

FINANCIAL MANAGEMENT

MEANING OF FINANCIAL MANAGEMENT

Financial Management may be defined as Planning, Organizing, Directing and Controlling of financial activities in a business enterprise. More specifically it is concerned with optimal procurement and effective utilization of funds in a manner that the risk, cost and control considerations are properly balanced in a given situation. Financial management is concerned with efficient acquisition and allocation of funds. In operational terms, it is concerned with management of flow of funds and involves decisions relating to procurement of funds, investment of funds in long term and short term assets and distribution of earnings to owners. In other words, focus of financial management is to address three major financial decision areas namely, investment; financing; and dividend decisions.

Definition : “The activity which is concerned with acquisition and utilization of all money/ Funds to be used in a corporate (Business) Enterprise.” - **Wheeler** More specifically, Financial Management is concerned with making the following **four decisions**:

- 1. Investment decision i.e., where and how much to invest in long-term assets and working capital?*
- 2. Financing decision i.e., from where to raise funds?*
- 3. Dividend decision i.e., how much earnings to be retained and how much to be distributed?*
- 4. Liquidity decision i.e., how much cash in hand is to be maintained with the firm.*

OBJECTIVE OF FINANCIAL MANAGEMENT (*)** The objective of financial management is to maximize the current price of equity shares of the company. However, the current price of equity shares should not be maximized by manipulating the share prices. Rather it should be maximized by making efficient decisions which are desirable for the growth of a company and are valued positively by the investors at large. A decision is considered efficient if it increases the price of share but is considered as inefficient if it results in decline in the share price. In other words, the objective of financial management is to maximize the wealth of the owners of the company, that is the shareholders. Here wealth maximization means the maximization of the market price of the equity shares of the company in the long run by making efficient decisions and not by manipulating the share prices. The financial manager must identify those avenues of investment; modes of financing, ways of handling various components of working

capital which ultimately will lead to an increase in the price of equity share. If shareholders are gaining, it implies that all other claimants are also gaining because the equity share holders get paid only after the claims of all other claimants (such as creditors, employees, lenders) have been duly paid.

Objectives of financial management

Primary objectives

1. Profit maximization funds at reasonable costs
2. Wealth maximization.

Secondary objectives

1. To ensure availability of sufficient amount of.
2. To ensure optimum utilization of funds.
3. To ensure safety of funds through creation of reserves.

Nature and Scope of Financial Management : Nature :

1. Management of flow of money.
2. Concept with application of skills in manipulation

Use of Control of Money Determining financial needs and Raising of funds Utilization of funds

1. Details : Management of flow money : It refer to Inflow and outflow of money. Inflow of money means Entering of money in business from external source and outflow of money refers to consumption of money. Which gives us the Best output of financial Manager need to concentrate over the inflows as well as outflow of money so that there cannot be shortage and excursiveness of financial resources.

2 *Concerns with application of skills in manipulation, we and control of money :*

In an effective financial Management, there is always a process of applying. Manager skills in Manipulate, utilization and control of money. In Financial Management, Controlling of firms financial resources play a vital role that is why a financial manager uses his skills in order to control such activities.

3 *Determining the Financial needs and Raising of Funds :* In financial management, a financial manager, firstly determining the financial needs of an enterprise and then finding out the best suitable sources for raising them. The sources should be commensurate with needs of business. If the funds needed for longer period then long term sources of like share capital, debentures, etc can be raise for short term, period, the short term sources like. Trade Bill, Commercial paper can be.

4. *Proper utilization of funds:* Though raising funds is important but their effective utilization is also more important. The funds should be used in such a that maximum benefit is derived from them. The retires from their use should be more than their cost. It should be ensured that funds do not remain idle at my point of time. The funds committed to various operations should be effectively utilized. Those projects would be preferred which are beneficial to the business.

Scope of financial Management :

1. Estimating Financial Requirement
2. Deciding Capital Structure
3. Selecting a source of finance
4. Selecting a Pattern of investment.
5. Proper Cash Management
6. Implementing Financial controls
7. Proper uses of surpluses.

1. Estimating Financial Requirements : The first task of a financial manager is to estimate short-term and long-term financial requirements of his business. For this

purpose, he will prepare a financial plan for present as well as for future. The amount required for purchasing fixed assets as well as needs of funds for working capital will have to be ascertained.

2. Deciding Capital Structure. The capital structure refers to the kind and proportion of different securities for raising funds. After deciding about the quantum of funds required it should be decided which type of securities should be raised. Long-term funds should be employed to finance working capital also, if not wholly then partially. A decision about various sources for funds should be linked to the cost of raising funds. If cost of raising funds is very high then such sources may not be useful for long.

3. Selecting a Source of Finance : After preparing a capital structure, an appropriate source of finance is selected. Various from which finance may be raised, include : share capital, debentures, financial institutions, commercial banks, public deposits, etc. If finances are needed for short periods then banks, public deposits and financial institutions may be appropriate, on the other hand, if long-term finances are required then share capital ad debentures may be useful.

4. Selecting a Pattern of Investment When funds have been procured then a decision about investment pattern is to be taken. The selection of an investment pattern is related to the use of funds. A decision will have to be taken as to which assets are to be purchased? The funds will have to be spent on fixed assets and then an appropriate portion will be retained for working capital.

5. Proper Cash Management : Cash management is also an important task of finance manager. He has to access various cash needs at different times and then make arrangements for arranging cash. Cash may be required to (a) purchase raw materials, (b) make payments to creditors, (c) meet wage bills, (d) meet day to day expenses. The usual sources of cash may be a: (a) cash sales, (b) collection of debts, (c) short term arrangements with bank etc. The cash management should be such that neither there is a shortage of it and nor it is idle. Any shortage of cash will damage the creditworthiness of the enterprise.

6. Implementing Financial Controls: An efficient system of financial Management

necessitates the use of various control devices. Financial control devices generally used are : (a) Return on investment, (b) Budgetary Control, (c), Break Even Analysis, (d) Cost Control, (e) Ratio Analysis (f) Cost of Internal Audit return on investment is the best control device to evaluate the performance of various financial policies the higher this percentage, better may be the financial performance.

7. Proper Use of Surpluses. The utilization of profits or surpluses is also an important factor in financial management. A effective use of surplus is essential for expansion and diversification plans and also in protecting the interests of shareholders.

3. Finance Function : Finance function is the most important of all business function. It remains a focus of all the activities it is possible to substitute or eliminate this function because the business will close down in the absence of finance.

Approaches to finance functions -

1. Traditional approaches – According to this approach the finance function was conformed only procurement of funds needed by business on most suitable firms. The utilization of funds was considered beyond the purview of finance function Here, it was felt that decision regarding application of funds are taken same where. **Limitations :**

- a. If completely ignore the decision making to the proper utilization of funds.
- b. If ignores the important issue of working capital finance and management.
- c. If ignore issue of allocation of funds.
- d. If ignore day to day financial problem of organization.

2. Modern Approach : It used in broader firms. It includes both raising and utilisation of funds. The finance function does not stop only by finding out sources of raising enough funds, their proper utilization . According to this approach, it cover financial planning, raising of funds. Allocation of funds and financial control etc.

Aims of Finance Function

- 1. Acquiring sufficient funds.
- 2. Proper utilization of funds.
- 3. Increasing profitability

4. Maximizes firms value.

1. Acquiring Sufficient Funds : The main aim of finance function is to assess the financial needs of an enterprise and then finding out suitable sources for raising them. If funds are needed for longer periods then long-term sources like share capital, debentures, term loans may be explored.

2. Proper Utilization of Funds : Though raising of funds is important but their effective utilization is more important. The funds should be used in such a way that maximum benefit is derived from them. The returns from their use should be more than their cost. It should be ensured that funds do not remain idle at any point of time.

3. Increasing Profitability : The planning and control of finance function aims at increasing profitability of the concern. It is true that money generates money. To increase profitability, sufficient funds will have to not wastes more funds than required.

4. Maximizing Firm's Value : Finance function also aims at maximizing the value of the firm. It is generally said that a concern's value is linked with its profitability. Besides profit, the type of sources used for raising funds, the cost of funds, the condition of money market, the demand for products are some other considerations which also influence a firm's value.

5. Sources of Financial information :

1. Banks
2. Financial institution
3. Government agencies
4. Investors
5. Brokers
6. Media
7. Supplier.

5. Functional Areas Financial Management:

1. Determining financial needs .
2. Selecting the sources of funds.
3. Financial analysis and interpretation
4. Cost volume and profit analysis.
5. Capital Budgeting.
6. Working Capital management

7. Profit Planning and Control.

8. Dividend Policy.

1. Determining financial needs: A finance manager is supposed to meet financial needs of the enterprise. For this purpose, he should determine financial needs of the concern. Funds are needed to meet promotional expenses, fixed and working capital needs.

2. Selecting the Source of Funds: A number of sources may be available for raising funds a concern may resort to issue of share capital and debentures. Financial institutions may be requested to provide long term funds. A finance manager has to be very careful and cautious in approaching different sources. The terms and conditions of banks may not be favourable to the concern.

3. Financial Analysis and Interpretation: The analysis and interpretation of financial statements is an important task of a finance manager. He is expected to know about the profitability, liquidity position, short term and long-term financial position of the concern. For this purpose, a number of ratios have to be calculated. The interpretation of various ratios is also essential to reach certain conclusions. Financial analysis and interpretation has become an important area of financial management.

4. Cost –Volume –Profit Analysis : Cost-volume-profit analysis is an important tool of profit planning. The costs may be subdivided as : fixed costs, variable costs and semi-variable costs. Fixed costs remain constant irrespective of changes in production. An increase or decrease in volume of production will not influence fixed costs. Variable costs, on the other hand, vary in direct proportion to change in production. Semi-variable remain constant for a period and then become variable for a short period.

5. Capital Budgeting : Capital budgeting is the process of making investment decisions in capital expenditures. It is an expenditure the benefits of which are expected to be received over a period of time exceeding one year. Capital budgeting decisions are vital to any organization. An unsound investment decision may prove to be fatal for the very existence of the concern.

6. Working Capital Management : Working capital is the life blood and nerve center of business. Just as circulation of blood is essential in the human body for maintaining life, Working capital is essential to maintain the smooth running of business. No business can run successfully without an adequate amount of working capital. Working capital refers to that part of the firm's capital which is required for financing short term or current assets such as cash, receivables and

inventories. It is essential to maintain a proper level of these assets.

