected dividend at the end of the year

NP = Nets proceeds of share issue

G = Rate of growth

Illustration 3.2.10

P&P Ltd. company expects to pay a dividend of ₹10 per share at the end of the year. The net proceeds per share (NP) are ₹100, and the expected growth rate of dividends is 12%. Calculate the cost of retained earnings.

Expected dividend (D) = ₹10

Net proceeds per share (NP) = ₹100

Growth rate (g) = 12%

Kr = 10/100 +0.12

= 0.10 +0.12

= 0.22 or 22%

3.2.5.2 Weighted Average Cost of Capital

The Weighted Average Cost of Capital (WACC) represents the overall average cost a company incurs for using various sources of funds, such as equity shares, preference shares, debentures (debt), and retained earnings. Since businesses typically rely on multiple forms of financing, it becomes important to calculate the combined cost of all these sources to make sound financial decisions. This combined cost is known as WACC.

WACC indicates the minimum rate of return a company must earn on its investments to satisfy all its investors, both equity and debt holders and to preserve the firm's market value. To calculate WACC, the specific cost of each component of capital (like equity, debt, and preference shares) is first determined, and then each is weighted according to its proportion in the company's total capital structure.These weights can be based on:

1. Book Value Weights:

Book Value Weights are based on the values of different sources of capital as recorded in the company's balance sheet or financial statements. These values represent the original amount of capital raised or invested by the company, not its present market worth.

2. Market Value Weights:

Market Value Weights are determined using the current market prices of a company's capital sources, such as equity shares, preference shares, and debentures. These values indicate what investors are willing to pay in the open market, making them more accurate and relevant than book values. The market value thus reflects the actual worth of a company's capital from the investors' point of view.

For instance, if a company's equity share has a face value of ₹10 but is trading at ₹90 in the market, ₹90 (and not ₹10) should be used for calculating the weights. Using market values provides a realistic view of the current cost of raising funds or the economic value of the existing capital. However, there are certain difficulties in applying market value weights, which are discussed below.

1. Market values change frequently, making the calculation unreliable.
2. Using market value weights may give undue importance to equity capital because its market price may be significantly higher than the book value.

Due to these problems, book value weights are often preferred in practice because they are stable and easy to find. So, the formula for the computation of WACC is as follows.

$$K_W = \frac{\Sigma(XW)}{\Sigma W}$$

Where:

- K_W = Weighted Average Cost of Capital
- X = Specific cost of each source of finance (e.g., cost of debt, cost of equity)
- W = Weight or proportion of that source in the total capital

Illustration 3.2.11

Quninon Ltd has the following capital structure and after-tax costs for the different source of funds used.

Source of Funds	Amount (₹)	Proportion (%)	After-tax Cost (%)
Debt	300,000	30	6
Preference Shares	250,000	25	9
Equity Shares	350,000	35	14
Retained Earnings	100,000	10	12
Total	10,00,000	**100**	—

You are required to compute the weighted average cost of capital.

Solution:

Weighted average cost of capital

Source of Funds	Weight or Proportion (in a total of 10,00,000)	After-tax Cost	Weighted Cost (Proportion × Cost)
Debt	0.30	6%	0.30 × 6 = 1.8
Preference Shares	0.25	9%	0.25 × 9 = 2.25
Equity Shares	0.35	14%	0.35 × 14 = 4.9
Retained Earnings	0.10	12%	0.10 × 12 = 1.2
WACC = 1.8+ 2.25+4.9+1.2			10.15 %

3.2.6 Marginal cost of capital

Sometimes, a company may need to obtain additional financing. The Marginal Cost of Capital (MCC) refers to the cost of raising this new capital. It is determined by calculating the weighted average cost of the new funds, using marginal weights, which represent the proportion of each financing source (such as debt, preference shares, and equity) in the new capital raised. If the company raises the additional funds in the same ratio as its existing capital structure and the cost of each financing source remains unchanged, then the marginal cost of capital will be equal to the Weighted Average Cost of Capital (WACC).

But in reality, when a firm raises more funds:

- ◊ The proportions of funds may change,
- ◊ The cost of each type of fund may also change.

In such cases, the marginal cost of capital will not be equal to the existing WACC.

Also, this marginal cost of capital calculation ignores the long-term effects of the new financing decision. Therefore, for the purpose of maximising shareholder wealth in the long run, the Weighted Average Cost of Capital (WACC) is generally preferred over the marginal cost of capital.

Recap

- ◊ The cost of capital of a firm is the minimum rate of return that will at least maintain the market value of the shares.
- ◊ The cost of capital ensures that the business generates sufficient returns to satisfy both lenders and investors while enhancing its overall market value.

- ◊ Specific cost of capital refers to the cost associated with each specific source of finance, such as equity shares, preference shares, debentures, or retained earnings.
- ◊ The cost of debt is the effective rate a company pays on its borrowed funds, such as loans or bonds.
- ◊ The cost of preference capital is determined by the returns expected by investors.
- ◊ The cost of equity represents the return that shareholders expect for investing in the company.
- ◊ Cost of retained earnings is the return that shareholders expect to earn if the company had paid the profits as dividends and they had invested it somewhere else.
- ◊ The Weighted Average Cost of Capital (WACC) represents the overall average cost a company incurs for using various sources of funds.
- ◊ The Marginal Cost of Capital (MCC) refers to the cost of raising this new capital.

Objective Questions

1. Implicit cost is also known as?
2. Weights that are based on the values of different sources of capital as recorded in the company's balance sheet or financial statements are?
3. Retained earnings are otherwise known as?
4. Net proceeds are calculated by?
5. CAPM stands for
6. Debt that the company must repay after a certain period?
7. Weights that are determined using the current market prices of a company's capital sources?
8. Preference shareholders may gain voting rights and influence the company's management. when?

Answers

1. Opportunity cost
2. Book value weights
3. Ploughing back of earnings
4. Issue price – any floatation cost
5. Capital Asset Pricing Model
6. Redeemable debt
7. Market value weights
8. Preference dividend is not paid

Self-assessment Questions

1. Define cost of capital
2. State the difference between explicit cost and implicit cost?
3. Explain the significance of the cost of capital.
4. Briefly explain different methods for the computation of cost equity.
5. A company issues debentures worth ₹2,00,000 at par value. The interest rate is 12% per annum, and the company is in the 30% tax bracket. Calculate the cost of irredeemable debt after tax.
6. Write a short note on the marginal cost of capital.
7. ABC Ltd. expects to pay a dividend of ₹12 per share at the end of the year. The net proceeds per share (NP) are ₹90, and the expected growth rate of dividends is 10%. Calculate the cost of retained earnings.
8. The risk-free rate is 8%, the market return is 14%, and the company's beta is 1.2. Calculate the cost of equity using the Capital Asset Pricing Model (CAPM).

Assignments

1. A firm has the following capital structure:

Source	Amount	Cost (%)
Equity share capital	400000	16
Preference share capital	100000	12
Debt	300000	8(after tax)

Compute the Weighted Average Cost of Capital (WACC) using book value weights.

If the current market values are:

Equity = ₹5,00,000

Preference = ₹80,000

Debt=250000

Recalculate the WACC and compare it with the book value WACC.

2. An incorrect estimate of the cost of capital can lead to poor financial decisions." Discuss this statement in detail, highlighting the significance of accurate cost of capital estimation in financial management.

3. Differentiate between Explicit Cost and Implicit Cost of Capital. Explain their significance in financial decision-making with suitable examples.

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Suggested Reading

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4 BLOCK

Capital Structure

Unit 1
Capital Structure

Learning Outcomes

After completing this unit, learners will be able to:

- ◊ comprehend the concept of capital structure
- ◊ identify the determinants of capital structure
- ◊ get an idea about optimum capital structure
- ◊ explore the theories of capital structure

Prerequisite

Consider Infosys Limited, a leading Indian IT company. Infosys primarily relies on equity and retained earnings and uses very little long-term debt. This conservative capital structure reduces financial risk and interest obligations, which is suitable for an IT business with relatively stable cash flows and low asset intensity. In contrast, a capital-intensive company such as Larsen & Toubro (L&T) uses a higher proportion of long-term debt along with equity to finance large infrastructure projects, as debt financing helps reduce the overall cost of capital due to tax benefits.

This unit enables learners to comprehend the concept of capital structure, identify its key determinants such as business risk, profitability, tax considerations, and control, and understand the idea of an optimum capital structure, where the firm achieves a balance between risk and return. The unit also explores major theories of capital structure, including the Net Income Approach, Net Operating Income Approach, Traditional Approach, and Modigliani–Miller Theory, which explain how different financing combinations influence the value of the firm.

Keywords

Capital structure, Net income theory, Net operating theory, Traditional theory, MM Hypotheses, Arbitrage

Discussion

Every business, whether it is just being established or already operating successfully, requires finance for its activities. Finance is the lifeblood of any business; without adequate funds, it is impossible to purchase assets, carry out production, expand operations, or even sustain day-to-day activities. But once the need for finance is recognised, an important question arises: From where should this finance be collected? Suppose you are planning to start a business. You will need money to buy machinery, raw materials, and other essentials. Or imagine you are already running a company, but you require additional finance for expansion, diversification, or modernisation. In both situations, you must decide the appropriate source of funds. Should you issue share capital to bring in new owners? Should you raise money through debentures or borrowings, which involve repayment obligations? Or should you explore other sources such as retained earnings, loans from financial institutions, or innovative financing options?

The choice of a source of finance is not a simple one. Each option carries its own implications in terms of cost, risk, control, and flexibility. For instance, issuing shares may dilute ownership but does not create repayment obligations, whereas raising debt may preserve ownership but increases financial risk due to fixed interest commitments. Thus, the process of selecting an appropriate mix of financing options is critical for the long-term success and stability of a business. This brings us to the concept of Capital Structure. The term refers to the proportion in which a company raises funds through equity, preference shares, debentures, loans, and other instruments. The structure chosen can have a significant impact on the profitability, solvency, and market value of the business.

4.1.1 Meaning of Capital Structure

Suppose Infosys Ltd**.** raises funds for its expansion by issuing equity shares to the public and, at the same time, borrows money through debentures and bank loans. If 60% of its capital comes from equity and 40% from debt, this ratio (60:40) represents its capital structure. Thus, capital structure refers to the arrangement of long-term sources of finance used by a company, showing the proportion of equity (shareholders' funds) and debt (borrowed funds) in total capital. Equity capital includes equity shares, preference shares, and reserves, while debt capital includes debentures, loans, and bonds. In simple terms, it is the mix of owned funds and borrowed funds used by a business to finance its operations and growth. A proper balance in capital structure is important because it affects the cost of capital, risk, and long-term stability of the

company

Several scholars have defined capital structure in different ways. According to Guthmann and Dougall, capital structure refers to the composition of a company's capitalization and includes all long-term resources such as loans, reserves, shares, and bonds. Gerstenberg defines it as the relationship between the various long-term sources of finance, like debentures, preference shares, equity shares, reserves, and surpluses. Ezra Solomon states that capital structure is simply the mix of debt and equity used by a firm to finance its business. In general terms, capital structure can be understood as the arrangement of a firm's long-term financing, showing the proportion of debt and equity in its total capital.

Imagine a company like Reliance Industries Ltd**.** planning to set up a new refinery. To finance this huge project, it has two options: raise money from shareholders (equity) or borrow from banks and issue debentures (debt). The decision on how much to raise from equity and how much from debt is not random. It depends on several factors, called the determinants of capital structure.

4.1.1.1 Determinants of capital structure

Every business requires funds to establish and expand its operations. These funds are raised through a mix of equity, preference shares, and debt. The proportion of these different sources constitutes the capital structure of a firm. These determinants can be broadly classified into internal (firm-specific) and external (environmental) factors.

I. Internal factors

1. Stability of Earnings (Business Risk)

The stability of earnings is a crucial internal factor affecting the capital structure decision. Firms with steady and predictable earnings, such as electricity or water utilities, can safely take on a higher proportion of debt because they can meet regular interest payments even during downturns. Conversely, firms with fluctuating or uncertain income, such as those in the entertainment or technology sectors, prefer equity financing to avoid the risk of financial distress. According to Khan and Jain, the greater the stability of earnings, the greater the ability of the firm to employ debt safely.

2. Profitability

Profitability refers to the firm's ability to earn profits from its operations. A highly profitable firm can use more debt because it can easily pay off fixed interest obligations and take advantage of the tax deductibility of interest payments. Such firms may also rely on retained earnings, reducing the need for external financing.

3. Cash Flow Position

A firm's cash flow position determines its ability to meet fixed charges like interest and principal repayment. Even a profitable firm may face financial strain if its cash inflows are irregular. Firms with consistent and strong cash flows can confidently adopt higher leverage since they can meet their obligations in time. Therefore, a sound cash

flow position supports the use of debt, while uncertain or erratic cash flows require a more conservative structure with higher equity.

4. Growth and Future Plans

Growing firms with expansion opportunities require large amounts of capital. If the expected return on investment is greater than the cost of debt, such firms may choose to use more borrowed funds to magnify shareholders' returns. However, rapidly growing firms also need flexibility to raise future funds, so they may avoid excessive debt that could restrict future borrowing. For example, *Reliance Industries* initially used significant debt during its expansion phase but later reduced its debt to maintain flexibility. Hence, growth and financing policies must be balanced.

5. Nature of Business

The type of industry and nature of business operations significantly influence the capital structure decision. Capital-intensive industries like cement, steel, and manufacturing generally employ more debt because they have tangible assets to offer as security. In contrast, service-oriented sectors like IT or consulting, which rely heavily on human capital rather than physical assets, tend to depend more on equity financing.

6. Asset Structure

The assets in a company's balance sheet affectits borrowing capacity. Firms with a higher proportion of fixed and tangible assets can easily obtain secured loans, as these assets can serve as collateral. On the other hand, firms with more intangible assets, like goodwill or patents, may find it difficult to raise debt. For instance, manufacturing firms can safely use more debt than software companies, as their fixed assets provide security to lenders.

7. Operating Leverage

A company with high operating leverage has a large proportion of fixed costs compared to variable costs. This means that even if sales fall slightly, profits can drop sharply because fixed costs remain the same regardless of the level of output or sales. On the other hand, when sales rise, profits can increase rapidly because the fixed costs are already covered. Hence, operating leverage acts like a double-edged sword; it increases profits in good times but also increases losses in bad times.

For example, consider a cement manufacturing company. It invests heavily in machinery and factories (fixed costs). Even if production falls, the company must still pay rent, maintenance, and salaries. This high fixed cost means its operating leverage is high. A small fall in demand will cause a big drop in profit because expenses remain unchanged. In contrast, a service firm like a consultancy, where most costs are variable (depending on projects), has low operating leverage; if sales fall, costs also fall.

Now, when such a firm with high operating leverage also takes on a large amount of financial leverage (debt), it faces double pressure. Debt requires regular interest payments, which are also fixed commitments. So, if the firm's sales decline, it will

struggle to meet both operating and financial obligations. This can lead to financial distress or even bankruptcy.

8. Control Considerations

Control over management and decision-making often plays a key role in financing decisions. Issuing new equity shares dilutes the ownership and control of existing shareholders. Hence, promoters or existing owners who want to retain control prefer debt or preference shares to raise capital. This is especially true for family-owned or closely-held companies in India, such as *Godrej Industries* or *TVS Group*, which prefer borrowing rather than issuing new equity.

9. Financial Flexibility

Financial flexibility means the firm's ability to raise capital when needed, especially during emergencies or opportunities. Companies should not exhaust their entire borrowing capacity at once; they must maintain some reserve borrowing power. This flexibility ensures that funds can be raised quickly when required for expansion, acquisitions, or unforeseen contingencies. Maintaining a moderate level of debt provides flexibility and reduces risk.

10. Cost of Different Sources of Finance

Each source of capital has a different cost. Debt is cheaper due to tax-deductible interest payments, but it increases financial risk. Equity is more expensive since dividends are not tax-deductible and shareholders expect higher returns. An optimum structure seeks to minimize the weighted average cost of capital (WACC). A rational firm will use more of the cheaper source until the rising cost of financial distress offsets the benefit.

11. Non-Debt Tax Shields

Non-debt tax shields, such as depreciation and investment allowances, reduce taxable income and thus the need for debt to gain tax benefits. Firms that already enjoy significant non-debt tax shields may prefer less borrowing. For instance, capital-intensive industries enjoy large depreciation benefits and may not require high debt solely for tax purposes.

12. Dividend Policy and Retained Earnings

Firms with conservative dividend policies retain a larger portion of profits, which can be used for reinvestment. This reduces the dependence on external financing. Retained earnings are considered the least expensive and most flexible source of finance. Companies with stable profits and high retained earnings, like *Infosys*, often rely primarily on internal funds, resulting in a low-debt capital structure.

13. Existing Leverage

The firm's current level of indebtedness affects its capacity to raise further debt. If the company is already highly leveraged, additional borrowing increases risk and the

cost of capital, since lenders demand higher interest for greater risk. Firms with low existing leverage, on the other hand, have greater capacity to borrow on favourable terms.

II. External Factors

1. Market Conditions

Prevailing capital market conditions strongly influence financing choices. In favourable or bullish market conditions, investors are confident, and firms can issue shares easily at higher prices. In contrast, during recessions or bearish phases, debt financing may be more feasible as raising equity becomes difficult. Firms, therefore, adjust their capital structure according to market sentiment and liquidity conditions.

2. Interest Rate Levels

When interest rates are low, debt financing becomes attractive since borrowing costs are minimal. Conversely, when interest rates rise, the cost of debt increases, and firms shift toward equity financing. Thus, the general level of interest rates in the economy directly impacts the proportion of debt in the capital structure.

3. Taxation Policy

The corporate tax structure also affects capital structure decisions. Since interest on debt is tax-deductible, higher corporate tax rates make debt financing more attractive. However, if tax benefits on interest payments are reduced by policy changes, firms may prefer equity financing. Therefore, firms continuously evaluate tax implications before finalizing their capital mix.

4. Legal and Regulatory Framework

Government laws, financial regulations, and policies can impose restrictions on the use of certain forms of capital. For example, banks and financial institutions have to maintain minimum capital adequacy ratios as per the Reserve Bank of India's norms. Such regulations limit excessive borrowing and affect the debt-equity composition of firms.

5. Industry Norms

Industry practices and peer comparison serve as useful benchmarks for determining capital structure. For instance, the automobile industry generally follows higher debt ratios due to high fixed investments, while software companies maintain low debt. Firms often align their leverage ratios with industry averages to maintain market credibility and investor confidence.

6. Investor Sentiment and Market Confidence

Investor preferences and overall confidence in the economy influence a company's ability to raise funds. If investors favour safe investments, raising equity may be difficult, pushing firms to rely more on debt. Conversely, strong investor confidence and bullish markets make equity issues easier and more economical.

7. Macroeconomic Conditions / Business Cycle

During periods of economic prosperity, firms are optimistic and willing to take on more debt to expand operations. However, during economic downturns, they become risk-averse and reduce leverage to safeguard stability. Therefore, macroeconomic trends and business cycles shape capital structure choices over time.

8. Inflation Rate

Inflation affects both the cost and attractiveness of debt. In periods of moderate inflation, the real burden of fixed interest payments declines, making debt financing cheaper. However, during high inflation, lenders demand higher nominal rates, increasing the cost of borrowing. Hence, firms need to adjust their leverage in line with inflationary expectations

Table 4.1.1 Determinants of capital structure

Category	Determinant	Description	Implications on Capital Structure
Internal Factors	1. Stability of Earnings (Business Risk)	Firms with stable and predictable earnings can bear higher debt since they can easily meet fixed interest obligations. Firms with fluctuating earnings should maintain a higher equity base to avoid financial distress.	Greater stability → more debt can be used; higher risk → less debt.
	2. Profitability	Highly profitable firms can use more debt as they can meet interest obligations comfortably and take advantage of tax benefits. Less profitable firms rely more on equity or retained earnings.	Higher profitability → higher debt capacity.
	3. Cash Flow Position	Adequate cash flow ensures timely servicing of debt. Firms with strong cash flows can afford higher financial leverage.	Strong cash flows → higher debt tolerance.
	4. Growth and Future Plans	Expanding firms require more funds; they may prefer equity for flexibility, or debt if returns on investment exceed cost of debt.	Growth with stable returns → moderate to high debt; uncertain growth → more equity.

