

**CERTIFIED INVESTMENT AND
FINANCIAL ANALYSTS**

PAPER NO.CI 32

CIFA PART TWO

SECTION THREE

STUDY NOTES

CORPORATE FINANCE

PAPER NO. 8 CORPORATE FINANCE

GENERAL OBJECTIVES

This paper is intended to equip the candidate with the knowledge, skills and attitudes that will enable him/her to make corporate finance decisions

8.0 LEARNING OUTCOMES

On successful completion of this paper, the candidate should be able to:

- Make capital budgeting decisions
- Compute the cost of capital of a firm
- Select the optimal capital structure of a firm
- Manage the working capital of a firm
- Undertake corporate restructuring
- Evaluate mergers and acquisitions
- Make decisions in the context of Islamic finance

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TOPIC ONE

OVERVIEW OF CORPORATE FINANCE

Nature and scope of corporate finance

Corporate finance is the area of finance dealing with the sources of funding and the capital structure of corporations and the actions that managers take to increase the value of the firm to the shareholders, as well as the tools and analysis used to allocate financial resources. The primary goal of corporate finance is to maximize or increase shareholder value. Although it is in principle different from managerial finance which studies the financial management of all firms, rather than corporations alone, the main concepts in the study of corporate finance are applicable to the financial problems of all kinds of firms.

Investment analysis (or capital budgeting) is concerned with the setting of criteria about which value-adding projects should receive investment funding, and whether to finance that investment with equity or debt capital. Working capital management is the management of the company's monetary funds that deal with the short-term operating balance of current assets and current liabilities; the focus here is on managing cash, inventories, and short-term borrowing and lending (such as the terms on credit extended to customers).

The terms corporate finance and **corporate financier** are also associated with investment banking. The typical role of an investment bank is to evaluate the company's financial needs and raise the appropriate type of capital that best fits those needs. Thus, the terms "corporate finance" and "corporate financier" may be associated with transactions in which capital is raised in order to create, develop, grow or acquire businesses..

Financial management overlaps with the financial function of the Accounting profession. However, financial accounting is the reporting of historical financial information, while financial management is concerned with the allocation of capital resources to increase a firm's value to the shareholders.

Outline of corporate finance

The primary goal of financial management is to maximize or to continually increase shareholder value. Maximizing shareholder value requires managers to be able to balance capital funding between investments in projects that increase the firm's long term profitability and sustainability, along with paying excess cash in the form of dividends to shareholders. Managers of growth companies (i.e. firms that earn high rates of return on invested capital) will use most of the firm's capital resources and surplus cash on investments and projects so the company can continue to expand its business operations into the future. When companies reach maturity levels within their industry (i.e. companies that earn approximately average or lower returns on invested capital), managers of these companies will use surplus cash to payout dividends to shareholders. Managers must do an analysis to determine the appropriate allocation of the firm's capital resources and cash surplus between projects and payouts of dividends to shareholders, as well as paying back creditor related debt.

Choosing between investment projects will be based upon several inter-related criteria.

1. Corporate management seeks to maximize the value of the firm by investing in projects which yield a positive net present value when valued using an appropriate discount rate in consideration of risk.
2. These projects must also be financed appropriately.
3. If no growth is possible by the company and excess cash surplus is not needed to the firm, then financial theory suggests that management should return some or all of the excess cash to shareholders (i.e., distribution via dividends).

This "capital budgeting" is the planning of value-adding, long-term corporate financial projects relating to investments funded through and affecting the firm's capital structure. Management must allocate the firm's limited resources between competing opportunities (projects).

Capital budgeting is also concerned with the setting of criteria about which projects should receive investment funding to increase the value of the firm, and whether to finance that investment with equity or debt capital. Investments should be made on the basis of value-added to the future of the corporation. Projects that increase a firm's value may include a wide variety of different types of investments, including but not limited to, expansion policies, or mergers and acquisitions. When no growth or expansion is possible by a corporation and excess cash surplus exists and is not needed, then management is expected to pay out some or all of those surplus earnings in the form of cash dividends or to repurchase the company's stock through a share buyback program.

Financial decision making process

Managers and business owners must weigh financial considerations with every major decision they make for their firm. Whether the decision involves capital expansion, hedging assets or acquiring major equipment or merging with another firm, solid financial analysis will provide the assurance that the decision is made with the best information available. There are six factors to consider.

1. The Opportunity

Financial analysis begins with a thorough description of the project being undertaken. This narrative includes background of the project, the current status and how you intend to complete the project. If, for example, you are planning to expand your business by building a new facility, you should explain why you have outgrown your current location, why the proposed addition will solve your problem and how long it will take to become operational.

2. Accounting Considerations

Your analysis will include pro forma balance sheets, income statements and projected cash flow -- with and without the expansion. This will be necessary to convince investors that you have thought through details and can justify the expense of the project being undertaken.

3. Financial Considerations

Financial considerations include the details regarding the cost of the project, what working capital is required and the sources of any funds that you do not already control. If you plan to borrow funds, then weigh the cost and terms of each potential lender -- venture capitalist, bank or private investor. Determine what collateral is required and if there are any special terms and conditions.

4. Risk Factors

Assessing risk factors is essential. Many risks cannot be avoided. Fire, accidents on the job, business interruptions and non-performance by a contractor are just a few of the risks you may encounter. Some require insurance; others you may self-insure. In any case, you must assess probabilities and present alternatives. Market risks and some risks of operations are uninsurable. If there is an environmental impact, then that too must be factored into your risk analysis.