7. Profit Planning and Control : Profit planning and control is an important responsibilities of the financial manager. Profit maximization is, generally, considered to be an important objective of a business. Profit is also used as a tool for evaluating the performance of management. Profit is determined by the volume of revenue and expenditure.

8. Dividend Policy : Dividend is the reward of the shareholders for investments made by them in the share of the company. Their investors are interested in earning the maximum return on their investment whereas management wants to retain profits for further financing. The company should distribute a reasonable amount as dividends to its members and retain the rest for its growth and survival.

OBJECTIVES OF FINANCIAL MANAGEMENT

Effective procurement and efficient use of finance lead to proper utilization of the finance by the business concern. It is the essential part of the financial manager. Hence, the financial manager must determine the basic objectives of the financial management. Objectives of Financial Management may be broadly divided into two parts such as:

1. Profit maximization
2. Wealth maximization.

Profit Maximization

Main aim of any kind of economic activity is earning profit. A business concern is also functioning mainly for the purpose of earning profit. Profit is the measuring techniques to understand the business efficiency of the concern. Profit maximization is also the traditional and narrow approach, which aims at, maximizes the profit of the concern. Profit maximization consists of the following important features.

1. Profit maximization is also called as cashing per share maximization. It leads to maximize the business operation for profit maximization.
2. Ultimate aim of the business concern is earning profit, hence, it considers all the possible ways to increase the profitability of the concern.

3. Profit is the parameter of measuring the efficiency of the business concern. So it shows the entire position of the business concern.

4. Profit maximization objectives help to reduce the risk of the business.

Favourable Arguments for Profit Maximization

The following important points are in support of the profit maximization objectives of the business concern:

- (i) Main aim is earning profit.
- (ii) Profit is the parameter of the business operation.
- (iii) Profit reduces risk of the business concern.
- (iv) Profit is the main source of finance.
- (v) Profitability meets the social needs also.

Unfavourable Arguments for Profit Maximization

The following important points are against the objectives of profit maximization:

- (i) Profit maximization leads to exploiting workers and consumers.
- (ii) Profit maximization creates immoral practices such as corrupt practice, unfair trade practice, etc.
- (iii) Profit maximization objectives leads to inequalities among the stake holders such as customers, suppliers, public shareholders, etc.

Drawbacks of Profit Maximization

Profit maximization objective consists of certain drawback also:

- (i) **It is vague:** In this objective, profit is not defined precisely or correctly. It creates some unnecessary opinion regarding earning habits of the business concern.
- (ii) **It ignores the time value of money:** Profit maximization does not consider the time value of money or the net present value of the cash inflow. It leads certain differences between the actual cash inflow and net present cash flow during a particular period.
- (iii) **It ignores risk:** Profit maximization does not consider risk of the business concern. Risks may be internal or external which will affect the overall operation of the business concern.

Wealth Maximization

Wealth maximization is one of the modern approaches, which involves latest innovations and improvements in the field of the business concern. The term wealth means shareholder

wealth or the wealth of the persons those who are involved in the business concern.

Wealth maximization is also known as value maximization or net present worth maximization. This objective is an universally accepted concept in the field of business.

SOURCES OF FINANCE

Sources of finance mean the ways for mobilizing various terms of finance to the industrial concern. Sources of finance state that, how the companies are mobilizing finance for their requirements. The companies belong to the existing or the new which need sum amount of finance to meet the long-term and short-term requirements such as purchasing of fixed assets, construction of office building, purchase of raw materials and day-to-day expenses.

Sources of finance may be classified under various categories according to the following important heads:

1. Based on the Period

Sources of Finance may be classified under various categories based on the period.

Long-term sources: Finance may be mobilized by long-term or short-term. When the finance mobilized with large amount and the repayable over the period will be more than five years, it may be considered as long-term sources. Share capital, issue of debenture, long-term loans from financial institutions and commercial banks come under this kind of source of finance. Long-term source of finance needs to meet the capital expenditure of the firms such as purchase of fixed assets, land and buildings, etc.

Long-term sources of finance include:

- Equity Shares
- Preference Shares
- Debenture
- Long-term Loans
- Fixed Deposits

Short-term sources: Apart from the long-term source of finance, firms can generate finance with the help of short-term sources like loans and advances from commercial banks, moneylenders, etc. Short-term source of finance needs to meet the operational expenditure of the business concern.

Short-term source of finance include:

- Bank Credit
- Customer Advances
- Trade Credit
- Factoring
- Public Deposits
- Money Market Instruments

Bank Loans

Bank Loans With a proper business plan, which has objectives and is commercially based, different financial institutions will be willing to give out small business loans to you. There are two types of business loans: the secured loans and the unsecured loans. The secured loans have collateral, meaning that if you fail in repaying them, your assets might be taken away by the bank. On the other hand, the unsecured loans have no security attached to them. What may limit you in both cases is if your personal FICO score is low.

Debentures

A Debenture is a document issued by the company. It is a certificate issued by the company under its seal acknowledging a debt.

According to the Companies Act 1956, “debenture includes debenture stock, bonds and any other securities of a company whether constituting a charge of the assets of the company or not.”

Types of Debentures

Debentures may be divided into the following major types:

1. Unsecured debentures: Unsecured debentures are not given any security on assets of the company. It is also called simple or naked debentures. This type of debentures are treated as unsecured creditors at the time of winding up of the company.

2. Secured debentures: Secured debentures are given security on assets of the company. It is also called as mortgaged debentures because these debentures are given against any mortgage of the assets of the company.

3. Redeemable debentures: These debentures are to be redeemed on the expiry of a certain period. The interest is paid periodically and the initial investment is

returned after the fixed maturity period.

4. Irredeemable debentures: These kind of debentures cannot be redeemable during the life time of the business concern.

5. Convertible debentures: Convertible debentures are the debentures whose holders

have the option to get them converted wholly or partly into shares. These debentures are usually converted into equity shares. Conversion of the debentures may be:

Non-convertible debentures

Fully convertible debentures

Partly convertible debentures

6. Other types: Debentures can also be classified into the following types. Some of the common types of the debentures are as follows:

1. Collateral Debenture
2. Guaranteed Debenture
3. First Debenture
4. Zero Coupon Bond
5. Zero Interest Bond/Debenture

Features of Debentures

1. Maturity period: Debentures consist of long-term fixed maturity period. Normally,

debentures consist of 10–20 years maturity period and are repayable with the principle investment at the end of the maturity period.

2. Residual claims in income: Debenture holders are eligible to get fixed rate of interest at every end of the accounting period. Debenture holders have priority of claim in income of the company over equity and preference shareholders.

3. Residual claims on asset: Debenture holders have priority of claims on Assets of the company over equity and preference shareholders. The Debenture holders may have either specific charge on the Assets or floating charge of the assets of the company. Specific charge of Debenture holders are treated as secured creditors and floating charge of Debenture holders are treated as unsecured creditors.

4. No voting rights: Debenture holders are considered as creditors of the company.

Hence they have no voting rights. Debenture holders cannot have the control over the performance of the business concern.

5. Fixed rate of interest: Debentures yield fixed rate of interest till the maturity period. Hence the business will not affect the yield of the debenture.

Preferred Stock

Preferred stock is commonly issued to fund new developments and projects a firm wants to complete in the future. This allows the company to raise capital and dilute the current ownership percentages of the common shareholders because preferred shares don't have voting rights. Preferred stock is also a more flexible option to a typical bond.

Preferred stock is different from common stock in several ways. Holders are first in line for any dividend payments. Holders also get priority in receiving their money back if the company goes into liquidation. This guarantee of receiving some or all the purchase price back means preferred stock is a mix of equity security, like common stock, and a debt security, like a bond. Typically, a preferred stock dividend is also considered a perpetuity. For this reason, the cost of preferred stock formula mimics the perpetuity formula closely.

The cost of preferred stock formula:

$$R_p = D (\text{dividend}) / P_0 (\text{price})$$

For example:

A company has preferred stock that has an annual dividend of \$3. If the current price is \$25, what is the cost of preferred stock?

$$R_p = D / P_0$$

$$R_p = 3 / 25 = 12\%$$

It is the job of a company's management to analyze the costs all of these options and pick the best one. Since preferred shareholders are entitled to dividends each year, management must include this in the price of raising capital with preferred stock.

For investors, the cost of preferred stock, once it has been issued, will vary like any other stock price. That means it will be subject to supply and demand in the market. In theory at least, preferred stock may be seen as more valuable than common stock as it has a greater likelihood of paying a dividend and offers a greater deal of security if the company folds.

Debt

Description:

Debt means the amount of money which needs to be repaid back and financing means providing funds to be used in business activities. An important feature in debt financing is

the fact that you are not losing ownership in the company.

Debt financing is a time-bound activity where the borrower needs to repay the loan along with interest at the end of the agreed period. The payments could be made monthly, half yearly, or towards the end of the loan tenure.

Another important feature in debt financing is that the loan is secured or collateralized with the assets of the company taking the loan. This is usually part of the secured loan. If the loan is unsecured, the line of credit is usually less.

If a company needs a big loan then debt financing is used, where the owner of the company attaches some of the firm's asset and based on the valuation of those assets, loan is given.

Let's understand debt financing with the help of an example. If a company requires a loan of Rs 10 crore, it can raise the capital by selling bonds or notes to institutional investors.

Debt financing is an expensive way of raising funds, because the company has to involve an investment banker who will structure big loans in a systematic way. It is a viable option when interest costs are low and the returns are better.

UNIT – II

Cost of Capital

INTRODUCTION

Cost of capital is an integral part of investment decision as it is used to measure the worth of investment proposal provided by the business concern. It is used as a discount rate in determining the present value of future cash flows associated with capital projects. Cost of capital is also called as cut-off rate, target rate, hurdle rate and required rate of return.

When the firms are using different sources of finance, the finance manager must take careful decision with regard to the cost of capital; because it is closely associated with the value of the firm and the earning capacity of the firm.