	5. Nature of Business / Industry	Capital-intensive industries with tangible assets can raise more debt, while service industries prefer equity due to fewer fixed assets.	Manufacturing → higher debt; service sector → higher equity.
	6. Asset Structure	Firms with more fixed, tangible assets can offer collateral for loans; those with intangible assets face borrowing constraints.	Tangible asset base → encourages debt financing.
	7. Operating Leverage	High operating leverage (high fixed costs) increases business risk; adding more debt would magnify total risk.	High operating leverage → low financial leverage.
	8. Control Considerations	Equity issuance dilutes ownership. Promoters seeking control prefer debt even at higher cost.	Need to retain control → prefer debt over equity.
	9. Financial Flexibility	Firms should keep borrowing capacity unutilized for emergencies or future expansion.	High flexibility → maintain moderate debt levels.
	10. Cost of Different Sources	Cost of debt (interest) and cost of equity (dividends, issue cost) differ. Firms choose the mix minimizing overall cost (WACC).	Low-cost source preferred; debt attractive if tax-deductible.
	11. Non-Debt Tax Shields	Depreciation and investment allowances reduce taxable income; such firms need less debt to gain tax benefits.	High non-debt tax shields → less debt required.
	12. Dividend Policy / Retained Earnings	High retention provides internal funds, reducing need for external financing.	High retention → less new debt or equity needed.
	13. Existing Leverage / Debt Capacity	Firms already heavily indebted may face high interest costs and risk; new debt becomes expensive.	High leverage → prefer equity; low leverage → can add debt.

External Factors	1. Market Conditions	When capital markets are favourable, equity can be issued easily; in recession, firms rely more on debt or internal funds.	Boom → equity preferred; Recession → debt preferred.
	2. Interest Rate Levels	Low interest rates encourage borrowing; high rates discourage debt financing.	Low rate → more debt; high rate → less debt.
	3. Taxation Policy	Interest is tax-deductible; higher corporate tax rates increase benefits of debt financing.	High tax rate → more debt advantageous.
	4. Legal and Regulatory Framework	Laws may restrict borrowing limits or set minimum capital requirements.	Stringent regulations → lower debt possible.
	5. Industry Norms / Peer Comparison	Firms often match debt-equity ratios of competitors to maintain market image and credit standing.	Industry averages act as reference for ideal structure.
	6. Investor Sentiment and Market Confidence	When investors prefer safe investments, raising equity is difficult; firms then rely on debt.	Strong investor confidence → easier equity financing.
	7. Macroeconomic Conditions / Business Cycle	In booms, firms expand and borrow more; in recessions, they deleverage to reduce risk.	Expansion → higher debt; recession → lower debt.
	8. Inflation Rate	During inflation, real cost of debt declines, making debt financing cheaper; however, lenders may charge higher nominal rates.	Moderate inflation → encourages debt use.

Determining the capital structure is a dynamic process influenced by a range of internal and external determinants. No single combination of debt and equity can be termed ideal for all firms; it varies based on the firm's profitability, cash flow, control, flexibility, and market conditions. The objective is to minimise the overall cost of capital and maximise shareholder wealth without exposing the firm to excessive financial risk. Thus, a prudent financial manager continuously reviews these factors to maintain a sound and balanced capital structure in a changing business environment. Deciding this

mix is one of the most crucial financial decisions because it affects both risk and return. Too much debt increases the burden of fixed interest payments and financial risk, while too much equity can dilute ownership and reduce earnings per share. Hence, firms must strike a balance between debt and equity. This balanced point is known as the optimum capital structure.

4.1.2 Optimum Capital Structure

A capital structure is the mix of a company's own money (equity) and borrowed money (debt). The right combination of debt and equity helps the company increase its value and reduce the total cost of raising funds. Optimum capital structure can be defined as a combination of debt and equity that provides maximum value to the firm with minimum cost and risk. This, structure should also be flexible so the company can adjust it when needed. The best or "optimum" capital structure balances two types of risks. So, in an optimum capital structure, there are two main risks to manage. They are Financial risk and NEDC risk (non-employment of debt capital risk)

4.1.2.1 Financial risk

Financial risk refers to the variability in return due to the change in the pattern of capital structure. It is the risk on account of debt or fixed-interest securities. If no debt finances no financial risk. For example, consider two companies, Company A and Company B. Both earn a profit of ₹10 lakhs annually. Company A is fully financed by equity, while Company B has taken a loan of ₹20 lakhs at 10% interest. When business conditions are stable, both companies earn well. However, if profits fall to ₹5 lakhs due to market slowdown, Company A is not affected much because it has no fixed interest obligations. But Company B still has to pay ₹2 lakhs as interest on its loan, leaving only ₹3 lakhs for equity shareholders. This creates variability in returns for Company B's shareholders due to the presence of debt. This extra risk caused by using debt is called financial risk. If a company uses only equity (no debt), there is no financial risk. But when fixed-interest debt is involved, changes in profit levels can significantly affect the returns to shareholders, increasing financial risk.

4.1.2.2 NEDC Risk

Risk arose due to the non-employment of debt capital, because of the following reasons:

1. The cost of debt is lower than the cost of equity.
2. The cost of flotation of debt is lower than the cost of equity.
3. Loss of tax benefit.

For example, if a company like ABC Ltd. raises ₹10 lakhs entirely through equity, it may miss out on important financial advantages. Firstly, the cost of debt is usually lower than the cost of equity because lenders accept a lower return compared to equity shareholders. Secondly, the cost of raising debt (like interest and processing fees) is

generally cheaper than the cost of issuing equity, which involves higher flotation costs such as legal fees, underwriting, and documentation. Thirdly, debt offers a tax benefit because the interest paid on loans is tax-deductible, which helps reduce the company's taxable income. By relying only on equity, ABC Ltd. loses these benefits, making its capital costlier and less efficient. Therefore, while avoiding debt may seem safe, it can also create a risk in the form of higher expenses and lower profitability.

If Debt capital increases, NEDC decreases
If debt capital decreases, NEDC increases

The firm has to reach a balance between financial risk and NEDC risk to increase the market value of the firm. These two risks need to be balanced carefully, which is called a risk-return trade-off. If the company makes the right decision and maintains a proper balance between debt and equity, it can improve profitability and increase the market value of the firm.

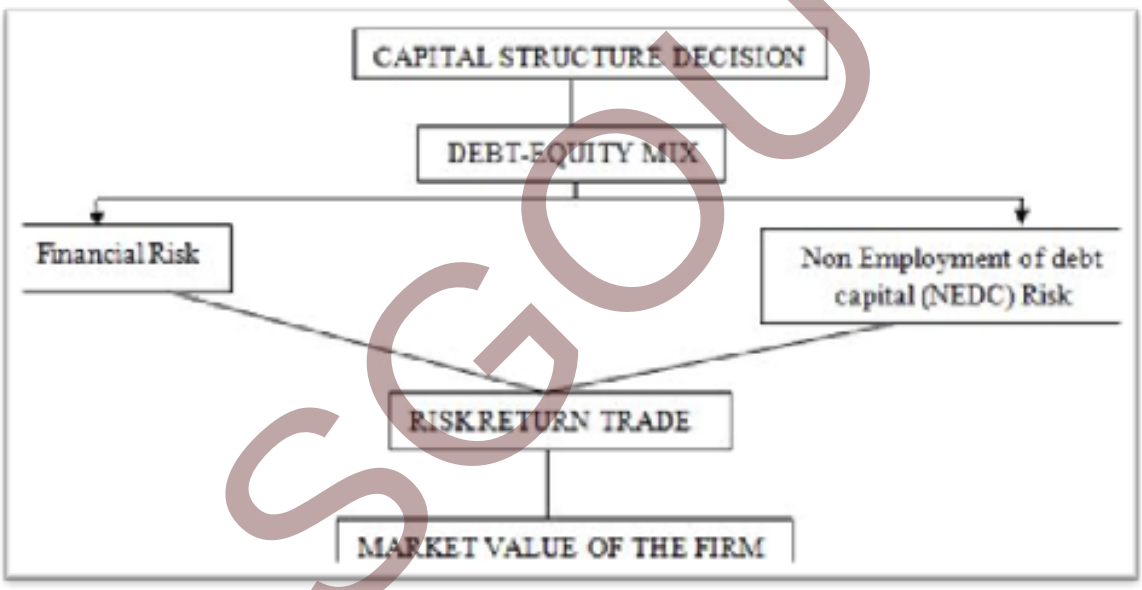

Fig 4.1.1 Optimum Capital Structure

Once the concept of optimal capital structure is understood, it becomes essential to study the theories that explain how different combinations of debt and equity influence the value of a firm. These theories help in understanding whether capital structure matters in financial decision-making. They also guide firms in selecting the most suitable financing pattern to achieve their financial goals. The major theories of capital structure are discussed below.

4.1.3 Theories of Capital Structure

Theories of capital structure explain the relationship between a firm's capital structure, its cost of capital, and the overall value of the firm. These theories help us understand whether changes in the mix of debt and equity affect a company's value

and, if so, how. They provide a framework for making better financing decisions by analysing the benefits and risks of using debt or equity. Each theory presents a different view on the impact of capital structure on firm value and cost of capital. The most important capital structure theories are as follows:

1. Net Income (NI) Approach
2. Net Operating Income (NOI) Approach
3. Traditional Approach
4. Modigliani and Miller (MM) Approach

To properly understand the elements of capital structure, the value of the firm, or the cost of capital controversy, we make the following assumptions:

- ◊ Firms use only two types of capital: debt and equity.
- ◊ The total assets of the firm are fixed. However, the leverage (debt-equity mix) can be changed by either:
  - ◊ selling debt to buy back shares, or
  - ◊ selling shares to pay off debt.
- ◊ All investors have the same beliefs (subjective probability distributions) about the firm's expected future operating earnings.
- ◊ The firm follows a policy of paying 100% of its earnings as dividends.
- ◊ The firm's operating earnings are expected to remain constant—they will not grow over time.
- ◊ The business risk stays constant and does not depend on the capital structure or financial risk.
- ◊ There are no corporate or personal income taxes (though this assumption will be reconsidered later).

Capital structure theories Divided into two main categories:

- ◊ Capital Structure Relevance Theory and
- ◊ Capital Structure Irrelevance Theory.

The relevance theories propose that a firm's value can be affected by its capital structure, that is, the proportion of debt and equity it employs. This group includes the Net Income (NI) Approach, which suggests that increasing debt reduces the overall cost of capital and thereby enhances the value of the firm; the Traditional Approach, which holds that there is an optimal combination of debt and equity that minimises cost and maximizes value; and the Modigliani and Miller (MM) Approach of 1963, which considers corporate taxation and supports the view that debt usage provides tax advantages, ultimately increasing firm value.

Conversely, the irrelevance theories argue that capital structure does not affect a firm's value. These include the Net Operating Income (NOI) Approach, which assumes that the overall cost of capital remains unchanged regardless of the debt-equity ratio;

and the Modigliani and Miller (MM) Approach of 1958, which is based on ideal market conditions without taxes and concludes that financing choices do not influence the value of the firm. Put simply, the relevance theories regard capital structure decisions as significant, whereas the irrelevance theories maintain that such decisions have no impact on the firm's overall value.

4.1.3.1 Net Income Theory (Fixed Ke theory)

The Net Income (NI) Approach to capital structure was proposed by David Durand. This theory explains how a company can decide the best mix of debt and equity to minimize its overall cost of capital and increase its total value.

According to this approach, a firm can increase its total value and reduce the overall cost of capital by using more debt in its capital structure. In other words, the company should depend as much as possible on borrowed funds (debt) rather than issuing new shares. The main idea is that debt is cheaper than equity, so by increasing the share of debt, the company's total financing cost becomes lower, which in turn increases the firm's market value.

David Durand's theory is based on certain simple assumptions:

1. Borrowed funds (loans, debentures) have a fixed rate of interest, which is usually less than the expected return demanded by shareholders.
2. The theory ignores the effect of income tax for simplicity.
3. Investors and lenders do not change their risk expectations, even if the company increases its debt.

Under this approach, since debt is cheaper, the Weighted Average Cost of Capital (WACC) decreases as more debt is introduced. As a result, the total value of the firm (V), which is the sum of the market value of debt and equity, goes up. Simply means, when cost of capital goes down, the firm's value goes up. Hence, this theory suggests that the optimum capital structure is achieved when the firm uses maximum possible debt in its financing. The firm should continue to increase debt until it reaches the highest value of the firm and the lowest cost of capital.

4.1.3.1.1 Arguments in Favour of NI Approach

1. Interest on debt is fixed and usually lower than the return expected by shareholders. Hence, using debt reduces the overall cost of finance. (cheaper source of capital)
2. Raising funds through debt involves less cost and formalities compared to issuing equity shares. (low flotation cost)
3. Although the theory assumes no taxes, in reality, interest is tax-deductible. So, debt becomes even cheaper compared to equity. (tax shield)

Because of these advantages, debt financing helps to reduce the firm's average cost of capital and increase the market value of equity shares.

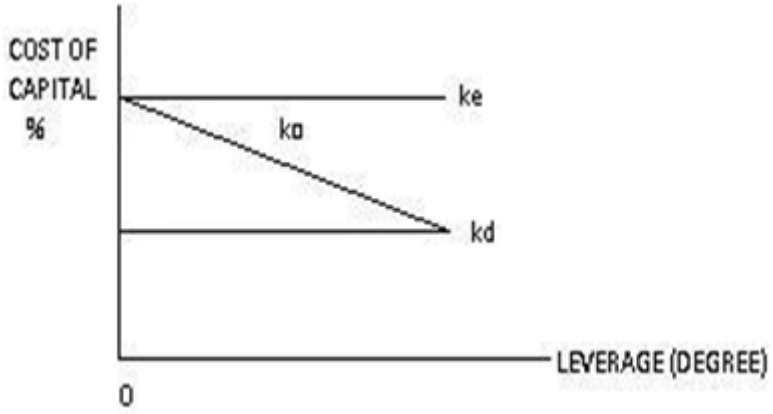

Fig 4.1.2 Net Income Theory

Figure 4.1.2Net income theory shows that both the cost of debt) and cost of equity (ke) remain constant at all levels of leverage (i.e., at all levels of debt financing). As the debt proportion increases, the WACC (Weighted Average Cost of Capital K_o) goes down, because k_d is lower than k_e. This leads to an increase in the firm's value. The figure also shows that as debt increases, WACC moves closer to k_d, but it never becomes equal to k_d, because a firm can't be financed by 100% debt and must have some equity. On the other hand, if the firm is financed by 100% equity, then WACC equals k_e. The rate at which WACC decreases depends on the difference between k_d and k_e. According to the Net Income (NI) approach, a firm achieves its maximum value when WACC is at its minimum. By carefully balancing debt and equity, a firm can reach an optimal capital structure at the point where WACC is low22 and the value of the firm is highest.

4.1.3.2 Net Operating Income Theory (NOI Theory)

This theory is also suggested by David Durand as the exact opposite of the Net income approach. This theory states that capital structure is irrelevant to the value of a firm. There is no relationship between capital structure change and the value of a firm. The overall cost of capital remains constant irrespective of the method of financing. It implies that the overall cost of capital remains constant or the same whether the debt-equity mix is 50:50 or 20:80, or 0:100. There is nothing as an optimum capital structure; every capital structure is optimum capital structure according to this approach.

Arguments in favour of this approach are that the use of more debt capital will increase the financial risk of equity shareholders and thereby they demand higher returns and lead to an increase in the cost of equity capital. So, the advantage of using debt capital will be offset by the increase in the cost of equity.

This theory assumes that:

- ◊ Business risk remains constant at every level of debt equity mix.
- ◊ The market capitalises the value of the firm as a whole.

- ◊ There is no corporate tax.
- ◊ The risk perception of shareholders tends to change in response to an increase in the proportion of debt in the capital structure.
- ◊ Cost of debt (kd) is lower than the cost of equity (ke).
- ◊ The cost of debt (kd) is constant.
- ◊ The overall cost of capital (ko) also remains constant.

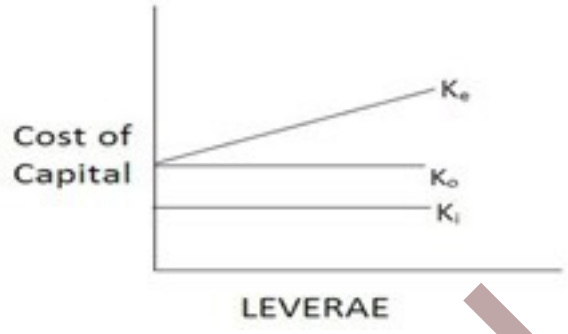

Fig 4.1.4 Net Operating Income Theory

Figure 4.1..4. Net operating income theory explains the relationship between leverage (use of debt) and the cost of capital under the Net Operating Income (NOI) approach. The vertical axis represents the cost of capital, while the horizontal axis shows leverage. As leverage increases, the cost of equity (K_e) rises because equity holders demand a higher return due to increased financial risk. However, the cost of debt (K_i) remains constant, assuming the firm can borrow at a fixed rate regardless of its debt level. The overall cost of capital (K_o), or WACC, also remains constant across different levels of leverage. According to the NOI approach, this means that changes in the capital structure (mix of debt and equity) do not affect the firm's overall cost of capital or its total value. In simple terms, no matter how much debt or equity a firm uses, the value of the firm stays the same.

4.1.3.3 Traditional Approach

The Traditional Approach to Capital Structure, also known as the Intermediate Approach, was contributed by Ezra Solomon and lies between two extreme theories: the Net Income Approach and the Net Operating Income Approach. This theory explains that a company can increase its value and reduce its overall cost of capital by maintaining a proper balance between debt (borrowed money) and equity (owner's money). Debt is usually cheaper than equity because companies pay lower interest on loans, and these interest payments can be deducted from taxable income. Therefore, in the beginning, when a company includes a reasonable amount of debt in its capital structure, the average cost of capital decreases, and the value of the company rises. But this benefit does not continue forever. If a company keeps increasing its debt, its financial risk also increases. Lenders and investors start worrying about whether the company can repay its loans. As a result, both expect higher returns to compensate for the higher risk. At this point, the cost of equity rises because they expect higher return

for increasing financial risk. After a certain level, known as the optimum point, any additional borrowing will only increase the overall cost of capital and reduce the value of the firm.

To understand this better, let us take the example of DKV Ltd, a company producing organic fruit products. Suppose DKV Ltd needs ₹10 crore to expand its business. If it uses only its own funds (all equity), there is no financial risk because it has no loans to repay. However, the shareholders expect a high return, say 14%, making the overall cost of capital high. In another situation, if DKV Ltd uses a balanced mix of ₹5 crore as equity and ₹5 crore as debt, the interest on debt is lower, say 8%, and also helps in saving taxes. This reduces the average cost of capital to around 11%, increasing the company's value. This is considered the optimal capital structure, where the company achieves a balance between risk and return. But if the company borrows excessively, say ₹8 crore debt and uses only ₹2 crore of its own funds, the financial risk becomes very high. Both lenders and investors start demanding higher returns due to uncertainty in repayment. As a result, the cost of capital increases to around 13%, and the firm's value starts declining.