5. ROI Forecast

While the forecast is implied in your pro forma financial statements, you need to address the return on investment, presenting best-case, likely case and worst-case scenarios. Since it is impossible to project business conditions with absolute certainty, offering a range of

forecasts will provide assurance to investors that even with the worst case the project will have an acceptable return.

6. Legal Issues

Whatever project you are contemplating, there will be legal considerations. A physical expansion will raise environmental issues. The purchase of major equipment will require contractual agreements. There are federal, state and local ordinances and regulations that must be followed, and tax considerations that must be met at all levels.

Role of the Financial Manager

The role of the Financial Manager is to make the right decisions in order to achieve the objectives of the company in the future.

The four key areas that the Financial Manager is concerned with are as follows:

(a) The raising of long-term finance:

The company needs finance for investment and in order to expand. Finance can be raised from shareholders or from debt – it is the job of the Financial Manager to be aware of the different sources of finance and to decide which source to use.

(b) The investment decision:

Decisions have to be made as to where capital is to be invested. For example, is it worth launching a new product? Is it worth expanding the factory? Is it worth acquiring another company?

It is the Financial Manager's role to decide on which criteria to employ in making this kind of investment decision.

(c) The management of working capital:

In order for the company to operate, it will have to accept a certain level of debtors and it will have to carry a certain level of stock.

Although these are needed to operate the business successfully, they require long-term investment of capital that is not directly earning profits.

Debtors and stock are just two components of working capital (working capital = current assets less current liabilities) and it is a job of the Financial Manager to ensure that the working capital is managed properly i.e. that it is high enough to enable company to operate efficiently, but that it does not get out of control and end up wasting money for the company.

(d) The management of risk:

One of the roles of the Financial Manager is to manage the risk due to changing exchange rates if the business trades abroad, and to manage the risk due to changes in interest rates if the business borrows or deposits money.

FINANCE FUNCTIONS

Finance function is one of the major parts of business organization, which involves the permanent and continuous process of the business concern. Finance is one of the interrelated functions which deal with personal function, marketing function, production function and research and development activities of the business concern. At present, every business concern concentrates more on the field of finance because, it is a very emerging part which reflects the entire operational and profit ability position of the concern. Deciding the proper financial function is the essential and ultimate goal of the business organization.

Finance manager is one of the important role players in the field of finance function. He must have entire knowledge in the area of accounting, finance, economics and management. His position is highly critical and analytical to solve various problems related to finance. A person who deals finance related activities may be called finance manager.

Finance manager performs the following major functions:

1. Forecasting Financial Requirements

It is the primary function of the Finance Manager. He is responsible to estimate the financial requirement of the business concern. He should estimate, how much finances required to acquire fixed assets and forecast the amount needed to meet the working capital requirements in future.

2. Acquiring Necessary Capital

After deciding the financial requirement, the finance manager should concentrate how the finance is mobilized and where it will be available. It is also highly critical in nature.

3. Investment Decision

The finance manager must carefully select best investment alternatives and consider the reasonable and stable return from the investment. He must be well versed in the field of capital budgeting techniques to determine the effective utilization of investment. The finance manager must concentrate to principles of safety, liquidity and profitability while investing capital.

4. Cash Management

Present day's cash management plays a major role in the area of finance because proper cash management is not only essential for effective utilization of cash but it also helps to meet the short-term liquidity position of the concern.

5. Interrelation with Other Departments

Finance manager deals with various functional departments such as marketing, production, personnel, system, research, development, etc. Finance manager should have sound knowledge not only in finance related area but also well versed in other areas. He must maintain a good relationship with all the functional departments of the business organization.

Financial goals of the firm.

➤ **Profit-Maximization**

Microeconomic theory of the firm is founded on profit maximization as the principal decision criterion: markets managers of firms direct their efforts toward areas of attractive profit potential using market prices as their signals. Choices and actions that increase the firm's profit are undertaken while those that decrease profits are avoided. To maximize profits the firm must maximize output for a given set of scarce resources, or equivalently, minimize the cost of producing a given output.

Applying Profit-Maximization Criterion in Financial Management

Financial management is concerned with the efficient use of one economic resource, namely, capital funds. The goal of profit maximization in many cases serves as the basic decision criterion for the financial manager but needs transformation before it can provide the financial manager with an operationally useful guideline. As a benchmark to be aimed at in practice, profit maximization has at least four shortcomings: it does not take account of risk; it does not take account of time value of money; it is ambiguous and sometimes arbitrary in its measurement; and it does not incorporate the impact of non-quantifiable events.

Uncertainty (Risk) The microeconomic theory of the firm assumes away the problem of uncertainty: When, as is normal, future profits are uncertain, the criteria of maximizing profits loses meaning as for it is no longer clear what is to be maximized. When faced with uncertainty (risk), most investors providing capital are risk averse. A good decision criterion must take into consideration such risk.

Timing Another major shortcoming of simple profit maximization criterion is that it does not take into account of the fact that the timing of benefits expected from investments varies widely. Simply aggregating the cash flows over time and picking the alternative with the highest cash flows would be misleading because money has time value. This is the idea that since money can be put to work to earn a return, cash flows in early years of a project's life are valued more highly than equivalent cash flows in later years. Therefore the profit maximization criterion must be adjusted to account for timing of cash flows and the time value of money.