Meaning of Cost of Capital

Cost of capital is the rate of return that a firm must earn on its project investments to maintain its market value and attract funds. Cost of capital is the required rate of return on its investments which belongs to equity, debt and retained earnings. If a firm fails to earn return at the expected rate, the market value of the shares will fall and it will result in the reduction of

overall wealth of the shareholders.

Definitions

The following important definitions are commonly used to understand the meaning and concept of the cost of capital.

According to the definition of John J. Hampton “ Cost of capital is the rate of return the firm required from investment in order to increase the value of the firm in the market place”.

According to the definition of Solomon Ezra, “Cost of capital is the minimum required rate of earnings or the cut-off rate of capital expenditure”.

CLASSIFICATION OF COST OF CAPITAL

Cost of capital may be classified into the following types on the basis of nature and usage:

- Explicit and Implicit Cost.
- Average and Marginal Cost.
- Historical and Future Cost.
- Specific and Combined Cost.

The Cost of Debt

Calculating the total cost of debt is a key variable for investors who are evaluating a company's financial health. The interest rate a company pays on its debt will determine the long-term cost of any business loan, bond, mortgage, or other debts a company uses to grow.

A business owner without any debts can look at the interest rates being paid by other firms within the same industry to get an idea of the prospective costs of a certain loan for their business.

Calculating the Cost of Debt

The cost of debt is not strictly the cost of a company's loans, although they are an important variable in the calculation. Since the interest on the debt is tax-deductible, a business must multiply the coupon rate (the yield paid by a fixed-income security) on the company's bonds by (1 - tax rate):

Post-tax Cost of Debt Capital = Coupon Rate on Bonds x (1 - tax rate)

or Post-tax Cost of Debt = Before-tax cost of debt x (1 - tax rate)

For example, a business with a 40% combined federal and state tax rate borrows \$50,000 at a 5% interest rate. The post-tax cost of debt capital is 3% (cost of debt capital = $.05 \times (1 - .40) = .03$ or 3%). The \$2,500 in interest paid to the lender reduces the company's taxable income, which results in a lower net cost of capital to the firm. The company's cost of \$50,000 in debt capital is \$1,500 per year ($\$50,000 \times 3\% = \$1,500$).

Flotation costs, or the costs of underwriting the debt, are not considered in the calculation since those costs are negligible. You generally include your tax rate because interest is tax-deductible. It's also possible (and sometimes useful) to calculate your pre-tax cost of debt capital:

Cost of Equity

Cost of equity capital is the rate at which investors discount the expected dividends of the firm to determine its share value.

Conceptually the cost of equity capital (K_e) defined as the “Minimum rate of return that a firm must earn on the equity financed portion of an investment project in order to leave unchanged the market price of the shares”.

Cost of equity can be calculated from the following approach:

- Dividend price (D/P) approach
- Dividend price plus growth (D/P + g) approach
- Earning price (E/P) approach
- Realized yield approach.

Dividend Price Approach

The cost of equity capital will be that rate of expected dividend which will maintain the present market price of equity shares.

Dividend price approach can be measured with the help of the following formula:

$$K_e = \frac{D}{N_p}$$

Where,

K_e = Cost of equity capital

D = Dividend per equity share

N_p = Net proceeds of an equity share

Cost of Preference Shares

Preference shares are shares of a company that pay out dividends to shareholders before common share dividends are issued. For this reason, they are also known as preferred stock. Preferred stockholders are entitled to be paid from company assets before common stockholder dividends in the event of a company entering bankruptcy or liquidation.

Preference shares do not hold voting rights as opposed to common dividends that allow shareholders the right to vote on company decisions if a high enough volume of shares is held by the shareholder.

Cost of Preference Shares Variables

Preference shares generally have a fixed dividend payout while common dividends do not. Assuming that a company will continue to operate indefinitely, preference shares are effectively a form of perpetuity payment and can be valued as such with a Cost of Preference Shares formula.

Rate of Return on Preference Shares (R_p)

The expected rate of return on a preference share is the percentage rate of return after considering both the market value of an individual preference share and its preference dividend payout.

Preference Dividend (D)

The expected dividend payout of a preference share. This is generally an annual payout by preference share issuing companies. As the dividend is generally a set amount and it is assumed that companies will exist indefinitely, the preference dividend is considered an amount that is paid indefinitely or in perpetuity.

Market Value of Preference Share (P_0)

The value of the preference shares on the market. This value is the buying and selling price of a preference share.

How to Calculate the Cost of Preference Shares

A company issues a 10% preference share of \$500, with a face value of \$450. An investor considering these preference shares holds an expected return of 10%, meaning the preference shares must have a return over their 10% expected return in order to consider the investment viable. The value of the preference shares to the investor can be calculated as follows:

$$R_p = D / P_0 = \$50 / \$450 = 0.1111 = 11.11\%$$

The expected rate of return for these preference shares is 11.11%. As the investor holds an expected return of 10% and the preference shares yield a return of 11.11%, the investor would consider the investment at this time to be lucrative and may undertake purchase of the issued preference shares.

Cost of Retained Earnings

This is kind of weird to think about. It takes some time to understand so take it slowly. After a company makes money (earnings), who owns that money? The shareholders, right? But when you retain earnings you are not giving the money to the shareholders. You are keeping it. In a way, you are investing it for them in your company. Well those shareholders want some return on that money you are keeping.. How much return do they expect? They want the same amount as if they had gotten the retained earning in the form of dividends, and bought more stock in your company with them. THAT is the cost of retained earnings. You as a financial genius, have to ensure that if you are retaining earning, that the shareholders will get at least as good a return on the money as if they had re-invested the money back into the company.

If you don't understand this, re-read it and re-think it until you do get it. There is really no "cost" in the cost of retained earnings. I mean, no money is changing hands. You aren't paying anyone anything. But you are keeping the shareholders money. You can't say it is "free" money. Frankly if you did, it would screw up your capital budgeting. So when you are doing your capital budgeting, to ensure that the shareholders are getting a decent rate of return, you "guess" a cost of retained earnings. How?? One way is CAPM. Another way is the bond yield plus risk premium approach, in which you take the interest rate on the company's own long term debt and then add between 5% and 7%. Again, you are kind of guessing here. A third way is the discounted cash flow method, in which you divide the dividend by the price of stock and add the growth rate. Again, a lot of guessing.

Cost of Issuing Common Stock

Flotation Cost of Common Stock	=	Costs of issuing the actual stock (ink, printing, paper, computers, etc.)	+	The cost of retained earnings.
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Cost of Preferred Stock

Cost of Preferred Stock	=	What you give.	divided by	What you get.
Cost of Preferred Stock	=	Dividend	divided by	Price - Underwriting Costs

Cost of Bonds (debt)

Cost of Debt	=	Coupon rate on the bonds	minus	The Tax Savings
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Interest on bonds is tax deductible. So we can reduce our taxable income by the amount of money we pay to the bondholders.

WACC - The Weighted Average Cost of Capital.

Every company has a **capital structure** - a general understanding of what percentage of debt comes from retained earnings, common stocks, preferred stocks, and bonds. By taking a weighted average, we can see how much interest the company has to pay for every dollar it borrows. This is the weighted average cost of capital.

Capital Component	Cost	Times	% of capital structure	Total
Retained Earnings	10%	X	25%	2.50%
Common Stocks	11%	X	10%	1.10%
Preferred Stocks	9%	X	15%	1.35%
Bonds	6%	X	50%	3.00%
TOTAL				7.95%

So the WACC of this company is 7.95%.

Weighted Average Cost of Capital

A company's weighted average cost of capital is how much it pays for the money it uses to operate, stated as an average. It is also the minimum average rate of return it must earn on its assets to satisfy its investors. In other words, the amount the company pays to operate must approximately equal the rate of return it earns.

The WACC is based on a business firm's capital structure. The capital structure of a business firm is essentially the right-hand side of its balance sheet where its financing sources are listed. On the right-hand side of the balance sheet, there is a list of the debt and equity accounts of the firm.

Included in the cost of capital calculation is some combination of the liability, or debt accounts, except for current liabilities such as accounts payable. Also included are the shareholder's equity accounts including [retained earnings](#) and new common stock. When a business raises money by selling shares and receiving cash from investors, that is equity financing. Existing shareholder's equity may also be used for financing operations. Raising money by borrowing from a bank or issuing bonds qualifies as debt and the cost is interest charges to the business firm.

Components of Weighted Average Cost of Capital

Cost of Equity

The cost of equity can be a little more complex in its calculation than the cost of debt. It is more difficult to estimate the cost of common stock than the cost of debt. Most businesses

use the Capital Asset Pricing Model (CAPM) to estimate the cost of equity.¹

Here are the steps to estimate the cost of equity or common stock:

1. The risk-free rate is usually estimated by using the rate of return on 10-year U.S. Treasury bills.
2. Estimate the expected return. You can use the historic rate of return from the company's ticker page such as Yahoo! Finance or the company's annual report for this. The ticker page lists a company's financial standing and usually includes historical information.
3. Find the risk of the company's stock as compared to the market. Look for "Beta" on the company's annual report or on a ticker page like Yahoo! Finance. If a company's risk is greater than the market, its beta is greater than 1.0, and less than 1.0 if the risk is lower than the market as a whole.
4. The expected market return at any given time is usually around 8%.
5. Use the CAPM formula below to calculate the cost of the company's common stock.

Dividend Policy

Meaning

The term dividend refers to that part of the earnings (Profits) of a company which is distributed among its shareholders on the basis of their shareholding. It is the reward to the shareholders for their investments made in the company. Generally the shareholders would prefer to receive higher rate of dividend in order to achieve their capital appreciation. But the company would prefer retention of profit as a desirable decision because it provides funds for financing the expansion and growth of the firms.

According to the Institute of Chartered Accountants of India Dividend is a "a distribution to shareholders out of profits or reserves available for this purpose". Generally dividend may be paid as a fixed percentage but this percentage may be changed every year according to the level of profit earned by the company.

Dividend Policy

Most of the companies follow certain principles for the declaration of dividend. But dividend should be declared only out of divisible profit. If the company incurs loss at any particular year it should not distribute dividend in that year.

Dividend policy means it is the policy of the company with regard to quantum of profits to be distributed as dividend. The basic concept of the dividend policy is that the company desires and take any future action regarding the payment of dividend with help of the company law board.

According to Weston and Brigham defines dividend policy as "Dividend policy determines the division of earnings between payment to shareholders and retained earnings".