Thus, the Traditional Approach suggests that a company should find a right mix of debt and equity. A moderate use of debt can be beneficial in reducing the cost of capital and improving the company's value, but too much debt increases financial risk and ultimately harms the firm's stability and growth.

4.1.3.4 MM hypothesis (Modigliani and Miller approach)

The M&M approach is a theory about how a business's value is affected by its capital structure (the mix of debt and equity used for funding). This theory is mainly based on the idea that the value of a firm does not depend on how it is financed, whether by debt or equity, if certain conditions are met.

A. If there is no corporate tax

According to Modigliani and Miller, if there are no corporate taxes, it is exactly same as of net operating income theory. That means, capital structure does not affect the company's total value or its overall cost of capital. This means that changing the proportion of debt and equity will not affect the value of the firm. Even though debt is cheaper than equity, using more debt increases financial risk. Because of this extra risk, equity shareholders demand higher returns. As a result, the benefit of cheaper debt is cancelled out by the higher cost of equity. So, the overall cost of capital stays the same, and the firm's value remains unchanged. In simple terms, M&M said that if two companies are the same in every way, such as profit, business type, and risk, but differ only in how they are financed (one uses debt, and the other uses only equity), then both should have the same market value.

For example, two companies, Company A and Company B. Company A is financed completely by equity (owners' money), while Company B uses a mix of debt and equity. Both companies earn the same profits and operate in the same industry. Although Company B uses debt, which is cheaper, it also faces higher financial risk. So, its equity

shareholders expect a higher return to compensate for that risk. This balances things out, making the overall cost of capital equal for both firms.

If Company A is priced higher in the market than Company B, investors will quickly notice this difference. They will sell their shares in Company A and start buying shares in Company B to get better returns. This process of shifting investments is called arbitrage. As more investors buy shares of Company B, its price will rise, and Company A's price will fall until both firms have the same value in the market. This proves that the capital structure is irrelevant when there are no taxes.

B. If there is corporate tax

Later, in 1963, Modigliani and Miller revised their theory to include the effect of corporate taxes. When corporate tax is considered, the theory becomes similar to the Net Income Approach. In this case, capital structure becomes relevant, meaning it can affect the company's value. This is because companies can deduct the interest paid on loans from their taxable income, which reduces the amount of tax they have to pay. This tax saving increases the total value of the company.

Suppose there are two companies, Company A and Company B, each earning ₹1 crore as profit before interest and tax. Company A has no debt, so it pays 30% tax on the full ₹1 crore, which equals ₹30 lakh. Company B, however, has taken a loan and pays ₹20 lakh as interest. It only pays tax on ₹80 lakh (₹1 crore – ₹20 lakh), which comes to ₹24 lakh. This means Company B saves ₹6 lakh in tax just because it uses debt. This saving is called a tax shield, and it increases the company's total value. So, according to M&M (with tax), the more debt a company uses, the more tax it can save, and the higher its value becomes, as long as the company does not take on too much financial risk.

No single, universal formula determines a firm's optimal capital structure. Each theory provides valuable yet partial insights into the intricate relationship between a company's debt-equity ratio, its cost of capital, and overall market value. While the early, assumption-based models of Modigliani and Miller (M&M) established a foundational benchmark, subsequent theories incorporated crucial real-world considerations such as corporate taxation, bankruptcy costs, and asymmetric information, thereby offering a more realistic perspective. In practice, a firm's optimal capital structure is not a static concept but a dynamic equilibrium that must be periodically reassessed. It emerges from strategic managerial decisions shaped by different factors such as profitability, cash flow stability, and risk tolerance and external influences like market conditions and investor expectations. Hence, these theories do not prescribe rigid rules; rather, they form an essential analytical framework enabling financial managers to evaluate trade-offs, manage risks, and make informed financing decisions that align with the firm's long-term objectives.

Recap

- ◊ Capital structure refers to the combination of debt and equity used by a company to finance its overall operations and growth.
- ◊ The optimal capital structure is the proportion of debt and equity that minimizes the overall cost of capital and maximizes the market value of the firm.
- ◊ Theories of Capital Structure explain how changes in debt–equity mix affect a firm's cost of capital and overall value.
- ◊ Net Income (NI) Approach, states that increasing debt in capital structure reduces the overall cost of capital and increases firm value.
- ◊ Net Operating Income (NOI) Approach argues that the value of the firm remains constant regardless of the debt–equity mix, making capital structure irrelevant.
- ◊ Traditional Approach suggests an optimal point exists where moderate use of debt minimises the cost of capital and maximises firm value.
- ◊ The MM hypothesis proposes that under certain assumptions, capital structure does not affect firm value, but when taxes are included, debt financing increases value due to tax benefits.

Objective Questions

1. Who propounded the Net Income Theory of capital structure?
2. The capital structure that minimises the overall cost of capital is called?
3. Who contributed MM hypothesis?
4. The mix of debt and equity used in financing a firm's operations is called?
5. The traditional approach is also called.
6. Who developed traditional approach?
7. List out the four theories of capital structure.
8. Who developed Net Operating Income theory?

Answers

1. David Durand
2. Optimum capital structure
3. Modigliani and Miller
4. Capital Structure
5. Intermediate approach
6. Ezra Solomon
7. Net Income (NI) Approach, Net Operating Income (NOI) Approach, Traditional Approach, Modigliani and Miller (MM) Approach
8. David Durand

Self-assessment Questions

1. Explain optimum capital structure.
2. Essay on determinants of capital structure.
3. Briefly explain the relevance theories of capital structure
4. Discuss the irrelevance theories of capital structure.
5. Short note on arbitrage in MM hypothesis.

Assignments

1. Select any listed company in India and analyse its latest balance sheet to identify the composition of debt and equity.
2. Compare the capital structure of two companies from different industries (e.g., a manufacturing company and an IT company).
3. Identify the determinants of capital structure in a real Indian firm of your choice by examining profitability, cash flow, control considerations, and

market conditions. Prepare a short report summarizing your findings.

4. Suppose you are the finance manager of a growing company planning expansion. How would you decide between issuing new equity shares or taking long-term debt? Discuss the factors influencing your decision.

5. Choose a firm that has increased its debt recently. Analyse whether this move supports the Net Income Approach (i.e., firm value rising with more debt). Use secondary data or financial reports to justify your answer.

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Unit 2
Leverage

Learning Outcomes

After studying this unit, learners will be able to:

- ◊ comprehend the concept of financial leverage
- ◊ describe the concept of operating leverage
- ◊ get an idea about composite leverage
- ◊ gain knowledge about the concept of capital gearing

Prerequisite

Consider Maruti Suzuki India Limited, a leading automobile manufacturer in India. The company operates large manufacturing plants with significant fixed costs such as depreciation, salaries of permanent staff, and plant maintenance. Due to these high fixed operating costs, Maruti Suzuki exhibits high operating leverage, meaning that a small increase in sales leads to a relatively larger increase in operating profit (EBIT), while a fall in sales can sharply reduce profits.

At the same time, Maruti Suzuki uses a limited amount of long-term debt in its capital structure and mainly relies on equity and internal funds. Because of low interest obligations, the company has low financial leverage, which reduces financial risk and protects shareholders during periods of declining sales.

When both operating leverage and financial leverage are considered together, Maruti Suzuki's composite leverage is moderate. This implies that changes in sales have a noticeable but controlled impact on earnings per share (EPS). The company is therefore considered low geared, as equity dominates its capital structure and fixed-interest-bearing securities form a small proportion of total capital.

This example helps learners understand how operating leverage, financial leverage, composite leverage, and capital gearing are interrelated and how companies choose their leverage position based on business conditions and risk tolerance.

Keywords

financial leverage, operating leverage, composite leverage, capital gearing

Discussion

Imagine trying to lift a large stone. It might be impossible with just your hands, but if you use a long stick and a strong support (a fulcrum), you can lift it more easily. That's leverage in action. In business, the concept of leverage works similarly. Just like a tool helps us lift heavy objects, certain financial strategies help a business increase its profits, even without increasing its resources. In simple terms, leverage enables a company to utilise borrowed money or fixed costs to generate additional returns for its owners, particularly equity shareholders.

4.2.1 Meaning of leverage

The term *leverage* generally means using an additional means or tool to achieve a greater result. Just as a lever helps us lift a heavy object by magnifying the force we apply, in business and finance, leverage helps a company magnify its profits or losses by using fixed-cost assets or borrowed funds. It allows firms to achieve greater returns with limited resources by effectively using debt or fixed costs.

According to James Horne, leverage refers to "the use of assets or funds for which a company pays a fixed cost or fixed return." In simple words, when a business borrows money or invests in fixed-cost assets like machinery, it commits to paying interest or depreciation, irrespective of its sales volume. Christy and Roder define leverage as "the tendency for profits to change at a faster rate than sales," which means a small change in sales can cause a much larger change in profits.

For example, consider a small manufacturing company in Coimbatore that produces furniture. If it buys technology-updated machinery worth ₹10 lakh using a bank loan, it will incur fixed costs like interest and depreciation every month. When sales rise, the additional revenue after covering these fixed costs directly increases profits. However, if sales fall, the company still has to pay the fixed charges, which can quickly reduce or even eliminate its profits. The following are the key characteristics of leverage.

- ◊ It involves using fixed assets or funds that have a fixed cost or fixed return.
- ◊ Profits change at a faster rate than sales due to the presence of fixed costs.

- ◊ There exists a direct relationship between risk and return. Higher leverage brings higher potential returns, but also higher risk.
- ◊ A firm with high leverage enjoys more profit during good times but faces greater losses when business slows down.

4.2.1.1 Financial Leverage

Imagine a small bakery owner named Akshay in Kollam. His business is doing well, and he wants to expand by buying new ovens and equipment worth ₹10 lakh. However, he only has ₹5 lakh of his own money. Instead of waiting to save more, he decides to borrow ₹5 lakh from the bank at an interest rate of 10% per year. After expansion, his bakery's sales increase sharply, and his profits grow faster than before. This extra growth in profit was achieved because he used borrowed money. This is what we call financial leverage. It means using borrowed funds or fixed-cost capital (like loans or preference shares) to increase the return to the company's owners. In simple words, financial leverage helps a business earn more profits by using other people's money, provided that the business earns a higher return on investment than the cost of borrowing.

According to James C. Van Horne, financial leverage is "the use of fixed charge sources of funds, such as debt and preference capital, to magnify the potential return to equity shareholders." Simply put, it shows how sensitive a company's earnings are to the use of debt. Financial leverage works because interest on loans is a fixed cost. Whether a company earns high or low profits, it must pay interest to lenders. So, when earnings rise, the profit after paying interest increases faster, making shareholders richer. However, if earnings fall, the same interest burden can reduce profits or even create losses.

Imagine a company, Thanvi Ltd., which needs ₹1 crore for expansion. It can either raise all the money through equity or borrow half as debt.

Table 4.2.1 Financial leverage

Particulars	Case 1 (No Debt)	Case 2 (With Debt ₹50 lakh @10%)
EBIT (Earnings Before Interest & Tax)	₹20,00,000	₹20,00,000
Less: Interest	₹0	₹5,00,000
EBT (Earnings Before Tax)	₹20,00,000	₹15,00,000

Now, if EBIT rises to ₹25,00,000, the EBT in Case 2 increases to ₹20,00,000, a 33% jump in profit, compared to Case 1, only a 25% rise in EBIT. This shows how financial leverage magnifies returns. But if EBIT falls below ₹10,00,000, the company still has to pay ₹5,00,000 as interest in case 2, which can drastically reduce profit or even cause a loss. So, leverage is a double-edged sword; it can increase returns in good times but deepen losses during downturns.

4.2.1.1.1 Significance of Financial Leverage

Financial leverage plays a vital role in business growth and financial strategy.

1. **Enhances Shareholders' Returns:** When a firm earns more on borrowed funds than it pays in interest, the extra profit goes to shareholders, boosting their earnings per share (EPS).
2. **Helps in Tax Saving:** Interest on loans is tax-deductible. This means companies pay less tax when they use debt, leading to higher net profits.
3. **Encourages Efficiency:** Knowing that interest must be paid regularly, management uses funds carefully and avoids wasteful spending.
4. **Builds an Optimal Capital Structure:** A proper mix of debt and equity helps balance risk and return, reducing the overall cost of capital.

4.2.1.1.2 Risks of Financial Leverage

However, leverage is not always beneficial. Just like driving fast on a slippery road, high leverage can be dangerous if not controlled.

1. **Increased Financial Risk:** A company must pay interest even if profits fall. During tough times, this can lead to financial distress or insolvency.
2. **Unstable Earnings:** Small changes in operating profit (EBIT) can cause big fluctuations in earnings per share (EPS).
3. **Reduced Flexibility:** Too much debt can make it hard for a company to borrow more in the future or make quick business decisions.
4. **Loss of Control:** Lenders may impose conditions or influence decisions when a company is highly leveraged.

4.2.1.1.3 Degree of financial leverage

It is the impact of changes in operating income (EBIT-Earnings before interest and tax) on change in earnings on equity capital or equity shares.

$$\text{Degree of Financial Leverage} = \frac{\%\ \text{Change in EPS}}{\%\ \text{Change in EBIT}}$$

$$\text{Degree of Financial Leverage} = \frac{\text{EBIT}}{\text{EBIT} - \text{Interest}}$$

- ◊ EPS = Earnings Per Share (what each shareholder earns)
- ◊ EBIT = Earnings Before Interest and Taxes (the profit before paying interest and tax)

Illustration 4.2.1

DKV Ltd. is considering two financial plans to examine their impact on Earnings Per Share (EPS). The total fund required is Rs 500000.

Financial plans		
	Plan A	Plan B
Debt (interest @10% p.a)	400000	100000
Equity shares (Rs.10 each)	100000	400000
Total finance required	500000	500000
No; of equity shares	10000	40000

Additional information:

- ◊ Earnings before interest and tax are assumed as Rs. 50000, Rs. 75000, and Rs. 125000.
- ◊ The rate of tax is taken at 50 %.

Solution 4.2.1

EBIT @ 50000		
	PLAN A	**PLAN B**
EBIT	50000	50000
Less: interest on debt	40000	10000
Earnings before tax (EBT)	10000	40000
Less: Tax@50%	5000	20000
Earnings after interest and tax	5000	20000
No. of equity shares	10000	40000
Earnings per share	5000/10000= **0.50**	20000/40000= **0.50**

EBIT @ 75000		
	PLAN A	**PLAN B**
EBIT	75000	75000
Less: interest on debt	40000	10000
Earnings before tax (EBT)	35000	65000
Less: Tax@50%	17500	32500
Earnings after interest and tax	17500	32500
No. of equity shares	10000	40000
Earnings per share	17500/10000 = **1.75**	32500/40000 = **0.81**

EBIT @ 125000		
	PLAN A	**PLAN B**

EBIT	125000	125000
Less: interest on debt	40000	10000
Earnings before tax (EBT)	85000	115000
Less: Tax@50%	42500	57500
Earnings after interest and tax	42500	57500
No. of equity shares	10000	40000
Earnings per share	42500/10000 = **4.25**	57500/40000 =**1.438**

- ◊ Plan A is a leveraged plan (thin equity) because it has 80 % debt financing and only 20 % owned funds (equity).
- ◊ Plan B is a conservative plan (thick equity) where fixed cost funds are only 20% of total funds and the balance is financed through equity capital.
- ◊ The EPS is increasing in Plan A with the increase in profits (EBIT). In situation (1), the earnings per share is the same in both plans, i.e. Rs. 0.50. As the EBIT has increased from ₹ 50,000 to ₹ 75,000 (situation 2), the EPS in plan A is 1.75 while it is 0.81 in plan B. EPS is 4.25 in Plan A and 1.438 in Plan B when EBIT increases to ₹ 1,25,000
- ◊ It is clear from the analysis that EPS is increasing with the increase in profits in Plan A as compared to that of Plan B. This is possible with the use of more fixed-cost funds in Plan A as compared to Plan B.
- ◊ The increase in EPS in Plan A is due to the financial leverage because earnings before interest and tax are the same in all situations.

4.2..1.2 Operating leverage

Imagine you own a small printing business in Kozhikode. You've invested in a printing machine that costs ₹1,00,000 a month in rent and maintenance, whether you use it or not. This cost doesn't change, even if you print more or fewer books, it is your fixed operating cost. These fixed costs are the foundation of operating leverage. Operating leverage arises because of the presence of fixed costs in a business. These costs act like a lever or fulcrum, allowing profits to rise faster once sales begin to grow. In other words, operating leverage shows how a change in sales affects the company's operating profit (also called EBIT or Earnings Before Interest and Tax). When a company increases its sales, its fixed costs remain the same, but its contribution (sales minus variable costs) grows. As a result, the profit increases at a faster rate. However, if sales fall, profit drops sharply because fixed costs do not decrease.

For example, in your printing business, each book costs ₹50 to print and sells for ₹100. You earn ₹50 per book after covering material costs. This is your contribution. To cover your ₹1,00,000 fixed cost, you need to print and sell 2,000 books. This is your break-even point (BEP), where you make no profit and no loss. Now, if you print and sell 2,500 books, you've already covered your fixed cost and made an extra profit on 500 books (₹50 × 500 = ₹25,000). If sales go up by just 10% (selling 2,750 books), your profit jumps to ₹37,500, a 50% increase in profit from only a 10% rise in sales. This magnified effect is what we call operating leverage.

Operating leverage can be measured using the following formula:

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

Where:

- ◊ Contribution = Sales – Variable Cost
- ◊ Operating Profit = Contribution – Fixed Cost

The higher the fixed cost compared to total cost, the higher the operating leverage - meaning profits react more sharply to sales changes.

The break-even point can also be calculated as:

$$\text{Break-even Point} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}}$$

Once sales rise above the break-even point, all additional sales contribute directly to profit, since fixed costs are already covered. That's why businesses with high operating leverage can earn large profits after crossing the break-even level.

Illustration 4.2.2

From the data given above find degree of operating leverage, financial leverage and composite leverage

Details	Amount (₹)
Sales (units)	10,000 units
Selling Price per Unit	₹200
Variable Cost per Unit	₹100
Fixed Operating Costs	₹3,00,000
Interest on Debt	₹1,00,000

Solution

Step 1: Calculate Contribution per Unit

Contribution = Selling Price - Variable Cost

= ₹200 - ₹100 = ₹100 per unit

Step 2: Calculate Operating Income (EBIT)

Total Contribution = Contribution × Sales

= ₹100 × 10,000 = ₹10,00,000

Operating Income = Total Contribution - Fixed Operating Costs

= ₹10,00,000 - ₹3,00,000 = ₹7,00,000

Step 3: Calculate Earnings Before Tax (EBT)

EBT = Operating Income - Interest

= ₹7,00,000 - ₹1,00,000 = ₹6,00,000

Step 4: Calculate Leverages

◊ Degree of Operating Leverage (DOL):

DOL = Contribution / Operating Income

= ₹10,00,000 / ₹7,00,000 ≈ 1.43

◊ Degree of Financial Leverage (DFL):

DFL = Operating Income / Earnings Before Tax

= ₹7,00,000 / ₹6,00,000 ≈ 1.17

◊ Degree of Composite Leverage (DCL):

DCL = DOL × DFL

= 1.43 × 1.17 ≈ 1.67

If sales go up by 1%, the company's operating income will rise by about 1.43%. After paying interest on loans, the profit before tax will increase by roughly 1.67%. This means the company's total profit changes 1.67 times for every 1% change in sales.

4.2.1.2.1 Significance of operating leverage

Operating leverage is important because it helps managers understand how much they need to sell to cover all their costs and start earning profit. It also helps businesses plan better and make efficient use of their fixed assets, like machinery, buildings, or salaries.

Once the break-even point is reached, every extra rupee earned in sales leads to a much larger increase in profit. For example, a car manufacturing company with expensive machines and buildings can earn huge profits when demand rises because its fixed costs don't change.