Subjectivity and ambiguity A third difficulty with profit maximization concerns the subjectivity and ambiguity surrounding the measurement of the profit figure. The accounting profit is a function of many, some subjective, choices of accounting standards and methods with the result that profit figure produced from a given data base could vary widely.

Qualitative information Finally many events relevant to the firms may not be captured by the profit number. Such events include the death of a CEO, political development, and dividend policy changes. The profit figure is simply not responsive to events that affect

the value of the investment in the firm. In contrast, the price of the firm's share (which measures wealth of the shareholders of the company) will adjust rapidly to incorporate the likely impact of such events long before their effects are seen in profits.

➤ **Value Maximization**

Because of the reasons stated above, Value-**maximization** has replaced profit-maximization as the operational goal of the firm. By measuring benefits in terms of cash flows value maximization avoids much of the ambiguity of profits. By discounting cash flows over time using the concepts of compound interest, Value maximization takes account of both risk and the time value of money. By using the market price as a measure of value the value maximization criterion ensures that (in an efficient market) its metric is all encompassing of all relevant information qualitative and quantitative, micro and macro. Let us note here that value maximization is with respect to the interests of the providers of capital, who ultimately are the owners of the firm. – The maximization of owners' wealth is the principal goal to be aimed at by the financial manager.

In many cases the wealth of owners will be represented by the market value of the firm's shares - that is the reason why maximization of shareholders wealth has become synonymous with maximizing the price of the company's stock. The market price of a firm's stocks represent the judgment of all market participants as to the values of that firm - it takes into account present and expected future profits, the timing, duration and risk of these earnings, the dividend policy of the firm; and other factors that bear on the viability and health of the firm. Management must focus on creating value for shareholders. This requires Management to judge alternative investments, financing and assets management strategies in terms of their effects on shareholders value (share prices).

Non-financial goals

➤ **Social Responsibility and Ethics**

It has been argued that the unbridled pursuit of shareholders wealth maximization makes companies unscrupulous, anti social, enhances wealth inequalities and harms the environment. The proponents of this position argue that maximizing shareholders wealth should not be pursued without regard to a firm's corporate social responsibility. The argument goes that the interest of stakeholders other than just shareholders should be taken care of. The other stakeholders include creditors, employees, consumers, communities in which the firm operates and others. The firm will protect the consumer; pay fair wages to employees while maintaining safe working conditions, support education and be sensitive to the environment concerns such as clean air and water. A firm must also conduct itself ethically (high moral standards) in its commercial transactions.

Being socially responsible and ethical cost money and may detract from the pursuit of shareholders wealth maximization. So the question frequently posed is: is ethical behavior and corporate social responsibility inconsistent with shareholder wealth maximization?

In the long run, the firm has no choice but to act in socially responsible ways. It is argued that the corporation's very survival depend on it being socially responsible. The implementation of a pro-active ethics and corporate social responsibility (CSR) program is believed to enhance corporate value. Such a program can reduce potential litigation costs,

maintain a positive corporate image, build shareholder confidence, and gain the loyalty, commitment and respect of firm's stakeholders. Such actions conserve firm's cash flows and reduce perceived risk, thus positively effecting firm share price. It becomes evident that behavior that is ethical and socially responsible helps achieve firm's goal of owner wealth maximization.

➤ **Growth and expansion.**

This is a major objective for small companies which seek to expand operations so as to enjoy economies of scale.

Difficulty of Achieving Shareholders Wealth Maximization

Two difficulties complicate the achievement of the goal of shareholder wealth maximization in modern corporations. These are caused by the agency relationships in a firm and the requirements of corporate social responsibility (As discussed above).

AGENCY THEORY.

An agency relationship is created when one party (principal) appoints another party (agent) to act on their (principals) behalf. The principal delegates decision making authority to the agent. In a firm agency relationship exists between;

- 1 Shareholders and management
- 2 Shareholders and creditors
- 3 Shareholders and the government
- 4 Shareholders and auditors

Shareholders and management

The separation of ownership and control in most modern corporations' causes a conflict of interest between the personal interest of appointed managers (agent) and the interests of the owners of the firms (principals).this conflict is known as the **agency conflict**. The following are some decisions by managers which would result in a conflict with shareholders:

1. Managers may use corporate resources for personal use.
2. Managers may award themselves hefty pay rises
3. Managers may organize mergers which are intended for their benefit only and not for the benefit of shareholders.
4. Managers may take holidays and spend huge sums of company money.
5. Managers may use confidential information for their benefit(insider trading)

Resolution of conflict

1. Performance based remuneration

This will involve remunerating managers for actions they take that maximize shareholders wealth. The remuneration scheme should be restructured in order to enhance the harmonization of the interest of shareholders with those of management. Managers could be given bonuses, commissions for superior performance in certain periods.

2. Incurring agency costs

Agency costs refer to costs incurred by shareholders in trying to control management behavior and actions and therefore minimize agency conflicts.

These costs include:

a) Monitoring costs. They arise as a result of mechanisms put in place to ensure interests of shareholders are met. They include cost of hiring external auditors, bonding assurance which is insurance taken out where the firm is compensated if manager commits an infringement, internal control system implementation.

b) Opportunity costs which are incurred either because of the benefit foregone from not investing in a riskier but more profitable investment or in the due to the delay in decision making as procedures have to be followed(hence, a timely decision will not be made)

c) Restructuring costs are those costs incurred in changing or altering an organizations structure so as to prevent undesirable management activities.

d) Board of directors- a properly constituted board plays the oversight role on management for the shareholders.