Determinants of Dividend Policy

The payment of dividend actually involves some legal as well as financial consideration. The following are the important factors which determine the dividend policy of a firm.

1. Legal restrictions

Business organisation must be legally restricted from the declaration and payment of dividend. According to provisions of the companies Act 1956 has put several restrictions regarding the payment of dividends. Some of these are as follows.

- Dividends can be paid only out of current profits of the company or past years accumulated profits.
- Dividends could not be paid out of capital.

2. General state of economy

Status of the general economic conditions of the country greatly affects the management decision to distribute its earnings as dividend. In case of uncertain economic condition the company may like to retain certain huge amount of earnings to establish reserve fund in order to face future

challenges. During the periods of the economic depression the company must maintain large sums of money as reserves in order to meet out liquidity position of the company. In case of prosperity also the company need huge funds because of large profitable investment opportunity. In the above situation the company can declare only lower rate of dividend to its shareholders.

3. Age of the company

The age of the company must decide the dividend policy of the Concern. If newly established company limits its payment of dividend and retain substantial part of earnings for financing its growth and development purpose. But in case of older companies. Which have established sufficient reserves so they have to pay liberal dividends i.e. higher rate of dividends.

4. Nature of Industry

Nature of industry is one of the factor considerably affects the dividend policy of the company. Certain industries have uniformly stable demand irrespective of the economic conditions. But some other industries earnings are uncertain. Such firms should retain higher portion of its earnings to meet out the dividend claims during the recession periods. Industries with steady market can declare a higher rate of dividends while cyclical industries should follow a lower rate of dividend policy.

5. Government Policy

Time to time Government announces policies with regard to the business and capital market it directly affects the profit earning capacity of the firm. And also it restrict the declaration of dividend beyond certain percentage in a particular industry. The companies should formulate the dividend policy accordingly.

6. State of capital market

A company which decides to mobilise its resources from the capital market either it is financially strong or because of favourable conditions prevail in the capital market. It may declare higher rate of dividend. Suppose the firm realise difficult to raise resources from the capital market because of either weak financial position or unfavourable conditions in the capital market. In this situation the company may declare only lower rate of dividends. So the movement of capital market is greatly influenced in the determination of rate of dividend.

7. Past year Dividend Rate

Whenever the company formulates the dividend policy, the directors of the company must consider the dividend paid in past several years. The current dividend rate should be calculated as the average of past years rates.

8. Stability of Dividends

Stable dividend rate is one of the important factor for formulating dividend policy. Irrespective of the profitability of the company it may declare constant rate of dividends. Automatically it should establish the reputation of the company among the shareholders. A stable dividend gives security and confidence to the shareholders. Hence companies may prefer to maintain a stable dividend.

9. Taxation Policy

Tax Policy announced by the Government also affects rate of dividend declared by the company. If the Government announces high rate of taxation it may reduce the earnings of the company and consequently the company shall declare only lower rate of dividend.

10. Liquid Resources

The dividend policy of the company is influenced by the availability of liquid assets. A company earns a good profit but it could not announce dividend to the shareholders because of

insufficient liquid resources. So the liquidity position of the company is an important factor for determining the rate dividends.

11. Restrictions by lenders

Lenders especially financial institution, banks may impose certain restriction on payment of dividend to the shareholders in order to protect their own interest. Based upon these restrictions the companies may retain huge amount of profits as retained earnings and also give a low rate of dividend.

Forms of dividend policy

Various types of dividend policies are summarized below.

1. Stable dividend policy

The term stable dividend means when the company maintains more or less stable rate of dividend. It may be in the following three forms.

- Constant Dividend per share
- Constant payout ratio
- Stable rupee dividend plus extra dividend.

2. Regular dividend policy

Regular dividend policy indicates that the payment of dividend at the usual rate is known as policy of regular dividend. If a concern follow a regular dividend policy automatically it creates confidence among the shareholders.

3. Policy to pay irregular dividend

It implies when the company follow this policy it could not pay the regular dividend. Because the company have uncertainty of earnings or inadequate profit. As per this policy if company earns a higher amount of profit it could pay higher rate of dividend. If there is no profit in any particular year the company does not declare dividend to its shareholders.

4. Policy of no immediate dividend

A company may follow a policy of paying no dividends immediately even when it earns huge amount of profit. Because either its unfavourable working capital position or on account of requirements of funds for future expansion.

Forms of dividend

Payment of dividend can be classified into the following forms.

1. Cash dividend

Dividend is paid to the shareholders in the form of cash is called cash dividend. The usual practice followed by the company is to pay dividend in cash. It results in out flow of fund from the firm. Hence the firm should maintain adequate cash resources for payment of cash dividend.

2. Bond dividend

The company does not have sufficient cash reserves to pay the dividend, it may issue bonds as against the amount due to the shareholders by way of dividend is known as bond dividend. Actually it is not popular in our country.

3. Property Dividend

Property dividend are those which can be paid by the company to its shareholders in the form of property instead of payment of dividend in cash. However this type of dividend is not popular in India.

4. Stock Dividend

Payment of stock dividend is popularly known as issue of bonus shares in India. Because in

any particular year the company does not have an adequate cash reserves it must decide to pay dividend in the form of shares. Normally the company may issue its own shares to the existing shareholders in lieu of cash dividend or in addition to cash dividend.

5. Scrip Dividend

Scrip dividend means when earnings justify a dividend is known as scrip dividend.

Theories of Dividend

There are conflicting opinions regarding the impact of dividend decision and the value of the firm. The dividend theories can be classified under the following two groups.

- (i) Relevance concept of dividend (Theories of Relevance)
- (ii) Irrelevance concept of dividend (Theories of Irrelevance)

Relevance concept of dividend

It indicates that there is a relationship between firms dividend policy and the firms position in the stock market. Myron Gordon, John linter, James Walter, Richardson and others are associated with the relevance concepts of dividend. If the company declares higher rate of dividend automatically its value increase in the stock market. Suppose it declares low dividend rate, immediately its value decrease in the market. As information about the rate of dividend is immediately communicated to the investors and also the profitability of the firms.

Irrelevance concept of dividend

Irrelevance concept of dividend was developed by soloman, Modigliani and Miller. According to this approach there is no such relationship between the rate of dividend and the value of the firm in the stock market. i.e. The dividend policy has no effect on the share price of the company and is therefore it does not have any consequence. Under this approach investors do not differentiate between dividends and capital gains. The investors ultimate aim is to earn higher return on their investment.

WALTER'S MODEL

According to the walters model, dividend policy of the firm depends on the internal rate of return (r) and cost of capital (k) of the firm.

Assumptions of Walters model

- (i) The entire financing of the firm only through the retained earnings. It does not use the new equity or debt.
- (ii) Entire earnings are distributed or reinvested in the firm.
- (iii) The firm has a very long life.
- (iv) Earnings of the firm and the rate of dividends do not change while determining the value.

Walter formula for determining the market price per share is as follows.

$$\text{Market price per share } P = \frac{D + r / K_e (E - D)}{K_e}$$

P = Market price of an equity share

D = Dividend per share

r = Internal rate of return

E = Earnings per share

K_e = Cost of equity capital

Criticism of Walters model

Walters approach has been criticised on account of various assumptions made by prof. Walter in formulating his hypothesis.

- (i) Internal rate of return remain constant is not true, because the rate of return changes with increase or decrease in investment.
- (ii) This model assumes that the cost of capital remain constant. Actually the cost of capital also change because of a firms risk pattern does not remain constant.
- (iii) The basic assumptions of the Walters model is that all the investments are financed only through retained earnings. This assumption is not real. Actually firms do raise funds not only from the retained earnings but also through equity and new debt also.

Gordon's Model

Prof Walter suggests that dividend decisions are relevant and it affects the value of the firm. Simply Gordon's model explicitly relates the market value of the firm to dividend policy. His model is based on the following assumption.

- (i) The rate of return on investment is constant
- (ii) The firm has a perpetual long life
- (iii) The cost of capital of the firm remains constant
- (iv) The corporate taxes do not exist.
- (v) The firm has a constant growth rate.
- (vi) Expansion of the firm is financed only through retained earnings.
- (vii) The retention ratio (b) once decided remains constant. Therefore the growth rate (g) ($g = br$) is also constant.

TEST QUESTIONS

1. What is dividend?
2. What is meant by dividend policy?
3. Name the two main theories of dividend.
4. What is the implication of stable dividend?
5. What is meant by scrip dividend?
6. What is dividend payout ratio?
7. What is meant by bonus issue?
8. What is meant by stock split?
9. Write short note on dividend policy in practice.
10. Explain the assumption and implication of Gordon's dividend model?
11. Explain the Modigliani-miller dividend irrelevance hypothesis?
12. What are the different forms of dividend?
13. What factor determines the dividend policy of a company? Do you believe it will be justifiable for a company to obtain short term loan from a bank to allow payment of dividend?
14. What is the bonus share? State the sources of the bonus share?
15. Critically examine the assumption underlining the irrelevance hypothesis of Modigliani and miller regarding dividend distribution?
16. What is meant by right issue of share? Explain its features & advantage
17. Discuss the factor to be taken into consideration for making right issue a success?

PROBLEMS AND SOLUTIONS

Problem 1. CMC Ltd. earnings Rs.5 per share. The capitalization rate is 10% and the return on investments is 12%.

Under Walter's model, determine

- The optimum payout
- The market price of the share at this payout
- The market price of the share if the payout is 40%

(M.Com., Periyar)

Solution:

(a) Optimum payout

Under the Walter's model, for a company which earns a higher return than the cost of capital ($r > k$) optimum payout is zero. That is, for growth firms, optimum payout is zero.

Victory Ltd, earns 12% whereas the cost of capital is 10%. Hence the optimum payout is zero.

$$t \text{ price } P = \frac{D + (r/K)(E - D)}{k}$$

(b) Market price per share if payout is zero

D = Dividend per share	=	0
R = Rate of return	=	12% or 0.12
K = Cost of capital	=	10% or 0.10
E = Earnings per share	=	Rs. 5

$$\text{Market price per share } P = \frac{0 + (.12/.10)(5 - 0)}{.10} = \text{Rs } 60$$

Market price per share if payout is 20%

D = Dividend per share = 20% of Rs.5 = Re.2

$$\begin{aligned} \text{Market price per share } P &= \frac{2 + (.12/10)(5 - 2)}{.10} \\ &= \frac{1 + (1.2)(3)}{.10} = \frac{1 + 4.8}{.10} = \frac{5.8}{.10} \end{aligned}$$

Market price = Rs 56.