The higher the fixed cost compared to total cost, the higher the operating leverage — meaning profits react more sharply to sales changes.

4.2.1.2.2 Risks of Operating Leverage

Operating leverage is a double-edged sword. While it increases profits during good times, it can magnify losses during downturns. If sales drop, the company still has to pay all its fixed costs, rent, salaries, and maintenance, which can cause profits to fall

sharply or even turn into losses. For example, if your printing business experiences a slowdown and sells only 1,500 books, you'll still have to pay ₹1,00,000 in fixed costs. That means you'll face a loss of ₹25,000. So, high operating leverage can make a business riskier during periods of falling demand. Also, operating leverage only exists when there are fixed costs. If all costs are variable (changing with production), there is no leverage effect.

But running a business involves not just operating costs, firms also have to pay financial costs like interest on loans. To understand the combined impact of both these fixed costs, operating and financial, we use composite leverage (also called combined leverage).

Let's say you run a small factory that makes wooden chairs. You pay ₹1,00,000 every month for rent, salaries, and machinery, that's your operating cost. You also took a bank loan and pay ₹20,000 interest every month, that's your financial cost. Now, if your sales increase, your rent and interest remain the same. Because both your operating and financial costs are fixed, your profit will increase much faster than your sales. But if sales fall, your losses will also multiply. This combined effect is known as composite leverage.

4.2.3 Composite leverage/Combined leverage

Composite leverage measures the combined effect of operating leverage and financial leverage on a company's profit. It illustrates the sensitivity of overall profit to changes in sales. A higher composite leverage means that a small change in sales will result in a larger change in profit, thereby increasing both potential returns and risks. Therefore, management should carefully assess the levels of fixed operating costs and financial debt before making decisions to balance risk and reward.

Now, if your sales increase, your rent and interest remain the same. Because both your operating and financial costs are fixed, your profit will increase much faster than your sales. But if sales fall, your losses will also multiply. This combined effect is known as composite leverage**.**

Composite Leverage - Operating Leverage x Financial leverage

Composite leverage helps measure the total risk and reward faced by a firm when sales change. It tells how sensitive the company's final profit (Earnings Per Share) is to changes in sales revenue.

To understand leverage better, think of a business as having two kinds of fixed commitments one related to its day-to-day operations and the other to its financing. Operating leverage comes from how a business runs. It arises when a firm has fixed operating costs such as rent, salaries, or machinery expenses. These costs stay the same whether the business produces a little or a lot. So, once sales cross the break-even point, every extra sale adds more to profit because the fixed costs are already covered.

On the other hand, financial leverage comes from how a business is funded. If a company borrows money, it must pay interest regularly, no matter how much profit it

makes. This creates a fixed financial obligation. When business is good and profits rise, shareholders enjoy higher returns because interest costs remain constant. But when business slows down, those same interest payments can become a burden and reduce profits sharply.

Now, when both these types of leverage work together, we get composite leverage, the combined effect of operating and financial leverage on the company's overall profit. It shows how sensitive the business's earnings are to a change in sales. A firm with high operating and financial leverage can make huge profits when sales go up, but it also faces greater risk if sales fall. Therefore, smart managers try to maintain a balance: if the firm's operating leverage is high, they keep financial leverage low, and vice versa. This helps maintain stability and reduces the chances of sudden losses.

After understanding leverage, it's easy to see that the way a company mixes its own funds and borrowed funds also plays a big role in its financial strength. This brings us to the idea of capital gearing. Just like leverage shows how sensitive profits are to sales, capital gearing shows how sensitive profits are to the company's financial structure, that is, how much of its capital comes from owners (equity) and how much from lenders (debt).

4.2.4 Capital gearing

Imagine two friends start similar businesses. Krishna invests mostly his own money, while Radha borrows a large sum from the bank. If business goes well, Radha earns higher returns because she uses borrowed money to boost profits, which is high gearing. But if sales fall, she still has to pay interest, which reduces her earnings, showing higher financial risk. Krishna, with less borrowing, has low gearing. His profits may grow more slowly, but his risk is also lower.

In short, capital gearing is the bridge between leverage and financial stability. It helps us understand how the mix of equity and debt affects both the profit potential and risk level of a company. Capital gearing (also called financial gearing or simply "gearing") refers to the ratio of the company's fixed-return capital (debt, preference shares, etc.) to its equity capital. In other words, gearing shows how much of the capital structure is made up of funds that require fixed payments (interest, dividends) versus owners' equity.

The capital gearing ratio shows the relationship between a company's borrowed funds and its own funds. It is calculated using the formula:

Capital Gearing Ratio = Total Debt / Total Equity.

Here, Total Debt includes all interest-bearing liabilities such as loans, bonds, and debentures, while Total Equity represents shareholders' funds, including common stock, and retained earnings. This ratio helps to understand whether a company is highly geared (more debt) or low geared (more equity). If a company has a large amount of debt and preference shares compared to equity, it is said to have high capital gearing. This means the company is using more borrowed money, which can increase profits when business is good, but also increase risk when profits fall. On the other

hand, if a company mainly uses its own equity and has little or no debt, it is said to have low capital gearing. Such companies are safer during tough times because they don't have to make fixed payments like interest, but their profit growth may be slower. The significance of capital gearing is as follows:

- ◊ **Assesses financial stability:** Shows how balanced a company's capital structure is between debt and equity.
- ◊ **Indicates financial risk:** A high gearing ratio means higher risk due to fixed interest obligations.
- ◊ **Measures profit potential:** Higher gearing can increase returns to shareholders when profits rise.
- ◊ **Helps in decision-making:** Guides management in choosing the right mix of debt and equity financing.
- ◊ **Useful for investors:** Helps investors evaluate the company's risk and return profile before investing.
- ◊ **Reflects borrowing capacity:** Indicates how much additional debt a company can safely take on.

Financial leverage shows how borrowing can increase a company's profits but also its risk. Operating leverage explains how fixed costs, like rent or salaries, can make profits rise or fall faster when sales change. Combined leverage shows the total effect of both operating and financial leverage on the company's earnings. Capital gearing simply means the balance between debt and equity used to finance the business.

Recap

- ◊ Financial Leverage shows how the use of debt affects a firm's earnings and risk.
- ◊ Operating Leverage reflects how fixed operating costs magnify the impact of sales changes on profits.
- ◊ Combined Leverage reveals the overall effect of both operating and financial leverage on earnings.
- ◊ Capital Gearing indicates the ratio of debt to equity in a company's capital structure.

Objective Questions

1. What measures a firm's debt impact?
2. What are the main types of leverage?
3. What shows the total effect of leverage on profits?

4. What indicates the debt-to-equity balance in a firm?
5. Which type of leverage reflects the effect of fixed operating costs?
6. Which type of leverage reflects the effect of fixed interest payments?
7. What is the main advantage of leverage?
8. What is the formula for capital gearing?

Answers

1. Leverage
2. Capital Gearing
3. Combined Leverage
4. Capital Gearing
5. Operating Leverage
6. Financial Leverage
7. Magnifies Returns
8. Total Debt/ Total Equity

Self-assessment questions

1. Explain the different concepts of leverage used in firms.
2. Write a short note on the significance of leverage.
3. Analyse the benefits and risks associated with financial leverage.
4. Explain the concept of operating leverage.
5. Discuss the concept of combined leverage.
6. Write an essay on the concept of capital gearing.

Assignments

1. How does operating leverage reflect the relationship between cost structure and profit volatility?
2. In what ways does leverage contribute to a firm's financial strategy and stability?

3. How does capital gearing shape the balance between debt and equity in financing decisions?
4. What insights does combined leverage offer about a firm's overall risk position?
5. To what extent can financial leverage enhance returns while increasing risk exposure?
6. How do varying forms of leverage influence a firm's financial performance?

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5

BLOCK

Dividend Decision

Unit 1
Dividend Decision Theories

Learning Outcomes

After completing this unit, learners will be able to:

- ◊ gain insight into the different dividend decisions
- ◊ comprehend the theories relevance
- ◊ describe the theories of Irrelevance

Prerequisite

Sunrise Pvt. Ltd., a growing manufacturing company, recently completed its most profitable year since its establishment. During the annual board meeting, the management team gathered to decide what to do with this year's earnings. The question was whether to distribute the profits as dividends or to reinvest them in the business. Mr. Rajan, the Finance Manager of the company, opined that paying dividends would please the shareholders and enhance the company's market reputation. He was of the view that dividends are relevant as the payment of regular dividends would help to strengthen the trust of shareholders. The financial analyst of the company, Mr. Aravind, was of the view that dividends are irrelevant and might not affect the company's value at all. However, Ms. Keerthy, the Operations Head, suggested that profits must be retained to finance new projects and future expansion activities of the company. She believed that reinvestment of earnings could bring higher returns in the long run. This discussion at Sunrise Pvt. Ltd. highlights the two main dividend theories, namely relevance theories and irrelevance theories. This unit discusses about the various relevance and irrelevance theories in detail.

Keywords

Relevance Theories, Irrelevance Theories, Dividend

Discussion

5.1.1 Dividend Decision

The term dividend refers to that part of profits of the company that is distributed by it among its shareholders. A dividend can be considered as the reward earned by the shareholders for the investments made by them in the share capital of the company. Dividend Decision is the third major financial decision. The dividend decision is concerned with the quantum of profits to be distributed among its shareholders and the quantum of profits to be retained for future growth. Dividend decision is a crucial part of financial management, and it directly affects shareholder satisfaction, the firm's reputation, and its overall market value. The management of a company must strike a balance between paying attractive dividends and maintaining sufficient funds for reinvestment in profitable opportunities. Various factors, such as the company's earnings, liquidity position, future investment needs, and shareholder preferences, influence the dividend decision. A well-planned dividend decision helps to ensure long-term financial stability and sustained investor confidence.

Dividend theories examine the relationship between a company's dividend policy and its valuation of the firm. There are two prominent schools of thought that examine whether the payment of dividends has any effect on the value of the firm or not. One is called the "Theory of Relevance" and the latter is called the "Theory of Irrelevance". Walter's Model and Gordon's Model are relevance theories that argue that dividends are relevant and influence the valuation of the firm. On the other hand, irrelevant theories like Modigliani and Miller (MM) Hypothesis and Residual Theory claim that dividend policy has no impact on a company's value under perfect market conditions.

5.1.2 Relevance Concept of Dividend (The Theory of Relevance)

5.1.1.1 Walters's model

Walter's Model is based on the relationship between the firm's return on investment (denoted by r) and the cost of capital or required rate of return (denoted by k). According to this model, dividend decisions are relevant and affect the value of the firm. So, the relationship between the internal rate of return earned by the firm and its cost of capital is very significant in determining the dividend policy to serve the ultimate goal of maximising the wealth of the shareholders.

According to Prof. Walter,

i. If the firm's rate of return on investment (r) is greater than its required rate of return (k) (i.e, if r > k), then it should retain its earnings. Such firms are called as growth firms. So, in the case of growth firms, the optimum payout ratio would be zero. This would aid in maximising the value of shares.

ii. If the firm's rate of return on investment (r) is less than its required rate of return (k) (i.e, if r < k), then it should distribute its entire earnings as dividends. Such firms are known as declining firms. So, in the case of declining firms, the optimum payout ratio would be 100 percent, and the shareholders would stand to gain if the firm distributes its earnings.

iii. If the rate of return on investment (r) of a firm is equal to its required rate of return (k) (i.e, if r = k), then such firms are known as normal firms. There is no optimum dividend payout for such firms, and the value of the firm would not change with a change in dividends. In the case of normal companies, dividend policy does not change the market value of shares because shareholders receive the return they expect, whether the company pays dividends or keeps the profits.

Assumption of Walter's Model

The following are the assumptions of this model,

i. Retained earnings are only used for financing the investments of the firm, and it does not depend on any external sources of funds.

ii. The internal rate of return (r) and the cost of capital (k) of the firm remain constant.

iii. Earnings and dividends are constant and they remain the same while determining the value.

iv. The firm has a long life.

Walter's Formula for Determining the Value of a Share

Walter has developed a mathematical equation to ascertain the market price of a share.

$$P = \frac{D}{ke - g}$$

Where,

P= Price of equity share

D = Initial dividend per share

ke = Cost of equity capital

g = Expected growth rate of earnings/dividend

He has also given the following formula to ascertain the market price of a share;

$$P = \frac{D}{ke} + \frac{r(E-D)/ke}{ke}$$

Where,

P = Market Price per equity share

D = Dividend per share

r = Internal rate of return

E = Earnings per share

ke = Cost of equity capital

Illustration 5.1.1

The following information is available with respect to Varun Ltd:

Capitalisation rate - 10%

Earnings per share - ₹ 100

Assumed rate of return on investments:

(i) 12%

(ii) 8%

(iii) 10%

Show the effect of dividend policy on the market price of shares applying Walter's formula when the dividend payout ratio is (a) 0% (b) 40%, (d) 80%, and (d) 100%.

Solution:

$$P = \frac{D}{ke} + \frac{r(E-D)/ke}{ke}$$

Effect of dividend policy on market price of shares

(a) When the dividend payout ratio is 0 %		
(i) r = 12 % $P = \frac{0}{.10} + \frac{0.12(100-0)/0.10}{.10}$ = ₹1200	(ii) r = 8 % $P = \frac{0}{.10} + \frac{0.08(100-0)/0.10}{.10}$ = ₹800	(iii) r = 10% $P = \frac{0}{.10} + \frac{0.10(100-0)/0.10}{.10}$ = ₹1000
(b) When the dividend payout ratio is 40 %		

(i) r = 12 % $P = \frac{40}{.10} + \frac{0.12(100-40)/0.10}{.10}$ = ₹1120	(ii) r = 8 % $P = \frac{40}{.10} + \frac{0.08(100-40)/0.10}{.10}$ = ₹880	(iii) r = 10% $P = \frac{40}{.10} + \frac{0.10(100-40)/0.10}{.10}$ = ₹1000
(c) When the dividend payout ratio is 80 %		
(i) r = 12 % $P = \frac{80}{.10} + \frac{0.12(100-80)/0.10}{.10}$ = ₹1040	(ii) r = 8 % $P = \frac{80}{.10} + \frac{0.08(100-80)/0.10}{.10}$ = ₹960	(iii) r = 10% $= \frac{80}{.10} + \frac{0.10(100-80)/0.10}{.10}$ = ₹1000
(d) When dividend pay out ratio is 100 %		
(i) r = 12% $P = \frac{100}{.10} + \frac{0.12(100-100)/0.10}{.10}$ = ₹1000	(ii) r = 8 % $P = \frac{100}{.10} + \frac{0.08(100-100)/0.10}{.10}$ = ₹ 1000	(iii) r = 10% $P = \frac{100}{.10} + \frac{0.10(100-100)/0.10}{.10}$ = ₹1000

Conclusion

From the above analysis , we can draw the following conclusion

i. When r >ke, the company should retain profits (i.e,when r = 12% and ke = 10%).

ii. When r < ke, the payout should be high (when r= 8%, ke= 10%).

iii. When r = ke , the dividend payout does not affect the price of the share (when r = 10% and ke =10%).

5.1.2.2 Gordon's model

Similar to Prof. Walter, Myron Gordon has also developed a model that argues that dividends are relevant and the dividend decision of the firm affects the valuation of the firm.

Assumptions of Gordon's Model

This model is based on the following assumptions:

i. The firm is an all equity firm.

ii. The rate of return on the firm's investment, i.e, r, is constant.

iii. No external financing is employed and retained earnings are the only source for financing the investments.

iv. The retention ratio, denoted by 'b', is constant. The growth rate of the firm, g = br, is also constant.

v. The cost of capital for the firm is also constant. It is greater than the growth rate.

i.e. k > br.

vi. The firm is assumed to have a perpetual life.

vii. There are no corporate taxes.

According to this model, a share's market value is equal to the present value of the future stream of dividends.

Gordon's valuation formula is given below

$$P = \frac{E(1-b)}{ke-br}$$

$$P = \frac{D1}{ke-g} = \frac{D0\,(1+g)}{ke-g}$$

Where,

P = Price of shares

E = Earnings per share

b = Retention ratio

ke = Cost of equity capital

br = g = Growth rate in r,

i.e, rate of return on investment of an all-equity firm

D_0 = Dividend per share

D_1 = Expected dividend at the end of year

Implications of Gordon's Model:

i. When the rate of return on investment of the firm (r) is greater than the required rate of return (k), i.e, when r > k, then the per share price increases as the dividend payout ratio decreases. So, it would be ideal for growth firms to distribute lesser dividends and retain maximum earnings.

ii. When the rate of return (r) is equal to the required rate of return (k), i.e., when r = k, the per share price remains constant and is not affected by the dividend policy. Thus, there is no optimum dividend payout for a normal firm.

iii. When the rate of return (r) is less than the required rate of return (k), i.e., when r < k, the per share price increases as the dividend payout ratio increases. Thus, it would be ideal for the declining firms to distribute their earnings to the shareholders. For such firms, the optimum payout would be 100%.

Illustration 5.1.2

The following information relates to Sumanth Ltd.

Rate of return on investment

(i) 5 % (ii) 12 % (iii) 15%

Cost of Capital (k) = 12 %

Earnings per Share (E) = ₹ 20

Calculate the value of the shares of Sumanth Ltd using Gordon's Model assuming the following:

	D/P ratio (1-b)	Retention Ratio (b)
(a)	100	0
(b)	80	20
(c)	40	60

Solution:

$$P = \frac{E(1-b)}{ke-br}$$

r = 5 %	r = 12%	r =15%
(a) When D/P ratio is 100% or b = 0		
$P = \frac{E(1-b)}{ke-br} = \frac{20(1-0)}{0.12-0 \times 0.05}$ = ₹166.67	$P = \frac{E(1-b)}{ke-br} = \frac{20(1-0)}{0.12-0 \times 0.12}$ = ₹166.67	$P = \frac{E(1-b)}{ke-br} = \frac{20(1-0)}{0.12-0.\times 0.15}$ = ₹166.67
(a) When D/P ratio is 100% or b = .20		
$P = \frac{E(1-b)}{ke-br} = \frac{20(1-.20)}{0.12-0.20 \times 0.05}$ = ₹145.45	$P = \frac{E(1-b)}{ke-br} = \frac{20(1-.20)}{0.12-0.20 \times 0.12}$ = ₹166.67	$P = \frac{E(1-b)}{ke-br} = \frac{20(1-.20)}{0.12-0.20 \times 0.15}$ = ₹177.78
(c) When D/P ratio is 40% or b = .60		
$P = \frac{E(1-b)}{ke-br} = \frac{20(1-.60)}{0.12-0.60 \times 0.05}$ = ₹88.89	$P = \frac{E(1-b)}{ke-br} = \frac{20(1-.60)}{0.12-0.60 \times 0.12}$ = ₹ 166.67	$P = \frac{E(1-b)}{ke-br} = \frac{20(1-.60)}{0.12-0.60 \times 0.15}$ = ₹ 266.67

5.1.2.3 Bird in the hand Argument/ Theory (Gordon's Revised Model)

The basic assumption underlying Gordon's Basic Valuation Model was that the cost of capital, i.e., k, will remain constant for a firm. However, it is not true in practice. In order to incorporate risk and uncertainty, Gordon revised his basic model.

It is based on two assumptions. They are:

(i) investors are risk-averse,

(ii) they put a premium on a certain return and discount/penalise uncertain returns.

As the investors are rational and want to avoid risk, they prefer near dividends than future dividends. So, the bird-in-the-hand argument means that the value of a rupee of dividend income is more than the value of a rupee of capital gain.

Shareholders prefer to act on the principle that a bird in the hand is worth than two in the bushes. They will be willing to pay a premium for the share with the higher dividend rate due to this reason. Therefore, when dividend policy is viewed in the context of uncertainty, the cost of capital cannot be treated as fixed. To minimise the cost of capital, a firm should aim for a high dividend payout ratio and provide a strong dividend yield.