3. Threat of corporate takeover

When management of a firm under performs this result in the shares of that firm being undervalued there is the threat of a hostile takeover. This threat acts to force managers to perform since should the firm be taken over they will be replaced.

4. Shareholders intervention

The shareholders as owners of the company have a right to vote. Hence, during the company's AGM the shareholders can unite to form a bloc that will vote as one for or against decisions by managers that hurt the company. This voting power can be exercised even when voting for directors. Shareholders could demand for an independent board of directors.

5. Legal protection

The companies act and bodies such as the capital markets authority have played their role in ensuring trying to minimize the agency conflict. Under the companies act, management and board of directors owe a duty of care to shareholders and as such can face legal liability for their acts of omission or commission that are in conflict with shareholders interests. The capital market authority also has corporate governance guidelines.

6. Use of corporate governance principles which specify the manner in which organizations are controlled and managed. The duties and rights of all stakeholders are outlined.

7. Stock option schemes for managers could be introduced. These entitle a manager to purchase from the company a specified number of common shares at a price below market price over duration. The incentive for managers to look at shareholders interests and not their own is that, if they deliver and the company's share price appreciates in the stock market then they will make a profit from the sale.

8. Labour market actions such as hiring tried and tested professional managers and firing poor performers could be used. The concept of 'head hunting' is fast catching on in Kenya as a way of getting the best professional managers and executives in the market but at a fee of course.

Shareholders vs. creditors

In this relationship the shareholders (agent) are expected to manage the credit funds provided by the creditors (principal). The shareholders manage these funds through management.

Debt providers/creditors are those who provide loan and credit facilities to the firm. They do this after gauging the riskiness of the firm.

The following actions by shareholders through management could lead to a conflict between them and creditors

1. Shareholders could invest in very risky projects

The management under the directive of the shareholders may undertake highly risky investments than those anticipated by the providers of long term debt finance. The creditors would not be interested in highly risky projects because they stand to lose their funds when the investments collapse. Even if the risky projects succeed they would not benefit because they only get a fixed rate of return.

2. The dividend payments to shareholders could be very high

An increase in the dividend rate in most cases is financed by a decrease in investments. This in turn reduces the value of bonds. If the firm is liquidating and it pays a liquidating dividend to its shareholders, the providers of capital could be left with worthless claims.

3. Default on interest payments to bondholders

4. Shareholders could organize mergers which are not beneficial to creditors

5. Shareholders could acquire additional debt that increases the financial risk of the firm

6. Manipulation of financial statements so as to mislead creditors

7. Shareholders could dispose of assets which are security for the credit given

8. Under investments

The shareholders may invest in projects with a negative net present value.

9. The shareholders may adopt an aggressive management of working capital. This may bring conflicts in liquidity position of the firm and would not be in the interest of the debt holders

Resolution of this conflict

1. Restrictive covenants- these are agreements entered into between the firm and the creditors to protect the creditor's interests.

These covenants may provide restrictions/control over:

- i. Asset based covenants- These states that the minimum asset base to be maintained by the firm.
- ii. Liability based covenant- This limits the firm's ability to incur more debt.
- iii. Cashflow based covenant- States minimum working capital to be held by the firm. This may restrict the amount of dividends to be paid in future.
- iv. Control based covenant – Limits management ability to make various decisions e.g. providers of debt fund may require to be represented in the BOD meetings.

2. Creditors could also offer loans but at above normal interest rates so as to encourage prompt payment

3. Having a callability clause to the effect that a loan could be re-called if the conflict of interest is severe

4. Legal action could also be taken against a company
5. Incurring agency costs such as hiring external auditors
6. Use of corporate governance principles so as to minimize the conflict.

Shareholders and the government

The shareholders operate in an environment using the license given by the government. The government expects the shareholders to conduct their business in a manner which is beneficial to the government and the society at large.

The government in this agency relationship is the principal and the company is the agent. The company has to collect and remit the taxes to the government. The government on the other hand creates a conducive investment environment for the company and then shares in the profits of the company in form of taxes. The shareholders may take some actions which may conflict the interest of the government as the principal.

These may include;

- (a) The company may involve itself in illegal business activities
- (b) The shareholders may not create a clear picture of the earnings or the profits it generates in order to minimize its tax liability.(tax evasion)
- (c) The business may not response to social responsibility activities initiated by the government
- (d) The company fails to ensure the safety of its employees. It may also produce sub standard products and services that may cause health concerns to their consumers.
- (e) The shareholders may avoid certain types of investment that the government covets.

Solutions to this agency problem

- (i) The government may incur costs associated with statutory audit, it may also order investigations under the company's act, the government may also issue VAT refund audits and back duty investigation costs to recover taxes evaded in the past.
- (ii) The government may insure incentives in the form of capital allowances in some given areas and locations.
- (iii) Legislations: the government issues a regulatory framework that governs the operations of the company and provides protection to employees and customers and the society at large.ie laws regarding environmental protection, employee safety and minimum wages and salaries for workers.
- (iv) The government encourages the spirit of social responsibility on the activities of the company.
- (v) The government may also lobby for the directorship in the companies that it may have interest in. i.e. directorship in companies such as KPLC, Kenya Re. etc

Shareholders and auditors

Auditors are appointed by shareholders to monitor the performance of management. They are expected to give an opinion as to the true and fair view of the company's financial position as reflected in the financial statements that managers prepare. The agency conflict arises if auditors collude with management to give an unqualified opinion (claim that the financial statements show a true and fair view of the financial position of the firm) when in fact they should have given a qualified opinion (that the financial statements do not show a true and fair view). The resolution of this conflict could be through legal action, removal from office, use of disciplinary actions provided for by regulatory bodies such as ICPAK.