(d) Market price per share if payout is 40%

D = Dividend per share = 40% of Rs. 5 = Rs.2

$$\text{Market price per share } P = \frac{1 + (1.2)(3)}{.10} = \frac{2 + 3.6}{.10} = \frac{5.6}{.10} = \text{Rs. } 56$$

Problem 2. The cost of capital and the rate of return on investment of MRM Ltd. are 10% and 15% respectively. The company has one million equity share of Rs.10. each outstanding and earnings per share is Rs. 5. Calculate the value of the firm in the following situations. Use Walter's model and comment on the results.

- 100% retention
- 50% retention
- No retention

(M.Com. Chennai)

Solution:

Accounting to Walter's model,

$$\text{Market price per share, } P = \frac{D + (r/k)(E - D)}{k}$$

D = Dividend per share

r = Rate of return = 15% or 0.15

k = Cost of capital = 10% or 0.10

E = Earnings per share = Rs. 5

(i) Market price of retention is 100% i.e., payout is (100% - 100%)

$$\text{Market price per share } P = \frac{0 + (.15/10)(5 - 0)}{.10}$$

$$\frac{0 + (1.5)(5)}{.10} = \frac{0 + 7.5}{.10} = \frac{7.5}{.10} = \text{Rs. } 75$$

Value of the firm = Rs. 75 x 1 million shares = Rs. 75 million

(ii) Market price if retention is 50%, i.e. payout is 50% (100% - 50%)

Dividend = 50% of EPS = 50% of Rs. 5 = Rs. 2.50

$$\text{Market price} = \frac{2.50 + (.15/.10)(5 - 2.50)}{.10}$$

$$= \frac{2.50 + (1.5)(5 - 2.50)}{.10} = \frac{2.50 + 3.75}{.10} = \text{Rs. } 62.50$$

Value of the firm = Rs. 62.5 x 1 million shares = Rs. 62.5 million

(iii) Market price if there is no retention (payout 100%)

Dividend = 100% of EPS = 100% of Rs. 5 = Rs. 5

$$\text{Market price} = \frac{5 + (.15/.10)(5 - 5)}{.10}$$

$$= \frac{5 + (1.5)(0)}{.10} = \frac{5}{.10} = \text{Rs. } 50$$

Value of the firm = Rs. 50 x 1 million shares = Rs. 50 million

The firm is a growth firm ($r > k$). As payout increases, value of the firm decreases. Ideal payout is 0%.

Problem 3. The earnings per share of Pome Ltd. is Rs. 20. The rate of capitalization is 12% and the rate of return on investments is 9%.

Compute the market price per share using Walter's formula if the dividend payout is (a) 20% (b) 60% (c) 100%. Which is the ideal payout? (B.Com. Bharathiar)

Solution:

According to Walter's formula,

$$\text{Market price per share } P = \frac{D + (r/k)(E - D)}{k}$$

D = Dividend per share

r = Rate of return = 9% or 0.09

k = Cost of capital = 12% or 0.12

E = Earning per share (EPS) = Rs. 20

(a) Market price per share if payout is 20%

D = Dividend = 20% of EPS = 20% of Rs. 20 = Rs. 4

DIVIDEND POLICY, BONUS & RIGHTS ISSUE

Dividend refers to that part of the earnings (profits) of a company which is distributed to shareholders. Shareholders would like to receive a higher dividend as it increases their current wealth. But, for the company, retention of profits would be desirable as it provides funds for financing the expansion and growth plans.

Retained earnings is the most important internal source of finance. A higher dividend means less retained earnings. It may result in slower growth rate and lower market price of the shares. Further, the company will have to depend on external sources such as debentures and new shares. Thus, distribution is desirable from the point of view of shareholders and retention is advantageous to the company for growth and expansion. The dividend policy must strike a happy balance between distribution and retention. It should allocate the earnings between dividends and retained earnings in such a way that the value of the firm is maximised. Hence, dividend policy is a very crucial area of financial management.

Dividend Theories

There are conflicting opinions regarding the relationship between dividend decision and the value of the firm. The dividend theories can be classified into two groups:

1. Theories of Relevance (Relevance concept of dividend): According to these theories, dividend decision is an active variable and it influences the value of the firm.

2. Theories of Irrelevance (Irrelevance concept of dividend): These theories consider dividend decision as irrelevant. It has no effect on the value of the firm.

WALTER'S MODEL

Professor James. E. Walter argues that dividend policy is a critical factor and it affects the value of the firm. According to the Walter's model, dividend policy depends on the firm's internal rate of return (r) and cost of capital (k).

Walter's views on optimum dividend payout are as follows,

Growth firms ($r > k$)

Growth firms have good, profitable investment opportunities. They are able to earn a return (r) which is higher than the cost of capital (k). Hence, the growth firms can benefit by retaining all the earnings for internal investment (100% retention). The optimum payout would be zero. This would maximise the value of the shares of growth firms.

(Refer Problems 1 to 9)

Normal firms ($r = k$)

Normal firms do not have good investment opportunities. They are able to earn a rate of return (r) which is just equal to the cost of capital (k). Hence, distribution or retention of earnings will not make any difference in the value of the firm. The dividend policy has no effect on the market value of shares. There is no particular optimum payout ratio for normal firms.

(Refer Problems 10 to 12)

Declining firms ($r < k$)

Declining firms do not have profitable investment opportunities. The rate of return (r) is less than the cost of capital (k). It is advisable for the declining firms not to retain the earnings. The optimum payout is 100 per cent. This will maximise the value of shares of the declining firms.

(Refer Problems 13 and 14)

In short, according to the Walter's model, a growth firm ($r > k$) should retain all its earnings (optimum payout is 0%).

A declining firm ($r < k$) should distribute all its earnings (optimum payout is 100%).

For a normal firm ($r = k$), there is no optimum payout. Any dividend policy is as good as the other.

(Refer problems 15 and 16)

Assumptions of Walter's Model

1. The firm finances all its earnings only through retained earnings. It does not use new debt or equity.

2. The internal rate of return (r) and the cost of capital (k) of the firm remain constant.
3. All the earnings are distributed or reinvested in the firm.
4. The firm has a perpetual life.
5. Earning per share and dividend remain constant in determining a given value.

Walter's Formula

Walter's formula to determine the market price per share is as follows:

$$\text{Market price per share, } P = \frac{D + r/k (E - D)}{k}$$

Where

D = Dividend k = cost of capital
 r = Rate of return E = Earnings per share

Criticism of Walter's Model

1. The model assumes that a firm finances all its investments only through retained earnings. The assumption is unrealistic. Firms do raise funds through new debt and equity.
2. The assumption that the rate of return (r) remains constant is also not true. In fact, the rate of return changes with increase in investment.
3. The model assumes that the cost of capital remains constant. But the cost of capital also changes because of the changes in risk. Hence, the assumption does not hold good.

GORDON'S MODEL

The model developed by Myron Gordon suggests that the dividend decision is relevant and it affects the value of the firm. Gordon's model explicitly relates the market value of the firm to dividend policy.

The conclusions of Gordon's model are:

1. Growth firms ($r > k$)

For growth firms with profitable investment opportunities, market price of share increases when dividend payout is less. Hence growth firms should retain maximum earnings. The optimum payout is zero per cent. (Refer problems 17 and 18)

2. Normal firms ($r = k$)

For normal firms, the price per share is not affected by dividend policy. Hence there is no optimal dividend payout. (Refer problem 19)

3. Declining firms ($r < k$)

For declining firms, the market price of share increases when dividend payout increases. It is beneficial to distribute all the earnings. Optimum payout is 100 per cent. (Refer problem 20)

Conclusions of Gordon's model are similar to those of Walter's model due to the similarities in assumptions.

Assumptions of Gordon's Model

1. The firm is an all equity firm. It does not use any debt.
2. The firm finances its expansion only through retained earnings.
3. The rate of return on investment (r) is constant.
4. The cost of capital (k) also remains constant.
5. The retention ratio (b), (the proportion of earnings retained) once decided, remains constant. Therefore, the growth rate (g) ($g = br$) is also constant.
6. Cost of capital (k) is greater than the growth rate (g).
7. There are no corporate taxes.
8. The firm has a perpetual life.

Gordon's Formula

According to the Gordon model, the market price of a share is equal to the present value of future stream of dividends.

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \dots + \frac{D_t}{(1+k)^n}$$

$$= \sum_{t=1}^n \frac{D_t}{(1+k)^t}$$

Accordingly, the value of the share can be obtained by the equation

$$P = \frac{D}{k-g} \quad \text{or} \quad \frac{E(1-b)}{k-br}$$

Where

P = Market Price per share	E = Earnings per share
D = Dividend per share	b = Retention ratio
k = Cost of Capital	r = Rate of return
g = Growth rate = b x r	

(Refer Composite Problems 21 to 24)

MODIGLIANI - MILLER HYPOTHESIS

(M. M. Model)

According to Modigliani and Miller, the value of the firm depends on its earnings. The dividend decision simply splits the earnings between retention and dividends. It has no significance in determining the value of the firm. The dividend decision is irrelevant as it does not affect the wealth of the shareholders. Hence, the MM hypothesis is known as hypothesis of dividend irrelevance.

The MM Argument

The substance of the MM argument is as follows. If the firm distributes dividends, the shareholders benefit. But the benefit to shareholders will be offset by the decline in market price of shares. As a result, there will be no change in the total wealth of the share holders.

For example, suppose A Ltd has investment opportunities. If the company distributes all its earnings as dividends, it will have to raise funds by the issue of new shares or debt to finance its investment. The

number of shares will increase or interest charges will go up. As a result, earnings per share will decline leading to a fall in market price of the share. In other words, the benefit derived by the shareholders on account of dividend payment will be offset by the fall in market price. Hence division of earnings between dividends and retained earnings is irrelevant from the point of view of shareholders.