5.1.3 Irrelevance Concept of Dividend (The Theory of Irrelevance)

5.1.3.1 Modigliani and Miller Approach (MM Model) / MM hypothesis

According to this model, the market price of the shares is unaffected by the dividend policy of the firm. The value of a firm is determined by its earning capacity or its investment policy. According to this model, "Under conditions of perfect capital markets, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend policy may have no influence on the market price of the shares."

Assumptions of MM Hypothesis

The following are the assumptions of the MM hypothesis of irrelevance of dividends

(i) There are perfect capital markets.

(ii) Investors are rational.

(iii) Information about the company is freely accessible to everyone at no cost.

(iv) Floatation and transaction costs are absent.

(v) No single investor is strong enough to alter the market price of shares.

(vi) Either taxes do not exist, or the tax rates on dividends and capital gains are the same.

(vii) The firm adheres to a fixed investment policy.

(viii) The future of the firm is free from any risk or uncertainty (However, this assumption was later removed by Modigliani and Miller).

Argument given by Modigliani and Miller

Modigliani and Miller argue that any increase in a firm's value due to the payment of dividends will be exactly offset by a corresponding decrease in the market price of its shares, resulting from the need for external financing. As a result, there is no overall change in the total wealth of the shareholders.

If a company with profitable investment opportunities pays out all its earnings as dividends to shareholders, it will need to raise additional capital from external sources. This could lead to the issuance of more shares or incurring interest costs, which in turn may reduce future earnings per share. As a result, any benefit a shareholder receives from dividends is entirely offset by a decrease in the share's market price, caused by the drop in anticipated future earnings. More precisely, the market price of a share at the beginning of a period equals the present value of the dividend received at the end of the period plus the expected market price of the share at that time.

This can be put in the following formula:

$$P_0 = \frac{D1 + P1}{1+ke}$$

Where, P_0 = Market price per share at the beginning of the period or prevailing market price of a share

D1 = Dividend to be received at the end of the period

P1 = Market price per share at the end of the period

Ke = Cost of Equity Capital or rate of capitalisation

From the above equation $P1 = P_0 (1+ Ke) – D1$

By presuming that investment required by the firm on account of payment of dividends is financed out of the new issue of equity shares, the MM hypothesis can be explained in another form also

Then, the number of shares to be issued can be computed with the help of the following equation:

$$m = \frac{I\,(E - nD1)}{P1}$$

Further, the value of the firm can be ascertained with the help of the following formula:

$$nP_0 = \frac{(n+m)P1 - (1-E)}{1+Ke}$$

Where, m =number of shares to be issued.

I = Investment required.

E = Total earnings of the firm during the period.

P1 = Market price per share at the end of the period.

ke = Cost of equity capital.

n = number of shares outstanding at the beginning of the period.

D1 = Dividend to be paid at the end of the period.

nP_0 = Value of the Firm

Criticism of MM Approach

On account of various unrealistic assumptions, as given below the MM model is criticized.

1. In reality, the situation of the prefect capital market is impossible.
2. All persons will not equally have information about the company.
3. Flotation costs have to be incurred by firms while issuing securities.
4. Taxes exist and there is a difference in tax treatment for dividends and capital gains.
5. A rigid investment policy may not be followed by firms.
6. While doing any transaction, the investors will have to pay brokerage, fees, etc.
7. As compared to further gains, shareholders may prefer current income.

Recap

- ◊ Dividend refers to that part of the profits of the company that is distributed by it among its shareholders.
- ◊ Dividend Decision is the third major financial decision, and it is concerned with the quantum of profits to be distributed among its shareholders.
- ◊ Dividend theories examine the relationship between a company's dividend policy and the valuation of the firm.
- ◊ There are two prominent schools of thought that examine whether the payment of dividends has any effect on the value of the firm or not. One is called the "Theory of Relevance" and the latter is called the "Theory of Irrelevance".
- ◊ Relevance theories, such as Walter's Model and Gordon's Model, suggest that dividends have relevance and can influence the firm's stock price and investor perception.
- ◊ Modigliani and Miller (MM) Irrelevance Theory argues that, under ideal market conditions, dividend policy does not affect a firm's value.
- ◊ Bird–in–the–hand argument means that the value of a rupee of dividend income is more than the value of a rupee of capital gain. As the investors are rational and want to avoid risk, they prefer near dividends than future dividends.

Objective Questions

1. Which theory states dividends affect the value of the firm?
2. Which theory states that dividends have no effect on firm value?
3. Walter's Model and Gordon's Model belong to which category of dividend theories?
4. Modigliani and Miller (MM) Hypothesis supports which type of dividend theory?
5. What are the two main schools of thought in dividend theories?
6. Under what conditions does the MM Hypothesis assume dividend policy is irrelevant?
7. Mention any one criticism of the MM Hypothesis
8. According to MM, what determines the value of a firm?

Answers

1. Relevance
2. Irrelevance
3. Relevance Theories
4. Irrelevance Theory
5. The Theory of Relevance and the Theory of Irrelevance.
6. Under perfect market conditions.
7. The situation of the prefect capital market is impossible.
8. The firm's earning capacity or investment policy.

Self-assessment Questions

1. Explain Walters's model
2. Discuss Gordon's model

3. What do you mean by bird-in-the-hand argument?
4. What do you mean by MM hypothesis?
5. Explain the residual theory of dividend.

Assignments

1. Differentiate between the Relevance and Irrelevance theories of dividends.
2. How does Walter's model explain the relevance of dividend policy in influencing a firm's market value?
3. How does the bird-in-the-hand theory conflict with the MM dividend irrelevance theory?

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Unit 2
Dividend Policy

Learning Outcomes

After studying this unit, learners will be able to:

- ◊ gain insight into the objectives of dividend policy
- ◊ explain the factors affecting the dividend policy of a firm
- ◊ familiarise the different types of dividend policy

Prerequisite

Rahul had recently joined the finance department of a growing consumer goods company. As the financial year came to an end, senior management asked him to prepare a note on the company's dividend policy for the board. Rahul soon realized that deciding dividends was not a simple matter of sharing profits; it required clear objectives, careful analysis of several factors, and the selection of an appropriate policy.

While reviewing past records, Rahul understood the objectives of dividend policy. The company wanted to provide a regular income to its shareholders to maintain their confidence, but it also needed to retain part of its earnings to fund new product launches and expansion plans. The ultimate objective was to maximize shareholders' wealth without weakening the company's financial position.

Next, Rahul examined the factors affecting dividend policy. Although the company had earned good profits, its cash position was tight due to high inventory levels. Earnings had been stable over the years, which supported a consistent dividend, but upcoming growth opportunities required sufficient retained earnings. Rahul also noted legal restrictions and the preferences of shareholders, many of whom depended on dividends for regular income.

Finally, Rahul explored the different types of dividend policy. He observed that in earlier years the company followed a stable

dividend policy, paying a fixed dividend annually. In years of exceptional profits, the company declared an additional dividend, while during difficult periods it avoided sudden cuts to maintain investor confidence.

By the time Rahul submitted his report, he clearly understood how firms design dividend policies in practice by aligning objectives, evaluating internal and external factors, and adopting a suitable type of dividend policy that balances shareholder expectations with long-term business growth.

Keywords

Dividend Policy, Factors, Objectives

Discussion

5.2.1 Meaning of Dividend Policy

Dividend policy is a crucial aspect of financial management. It encompasses a company's strategic approach in determining the portion of profits to be distributed to its shareholders as dividends versus the amount to be retained for reinvestment for financing the future expansion activities and growth of the business. It influences the investor confidence and expectations, and the market value of the business concern. The relevance of dividend and retention lies in how a firm allocates its earnings between immediate distribution to shareholders and reinvestment for future growth. Dividends provide a tangible return to shareholders. On the other hand, retained earnings are a crucial source of internal financing for the expansion, innovation, and long-term value creation of the firm. The decision to pay dividends or retain profits must align with the firm's financial goals, investment opportunities, and liquidity position. Striking the right balance between dividend payouts and profit retention is essential for sustaining growth while maintaining shareholder satisfaction.

The dividend policy involves deciding how much profit has to be distributed to shareholders and how much profit has to be retained for financing the future activities of the business.

5.2.2 Objectives of Dividend Policy

The following are the objectives of dividend policy.

(i) Maximization of Shareholder Wealth

It is one of the predominant objectives of dividend policy. A well-defined dividend policy acts as an indicator of the financial health and future prospects of the company.

A well-framed dividend policy will help in increasing the confidence of the investors. This will ultimately help in positively impacting the market value of shares.

(ii) Providing Stable Returns to Shareholders

Another key objective of the dividend policy is to ensure stable and predictable returns to shareholders. Income-focused investors such as retirees and institutions rely on regular dividend income. The companies can build trust and attract long-term investment by maintaining a consistent or gradually increasing dividend payout policy. Even when profits fluctuate, stability in dividends will help to reflect prudent financial management.

(iii) Optimal Capital Allocation

The aim of the dividend policy is to balance the use of retained earnings between reinvestment in profitable opportunities and returning surplus cash to shareholders. It is better to distribute profits as dividends if the company has no worthwhile investment opportunities with positive net present value (NPV). This approach ensures optimal capital allocation and prevents the misuse of excess funds by the management.

(iv) Signalling Effect to the Market

Dividend policy also plays a signalling role. Based on signalling theory, adjustments in dividend payouts communicate key insights about a company's expected future performance. For example, a considerable increase in dividends can be considered as a positive indication that management anticipates stronger future earnings, whereas a reduction in dividends may suggest potential financial difficulties.

(v) Maintaining Target Capital Structure

An effective dividend policy also helps in maintaining the company's desired capital structure. By controlling the level of retained earnings (through dividend payout), companies manage their debt-equity ratio, which impacts their cost of capital and risk profile. Excessive retention may lead to over-capitalization, whereas very high payouts could compel firms to borrow unnecessarily, increasing financial risk.

5.2.3 Factors Determining Dividend Policy

The dividend policy of a company is determined by various factors. They are discussed below:

(i) Nature of the Industry

The dividend policy of a company is influenced by the type of industry it operates in. Some industries have a stable and consistent demand for their products regardless of economic conditions. In contrast to this, there are industries that face fluctuations in their earnings. Such industries should retain a larger portion of profits earned during prosperous periods. This will help to ensure that sufficient funds are available to maintain reasonable dividend payments during downturns. In short, a higher dividend payout ratio can be maintained by those industries having a stable demand for their

products, whereas those industries having unstable demand (i.e. cyclical industries) should maintain a lower payout ratio.

(ii) Age of the Company:

The dividend decision of a company is also influenced by its age. A newly established company has to limit the payment of dividend and retain a substantial part of earnings for financing its future growth and development. On the other hand, older companies that have established sufficient reserves can pay liberal dividends.

(iii) Stability of Dividends

Another factor that determines the dividend policy of a firm is the stability of dividends. Stability of dividends refers to the practice of maintaining consistency in the amount of dividends paid. The shareholders of a company always favour a stable dividend. The stability of dividends can take any of the following three forms: (1) constant dividend per share, (ii) constant/stable Dividend Payout (D/P) ratio, and (iii) constant dividend per share plus extra dividend.

Constant dividend per share can be followed by companies whose earnings are expected to remain stable over a number of years. It is also employed by companies having sufficient reserves to pay dividends during the years of low profits. The policy of Constant payout ratio implies paying a fixed percentage of net earnings every year. The policy of Constant low dividend per share plus some extra dividend can be followed by firms whose earnings experience fluctuations from year to year.

(iv) Future Financial Requirements.

Another crucial factor that affects the dividend policy is the future financial requirements. If the company has profitable investment opportunities in the future, then it must convince the shareholders of the need to retain the profits for financing the investment activities of the company. The shareholders must be made aware that such retention will aid in increasing the future earnings and stabilising the financial position of the company. However, if profitable investment opportunities do not exist, then the company may not retain its earnings. Thus, a high payout ratio should be followed by a concern having less investment opportunities, as compared to those having profitable investment opportunities.

(v) Trend of the Earnings:

Another important factor that affects the dividend policy of a company is the amount and the trend of the earnings of company. It marks the starting point for framing the dividend policy. The dividends should be generally paid out of the current year's earnings only, as retained earnings become part of the permanent investment in the business in order to earn current profits. While making the dividend decision, the company must also consider the past trend of the company's earnings.

(vi) Desire of Shareholders

A company should give due consideration to the desire of the shareholders for dividends when framing dividend policy. The shareholders' desire for dividends is

determined by their economic status. Retired persons, widows, and economically backward persons view dividends as a source of funds to meet their daily expenses. So, in order to benefit such learners, regular dividends should be paid. However, wealthy investors in a high tax bracket may not benefit from the current dividend. In order to benefit such investors, lower current dividends and high capital gains may be offered. In short, the interests of the various groups of investors must be taken into consideration before formulating the dividend policy.

(vii) Control Objectives

The payment of high dividends out of the earnings of a company may lead to the dilution of control and a reduction in earnings for the existing shareholders. The company may be forced to raise new shares to finance future financial requirements if the dividend payout ratio is high. The issue of new shares will result in the dilution of control of existing shareholders if they are not able to buy the additional shares issued by the company. In addition to this, the issue of new shares will lead to an increase in the number of equity shares and a reduction in the earnings per share and price of the company's shares in the market. So, if the company intends to retain control of the existing shareholders, it will be desirable to declare lower dividends and retain earnings to fund the future financial requirements of the company.

(viii) Availability of Liquid Resources

Another major factor that influences the dividend policy of a firm is the availability of liquid resources. Although a firm may have sufficient available profits to declare dividends, yet it may not be able to pay dividends if it does not have sufficient liquid resources. Hence, the liquidity position of the company is an important consideration in paying dividends.

(ix) Legal Restrictions:

Sections 123 to 127 of the Companies Act 2013 contain the legal provisions related to dividends. They provide a legal framework within which the dividend policy can be formulated. According to these provisions, dividends can only be paid out of the current profits or the past profits after providing for depreciation or out of the money that is provided by the government for dividend payment in pursuance of the guarantee provided by the government.

(x) Taxation Policy

The dividend decision of a company is also affected by the taxation policy of the government. A high or low rate of business taxation affects the net earnings of a company (after tax), which in turn affects its dividend policy. The income–tax status of the shareholders also dictates the dividend policy of a company.

5.2.4 Types of Dividend Policy

Dividend policy refers to the strategy a company adopts to decide how its earnings are to be allocated. A company has to decide the proportion of profits to be paid as dividends and the proportion of profits to be retained for business growth. While some companies prefer paying regular dividends, other companies will prefer to reinvest most of their earnings back into the business.

The following are the different types of dividend policy:

1. Regular Dividend Policy

A dividend paid consistently at a regular or fixed rate is known as a regular dividend. Such dividends are especially preferred by investors like retirees, widows, and individuals from financially weaker sections, as they rely on a steady source of income. A regular dividend policy helps to build a track record of profitability for the company, enhances shareholder confidence, supports long-term financing, and contributes to the stability of the company's share price in the market. However, it is important to note that only well-established companies with stable earnings can afford to maintain regular dividends.

2. Stable Dividend Policy / Stability in Dividends

Stability in dividends refers to the situation where there is a consistency in dividend payments. In simple words, it means the payment of a certain minimum amount of dividend on a regular basis. There are three forms of stable dividend policy. They are:

(a) Constant dividend per share

Some companies follow a policy of paying a fixed dividend per share irrespective of the level of earnings year after year. For the payment of dividends, such firms create a Dividend Equalisation Reserve. This enables them to pay the fixed dividend even if the earnings are not sufficient or when there are losses. This policy is suitable for firms whose earnings are expected to remain stable over a number of years.

(b) Constant payout ratio

It means the practice of paying a fixed percentage of net earnings as dividends every year. However, in this policy, the amount of dividend fluctuates in direct proportion to the earnings of the company. Firms often favor a constant payout policy because it aligns with their financial capacity to distribute dividends.

(c) Stable rupee dividend plus extra dividend

Certain companies adopt a policy of distributing a consistently low dividend per share along with an additional dividend during years of high profitability. This approach is particularly appropriate for firms with earnings that change significantly from year to year.

3. Irregular Dividend Policy

If a company does not pay dividends consistently, either in terms of amount or frequency, then such a dividend distribution strategy is referred to as an Irregular Dividend Policy. Under this policy, dividends are declared only when the company has excess profits or surplus cash, and management deems it appropriate. There is no fixed schedule or rate for dividend payments. Some companies follow irregular dividend payments when there is uncertainty of earnings, business operations are unsuccessful, and there is a shortage of liquid resources.

4. No Dividend Policy

A company may follow a policy of paying no dividends when the working capital position is unfavourable or when the firm needs to keep aside the funds for the future.

Recap

- ◊ Dividend Policy encompasses a company's strategic approach in determining the portion of profits to be distributed to its shareholders as dividends versus the amount to be retained for reinvestment for financing the future expansion activities and growth of the business.
- ◊ Dividend Policy aims to Maximize Shareholder Wealth, ensure Stable Returns to Shareholders, ensure Optimal Capital Allocation. Dividend policy also helps in providing and maintaining a target capital structure.
- ◊ The Dividend Policy of a company is affected by numerous factors such as the nature of the industry, the age of the company, the stability of dividends, the trend of earnings, the future financial requirements, the control objectives, the desire of shareholders, the availability of liquid resources, legal restrictions, and the taxation policy of the government.
- ◊ Regular Dividend Policy, Stable Dividend Policy, Irregular Dividend Policy, and No Dividend Policy are the different types of Dividend policy.

Objective Questions

1. State two objectives of Dividend Policy.
2. Which type of industries can maintain a higher dividend payout ratio?
3. What type of dividend payout ratio should industries with unstable demand maintain?

4. What does stability of dividends mean?
5. Which companies can follow a constant dividend per share policy?
6. What does a constant payout ratio policy mean?
7. Which group of investors may prefer lower current dividends and higher capital gains?
8. What should a company do if it has profitable investment opportunities in the future?
9. A dividend paid consistently at a regular or fixed rate is known as?
10. The practice of paying a fixed percentage of net earnings as dividends every year is referred to as?

Answers

1. Maximization of shareholder wealth, providing stable returns to shareholders
2. Industries with stable and consistent demand for their products
3. A lower dividend payout ratio.
4. It refers to maintaining consistency in the amount of dividends paid over time.
5. Companies whose earnings are stable over a number of years.
6. Paying a fixed percentage of net earnings as dividends each year.
7. Wealthy investors in higher tax brackets.
8. Retain a larger portion of its profits to finance those investments.
9. Regular dividend
10. Constant payout ratio

Self-assessment questions

1. What do you mean by dividend policy?
2. Elucidate the factors determining dividend policy.
3. Discuss the objectives of dividend policy.
4. Discuss the different types of dividend policy.

Assignments

1. ABC Ltd. is a company in the FMCG sector with a stable demand for its products. It has consistently earned steady profits over the past five years. The majority of its shareholders are small investors who rely on dividends for regular income. The company, however, is planning to expand its operations into a new market, which will require significant capital investment.

2. Analyse and recommend a suitable dividend policy for ABC Ltd., considering:

   ◊ Stability of earnings

   ◊ Shareholder preferences

   ◊ Future financial requirements

3. Sunrise Electronics Ltd. is a medium-sized company engaged in manufacturing home appliances. Over the last few years, the company has experienced steady growth in sales and profits. It operates in a stable industry with consistent demand. The company has moderate cash reserves and is planning to expand its production capacity in the near future. Its shareholders include both small investors who depend on dividends for regular income and wealthy investors who prefer capital appreciation. The management is currently reviewing its dividend policy.