TOPIC TWO

COST OF CAPITAL

The concept and significance of cost of capital

Introduction

The cost of capital of a project is the minimum required rate of return expected on funds committed to the project. It is the required rate of return by the providers of funds.

Significance of cost of capital

- a) It is useful in long term investment decisions so as to determine which project should be undertaken. The techniques used to make this decision include net present value and IRR.
- b) It is also used in capital structure decisions to determine the mix of various components in the capital structure. The cost of capital of each component is determined.
- c) Used for performance appraisal. A high cost of capital is an indicator of high risk attached to the firm usually attributed to the performance of the management of a firm
- d) In making lease or buy decisions. In lease or buy decisions the cost of debt is used as the discounting rate.

SPECIFIC COSTS OF CAPITAL

Specific costs of capital are the costs of capital of each source of capital such as debt, preference shares and equity.

a) Cost of debt (kd)

The cost of debt for a perpetual debenture will be;

$$K_d = \frac{I}{P_b}$$

I is the annual interest

P_b is the current market value of a debenture

If the debenture is redeemable after a certain period of time/it has a maturity period the following formula will be applied to get the cost of debt or yield to maturity;

$$k_d = \frac{I + \frac{M - P_b}{n}}{\frac{M + P_b}{2}}$$

I is the annual interest

M is the par value of the debenture

P_b is the current market value of the debenture

n is the period to maturity

The above formula gives the pre-tax cost of debt the after tax cost of debt for which interest paid on debentures is an allowable expense for tax purposes will therefore be; $K_d (1-T)$ T being the tax rate.

b) Cost of preference shares (k_p)

The required return to the preference shareholders with perpetual preference share capital will be;

$$K_p = \frac{d_p}{P_p}$$

d_p is the preference dividend per share

P_p is the market price per preference share

Where the company incurred floatation cost the $k_p = \frac{d_p}{P_p - F_c}$

F_c is the floatation cost

c) Cost of ordinary shares/equity (k_e)

Equity can be either internally generated (from retained earnings) or externally generated (the common share capital).

The cost of retained earnings (k_r). Retained earnings are an internal financing received without incurring floatation costs. It can be calculated as follows;

$$k_r = \frac{d_1}{P_0} + g$$

The cost of external equity (k_s) can be calculated as follows;

$$k_s = \frac{d_1}{P_0 - F_c} + g$$

Where F_c is the floatation cost which may be given as the percentage of the price or in shilling value.

Weighted average cost of capital (WACC)

This is the overall/composite cost of capital that a firm is currently using. It is calculated by determining the weighted average cost of each source of capital in the firm's capital structure.

$$WACC(k_o) = k_d \left(\frac{D}{V} \right) + k_p \left(\frac{P}{V} \right) + k_r \left(\frac{R}{V} \right) + k_s \left(\frac{S}{V} \right)$$

Where;

k_d, k_p, k_r, k_s =percentage cost of debt, preference share capital, retained earnings and external equity respectively

D, P, R, S =total debt, preference, retained and ordinary share capital respectively

V= total value/capital of the firm

Hence, $\frac{D}{V}, \frac{P}{V}, \frac{R}{V}, \frac{S}{V}$ are the proportions or weights of debt, preference capital, retained earnings and external equity in the capital structure respectively

Example.

Bahati Company has the following capital structure.

Source	amount
Debentures	8,000,000
Preference capital	2,000,000
Retained earnings	4,000,000
Ordinary share capital	<u>6,000,000</u>
	20,000,000

The component costs of capital are; k_d is 6%, k_p is 10.5%, k_r is 14%, k_s is 17.2%

Compute the WACC.

$$K_o = w_d k_d + w_p k_p + w_r k_r + w_s k_s$$

The w_d, w_p, w_r, w_s are the weights of the specific sources of capital whose sum is 1.

$$k_o = 6 \left(\frac{8m}{20m} \right) + 10.5 \left(\frac{2m}{20m} \right) + 14 \left(\frac{4m}{20m} \right) + 17.2 \left(\frac{6m}{20m} \right)$$

$K_o = 11.41\%$

The weighted average cost of capital can be used to evaluate the performance of management. Since it is a historic cost it is not useful in investment decisions as it is irrelevant. In making decisions the future costs are considered and hence the need for the marginal cost of capital (MCC).

Marginal cost of capital (MCC)

This is the cost of raising an additional shilling. It considers the cost of raising additional or future financing. An increase in the level of financing increases the cost of various types of finances. As retained earnings are exhausted there may be a need to issue new ordinary shares which comes with high floatation costs hence a higher marginal cost of capital.

Example.

Mina Ltd has 300,000 of retained earnings available. The k_r is 13%. If the company exhausts the retained earnings it can issue equity whose cost is 14%. The firm expects that it can borrow up to 400,000 at 5.6%, beyond that additional debt will have an after tax cost of 8.4%

Unlimited amounts of funds can be raised by issuing preference stock at a current cost of 10.6%. Mina Ltds capital structure is 40% debt, 50% equity, 10% preference.