Assumptions of M.M. Model

The assumptions underlying M.M hypothesis are :

1. The capital markets are perfect.
2. Investors behave rationally.
3. Information is freely available.
4. There are no floatation costs (Costs of issue of securities).
5. There are no transaction costs such as brokerage.
6. There are no taxes or tax rates applicable to dividends and capital gains are the same.
7. The firm has a fixed investment policy.
8. There is no risk of uncertainty. Hence, investors can forecast dividends and prices with certainty. A single discount rate can be used for discounting cash inflows at different time periods.

Market Price under M.M. Model

The market price of a share at the beginning of a period (P_0) is equal to the present value of dividends received at the end of the period plus the market price of the share at the end of the period.

$$P_0 = \text{Present value of dividends received} + \text{Market Price of the share at the end of the period.}$$

This can be expressed as follows

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

The value of P_1 (market price at the end of the period) can be derived from the above equation.

$$P_1 = P_0 (1 + k_e) - D_1$$

P_1 = Market price per share at the end of the period

P_0 = Current market price

K_e = Cost of equity capital

D_1 = Dividend to be received at the end of the period.

(Refer Problems 25 to 27)

Computation of the Number of New Shares

The investment requirements of a firm can be financed by retained earnings or issue of new shares or both. The number of new shares to the issue is determined as follows.

	Rs	Rs
1. Investment proposed		
2. Net Income		
3. Less: Dividend distribution		
4. Retained earnings available for investment (2)-(3)		
5. New shares to be issued for the balance (1)-(4)		
6. Issue price of share		
7. No. of shares to be issued = (5)÷(6)		

Criticism of M.M. Hypothesis

Modigliani and Miller's hypothesis is based on certain simplifying assumptions. But the assumptions are not well founded. As the assumptions are unrealistic, the MM hypothesis lacks practical relevance. The criticisms are:

1. The model assumes perfect capital markets. But in practice, capital markets are not perfect.
2. Information about the company is also not freely available to all.
3. The assumption that there are no corporate taxes does not hold good. In the real world, there are corporate taxes. Further, the rates of tax on dividend and capital gains are not the same.

4. The firms are assumed to follow a fixed investment policy. In the dynamic real world, firms do not follow any fixed investment policy.
5. The model assumes that there are no floatation costs (costs of issue). But in actual practice, floatation costs are incurred by companies for raising new debt or capital.
6. Similarly, the assumption that there are no transaction costs is also not valid. Investors have to pay brokerage, service tax etc. on purchase and sale of securities.

DETERMINANTS OF DIVIDEND POLICY

The following are the important factors which influence the dividend policy of a firm.

1. Expectations of Shareholders

Shareholders are the owners of the company. So, the company should consider the dividend expectations of shareholders. They may be interested in dividend or capital gains. The preference for dividend or capital gains depends on the economic status or attitude of an individual. For example, a retired person who wants a regular income may prefer to receive dividends. On the other hand, a wealthy person may prefer capital gains to dividends.

In the case of a closely held company, it is easy to ascertain the wishes of the shareholders. But in the case of a widely held company, it is difficult to ascertain the preferences of shareholders. They may have different desires regarding dividends and capital gains.

A company should formulate the dividend policy after taking into consideration the expectations of different groups of shareholders. It may aim at satisfying a vast majority of the shareholders.

2. New Investments

Availability of investment opportunities (such as expansion and diversification) is an important factor which influences the dividend decision. If the company has profitable investment opportunities, it may retain a substantial part of the earnings and pay out a small dividend. If the company does not have good investment opportunities,

it is better to distribute the earnings as dividends. In other words, a high payout is desirable for such companies.

3. Taxation

Taxation policy also affects the dividend policy of a firm. In India, dividends are tax free in the hands of the shareholders. Long term capital gain on listed shares, sold on or after 1st October 2004 is also not taxable, if securities transaction tax has been paid. But, short term capital gain is taxable. The share holders may prefer dividends or capital gains depending on the effect of tax on their incomes. Hence, a company should keep in mind the taxation aspect while formulating its dividend policy.

4. Liquidity

The liquidity position is an important factor which influences the dividend decision. Sometimes, a company which has good earnings may not have sufficient liquidity. In such a case, it is advisable to restrict the dividend to the available liquid resources.

5. Access to Capital Markets

A company which is confident of raising resources from the capital market (for expansion and diversification) may pay higher dividends. On the other hand, if the company is unable to raise resources due to its poor image or the depressed state of the capital markets, it has to contend with a low payout.

6. Restrictions by Lenders

The lenders, particularly financial institutions impose restrictions on the payment of dividends to safeguard their own interests. For example, a lender may stipulate that only upto 30. per cent of the profits may be paid as dividends. Because of these restrictions, a company may be forced to retain earnings and have a low payout.

7. Control

The objective of maintaining control by the present management may also affect the dividend policy. Suppose a company is quite liberal in paying dividends, it may have to raise funds for expansion or diversification by the issue of new shares. If the present management is unable to subscribe to the new shares, its control will be diluted. Hence,

the management may opt for a low payout and retain earnings to maintain control over the company.

8. Legal Restrictions

The provisions of the Companies Act are to be adhered in the formulation of dividend policy. According to these provisions, dividends can be paid only out of current profits or past profits, only after providing for depreciation. There are also stipulations regarding transfer of profits to reserves before declaration of dividends. Further, dividends can not be paid out of capital.

9. Nature of Earnings

The nature of earnings is also a key factor in dividend decision. Certain industries like pharmaceuticals, liquor and essential goods have a steady demand. Companies in such industries may enjoy stable earnings. They may therefore resort to liberal payout of dividends. However, if the earnings are uncertain because of the cyclical nature of the industry (e.g. Sugar, shipping, plantations) it is desirable to have a low payout.

10. Stability of Dividends

Stable dividends create a good image of the company. A steady dividend gives a sense of security and confidence to the shareholders. Hence, companies may prefer to maintain a stable dividend irrespective of the ups and downs in the earnings.

STABILITY OF DIVIDENDS

Stability of dividends refers to consistency in payment of dividends over the years. It means a regular payment of a minimum dividend although there may be fluctuation in earnings. Shareholders generally prefer stable dividends to fluctuating dividends.

The following are the three forms of stable dividends:

1. Fixed Dividend per Share

It means the payment of a constant dividend per share for a fairly long period. It is paid although there may be a rise or fall in earnings. For example, a company may pay a dividend of Rs 3 per share (face value per share Rs 10) year after year, irrespective of the fluctuations in earnings.

When the earnings are stable it is easy to maintain a constant dividend. However, when there are wide fluctuations in earnings, companies use dividend equalisation reserve or general reserve to smoothen dividend payments.

2. Constant Payout Ratio

Under this policy, the company pays a fixed percent age of its earnings as dividends year after year. The payout percentage is consistent. The amount of dividend varies in direct proportion to the earnings of the company. For instance, A Ltd adopts a policy of a constant payout of 40 per cent; If the company earns Rs 10 lakhs, total dividend will be Rs.4 lakhs (40% of Rs 10 lakhs). If the earnings increase to Rs 20 lakhs in the next year, total dividend will be Rs 8 lakhs (40% of Rs 20 lakhs).

3. Extra Dividend

The company generally pays a fixed dividend per share. In years of very high profits, an extra dividend is paid in addition to the regular dividend. Some companies pay a special dividend to mark special occasions such as the silver jubilee of the company.

Advantages of Stable Dividend Policy

The policy of paying a constant dividend per share is quite popular. Its popularity is due to the following advantages.

1. Regular Income to Investors

Many investors prefer stable dividend as it is convenient to them. They can rely on dividend as a regular source of income as it is helpful to meet their regular expenses.

2. Stability in Share Prices

Stable dividends help to maintain stability in market values of the company's shares.

3. Investor Confidence

Companies which follow a stable dividend policy enjoy a high degree of investor confidence.

4. Raising of Capital

A stable dividend policy signifies continued normal operations of the company. It sends out positive signals about its performance. It helps to build investor confidence and a good image about the company. As a result, raising of additional finances is easy for companies which pay stable dividends.

FORMS OF DIVIDEND

Dividend payment may take any of the following forms.

1. Cash Dividend

The dividend is paid to shareholders in cash. Cash dividend is the usual method of paying dividends. It results in outflow of cash. Hence, the company should arrange adequate cash resources for payment of dividend.

2. Bond Dividend

If the company does not have sufficient cash resources, it may issue bonds in lieu of dividend. The shareholders get bonds instead of dividends. The company generally pays interest on these bonds and repay the bonds on maturity. Bond dividend enables the company to postpone payment of dividend. But it is not popular.

3. Property Dividend

It refers to the payment of dividend in the form of some assets other than cash. This type of dividend is also not popular.

4. Stock Dividend

Stock dividend refers to the issue of bonus shares to shareholders. Bonus shares are issued free of cost to shareholders out of accumulated

profits. Usually they are issued when a company has substantial reserves but needs to retain cash for expansion/diversification. It does not result in any outflow of cash. Issue of bonus shares signifies optimism about future profits of the company.

BONUS SHARES

Bonus shares are shares issued free of cost to existing shareholders. The shares are issued out of reserves and surplus consisting of accumulated profits, share premium etc. Bonus issue is made to shareholders in proportion to the number of shares held by them. For instance, a bonus issue of 1 : 2 refers to the issue of one bonus share for every two shares held by the shareholder. Bonus shares are also known as stock dividend.

Issue of bonus shares does not alter the total capital structure of the company. It simply results in conversion of reserves and surplus into equity share capital. Hence, bonus issue involves capitalisation of earnings of a company. The effect of bonus issue on the equity portion of balance sheet is shown below.

Before Bonus Issue

	Rs.
Paid-up share capital	
10,00,000 shares of Rs 10 each	1,00,00,000
Reserves and Surplus	4,00,00,000
Shareholders' Equity	<u>5,00,00,000</u>

After Bonus Issue in the Ratio of 1:1

Paid-up share capital	
20,00,000 shares of Rs 10 each	2,00,00,000
Reserves and Surplus	3,00,00,000
Shareholders' Equity	<u>5,00,00,000</u>

Note: As a result of bonus issue in the ratio of 1:1, no. of shares had increased from 10 lakhs to 20 lakhs. The share capital had increased from Rs 1 crore to Rs 2 crores while the reserves and surplus had decreased from Rs 4 crores to Rs 3 crores. However, there is no change in the shareholders' equity.