4. Analyze and suggest an appropriate dividend policy for Sunrise Electronics Ltd., taking into account the following factors affecting dividend policy:

   1. Nature of the industry
   2. Stability of earnings and dividends
   3. Shareholders' preferences
   4. Future financial requirements
   5. Availability of cash and reserves

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BLOCK 6

Working Capital Management

Unit 1
Introduction to Working Capital

Learning Outcomes

After completing this unit, learners will be able to:

- ◊ explain the different working capital concepts
- ◊ identify different types of working capital
- ◊ comprehend the significance of working capital
- ◊ describe factors influencing working capital
- ◊ aware of the evils of excess or inadequate working capital.

Prerequisite

Rohan had just joined the accounts department of a small manufacturing firm. On his first day, he noticed that the company struggled to pay suppliers on time, even though it had plenty of raw materials sitting in the warehouse. His manager explained that this was a working capital problem the company either had too much money tied up in stock and receivables or too little cash on hand to meet daily expenses.

Over the next few weeks, Rohan learned about the different concepts of working capital. He understood that gross working capital referred to all current assets, while net working capital was the difference between current assets and current liabilities. He also learned about the types: permanent working capital, which is always needed, and temporary working capital, which rises and falls with seasonal demand.

Rohan saw how significant working capital was for smooth operations. When the company had the right amount, suppliers were paid on time, production ran smoothly, and employees

received salaries without delays. But too much working capital meant excess stock and idle cash, reducing profitability, while too little caused delayed payments, halted production, and unhappy customers.

Through this experience, Rohan realized that managing working capital carefully was crucial for the company's liquidity, efficiency, and overall financial health.

Keywords

Working capital, Gross working capital, Net working capital, Operating cycle, Liquidity.

Discussion

A business needs two main types of capital to run efficiently and effectively. The first type is fixed capital, which is used to buy long-term assets like buildings, machinery, or equipment needed to start or expand production. This money stays invested in the business for a long time because these assets are not meant for resale but for continuous use in operations.

The second type is working capital, which is the money needed for the day-to-day running of the business. It is used to buy raw materials, pay wages, and cover everyday expenses. Working capital supports short-term assets such as cash, debtors, inventories, and marketable securities. Since the money invested in these assets keeps moving from cash to goods, then to sales, and back to cash, it is called revolving or circulating capital. In simple terms, working capital keeps the daily operations of a business running smoothly without interruptions.

6.1.1 Working Capital - Meaning and Definitions

Working capital refers to the funds a business requires to meet its day-to-day operating expenses, such as purchasing raw materials, paying wages, covering electricity charges, and managing other short-term obligations.

It represents the difference between current assets and current liabilities and ensures smooth and uninterrupted business operations.

Working capital = current assets- current liabilities

According to Genestenberg, "Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, for example, from cash to inventories, inventories to receivables, receivables into cash."

According to Shubin" working capital is the amount of funds necessary to cover the cost of operating the enterprise."

6.1.2 Concepts of Working Capital

Working capital can be understood through two main concepts:

(A) Balance Sheet Concept

(B) Operating Cycle or Circular Flow Concept

A- Balancesheet Concept

Under the balance sheet approach, working capital can be interpreted in two ways:

1. Gross Working Capital – It refers to the total amount of a firm's current assets.
2. Net Working Capital – It represents the difference between current assets and current liabilities, i.e.,

Net Working Capital = Current Assets – Current Liabilities

Net working capital can be positive or negative, depending on the relationship between current assets and current liabilities.

- ◊ When current assets exceed current liabilities, the working capital is positive, indicating a sound liquidity position.
- ◊ When current liabilities exceed current assets, the working capital becomes negative, showing a shortage of liquid funds.

Current assets are those that can be easily converted into cash within a short period, generally within one accounting year or less. Current liabilities are obligations that a firm expects to settle in the normal course of business, typically within the same accounting year using its current assets or operating income.

Examples of Current Assets are: Constituents of Current Assets

i. Bills Receivable.

ii. Sundry debtors or Accounts receivable.

iii. Accrued or outstanding income.

iv. Prepaid expenses, short-term marketable securities, etc.

v. Inventory (Stock of Raw Materials, Work in Progress and Finished Goods).

vi. Cash in hand and at Bank.

Examples of current liabilities are: Constituents of Current Liabilities

i. Bills payable.

ii. Sundry creditors or accounts payable.

iii. Accrued or outstanding expenses.

iv. Short-term loans, advances and deposits.

v. Dividends payable.

vi. Bank overdraft.

vii. Provision for taxation.

Let us understand the concept of working capital with the help of an example.

The following example explains both the concepts of working capital:

Liabilities	**Amount**	**Assets**	**Amount**
Equity shares	300000	Goodwill	20000
8% debentures	100000	Land and buildings	250000
Reserve and surplus	50000	Plant and machinery	100000
Sundry creditors	150000	Inventories: Finished goods Work in progress	60000 40000
Bills payable	30000	Prepaid expense	20000
Outstanding expense	20000	Marketable securities	60000
Bank overdraft	50000	Sundry debtors	90000
Provision for taxation	20000	Bills receivables	20000
Proposed dividend	30000	Cash and bank balance	90000
Total	**750000**	Total	**750000**

• **Gross Working Capital (Total current assets)**

Current assets = Inventories (60,000 + 40,000) + Prepaid Expense 20,000 + Marketable Securities 60,000 + Sundry Debtors 90,000 + Bills Receivable 20,000 + Cash & Bank 90,000 = **Rs. 380,000**

• **Current Liabilities**

= Sundry Creditors 150,000 + Bills Payable 30,000 + Outstanding Expenses 20,000 + Bank Overdraft 50,000 + Provision for Taxation 20,000 + Proposed Dividend 30,000 = **Rs. 300,000**

• **Net Working Capital = Current Assets − Current Liabilities**

= 380,000 − 300,000 = **Rs. 80,000**

(B) Operating Cycle or Circular Flow Concept

Working capital represents the portion of a firm's capital used to finance its short-term or current assets, such as cash, marketable securities, debtors, and inventories. The funds invested in these assets circulate continuously they are converted into cash, which is again used to acquire other current assets. Because of this continuous movement, working capital is also referred to as revolving or circulating capital.

The circular flow concept of working capital is derived from the firm's operating or working capital cycle. This cycle begins with the purchase of raw materials and other inputs, continues through their transformation into work-in-progress and then finished goods (with additional labour and service costs at each stage), and ends with the sale of these goods and the collection of cash from customers.

Debtors and receivables and ultimately realisation of cash and this cycle continues again from cash to purchase of raw material and so on. The speed/time duration required to complete one cycle determines the requirements of working capital-longer the period of cycle, larger is the requirement of working capital.

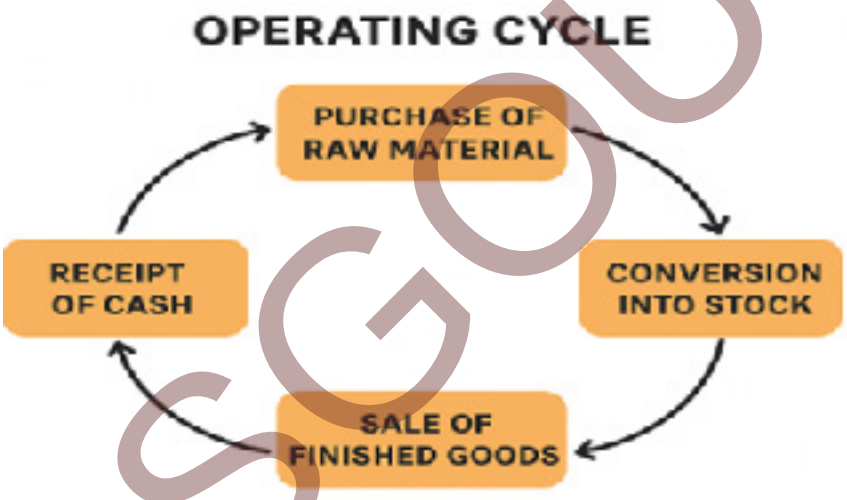


Fig 6.1.1 Operating Cycle

There are two types of Working capital cycle

- ◊ Gross operating cycle and
- ◊ Net operating cycle

Gross Operating Cycle = Raw Material Conversion Period + Work in Progress Conversion Period + Finished Goods Conversion Period + Receivables Conversion Period

Net Operating Cycle period = Gross Operating Cycle – Payable Deferral Period

The following formula can be used to determine the conversion period.

1. Raw material Conversion Period = $\frac{average\ stock\ of\ raw\ material}{raw\ materials\ consumption\ per\ day}$

2. Work – in – progress Conversion Period = $\frac{avaerage\ stock\ of\ work\ in\ progress}{total\ cost\ of\ production\ per\ day}$

3. Finished Goods Conversion Period = $\frac{average\ stock\ of\ finished\ goods}{total\ cost\ of\ goods\ sold\ per\ day}$

4. Receivables Conversion Period = $\frac{average\ accounts\ receivables}{net\ credit\ sales\ per\ day}$

5. Payables Deferral Period = $\frac{avaerage\ payables}{net\ credit\ purchases\ per\ day}$

From the following data, compute the duration of the operating cycle for each company:

Particulars	**X Ltd (Rs.)**	**Y Ltd (Rs.)**
Stock: Raw Material	45,000	60,000
Work-in-Progress	25,000	40,000
Finished Goods	20,000	30,000
Purchase / Consumption of Raw Material	1,80,000	2,00,000
Cost of Goods Produced / Sold	1,20,000	3,00,000
Sales (All Credit)	3,00,000	3,80,000
Debtors	70,000	1,20,000
Creditors	15,000	20,000

Assume 360 days per year for computational purposes

Solution

6.1.3 Classification or kinds of working capitals

Working capital can be categorized in two main ways:

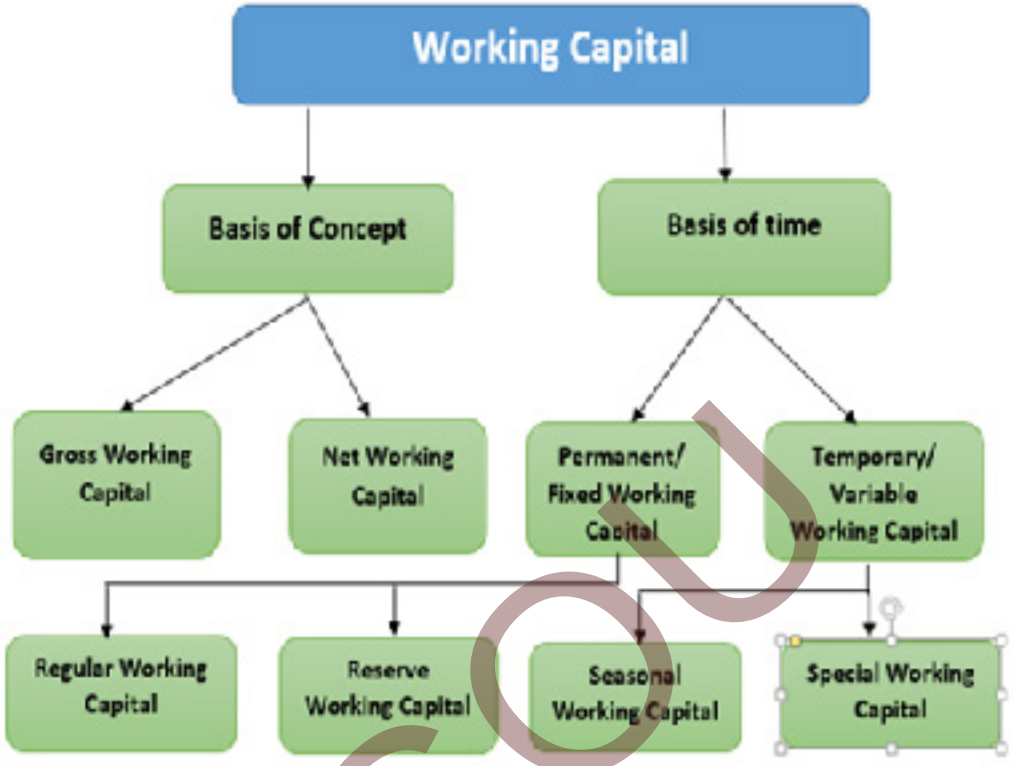
(a) Based on concept, and

(b) Based on time.

From the conceptual point of view, it is divided into gross working capital and net working capital, as explained earlier. This classification is particularly significant for financial managers when making funding and investment decisions.

From the time perspective, working capital is classified into two types:

1. Permanent or fixed working capital, and
2. Temporary or variable working capital



Computation of Operating Cycle		
Particulars	X Ltd	Y Ltd
(a) **Raw Material Conversion / Holding period**$=\frac{STOCK\ OF\ RAW\ MATERIALS}{RAW\ MATETIALS\ CONSUMPTION\ PER\ DAY}$	$=\frac{45000}{180000}*360=90\ days$	$=\frac{60000}{200000}*360$ =108 days
(b) **Work – in – progress Conversion Period** $=\frac{STOCK\ OF\ WORK\ IN\ PROGRESS}{COST\ OF\ GOODS\ PRODUCED\ PER\ DAY}$	$=\frac{25000}{120000}*360=75\ days$	$=\frac{40000}{300000}*360=48\ days$
(c) **Finished Goods Holding Period** $=\frac{stock\ of\ finished\ goods}{cost\ of\ goods\ sold\ per\ day}$	$=\frac{20000}{120000}*360=60\ days$	$=\frac{30000}{300000}*360=36\ days$
(d) **Receivables Conversion Period** $=\frac{debtors}{credit\ sales\ per\ day}$	$=\frac{70000}{300000}*360=84\ days$	$=\frac{120000}{380000}*360=114\ days$
(e) **Payables Deferral Period** $=\frac{creditors}{purchase\ per\ day}$	$=\frac{15000}{180000}*360=30\ days$	$=\frac{20000}{200000}*360=36\ days$

Gross duration of Operating Cycle = (a) +(b)+(c)+(d)	309 days	296 days
Net duration of Operating Cycle = (a) +(b)+(c)+(d) – (e)	279 days	260 days

Fig 6.1.2 Classification of Working Capital

1. Permanent or fixed working capital

Permanent or fixed working capital refers to the minimum amount of funds that a business must maintain to ensure the efficient use of its fixed assets and smooth operation of day-to-day activities. Every enterprise needs to hold a certain minimum level of current assets, such as raw materials, work-in-progress, finished goods, and cash on a continuous basis to conduct its regular business operations. This constant investment in current assets is known as permanent or fixed working capital, as it remains permanently tied up in the business.

2. Temporary or Variable Working Capital:

Temporary or variable working capital represents the additional funds required to meet seasonal fluctuations or special business needs. It can be further divided into seasonal working capital and special working capital. Seasonal working capital is needed to support higher activity levels during busy seasons, while special working capital is required to handle extraordinary situations such as launching new marketing campaigns, expanding production, or undertaking research projects.

6.1.4 Significance of Working Capital

- ◊ **Maintain Solvency:** Having enough working capital helps a business stay financially stable. It ensures that the firm can easily meet its short-term debts and obligations when they become due.
- ◊ **Regular Supply of Raw Materials:** Adequate working capital allows a business to buy raw materials on time. This ensures that production continues smoothly without any interruptions.
- ◊ **Regular Payment of Wages and Daily Expenses:** When a business has sufficient working capital, it can regularly pay salaries, wages, and other daily expenses. This boosts employee morale, improves efficiency, reduces waste, and lowers production costs, all of which lead to higher profits.
- ◊ **Increase in Goodwill:** A firm that pays its short-term dues on time builds a good reputation. Hence, adequate working capital helps in improving the goodwill of the business.
- ◊ **Easy Availability of Loans:** Businesses with strong working capital and a

good credit record can easily get loans from banks and financial institutions on favourable terms.

- ◊ **Helps in Availing Cash Discounts:** Firms with enough working capital can make prompt payments to suppliers and enjoy cash discounts on purchases, thereby reducing overall costs.
- ◊ **Exploitation of Favourable Market Conditions:** Adequate working capital allows a business to take advantage of market opportunities, such as purchasing goods in bulk at lower prices or holding inventory until prices increase, leading to higher profits.
- ◊ **Ability to Face Crisis:** A firm with sufficient working capital can better handle unexpected situations like economic downturns or recessions, as it has enough funds to continue operations.
- ◊ **Quick and Regular Return on Investments:** Investors prefer businesses that provide steady returns. With enough working capital, a company can pay regular dividends without needing to retain all its profits. This builds investor confidence and makes it easier to attract new funds in the future.

6.1.5 Factors Determining Working Capital Requirements

The working capital needs of a business depend on several internal and external factors. Some of the key determinants are explained below:

1. Nature of business

The type of business largely influences the level of working capital required. Public utility undertakings like railways, electricity boards, and water supply companies need minimal working capital since they provide services rather than tangible products. Their operations mainly involve cash transactions, and little or no funds are tied up in inventories or receivables. In contrast, trading and financial firms need substantial working capital because they invest heavily in current assets such as stock, receivables, and cash, though their investment in fixed assets is relatively smaller. Manufacturing firms require a moderate amount of working capital, as they must maintain inventories and process materials while also holding fixed assets.

2. Size of operations

The scale of a firm's operations significantly affects its working capital needs. Larger firms typically require more working capital to support higher levels of production and sales, while smaller firms need less. However, inefficient use of resources or high overhead costs can increase the working capital requirements even for smaller firms.

3. Production policy of the firm

Industries affected by seasonal demand must adjust their working capital based on their production policy. Firms can either maintain steady production throughout the year, accumulating inventories during slack seasons to meet peak-season demand or reduce production during off-seasons and increase it later. The first approach requires more working capital to finance inventory storage, while the second requires less.

4. Manufacturing process

The length of the production process directly influences the working capital requirement. When the manufacturing cycle is long, raw materials, labour, and other costs remain tied up for a longer period, increasing the need for working capital. Conversely, a shorter production process requires less.

5. Working capital cycle/ operating cycle

The working capital cycle refers to the time taken to convert cash into raw materials, process them into finished goods, sell the goods, and finally collect cash from customers. The longer this cycle, the greater the working capital requirement. Faster turnover of this cycle reduces the need for working capital.

6. Rate of stock turnover

The speed at which a firm sells its inventory affects its working capital needs. A higher stock turnover rate means goods are sold quickly, reducing the need for working capital. Conversely, slower sales tie up funds in inventory for longer, requiring more working capital.

7. Credit policy

A firm's credit terms with suppliers and customers also affect working capital. A business that buys on credit and sells for cash needs less working capital. However, a firm that pays suppliers immediately but allows customers credit will need more, as a significant portion of funds remains locked in debtors or receivables.

8. Earning capacity and dividend policy

Firms with higher earning potential can generate more internal funds and thus depend less on external working capital. Likewise, a company's dividend policy matters: a firm paying high cash dividends regularly will need more working capital than one that retains profits to finance its operations.

9. Rate of growth of business

As a business expands, its working capital requirements rise. For moderate growth, retained earnings may be enough to meet additional working capital needs. However, rapidly expanding firms must arrange additional funds to support their increased operational scale.

10. Seasonal variations

In industries where raw materials are seasonally available, firms must purchase and store materials in bulk during specific periods to maintain year-round production. This leads to a temporary rise in working capital requirements. Generally, firms need more working capital during peak seasons than during off-seasons.

11. Business cycle

Economic fluctuations also affect working capital needs. During a boom, firms require more working capital due to higher sales, increased prices, and business

expansion. Conversely, during a recession or depression, sales decline and collections become difficult, leading to idle working capital.

12. Price level changes

Inflation or rising prices increases the cost of raw materials, labour, and other inputs. To maintain the same level of operations, firms must invest more in working capital during inflationary periods.

13. Other factors

Other influences include management's efficiency, the firm's operational policies, supply chain irregularities, import restrictions, the structure of assets, and the availability of banking and credit facilities.