Calculate the marginal cost of capital of the various ranges of total financing.

The **Break point** reflects the level of total new financing at which the cost of one of the financing components rises.

$$BP_j = \frac{AF}{W_j}$$

Where; AF is the amount of funds available from source j at a given cost before braking point.

W_j is the capital structure weight of source j

$$\text{BP of equity} = \frac{300,000}{0.5} = 600,000$$

$$\text{BP of debt} = \frac{400,000}{0.4} = 1,000,000$$

Breaking point	MCC
0- 600,000	$0.4(5.6) + 0.1(10.6) + 0.5(13) = 9.8\%$
600,001- 1,000,000	$0.4(5.6) + 0.1(10.6) + 0.5(14) = 10.8\%$
Over 1m	$0.4(8.4) + 0.1(10.6) + 0.5(14) = 11.5\%$

Preference share capital cost does not change with the breaking points as we are told we can raise unlimited funds at the same cost. The retained earnings are exhausted at the 600,001 shilling so the cost increases as new equity is issued at 14%.

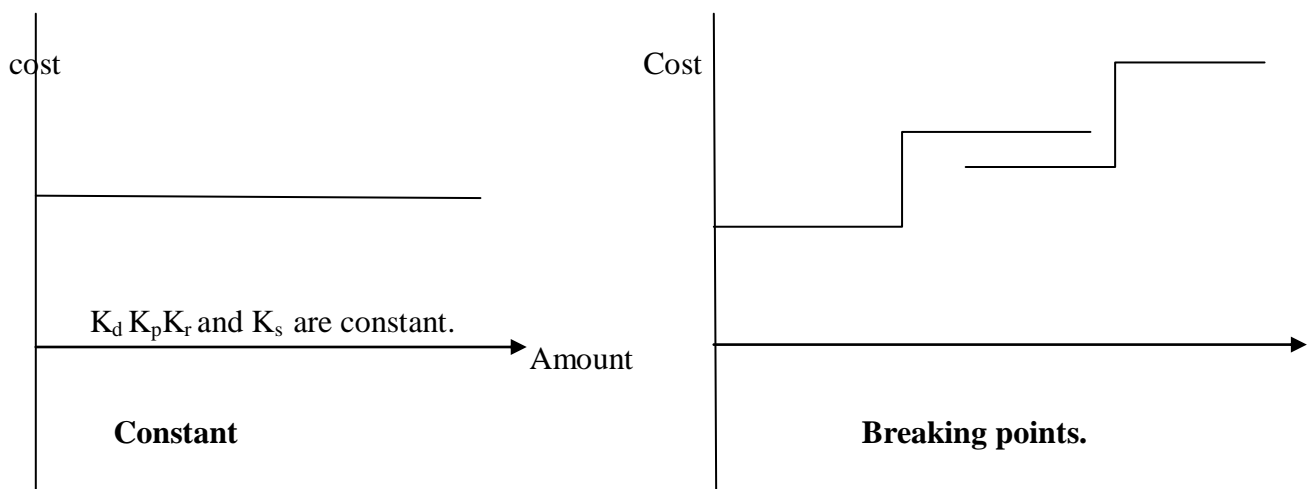
The **marginal cost of capital schedule** shows the relationship between the MCC and the amount of funds raised by the company.

Weaknesses of WACC as a discounting rate.

- It is an historical cost and therefore would not be appropriate to use in investment decision as only future cash flows should be used. When calculating cost of equity the dividend is used and so is the growth rate which is gotten from past stream of dividends.
- It assumes that the capital structure is optimal which is not achievable in the real world.
- It can only be used as a discounting rate assuming that the risk of the project is equal to the business risk of the firm. If the project has higher risk then a percentage premium will be added to WACC to determine the appropriate discounting rate.

WEIGHTED MARGINAL COST OF CAPITAL (WMCC) SCHEDULE.

This is a schedule that shows the relationship between the marginal cost of capital; and the amount of funds raised by a company. The marginal cost of capital can either be constant or have breaks or breaking points.



Constant cost of capital schedule occurs if it is possible to raise a limited amount of funds from each of the sources at the same cost. A breaking point MCC occurs if additional funds from any of the sources can only be raised at a higher cost. The most common MCC schedule is one with a break when retained earnings are exhausted.

Breaking Point = $\frac{\text{Total cheaper funds from a given source}}{\text{Proportion of that source in the capital structure.}}$

Example

Makueni Investments Ltd. wishes to raise funds amounting to Sh.10 million to finance a project in the following manner:

Sh.6 million from debt; and
Sh.4 million from floating new ordinary shares.

The present capital structure of the company is made up as follows:

1. 600,000 fully paid ordinary shares of Sh.10 each
2. Retained earnings of Sh.4 million
3. 200,000, 10% preference shares of Sh.20 each.
4. 40,000 6% long term debentures of Sh.150 each.

The current market value of the company's ordinary shares is Sh.60 per share. The expected ordinary share dividends in a year's time is Sh.2.40 per share. The average growth rate in both dividends and earnings has been 10% over the past ten years and this growth rate is expected to be maintained in the foreseeable future.

The company's long term debentures currently change hands for Sh.100 each. The debentures will mature in 100 years. The preference shares were issued four years ago and still change hands at face value.

Required:

- (i) Compute the component cost of:
 - Ordinary share capital;
 - Debt capital
 - Preference share capital.
- (ii) Compute the company's current weighted average cost of capital.
- (iii) Compute the company's marginal cost of capital if it raised the additional Sh.10 million as envisaged. (Assume a tax rate of 30%).