Sources of Bonus Issue

Bonus shares can be issued out of accumulated profits as well as current profits. Free reserves built out of genuine profits and share premium received in cash may also be used for the issue of bonus shares. However, bonus shares can not be issued out of reserves created for a specific purpose or by revaluation of assets.

The following are the sources of bonus issue.

1. Balance in Profit and Loss a/c.
2. General Reserve or Reserve Fund.
3. Capital Reserve arising from profit on sale of fixed assets received in cash.
4. Capital Redemption Reserve.
5. Share Premium received in cash.
6. Balance in Sinking Fund reserve for redemption of debentures (This can be used only after the redemption of debentures).
7. Dividend Equalisation Reserve.

Advantages of Bonus Issue

Issue of bonus shares is advantageous to the company as well as the shareholders. The advantages to the company are:

1. Conservation of cash

Payment of cash dividend results in outflow of cash. The issue of bonus shares, on the other hand, does not result in any outflow of cash. The working capital position is also not affected.

2. Enables Retention of Earnings

Retention of earnings provides capital necessary for financing investment opportunities. It is also the cheapest source of finance. But the shareholders may not like retention as they do not get any direct

benefit. In the case of a bonus issue, the shareholders get additional shares without any payment. Thus, issue of bonus shares enable, the company to retain the earnings and at the same time make the shareholders happy.

3. Attractive Share Price: The ex-bonus price of shares is usually lower than the cum-bonus price. As the price is attractive, trading activity increases.

4. Promotes Active Trading: Issue of bonus shares increases the number of shares. This also tends to increase market interest and promotes active trading in the shares.

5. Better Image : A company which issues bonus shares is considered investor friendly. The image of the company gets a boost.

6. Realistic EPS and DPS : When the company has a small share capital and huge reserves, the earning per share (EPS) and dividend per share (DPS) are generally very high. The exceptionally high EPS and DPS give an impression of exploitation or profiteering by the company. It may attract competition also. The issue of bonus shares increases the number of shares. As a result, the EPS and DPS come down.

7. No Cash Requirement : Sometimes the company may not be able to pay cash dividends due to inadequacy of liquid resources or restrictions imposed by lenders. In such cases, bonus issue helps to satisfy the shareholders.

8. Tax Benefits : Companies in India have to pay tax on dividend distribution. But there is no tax on the issue of bonus shares.

Advantages to Shareholders

1. Signal of Higher Future Profits

A company generally issues bonus shares only when it is confident of improvement in the earnings. Issue of bonus shares is therefore perceived by investors as an indication of a bright future. The optimism about future earnings increases the market value of shares.

2. Chances of Increase in Dividends

Issue of bonus shares results in an increase in the number of shares held by the shareholders. In course of time, they get higher dividends even if the rate of dividend is reduced. For example, Mr. A holding

1000 shares in S. Ltd receives a dividend of Rs 3000, at the rate of Rs 3 per share. As a result of a bonus issue of 1:1 his shareholding increases to 2000. Even if the dividend is reduced Rs 2 per share next year, Mr A will receive a total dividend of Rs 4000 (2×2000 shares).

3. Favourable Psychological Effect

Bonus issue increases the number of shares held by the shareholders. It has a favourable psychological effect. Further, bonus issue gives them an opportunity to sell the shares to get capital gains, without affecting the original holding.

STOCK SPLIT

Stock split signifies a reduction in the par value of a share and a proportionate increase in the number of shares. For example, one share of Rs 100 may be split into 10 shares of Rs 10 each. It is similar to getting 10 notes Rs 10 each in exchange for one hundred rupee note. It is to be noted that there is no change in the amount of share capital. The number of shares increases. A shareholder holding 100 shares of Rs 100 each will get 1000 shares of Rs 10 each as a result of the stock split. In recent years, many companies have resorted to stock splits. Hindustan Lever had split its shares of Rs 10 into shares of Re 1. Tata steel and HDFC have split their shares of Rs 100 into shares of Rs 10.

The effect of a stock split (also known as share split) on the balance sheet is shown below

Before the Stock Split

Paid up share capital	Rs.
1,00,000 shares of Rs 100 each	1,00,00,000

After the Stock Split

Paid up share capital	Rs.
10,00,000 shares of Rs 10 each	1,00,00,000

Reasons for Stock Split

1. Attractive Share Prices

Stock split makes the market price of a share appear to be cheap and attractive to investors. The reduction in market price motivates the

investors to buy the shares. For example, suppose a 10 rupee share is quoted at Rs 500, small investors can not afford to buy the shares. They may also feel that the share is over priced. But if the shares are split into shares of Rs 1 and market price comes down to Rs 50, investor interest will increase, although there is no real decline in price. In other words, the price is brought within a popular trading range. This helps in increasing the liquidity and marketability of the shares.

2. Signal of Higher Profits

The investors perceive stock split as an indication of higher future profits. Such a positive perception creates a favourable impact on the market price of the share.

3. Satisfaction of Shareholders

Stock split increases the number of shares. Suppose a shareholder holds 200 shares of Rs 100 each in K Ltd. If the shares are split into shares of Rs 10, he will get 2000 shares of Rs 10 each, (in lieu of the 200 shares held by him) The increase in shareholding gives a sense of satisfaction to the shareholders.

Bonus Issue and Stock Split - A Comparison

Bonus Issue	Stock Split
1. There is no change in the par value of the share.	1. Parvalue of the share is reduced
2. Bonus shares are issued by capitalising the earnings. So, there is a fall in reserves and increase in share capital.	2. There is no capitalisation of reserves. There is no change in reserves or share capital.
3. The book value per share, the EPS and market price per share decline.	3. The book value per share, the EPS and the market price per share decline
4. The shareholders' proportional ownership in the company remains unchanged.	4. The shareholders' proportional ownership in the company remains unchanged.
5. The market price per share is reduced and brought within a more popular trading range.	5. The market price per share is reduced and brought with in a more popular trading range.

Reverse Split

It is the opposite of stock split. Reverse split involves an increase in the par value of shares and a proportional decrease in the number of shares. For example, a company has one crore shares of Rs 10 each. (Share capital = Rs 10 crores). If the company increases the par value to Rs 100 and reduces the number of shares to 10 lakhs, the process is called reverse split.

RIGHTS ISSUE

Rights issue is the offer of new shares of the company to the existing shareholders. The issue price is usually less than the market price. Rights shares are offered to the shareholders in proportion to their existing shareholding in the company.

For example, A Ltd may issue rights shares of Rs 10 each at a price of Rs 70 (market price Rs 100) in the ratio of 2:5. This means that the company offers two shares for every five shares held, at a price of Rs 70 per share.

Features

1. Right issue is the issue of additional shares to the existing shareholders.
2. The shares are issued in proportion to the existing shareholding.
3. The issue price is also known as subscription price. It is left to the discretion of the company. In general, the issue price is fixed lower than the market price, in order to make it attractive to shareholders.
4. The rights are negotiable. The holder of the rights can renounce them. The transferee (or buyer) is called Renouncee.
5. Rights can be exercised only during the specified period. It is usually about 30 days.
6. The existing shareholders, who exercise their rights in full can apply for additional shares.
7. Existing shareholders who renounce their rights in part or in full, are not generally entitled to apply for additional shares.
8. Similarly, renouncees also are not generally entitled to apply for additional shares.

Advantages

1. The right issue is made on a pro-rata basis. So, the control of the existing shareholders of the company is maintained.
2. The floatation costs (issue expenses) are much less when compared to a public issue.
3. Shareholders prefer right issue as they get the shares at a price which is less than the market price. Lower the issue price, greater is the benefit to shareholders.
4. The chances of right issue being subscribed are very bright.

TEST QUESTIONS

1. What are the essentials of Walter's dividend model? Explain its short conings.
2. Discuss Walter's views on optimum dividend payout.
3. Explain the assumptions and implications of Gordon's dividend model.
4. Explain Modigliani - Miller's Dividend Irrelevance Hypothesis.
5. Discuss the determinants of dividend policy of corporate enterprises.
6. What is meant by stability of dividends? Describe the three forms of stable dividends.
8. What are the different forms of dividends?
9. What are bonus shares? State the sources of bonus issue.
10. Explain the advantages of bonus issue.
11. What is a stock split? Discuss the reasons for stock split.
12. Distinguish between bonus issue and stock split.
13. What is meant by right issue of shares? Explain its features and advantages.

PROBLEMS AND SOLUTIONS

WALTER'S MODEL

Problem : 1 The following information relates to Vignesh Ltd.

Earning per share	=	Rs.9
Internal rate of return	=	18%
Cost of capital	=	12%
Payout ratio	=	33.33%

Compute the market price under the Walter's model.

Solution:

Under the Walter's model,

$$\text{Market price per share, } P = \frac{D + r/k (E - D)}{k}$$

$$D = \text{Dividend} = 33.33\% \text{ of EPS} = 33.33\% \text{ of Rs.9} = \text{Rs.3}$$

$$r = \text{Rate of return} = 18\% \text{ or } 0.18$$

$$k = \text{Cost of capital} = 12\% \text{ or } 0.12$$

$$E = \text{Earnings per share} = \text{Rs.9}$$

$$\text{Market price} = \frac{3 + (0.18/0.12)(9 - 3)}{0.12}$$

$$= \frac{3 + (1.5)(6)}{0.12} = \frac{3 + 9}{0.12} = \frac{12}{0.12} = \text{Rs.100}$$

Problem : 2 Joy Ltd. earns Rs.5 per share. The company is capitalised at a rate of 10% and has a return on investment of 18%. According to Walter's formula, what should be the price per share at 25% dividend payout ratio?

Solution:

According to Walter's formula,

$$\text{Market price per share, } P = \frac{D + (r/k)(E - D)}{k}$$

$$D = \text{Dividend} = 25\% \text{ of EPS} = 25\% \text{ of Rs.5} = 1.25$$

$$\begin{aligned}
 r &= \text{Rate of return} &= 18\% \text{ or } 0.18 \\
 k &= \text{Cost of capital} &= 10\% \text{ or } 0.10 \\
 E &= \text{Earnings per share} &= \text{Rs.5}
 \end{aligned}$$

$$\begin{aligned}
 \text{Market price per share} &= \frac{1.25 + (.18 / .10) (5 - 1.25)}{.10} \\
 &= \frac{(1.25) + (1.80) (3.75)}{.10} \\
 &= \frac{1.25 + 6.75}{.10} = \frac{8}{.10} = \text{Rs.80}
 \end{aligned}$$

Problem : 3 The earnings per share of a company is Rs.12. The cost of equity capital is 10%. The rate of return on investments is 15%. Compute the market price per share under Walter's model, if the payout is a) 50% b) 75%.