6.1.6 Evils or Inadequate Working Capital

Every business enterprise must maintain an optimum level of working capital to ensure smooth and uninterrupted operations. Working capital should neither be excessive nor insufficient; both situations are undesirable. While excessive working capital results in inefficient use of resources, inadequate working capital is even more dangerous as it can threaten the very survival of the firm.

Below are the major disadvantages and harmful effects of both extremes:

6.1.6.1 Disadvantages of Excess or Redundant Working Capital

1. Idle and unproductive funds

When a business has more working capital than required, a portion of its funds remains idle instead of being invested productively. Idle funds do not generate returns, thereby reducing the overall profitability and efficiency of the enterprise.

2. Overinvestment in inventories

Surplus working capital often leads to overstocking of raw materials, work-in-progress, and finished goods. This can cause wastage, spoilage, theft, and higher storage and insurance costs. Moreover, blocked funds in excess stock reduce liquidity.

3. Loose Credit Policy and Rising Bad Debts:

A business with abundant working capital may become lenient in extending credit to customers. Such a liberal credit policy may increase sales in the short term, but also raises the risk of delayed payments and bad debts.

4. Decline in Operational Efficiency:

Availability of surplus funds sometimes leads to poor cost control, and carelessness among employees and management. This reduces the overall productivity and operational discipline of the firm.

5. Strained Financial Relationships:

When a company maintains excessive liquidity, it may not utilise loans and credit facilities efficiently. This could weaken relationships with banks and other financial institutions, as funds lent to the firm are not being used effectively.

6. Fall in Shareholder Value:

A low return on investment due to inefficient use of funds can negatively affect the market price of shares. Investors lose confidence when profits decline because of idle resources.

7. Speculative Investments:

Surplus working capital may tempt management to engage in speculative or risky ventures such as trading in securities or commodities. This can endanger the financial stability of the enterprise.

8. Reduced Financial Discipline:

Easy access to excess cash may create a false sense of security, leading to indiscipline in spending and weak budgetary control

6.1.6.2 Disadvantages or Dangers of Inadequate Working Capital

1. Loss of Credit Reputation:

Firms with insufficient working capital often fail to meet their short-term obligations on time, such as payment to creditors, suppliers, and employees. This damages the firm's goodwill, reliability, and creditworthiness in the market.

2. Inability to Purchase in Bulk:

Due to lack of liquid funds, the firm cannot take advantage of cash discounts or bulk purchase opportunities. As a result, the cost of materials and operations increases.

3. Loss of Growth and Expansion of Business Opportunities

A shortage of working capital restricts a firm's flexibility to seize profitable opportunities, such as launching new products, expanding operations, or responding quickly to changes in demand.

4. Irregular Production and Supply:

Insufficient funds disrupt the purchase of raw materials, payment of wages, and other operational expenses. This leads to irregular production schedules, delays in deliveries, and customer dissatisfaction.

5. Underutilisation of Fixed Assets:

Without adequate working capital, fixed assets like machinery, equipment, and buildings cannot be used to their full capacity. Idle machinery increases overhead costs

and reduces efficiency.

6. Increased Borrowing and Interest Costs:

Firms facing working capital shortages often depend on short-term borrowings at high interest rates. This increases financial burden and further reduces profitability.

7. Decline in Profitability:

Due to operational inefficiencies, production delays, and higher costs, the overall profitability of the business declines sharply.

8. Reduced Morale and Employee Productivity:

When a firm struggles to pay wages or meet daily expenses on time, employee morale and productivity drop, leading to further inefficiency and loss.

9. Risk of Insolvency:

Persistent shortage of working capital can eventually lead to a liquidity crisis, making it impossible to continue operations and pushing the firm toward insolvency or closure.

Recap

- ◊ Working capital is the amount of funds necessary to cover the cost of operating the business.
- ◊ Adequate working capital ensures smooth operations and financial stability.
- ◊ Gross Working Capital refers to the total amount of a firm's current assets.
- ◊ Net Working Capital represents the difference between current assets and current liabilities.
- ◊ Permanent or fixed working capital refers to the minimum amount of funds that a business must maintain to ensure the efficient use of its fixed assets and smooth operation of day-to-day activities
- ◊ Temporary or variable working capital represents the additional funds required to meet seasonal fluctuations or special business needs.
- ◊ The circular flow concept of working capital is derived from the firm's operating or working capital cycle

Objective Questions

1. What is working Capital?
2. What is Permanent working Capital?
3. Give an equation for Working capital.
4. What is Temporary working Capital?
5. Mention any two factors determining working capital.
6. What is the another name of Temporary working capital?
7. What is liquidity?
8. What is the meaning of Production cycle?

Answers

1. The funds required for day to day operations of a business.
2. Minimum level of working capital required at all times.
3. Current Assets - Current liabilities.
4. Temporary Working Capital is fund that vary with cyclical or seasonal changes.
5. Nature of Business, size of operation.
6. Variable working capital.
7. The ability of a firm to meet its short term obligations.
8. The time gap between raw materials and finished goods.

Self-assessment Questions

1. Explain the significance of adequate working capital in a business.
2. What are the consequences of excess working capital?
3. List any four factors influencing working-capital requirements.

4. Differentiate between permanent and temporary working capital.
5. Why is inadequate working capital harmful to a firm?
6. Explain the various components of working capital with suitable examples.
7. Illustrate the concepts of gross and net working capital using your own example.

Assignments

1. Describe the significance of maintaining adequate working capital. Analyse the consequences a business may face due to excess as well as inadequate working capital.
2. Discuss the major factors influencing the working-capital requirements of a business. Illustrate your answer with suitable examples.
3. Explain the concepts of gross working capital and net working capital. Prepare an example to show how both are calculated and interpret the results.
4. Working capital is considered the lifeblood of a business. Examine this statement and justify the need for efficient working-capital management

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Unit 2

Management of Current Assets

Learning Outcomes

After studying this unit, learners will be able to:

- ◊ explain Cash Management.
- ◊ discuss Inventory Management.
- ◊ narrate Receivable Management.

Prerequisite

Every business, whether big or small, must manage its day-to-day financial and operating activities carefully to run smoothly. Three important areas that support the continuous functioning of a business are Cash Management, Inventory Management, and Receivable Management. Cash ensures that the business can meet its daily expenses; inventory ensures that goods are available for sale or production; and receivables represent the money that customers owe when goods are sold on credit. If any one of these areas is neglected, the business may face cash shortages, stockouts, or delays in collections, all of which can disrupt business operations. Therefore, understanding how to plan cash flows, maintain the right level of stock, and manage credit customers is essential for effective working capital management. This unit introduces these three concepts in a simple manner to help learners understand their importance and application in real business situations.

Keywords

Cash management, receivable management, inventory management

Discussion

Before learning about cash management, it is essential to understand the meaning of cash and the various motives for holding it. Therefore, we will begin by examining these aspects in order to build a clear and strong foundation for understanding cash management.

6.2.1 Nature of cash

Cash is one of the most vital current assets required for the smooth functioning of any business. A firm must always maintain an adequate cash balance, neither too high nor too low, to ensure uninterrupted operations. A shortage of cash can hamper production and daily activities, while excess cash may remain idle and fail to contribute to the firm's profitability. Therefore, maintaining an optimal cash position is a key responsibility of the financial manager.

The term *cash* includes coins, currency, cheques, and bank balances held by the firm. It also covers *near-cash assets* such as marketable securities and time deposits, which can be quickly converted into cash when needed.

6.2.2 Motives for Holding Cash

A business holds cash for several important reasons, mainly categorised to:

1. transaction motive
2. precautionary motive, and
3. speculative motive

Fig 6.3.1 Motives for Holding Cash

Each of these serves a specific financial purpose.

1. Transaction Motive

Businesses require cash to carry out routine transactions necessary for daily operations. This includes payments for purchases, wages, taxes, dividends, and other expenses.

Since there is often a time gap between cash inflows and outflows, the firm needs to maintain sufficient cash to bridge this gap. At times, payments may exceed receipts resulting a temporary shortage of cash. In such cases, firms may rely on short-term borrowing such as bank overdrafts. Conversely, if receipts exceed payments, the surplus may be invested in short-term marketable securities. Thus, cash held for transaction purposes ensures smooth day-to-day functioning without financial interruptions.

2. Precautionary Motive

Business also keep a reserve of cash to meet unexpected or unforeseen situations. Although cash inflows and outflows can be estimated in advance, actual events may differ from forecasts. For instance, a customer may delay payment, or a supplier may suddenly demand cash instead of credit. In such cases, having a precautionary cash reserve helps the business handle emergencies without disrupting operations. This motive ensures financial stability and the ability to respond quickly to contingencies.

3. Speculative Motive

Under this motive, firms maintain cash to take advantage of unexpected profitable opportunities that may arise. These opportunities, such as purchasing securities or assets at low prices cannot be predicted with certainty, but having available cash allows the firm to act promptly when they occur. By keeping some funds ready for speculation, a business can earn additional income from favourable market conditions.

6.2.3 Meaning of Cash Management

Cash management refers to the systematic handling of cash inflows and outflows, internal cash movements within the firm, and the control of cash balances at any given time. It involves ensuring that cash shortages are financed properly and surplus funds are invested efficiently. Although cash is the most important asset for maintaining liquidity, it is also the least productive because, unlike fixed assets or inventories, it does not generate goods or income directly. Hence, the main objective of cash management is to strike a balance, ensuring sufficient liquidity for operations while utilizing any surplus cash effectively and profitably.

Cash management has gained great importance as it is the most crucial among all current assets. It is essential for meeting business obligations, but remains idle and unproductive if not properly utilised.

It mainly involves the following aspects:

(i) Management of cash inflows and outflows

(ii) Regulation of cash movements within the organisation

(iii) Maintenance and control of cash balances at a specific point in time.

Effective cash management requires well-planned strategies to handle its various aspects. The major factors of cash management are as follows:

(a) Cash Planning:

Cash planning is a method used to plan and control the movement and utilisation of cash. It involves preparing a projected cash flow statement based on current operations and expected future activities. By estimating cash inflows from different sources and identifying likely cash outflows, a business can determine how its cash will be utilized effectively.

(b) Cash Forecasting and Budgeting:

A cash budget serves as a vital tool for monitoring and controlling cash receipts and payments. It provides an estimate of expected cash inflows and outflows over a specific period, short-term or long-term.

In the short term, forecasts are made using projected cash flows to estimate near-future receipts and payments. Although precise forecasts are difficult, such estimates help financial managers plan for cash requirements and identify sources to meet short-term needs. They can also plan to invest any temporary surplus cash productively. Long-term cash forecasts, typically covering three to five years or more, are equally important for sound cash planning. These help determine future financial needs related to working capital and capital investments.

Both short-term and long-term forecasts can be prepared using two main methods:

1. Receipts and Disbursements Method
2. Adjusted Net Income Method

Receipts and Disbursements Method

This method involves estimating all expected cash inflows and outflows of a business. Cash receipts may arise from various sources such as cash sales, collections from debtors, the sale of fixed assets, dividends, or other income. Among these, forecasting sales is often challenging because they can occur either on a cash or credit basis. While cash sales generate immediate receipts, credit sales lead to delayed collections depending on the firm's credit policy. Any variation in sales volume directly affects expected cash receipts.

Cash payments, on the other hand, include disbursements for cash purchases, payments to creditors, acquisition of fixed assets, and other expenses. Ideally, receipts and payments should be balanced over both short and long periods. In case of a cash shortage, funds must be arranged through bank borrowings or other sources, whereas surplus cash can be invested in safe marketable securities.

Although estimating payments is relatively easier, forecasting receipts is often more uncertain due to fluctuating sales and varying customer behaviour. This method proves useful in maintaining control over working capital and identifying the business's financial requirements, even though movements in working capital items like receivables and inventories are influenced by changing factors such as raw material prices and demand conditions.

Adjusted Net Income Method

Also known as the sources and uses approach, this method is used to project a company's cash needs at a future date. It typically consists of three parts: sources of cash, uses of cash, and adjusted cash balance.

Through this approach, a firm can determine whether its future operations will generate sufficient cash to meet obligations. If not, it can plan to raise funds through borrowing, issuing shares, or other means. The method relies on key items such as net income, depreciation, dividends, and taxes, which are relatively easy to estimate, making it a practical tool for forecasting long-term cash requirements.

6.2.4 RECEIVABLE MANAGEMENT

6.2.4.1 Meaning of Receivables

Receivables refer to the amounts due to a firm arising from the sale of goods or provision of services in the normal course of business. They represent the firm's claims against customers and constitute a component of current assets. Receivables are commonly termed accounts receivable, trade receivables, or book debts.

6.2.4.2 Costs of Maintaining Receivables

When a business extends credit to customers, it must bear certain costs related to managing those receivables. These include:

(i) Collection Cost

This refers to the administrative expenses involved in collecting payments from customers who bought on credit. It includes costs related to setting up and running a credit department, obtaining credit information either through external agencies or internal staff and managing follow-ups for payments, making follow-up phone calls, paying the salaries of collection staff, and meeting postage or communication expenses for recovering dues.

(ii) Capital Cost

This is the cost of tying up additional funds in receivables. The money used for credit sales could have been used elsewhere for profitable or productive purposes, so this represents an opportunity cost.

(iii) Delinquency Cost

This cost arises when customers delay payments beyond the due date. The business incurs additional expenses or losses due to such payment delays. For example if a customer fails to pay on the due date, the firm may incur extra costs such as repeated follow-up efforts, issuing legal notices, charging penalty interest on borrowed funds to cover the cash shortfall, or suffering temporary cash flow problems due to delayed receipt of money.

(iv) Default Cost

This cost occurs when customers completely fail to pay their dues. Such uncollected amounts turn into bad debts and must be written off as a loss to the firm.

6.2.4.3 Factors Affecting the Size of Receivables

(i) Proportion of Credit Sales in Total Sales

The amount of receivables depends largely on how much of the firm's total sales are made on credit. If the share of credit sales is high compared to cash sales, receivables will also be higher, and vice versa.

(ii) Credit Policy of the Firm

A company that follows a strict or conservative credit policy will have fewer receivables since it limits sales on credit. On the other hand, a liberal credit policy allowing easy credit to customers will result in a higher level of receivables.

(iii) Terms of Credit

The length of the credit period offered to customers has a direct impact on receivables. Granting a longer credit period increases the amount of receivables while shorter credit terms help reduce them.

(iv) Business Expansion Plans

When a company is expanding into new markets, it often extends credit to attract new customers. Offering longer credit periods initially helps boost sales and build customer relationships. However, as the business stabilises and gains loyal customers, the firm can shorten the credit period. During the expansion phase, receivables tend to be higher.

(v) Efficiency of Credit Collection

Effective and timely collection of dues helps maintain lower receivable levels. If the company's collection process is slow or inefficient, outstanding amounts will accumulate, increasing the size of receivables.

6.2.5 Receivable Managemnt

Receivables management involves planning and controlling the amounts due to a business from its customers as a result of credit sales. It is also known as trade credit management. The main aim of receivables management is to maximize the return on the investment tied up in receivables. However, maintaining receivables involves various costs and the risk of bad debts. Therefore, it is crucial for a firm to exercise effective control and management over its receivables to ensure financial stability and efficiency.

6.2.6 Objectives of receivable management

Determine the Optimal Investment in Receivables

The primary objective is to decide the appropriate amount of funds to be tied up in receivables. Excessive investment may block working capital and weaken liquidity, while insufficient investment may restrict sales. Receivables management aims to strike a balance that maximizes profitability without compromising financial stability.

Increase Sales Through Credit Extension

Offering credit can stimulate demand and attract new customers. An effective receivables management system supports the firm's marketing strategy by enabling credit sales that enhance turnover. The goal is to expand sales volume while controlling the risks associated with credit.

Minimize the Risk of Bad Debts and Defaults

Receivables management seeks to reduce the likelihood of customers failing to pay. This is achieved through proper credit assessment, credit rating, setting credit limits, and constant monitoring of customer accounts. By managing credit risk carefully, the firm protects its profitability.

Ensure Prompt and Efficient Collection of Dues

Efficient receivables management includes timely invoicing, systematic follow-up, and the use of appropriate collection procedures. The objective is to shorten the collection period, accelerate cash inflow, and prevent overdue accounts from accumulating.

Maintain Adequate Liquidity

Since receivables represent cash locked up with customers, their timely conversion into cash is crucial for meeting the firm's operational needs. Effective receivables management helps ensure that sufficient cash is available for meeting working capital requirements and other short-term obligations.

Control the Cost of Maintaining Receivables

Managing credit sales involves various costs administrative expenses, collection costs, financing costs, and opportunity costs. Receivables management aims to minimize these expenses while maintaining an efficient and customer-friendly credit system.

Formulate and Implement an Effective Credit Policy

Receivables management involves designing appropriate credit terms (credit period, cash discounts, credit standards), setting credit limits, and establishing clear collection policies. An effective credit policy balances sales growth with financial prudence.

Strengthen Customer Relationships

A fair and flexible credit policy, combined with professional collection practices, helps maintain goodwill with customers. Receivables management seeks to support long-term relationships by ensuring that credit facilities are extended and monitored in a courteous and customer-oriented manner.

Improve Overall Profitability

By optimizing credit sales, reducing defaults, and controlling costs, receivables management contributes to higher profitability. Ensuring timely collections also enables the firm to reinvest cash in productive activities, further enhancing returns.

6.2.7 Inventory Management

6.2.7.1 Meaning of Inventory

Inventory is a key element of working capital, essential for ensuring the smooth functioning of business operations. The term inventory refers to all the goods and materials a company holds for production and sales purposes. It includes raw materials, work-in-progress, consumable items, finished goods, and spare parts required for continuous business activities.

6.2.7.2 Types of Inventories

(i) Raw Materials:

These are the basic materials used to produce finished goods, but on which no work has yet started. For example, wooden planks and screws used to make a chair are raw materials. The number of raw materials needed depends on how fast they are used and how long it takes to restock them. Availability, supply conditions, and government rules also affect raw material levels.

(ii) Work-in-Progress (WIP):

This includes goods that are in the process of being made but are not yet finished. They are semi-manufactured products. For instance, a chair frame that has been built but not yet polished or painted is WIP. The quantity of WIP depends on the length of the production process longer production time means more WIP.

(iii) Consumables:

These are materials that don't become part of the final product but help in the production process. They ensure smooth operations and may be used up quickly. Examples include glue, sandpaper, varnish, and paint used while making a chair.

(iv) Finished Goods:

These are the completed products ready for sale or use. For example, a fully assembled and polished wooden chair ready to be sold is a finished good.

(v) Spares:

These are extra parts kept in stock to replace damaged or worn-out machine parts. They help maintain and repair equipment, ensuring uninterrupted production. For example, extra chair legs or screws stored for future repairs are spares.

6.2.8 Inventory Management- Meaning and definition

Inventory management refers to the efficient and systematic control of materials and goods kept in stock. Its main goal is to maintain the right level of inventory enough to ensure smooth production and sales activities while at the same time keeping storage and ordering costs as low as possible.

Inventory management is defined as "planning and devising procedures to maintain an optimum level of inventories, so the smooth flow of activities is assured and cost control and cost reduction is made possible"

According to R P Saxena Inventory management is the systematic control of stock to reduce costs and improve efficiency in business operations.

6.2.9 Objectives of Inventory Management

i. To guarantee the uninterrupted availability of raw materials, work-in-progress items, and finished goods so that production flows smoothly and customer requirements are consistently fulfilled.

ii. To avoid situations of insufficient stock as well as excessive stock accumulation.

iii. To hold inventory at an optimal level that efficiently supports operational processes and sales functions.

iv. To regulate and minimise material-related expenses in order to reduce production costs and overall organisational expenditure.

v. To eliminate repeated or unnecessary purchasing activities by centralising the procurement function.

vi. To reduce inventory losses arising from deterioration, theft, wastage, or accidental damage.

vii. To establish an effective and well-structured inventory management system.

viii. To maintain continuous (perpetual) inventory control so that the quantities recorded in stock registers accurately reflect the physical stock in the stores.

ix. To ensure the availability of goods of appropriate quality at fair and competitive prices by following suitable quality standards and conducting price, cost, and value analyses.