Solution

(b) (i) Cost of equity

$$K_e = \frac{d_o(1+g)}{P_o} + g$$

$$d_o(1+g) = \text{Sh}2.40$$

$$P_o = \text{Sh}60$$

$$g = 10\%$$

$$K_e = \frac{2.40}{60} + 0.10 = 0.14 = 14\%$$

Cost of debt capital (Kd)

Since the debenture has 100years maturity period then Kd = yield to maturity = redemption.

$$K_d = \frac{\text{Int}(1-T) + (m - vd)\frac{1}{n}}{(m + vd)\frac{1}{2}}$$

$$m = \text{Maturity/per value} = \text{sh } 150$$

$$vd = \text{market value} = \text{Sh. } 100$$

$$n = \text{number of years to maturity} = 100$$

$$\text{Int} = \text{Interest} = 6\% \times \text{Sh. } 150 = \text{Sh.}9 \text{ p.a}$$

$$T = \text{Tax rate} = 30\%$$

$$K_d = \frac{9(1-0.3) + (150-100)\frac{1}{100}}{(150+100)\frac{1}{2}} = \frac{6.8}{125} \times 100 = 5.441\%$$

Cost of preference share capital Kp

$$K_p = \text{Coupon rate} = 10\% \text{ since MPS} = \text{par value}$$

(ii) WACC or overall cost of capital K_o

$$\text{M.V of equity} = 600,000 \text{ shares} \times \text{sh } 60 \text{ MPS} \quad 36$$

$$\text{M.V of debt} = 40,000 \text{ debentures} \times \text{Sh } 100 \quad 4$$

$$\text{M.V of preference shares} = 200,000 \text{ shares} \times \text{Sh } 20 \frac{4}{44}$$

$$K_e = 14\% \quad K_d = 5.44\% \quad K_p = 10\%$$

$$K_o = \text{WACC} = 14\% \left(\frac{36}{44} \right) + 5.44\% \left(\frac{4}{44} \right) + 10\% \left(\frac{4}{44} \right) = \underline{12.86\%}$$

The Sh 10M will be raised as follows:

Sh 6M from debt
Sh 4M from shares

Since there are no floatation costs involved then:

Marginal cost of debt = 5.4%
Marginal cost of ordinary share capital = 14%

$$\text{Therefore marginal cost of capital} = 14\% \left(\frac{4}{10} \right) + 5.55\% \left(\frac{6}{10} \right) = \underline{8.86\%}$$

Term structure of interest rates.

The term structure of interest rates describes the relationship between interest rates and the term to maturity and the differences between the short term and long term interest rates.

Theories which have been advanced to explain the nature of the yield curve –which is a graph of the term structure of interest rates depicting the relationship between yield to maturity of a security-on the y-axis and the time to maturity-on the x-axis.

Theories of term structure.

1. Liquidity preference theory.

This theory states that short term bonds are more favourable than long term bonds because;

Investors perceive less risk in short term securities because they are more liquid. Hence they can accept lower yields to avoid the risk.

Borrowers on the other hand, will prefer longer term bonds so as to delay repayment of the debt. They are thus willing to pay a higher rate for longer term bonds.

These preferences result in a premium being paid which increases as the time to maturity increases. Hence this explains an upward sloping yield curve.

2. Expectations hypothesis

This theory states that the yield curve depends on the expectations about the future inflation rate. If the inflation rate is expected to rise, then the rate on long term bonds will

exceed that of short term loan. In this case the yield curve would be upward sloping, the reverse is true. The expected future interest rates are equal to forward rates computed from the expectations with regard to the future interest rates.

The following conditions are necessary for the expectations hypothesis to hold;

- There's a perfect capital market with many buyers and sellers.
- Investors are assumed to be rational. Are wealth maximizers
- Investors have homogeneous expectations about future interest rates and return on investment.
- The bankruptcy of firms due to the use of borrowing is unlikely.

3. Market segmentation theory

It state that the market for loans is segmented on the basis of maturity and are confined to a segment of the market and will not change even if the forecast of the likely future interest changes.

The supply and demand for loans in each segment will determine the prevailing rates in that segment. Take an example of someone borrowing to build a house they would most likely prefer a long term loan. The lower rates say in the short term segment and high rates in the long term segment would result in an upward sloping curve.

Reinforcing questions

1. (a) Explain the meaning of the term “cost of capital” and explain why a company should calculate its cost of capital with care. (4 marks)
- (b) Identify and briefly explain three conditions which have to be satisfied before the use of the weighted average cost of capital (WACC) can be justified. (6 marks)
2. Vitabu Ltd. is a merchandising firm. The following information relates to the capital structure of the company:
 1. The current capital structure of the company which is considered optimal, comprises:
Ordinary share capital – 50%, preference share capital – 10% and debt – 40%.
 2. The firm can raise an unlimited amount of debt by selling Sh.1,000 par value, 10 year 10% debentures on which annual interest payments will be made. To sell the issue it will have to grant an average discount of 3% on the par value and meet flotation costs of Sh.20 per debenture.
 3. The firm can sell 11% preference shares at the par value of Sh.100. However,, the issue and selling costs are expected to amount to Sh.4 per share. An unlimited amount of preference share capital can be raised under these terms.
 4. The firm's ordinary shares are currently selling at Sh.80 per share. The company expects to pay an ordinary dividend of Sh.6 per share in the coming year. Ordinary dividends have been growing at an annual rate of 6% and this growth rate is expected to be maintained into the foreseeable future. The firm can sell

- unlimited amounts of new ordinary shares but this will require an under pricing of Sh.4 per share in addition to flotation costs of Sh.3 per share.
5. The firm expects to have Sh.225,000 of retained earnings available in the coming year. If the retained earnings are exhausted, new ordinary shares will have to be issued as the form of equity financing.
The company is in the 30% corporation tax bracket.