Solution :

Under the Walter's model

$$\text{Market price per share, } P = \frac{D + (r/k)(E - D)}{k}$$

$$\begin{aligned}
 r &= \text{Rate of return} &= 15\% \text{ or } 0.15 \\
 k &= \text{Cost of capital} &= 10\% \text{ or } 0.10 \\
 E &= \text{Earnings per share} &= \text{Rs.12}
 \end{aligned}$$

a) **Market price if payout is 50%**

$$\text{Dividend} = 50\% \text{ of EPS} = 50\% \text{ of Rs.12} = \text{Rs.6}$$

$$\begin{aligned}
 \text{Market price per share } P &= \frac{6 + (.15 / .10) (12 - 6)}{.10} \\
 &= \frac{6 + (1.5) (6)}{.10} = \frac{6 + 9}{.10} = \frac{15}{.10} = \text{Rs.150}
 \end{aligned}$$

b) **Market price if payout is 75%**

$$\text{Dividend} = 75\% \text{ of EPS} = 75\% \text{ of Rs.12} = \text{Rs.9}$$

$$\begin{aligned}
 \text{Market price per share } P &= \frac{9 + (.15 / .10) (12 - 9)}{.10} \\
 &= \frac{9 + (1.5) (3)}{.10}
 \end{aligned}$$

12.22

$$= \frac{9 + 4.5}{.10} = \frac{13.5}{.10} = \frac{13.5}{.10} = \text{Rs.135}$$

Problem : 4 The earnings per share of a company are Rs.10. The rate of capitalisation is 10% and the retained earnings can be employed to yield a return of 20%.

The company is considering a payout of a) 20% b) 40% and c) 60%. Which of these would maximise the wealth of the shareholders as per Walter's model?
(B.Com. Bharathidasan)

Solution :

Under the Walter's model,

$$\text{Market price per share, } P = \frac{D + (r/k)(E - D)}{k}$$

$$\begin{aligned}
 D &= \text{Dividend per share} \\
 r &= \text{Rate of return} &= 20\% \text{ or } 0.20 \\
 k &= \text{Cost of capital} &= 10\% \text{ or } 0.10 \\
 E &= \text{Earnings per share} &= \text{Rs.10}
 \end{aligned}$$

a) **When the payout is 20%**

$$\text{Dividend} = 20\% \text{ of EPS} = 20\% \text{ of Rs.10} = \text{Rs.2}$$

$$\begin{aligned}
 \text{Market price per share } P &= \frac{2 + (.20 / .10) (10 - 2)}{.10} \\
 &= \frac{2 + (2) (8)}{.10} = \frac{2 + 16}{.10} = \frac{18}{.10} = \text{Rs.180}
 \end{aligned}$$

b) **When the payout is 40%**

$$\text{Dividend} = 40\% \text{ of EPS} = 40\% \text{ of Rs.10} = \text{Rs.4}$$

$$\begin{aligned}
 \text{Market price per share } P &= \frac{4 + (.20 / .10) (10 - 4)}{.10} \\
 &= \frac{4 + (2) (6)}{.10} = \frac{4 + 12}{.10} = \frac{16}{.10} = \text{Rs.160}
 \end{aligned}$$

c) **When the payout is 60%**

$$\text{Dividend} = 60\% \text{ of EPS} = 60\% \text{ of Rs.10} = \text{Rs.6}$$

$$\text{Market price per share } P = \frac{6 + (.20 / .10) (10 - 6)}{.10}$$

Optimal payout

Sun Ltd. is a growth firm as its rate of return is higher than the cost of capital. ($r > k$). The optimal payout is 0%.

Market price per share if payout is 0%

Dividend = 0

$$\begin{aligned} \text{Market price per share } P &= \frac{0 + (.10 / 0.05) (10 - 0)}{.05} \\ &= \frac{0 + (2) (10)}{.05} = \frac{20}{.05} = \text{Rs. } 400 \end{aligned}$$

At the current payout of 80%, market price is Rs. 240

If the payout is 0%, market price will be Rs. 400

Hence, the current payout is not optimal.

The optimal payout is 0%

Problem : 10 The following information relates to Sunlight Ltd.

Earnings per share (EPS) = Rs. 10

Return on investments r = 12%

Cost of capital k = 12%

Payout ratio = 40%

Determine the market price per share using Walter's approach.

Solution

Under the Walter's model,

$$\text{Market price per share, } P = \frac{D + (r/k)(E - D)}{k}$$

D = Dividend = 40% of EPS = 40% of Rs. 10 = Rs. 4

r = Rate of return = 12% or 0.12

k = Cost of capital = 12% or 0.12

E = Earnings per share (EPS) = Rs. 10

$$\begin{aligned} \text{Market price per share } P &= \frac{4 + (.12 / .12) (10 - 4)}{.12} \\ &= \frac{4 + (1) (6)}{.12} = \frac{4 + 6}{.12} = \frac{10}{.12} = \text{Rs. } 83.33 \end{aligned}$$

Problem : 11 The earnings per share of a company are Rs. 12 and the rate of capitalisation applicable to the company is 10%. The productivity of earnings (r) is 10%.

Compute the market value of the company's share if the payout ratio is a) 25% b) 50% c) 75%. Which is the optimum payout?

Solution :

According to Walter's formula,

$$\text{Market price per share } P = \frac{D + (r/k)(E - D)}{k}$$

D = Dividend per share

r = Rate of return = 10% or 0.10

k = Cost of capital = 10% or 0.10

E = Earnings per share (EPS) = Rs. 12

a) **Market price per share if payout is 25%**

D = Dividend = 25% of EPS = 25% of Rs. 12 = Rs. 3

$$\text{Market price } P = \frac{3 + (.10 / .10) (12 - 3)}{.10}$$

$$\frac{3 + (1) (9)}{.10} = \frac{3 + 9}{.10} = \frac{12}{.10} = \text{Rs. } 120$$

b) **Market price per share if payout is 50%**

D = Dividend = 50% of EPS = 50% of Rs. 12 = Rs. 6

$$\text{Market price } P = \frac{6 + (.10 / .10) (12 - 6)}{.10}$$

$$\frac{6 + (1) (6)}{.10} = \frac{6 + 6}{.10} = \frac{12}{.10} = \text{Rs. } 120$$

c) **Market price per share if payout is 75%**

D = Dividend = 75% of Rs. 12 = Rs. 9

$$\text{Market price } P = \frac{9 + (.10 / .10) (12 - 9)}{.10}$$

$$\frac{9 + (1) (3)}{.10} = \frac{9 + 3}{.10} = \frac{12}{.10} = \text{Rs. } 120$$

The company is a normal firm ($r = k$). Market value remains the same for all payouts. Hence, there is no optimum payout.

Problem : 12 The following information relates to Venus Ltd.

Earnings per share	Rs.30
Productivity of retained earnings (r)	15%
Capitalisation rate (k)	15%

What is the market price per share according to the Walter model if the payout is a) 20% b) 40% c) 60%
Give your comments.

Solution :

Under the Walter's model,

$$\text{Market price per share } P = \frac{D + (r/k)(E - D)}{k}$$

D = Dividend per share

r = Rate of return = 15% or 0.15

k = Cost of capital = 15% or 0.15

E = Earning per share (EPS) = Rs.30

a) **Market price per share if payout is 20%**

D = Dividend = 20% of EPS = 20% of Rs.30 = Rs.6

$$\begin{aligned} \text{Market price } P &= \frac{6 + (0.15/0.15)(30 - 6)}{0.15} \\ &= \frac{6 + (1)(24)}{0.15} = \frac{6 + 24}{0.15} = \frac{30}{0.15} = \text{Rs.200} \end{aligned}$$

b) **Market price per share if payout is 40%**

Dividend = 40% of EPS = 40% of Rs.30 = Rs.12

$$\begin{aligned} \text{Market price } P &= \frac{12 + (0.15/0.15)(30 - 12)}{0.15} \\ &= \frac{12 + (1)(18)}{0.15} = \frac{12 + 18}{0.15} = \frac{30}{0.15} = \text{Rs.200} \end{aligned}$$

c) **Market price per share if payout is 60%**

Dividend = 60% of EPS = 60% of Rs.30 = Rs.18

Market price, P

$$= \frac{18 + (0.15/0.15)(30 - 18)}{0.15}$$

$$= \frac{18 + (1)(12)}{0.15} = \frac{18 + 12}{0.15} = \frac{30}{0.15} = \text{Rs.200}$$

Comments

The rate of return is equal to the cost of capital ($r = k$). Hence Venus Ltd. is a normal firm. The market price per share will be the same for all payouts. Thus, the market price is Rs.200 at different payouts of 20%, 40% and 60%. That is, for a normal firm, distribution or retention of profits does not make any difference.

Problem : 13 The earnings per share of Notsowell Ltd. is Rs.20. The rate of capitalisation is 12%, and the rate of return on investments is 9%.

Compute the market price per share using Walter's formula if the dividend payout is a) 20% b) 60% c) 100%. Which is the ideal payout?

Solution :

According to Walter's formula,

$$\text{Market price per share } P = \frac{D + (r/k)(E - D)}{k}$$

D = Dividend per share

r = Rate of return = 9% or 0.09

k = Cost of capital = 12% or 0.12

E = Earning per share (EPS) = Rs.20

a) **Market price per share if payout is 20%**

D = Dividend = 20% of EPS = 20% of Rs.20 = Rs.4

$$\begin{aligned} \text{Market price } P &= \frac{4 + (0.09/0.12)(20 - 4)}{0.12} \\ &= \frac{4 + (0.75)(16)}{0.12} = \frac{4 + 12}{0.12} = \frac{16}{0.12} = \text{Rs.133} \end{aligned}$$

b) **Market price per share if payout is 60%**

Dividend = 60% of EPS = 60% of Rs.20 = Rs.12