6.2.10 Tools and Techniques of Inventory Management

An efficient inventory management framework demands a well-designed mechanism for monitoring and regulating stock levels. The following represent the key tools and techniques commonly employed for effective inventory control.

6.2.10.1 Stock level

Stock levels refer to the amount of inventory a business should keep on hand. It is important for a company to maintain the right quantity of stock. If the stock is too low, the firm may face frequent shortages and may need to place orders again and again, which increases ordering costs. If the stock is too high, too much money gets tied up in inventory that is not immediately needed.

Therefore, good inventory management helps maintain the ideal amount of stock. Keeping the right level of inventory reduces overall costs and prevents stock-outs that can stop production. In simple terms, the goal of setting stock levels is to avoid both shortage and excess stock.

To achieve this, businesses fix different types of stock levels for proper inventory control.

a. Minimum level

This level represents the minimum quantity of inventory that a business should always have in stock. If the inventory falls below this limit, production may stop because of a shortage of materials.

Formula:

Minimum Level = Reorder Level – (Normal Consumption × Normal Reorder Period)

Before deciding the minimum level, a firm needs to consider lead time, the rate of consumption, and the type of material involved.

- ◊ Lead time is the time required to process and receive an order. The firm must hold enough stock to meet needs during this period.
- ◊ Rate of consumption refers to the average amount of raw material used, which is estimated based on past usage and production plans.
- ◊ Nature of material also influences the minimum level. If a material is needed only for special customer orders, then maintaining a minimum stock for it may not be necessary

A new purchase order is placed when the inventory falls to a specific point. This point is set above the minimum level so that the order can be made before the stock runs too low. The reorder level is therefore positioned between the minimum and maximum stock levels.

b. Re-ordering Level

The re-ordering level is the inventory level at which a new order for materials or goods is placed to ensure that stock is replenished before it runs out, thereby avoiding stock-outs and interruptions in operations.

While determining the reorder level, the firm considers factors such as the rate at which materials are used, the time needed to receive new supplies, and the highest possible daily usage of materials.

Formula:

Reorder Level = Maximum Consumption × Maximum Reorder Period

c. Maximum level

A firm should avoid holding inventory beyond a certain limit, known as the maximum level. Exceeding this level leads to overstocking, which increases material-related costs. Overstocking can create several problems, including tying up excess working capital, requiring additional storage space, increasing the risk of wastage, and raising the chances of losses due to materials becoming outdated.

The maximum level of stock is determined by factors such as the funds available for purchasing materials, the storage capacity, the highest expected material requirement at any time, the cost of maintaining inventory, and the likelihood of price changes.

Formula:

Maximum Stock Level = Reorder Level + Reorder Quantity – (Minimum Consumption × Minimum Reorder Period)

(d) Danger Level

The danger level indicates the point below which inventory must never be allowed to fall. When stock reaches this level, the firm must take immediate action to replenish materials, even if it involves higher costs. Failing to do so may result in a halt in production or other operational disruptions.

Formula:

Danger Level = Average Consumption × Maximum Reorder Period for emergency purchases.

(e) Average Stock Level

The average stock level represents the normal quantity of inventory a firm is expected to hold over a period of time.

Formula:

Average Stock Level = Minimum Stock Level + ½ × Reorder Quantity

Calculate the minimum stock level, maximum stock level, and reorder level from the following information:

(i) Maximum consumption – 500 units per day

(ii) Minimum consumption – 250 units per day

(iii) Normal consumption – 300 units per day

(iv) Reorder period – 15 to 25 days

(v) Reorder quantity – 4,000 units

(vi) Normal reorder period – 20 days

1. Reorder Level

Reorder Level = Maximum Consumption × Maximum Reorder Period

= 500 × 25

= **12,500 units**

2. Minimum Stock Level

Minimum Stock Level = Reorder Level – (Normal Consumption × Normal Reorder Period)

= 12,500 – (300 × 20)

= 12,500 – 6,000

= **6,500 units**

3. Maximum Stock Level

Maximum Stock Level = Reorder Level + Reorder Quantity – (Minimum Consumption × Minimum Reorder Period)

= 12,500 + 4,000 – (250 × 15)

= 12,500 + 4,000 – 3,750

= **12,750 units**

6.2.10.2 Determination of Safety Stock

Safety stock is an extra quantity of inventory kept as a buffer to handle unexpected increases in demand or delays in supply. Because demand cannot be predicted perfectly and suppliers may sometimes deliver late, stock-outs can occur and disrupt business operations. To avoid this, firms maintain safety stock. The main challenge is deciding the right amount to keep. This requires balancing two types of costs: the cost of running out of stock and the cost of holding additional inventory. Stock-outs of raw materials stop production and increase expenses, while stock-outs of finished goods reduce customer satisfaction and affect competitiveness. Keeping too little safety stock leads to frequent stock-outs, but keeping too much increases carrying costs. Therefore, the firm must determine an optimal level that balances both costs effectively.

6.2.10.3 Economic Order Quantity / Re–order Quantity

In inventory management, deciding how much to order is very important because both purchasing and holding materials involve high costs. The order quantity should not be too small or too large. The Economic Order Quantity (EOQ) is the most economical size of an order. It represents the level at which the total ordering cost and total carrying cost are at their minimum. In simple terms, EOQ is the point where ordering costs and carrying costs become equal. The main purpose of EOQ is to find the order quantity that allows a firm to buy materials at the lowest possible total cost.

6.2.10.3.1 Factors to Consider While Determining Economic Order Quantity (EOQ)

(A) Annual Consumption

Annual consumption refers to the total quantity of materials required for producing the expected annual output of the business.

(B) Ordering Costs

Ordering costs are the expenses involved in purchasing or placing orders for materials. These include:

1. **Labour or staff costs** related to preparing and processing purchase orders.
2. **Transportation expenses** for bringing materials from suppliers.
3. **Inspection costs** for checking the materials received.
4. **Administrative expenses** such as stationery, postage, telephone charges, and typing work.

The total ordering cost is calculated as:

Total Ordering Cost = Number of orders per year × Ordering cost per order

= (Annual Consumption ÷ Order Size) × Ordering Cost per Order

(C) Carrying Costs

Carrying costs are the expenses incurred for holding inventory over a period of time. These include:

1. Interest on capital invested in inventory.
2. Storage costs, including the rent or cost of space used.
3. Loss due to deterioration or obsolescence of materials.
4. Insurance expenses on stored materials.
5. Loss due to spoilage while handling inventory.

The total carrying cost is calculated as:

Total Carrying Cost = (Order Size ÷ 2) × Carrying Cost per Unit per Year

Ordering costs and carrying costs move in opposite directions.

◊ **When order size Increases:**

Fewer orders are placed during the year, which reduces ordering cost. However, larger orders result in higher average inventory, thereby increasing carrying cost.

◊ **When order size Decreases:**

More orders are required to meet demand, which increases ordering cost. At the same time, smaller order sizes reduce average inventory, thereby lowering carrying cost.

Formula for Economic Order Quantity (EOQ):

$$EOQ = \sqrt{\frac{2AS}{I}}$$

Where:

- ◊ **EOQ** = Economic Order Quantity
- ◊ **A** = Annual Consumption (in Rupees)
- ◊ **S** = Cost per order
- ◊ **I** = Carrying cost per unit per year

Example

Annual usage = ₹7,00,000

Cost of placing and receiving one order = ₹ 100

Annual Carrying Cost : 10 % of inventory value

Find out the economic order quantity

EOQ = √2AS/ I

A = Annual usage = ₹7,00,000

S = Cost of placing an order is ₹ 100

I = Annual carrying cost is 10 % of material value

EOQ = √2AS/ I

$$= \sqrt{\frac{2 \times 700{,}000 \times 100 \times 100}{10}}$$

= 37417 units

6.2.10.4 Selective Inventory Control Techniques

6.2.10.4.1 ABC Analysis

ABC Analysis is a commonly used method of inventory control based on the idea that a few items generally contribute to most of the total inventory value. Under this technique, materials are grouped into three categories, A, B, and C ,according to their importance and value.

Category A Items:

These are the most valuable items in the inventory. Although they make up only about 10% of the total number of items, they account for nearly 70% of the total inventory value. Because they have a major impact on the financial performance of the business, they require strict control, close monitoring, frequent reordering, and accurate record-keeping. Firms usually set detailed stock levels, such as maximum, minimum, and reorder levels and calculate EOQ for these items.

Category B Items:

These items fall in the middle range in terms of both value and quantity. They generally represent about 20% of the total items and about 20% of the total inventory value. They require moderate control and are reviewed less frequently than Category A items, but still need attention to avoid shortages or excess stock.

Category C Items:

These items form the largest share of inventory by quantity about 70% of total items, but contribute only around 10% to the total value. They are low-value, high-volume items and therefore need only a low level of control. Basic monitoring is sufficient for these materials.

6.2.10.4.2 VED analysis

This method is particularly useful for managing spare parts in inventory, similar to the ABC analysis. Under this approach, inventory items are grouped into three categories based on their importance in usage:

- ◊ V (Vital) – Items that are crucial for operations
- ◊ E (Essential) – Items that are important but not critical
- ◊ D (Desirable) – Items whose absence will not significantly affect operations

6.2.10.4.3 Just-in-time (JIT) System

The Just-in-Time (JIT) system, introduced by Toyota in 1950, is an inventory control method in which raw materials and components arrive at the production site only a few hours before they are needed. In this system, material deliveries are closely aligned with the manufacturing schedule and pace. In simple terms, JIT ensures that materials

are purchased and supplied exactly when they are required for use, avoiding early or excess inventory.

The JIT philosophy emphasizes that firms should depend on their suppliers to deliver materials exactly when needed, allowing them to keep inventories at a minimum or even at zero. This approach is different from the traditional inventory systems, where businesses maintain a comfortable amount of safety stock to safeguard against production delays or supply uncertainties. JIT is built on two major ideas:

(i) producing goods only when needed, and

(ii) purchasing materials only when required.

This system demands strong coordination between producers and suppliers regarding delivery schedules and material quality. If the materials supplied are defective or delayed, production may halt. JIT works closely with Total Quality Management (TQM), as both aim for efficiency, consistency, and waste reduction.

6.2.10.4.4 Inventory Turnover Ratio

The Inventory Turnover Ratio measures how effectively a firm manages and utilizes its inventory. It helps assess whether the level of inventory held is appropriate and whether the funds invested in inventory are kept to the minimum necessary. This ratio, also called stock velocity, indicates how frequently inventory is sold or used during a given period. It is computed using the following formula:

$$\text{Inventory Turnover Ratio} = \frac{\textit{Cost of goods Sold}}{\textit{Average Inventory at Cost}}$$

$$\text{Inventory Conversion Period} = \frac{\textit{Days in a Year}}{\textit{Inventory turnover Ratio}}$$

Example

The cost of goods sold of Dev Limited is ₹10,00,000. The opening inventory is ₹80,000 and the closing inventory is ₹1,20,000. Find out the inventory turnover ratio.

Solution :

$$\textbf{Inventory Turnover Ratio} = \frac{\textit{Cost of goods sold}}{\textit{Average Inventory}}$$

$$= \frac{10,00,000}{80,000+1,20,000/2}$$

$$= \frac{10,00,000}{1,00,000}$$

= 10 times

Recap

- ◊ Cash management involves planning, controlling, and optimizing cash inflows and outflows to ensure liquidity and minimize idle funds.
- ◊ Inventory management refers to maintaining the right quantity of materials at the right time to ensure smooth production while minimizing carrying and ordering costs.
- ◊ Receivable management deals with establishing credit policies and collection procedures to accelerate cash inflows and reduce the risk of bad debts.
- ◊ The Inventory Turnover Ratio measures how effectively a firm manages and utilizes its inventory
- ◊ VED analysis is particularly useful for managing spare parts in inventory.
- ◊ ABC Analysis is a commonly used method of inventory control based on the idea that a few items generally contribute to most of the total inventory value.

Objective Questions

1. What is transaction motive?
2. Which analysis classifies inventory into A, B, and C categories?
3. What is Precautionary motive?
4. What is cash management?
5. Mention any two types of inventories.
6. What is Speculative motive?
7. Expand JIT.

Answers

1. Cash held for meeting day to day needs.
2. ABC analysis
3. Cash kept to meet unexpected emergencies.
4. Systematic handling of cash inflows and cash outflows.

5. Raw materials, consumables
6. Holding cash for routine payments
7. Just - in - Time

Self-assessment questions

1. Explain the Just-in-Time (JIT) approach to inventory management.
2. Explain the different motives for holding cash with suitable examples.
3. Compare cash management and receivable management in terms of their role in working capital.
4. Explain the objectives of receivable management
5. Discuss the techniques of inventory management.

Assignments

1. Explain the concept of cash management and discuss its objectives, motives for holding cash, and the tools used to ensure effective cash control in an organisation.
2. Explain the concept of Economic Order Quantity (EOQ). Describe its formula, and factors influencing the order quantity with suitable illustrations.
3. Describe in detail ABC Analysis, VED Analysis, and Just-in-Time (JIT) systems of inventory control. Compare their relevance and suitability in different business situations.
4. Explain receivable management in detail. Discuss the objectives, significance, and components of an effective receivable management system.
5. Discuss how cash management, inventory management, and receivable management are interrelated. Explain how poor control in one area affects the overall working capital cycle.

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2. Chandra, P. (2015.). *Financial management: Theory and practice*. Tata McGraw

Suggested Reading

1. Gupta, S. K., Sharma, R. K., & Gupta, N. (2018). *Financial management: Theory and practice* (9th ed.). Kalyani Publishers.
2. Pandey, I. M. (2015). *Financial management* (11th ed.). Vikas Publishing House Pvt. Ltd.
3. Tulsian, T. C., Tulsian, B., & Tulsian, T. (2020). Tulsian's Cost and Management Accounting. McGraw Hill Education (India), Private Limited.

MODEL QUESTION PAPER SETS

SREENARAYANAGURU OPEN UNIVERSITY

QP **CODE: ……**

Reg. No : .....

Name : ……..

MODEL QUESTION PAPER- SET- A

Fourth Semester Bachelor of Commerce (B.Com) Examination
Major Discipline Specific Elective Courses (DE)
SGB24CM201ME - Financial Management
(CBCS - UG)
2024-25 - Admission Onwards

Time: 3 Hours **Max Marks: 70**

Section A

(Answer any 8 each carry 1 mark) (8×1= 8)

1. What is financial management?
2. Define capital rationing
3. What is financial risk?
4. What is dividend policy?
5. What is net working capital management?
6. What is solvency?
7. What is receivable management.
8. What is GDR?
9. What are bonus shares?
10. What is wealth maximisation?

Section B

(Answer any 6 each carry 2 marks) (6×2=12)

11. What is dividend decision?
12. State any two objectives of inventory management?
13. What is Profitability Index (PI)?State its decision rule.
14. State any two roles of a finance manager in a business organisation.
15. Define Net Present Value (NPV).

16. What is Weighted Average Cost of Capital (WACC).
17. What is combined leverage.
18. State any two factors affecting dividend policy.

Section C

(Answer any 6 each carry 5 marks) (6 x 5 = 30)

19. Explain the concept of profit maximization.
20. Describe the Internal Rate of Return (IRR) method.
21. Write a note on the evils of excess and inadequate working capital.
22. Explain the Modigliani–Miller approach to dividend policy.
23. Explain financial planning and its role in effective financial management.
24. Explain the assumptions of Gordon's Model.
25. Explain the objectives of inventory management.
26. Explain the impact of capital structure on the cost of capital.

Section D

(Answer any 2 each carry 10 marks) (2 x 10 = 20)

27. Explain the various sources of finance available to a business enterprise. Compare equity finance and debt finance.
28. Explain the management of current assets with reference to cash, receivables, and inventory management.
29. **XYZ Ltd** is considering two alternative financial plans to study their impact on Earnings Per Share (EPS).

The total funds required amount to ₹8,00,000**.**

Particulars	Plan A	Plan B
Debt (interest @ 14% p.a.)	₹5,00,000	₹2,00,000
Equity Share Capital (₹10 each)	₹3,00,000	₹6,00,000
Total Funds Required	₹8,00,000	₹8,00,000
Number of Equity Shares	30,000	60,000

Additional Information:

1. Earnings Before Interest and Tax (EBIT) are assumed to be:
   - ◊ ₹80,000
   - ◊ ₹1,20,000
   - ◊ ₹2,00,000
2. The rate of tax is assumed to be 35%.

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QP **CODE: ……**

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MODEL QUESTION PAPER- SET- B

Fourth Semester Bachelor of Commerce (B.Com) Examination
Major Discipline Specific Elective Courses (DE)
SGB24CM201ME - Financial Management
(CBCS - UG)
2024-25 - Admission Onwards

Time: 3 Hours **Max Marks: 70**

Section A

(Answer any 8 each carry 1 mark) (8×1= 8)

1. What is finance?
2. Define capital budgeting?
3. What is business risk?
4. What is meant by stock split?
5. What is net working capital?
6. What is liquidity?
7. What is inventory management?
8. What is ADR?
9. Name one component of cost of capital?
10. What is EBIT?

Section B

(Answer any 6 each carry 2 marks) (6×2=12)

11. Define shareholders' wealth maximization (SWM).
12. Explain internal rate of return (IRR).
13. Explain convertible securities.
14. State two long-term sources of finance?
15. State two assumptions of MM theory.
16. Explain capital gearing.

17. State any two objectives of current asset management.
18. What is credit policy?

Section C

(Answer any 6 each carry 5 marks) (6 x 5 = 30)

19. Explain the importance of financial management in achieving organizational objectives.
20. Explain the capital budgeting process.
21. Explain the concept of capital structure and its determinants.
22. Explain Gordon's model of dividend policy.
23. Explain cash management techniques.
24. Explain the scope of finance?
25. Explain Walter's model of dividend policy.
26. Explain the significance of cost of capital?

Section D

(Answer any 2 each carry 10 marks) (2 x 10 = 20)

27. Explain the factors influencing working capital requirements.
28. Analyse the importance of financial management in achieving organisational goals with suitable examples.
29. **Compute the following for the project given below:**

1. Payback Period
2. Post Payback Period
3. Post Payback Profit
4. Post Payback Profitability Index

Initial Outlay: ₹3,00,000

Estimated Life: 6 years

Earnings after tax but before depreciation:

- ◊ 1st Year – ₹65,000
- ◊ 2nd Year – ₹80,000
- ◊ 3rd Year – ₹55,000
- ◊ 4th Year – ₹70,000
- ◊ 5th Year – ₹90,000
- ◊ 6th Year – ₹85,000

സർവ്വകലാശാലാഗീതം

വിദ്യയാൽ സ്വതന്ത്രരാകണം
വിശ്വപൗരരായി മാറണം
ഗ്രഹപ്രസാദമായ് വിളങ്ങണം
ഗുരുപ്രകാശമേ നയിക്കണേ

കൂരിരുട്ടിൽ നിന്നു ഞങ്ങളെ
സൂര്യവീഥിയിൽ തെളിക്കണം
സ്നേഹദീപ്തിയായ് വിളങ്ങണം
നീതിവൈജയന്തി പാറണം

ശാസ്ത്രവ്യാപ്തിയെന്നുമേകണം
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ബോധരശ്മിയിൽ തിളങ്ങുവാൻ
ജ്ഞാനകേന്ദ്രമേ ജ്വലിക്കണേ

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LOVE YOURSELF AND ALWAYS BE HEALTHY

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