Required:

- (a) The cost of each component of financing. (12 marks)
- (b) The level of total financing at which a break in the marginal cost of capital (M.C.C) curve occurs. (2 marks)
- (c) The weighted average cost of capital (W.A.C.C):
- (i) Before exhausting retained earnings. (3 marks)
- (ii) After exhausting retained earnings. (3 marks)
- (d) Explain fully the effect of the use of debt capital on the weighted average cost of capital of a company. (6 marks)

3 .The Salima company is in the fast foods industry. The following is the company's balance sheet for the year ended 31 March 1995:

Assets	Sh.'000'	Liabilities and owners equity	Sh.'000'
Current Assets	65,000	Current liabilities	25,000
	85,000	16% Debentures (Sh.1,000 par)	31,250
Net fixed assets		15% Preference shares	25,000
	<u> </u>	Ordinary shares (Sh.10 par)	<u>56,250</u>
	150,000	Retained profits	150,000

Additional information:

- The debenture issue was floated 10 years ago and will be due in the year 2005. A similar debenture issue would today be floated at Sh.950 net.
- Last December the company declared an interim dividend of Sh.2.50 and has now declared a final dividend of Sh.3.00 per share. The company has a policy of 10% dividend growth rate which it hopes to maintain into the foreseeable future. Currently the company's shares are trading at Sh.75 per share in the local stock exchange.
- A recent study of similar companies in the fast foods industry disclose their average beta as 1.1.

4. There has not been any significant change in the price of preference shares since they were floated in mid 1990.
5. Treasury Bills are currently paying 12% interest per annum and the company is in the 40% marginal tax rate.
6. The inflation rate for the current year has been estimated to average 8%.

Required:

- (a) Determine the real rate of return. (2 marks)
- (b) What is the minimum rate of return investors in the fast foods industry may expect to earn on their investment? Show your workings. (7 marks)
- (c) Calculate Salina's overall cost of capital. (6 marks)
- (d) Discuss the limitations of using a firm's overall cost of capital as an investment discount rate. (6 marks)

Discussion questions

1. (b) The total of the net working capital and fixed assets of Kandara Ltd as at 30 April 2003 was Sh.100,000,000. The company wishes to raise additional funds to finance a project within the next one year in the following manner.

Sh.30,000,000 from debt
 Sh.20,000,000 from selling new ordinary shares.

The following items make up the equity of the company:

	Sh.
3,000,000 fully paid up ordinary shares	30,000,000
Accumulated retained earnings	20,000,000
1,000,000 10% preference shares	20,000,000
200,000 6% long term debentures	30,000,000

The current market value of the company's ordinary shares is Sh.30. The expected dividend on ordinary shares by 30 April 2004 is forecast at Sh.1.20 per share. The average growth rate in both earnings and dividends has been 10% over the last 10 years and this growth rate is expected to be maintained in the foreseeable future.

The debentures of the company have a face value of Sh.150. However, they currently sell for Sh.100. The debentures will mature in 100 years.

The preference shares were issued four years ago and still sell at their face value.

Assume a tax rate of 30%

Required:

- (i) The expected rate of return on ordinary shares. (2 marks)
- (ii) The effective cost to the company of:
▪ Debt capital (2 marks)
▪ Preference share capital (2 marks)
marks)
- (iii) The company's existing weighted average cost of capital. (4 marks)
- (iv) The company's marginal cost of capital if it raised the additional Sh.50,000,000 as intended. (4 marks)

TOPIC THREE

CAPITAL STRUCTURE

INTRODUCTION

Finance is the lifeblood of business concern, because it is interlinked with all activities performed by the business concern. In a human body, if blood circulation is not proper, body function will stop. Similarly, if the finance not being properly arranged, the business system will stop. Arrangement of the required finance to each department of business concern is highly a complex one and it needs careful decision. Quantum of finance may be depending upon the nature and situation of the business concern. But, the requirement of the finance may be broadly classified into two parts:

Long-term Financial Requirements or Fixed Capital Requirement

Financial requirement of the business differs from firm to firm and the nature of the requirements on the basis of terms or period of financial requirement; it may be long term and short-term financial requirements.

Long-term financial requirement means the finance needed to acquire land and building for business concern, purchase of plant and machinery and other fixed expenditure. Long-term financial requirement is also called as fixed capital requirements. Fixed capital is the capital, which is used to purchase the fixed assets of the firms such as land and building, furniture and fittings, plant and machinery, etc. Hence, it is also called a capital expenditure.

Short-term Financial Requirements or Working Capital Requirement

Apart from the capital expenditure of the firms, the firms should need certain expenditure like procurement of raw materials, payment of wages, day-to-day expenditures, etc. This kind of expenditure is to meet with the help of short-term financial requirements which will meet the operational expenditure of the firms. Short-term financial requirements are popularly known as working capital.

SOURCES OF CAPITAL

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

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