FINANCE AND CORPORATE GOVERNANCE

The Financial Reports are used to help all stakeholders of an organisation in the decision-making process.

The International Accounting Standards Board (IASB) is a body that develops, issues, and withdraws accounting standards. The standards that are issued by the IASB are currently called International Financial Reporting Standards (IFRSs).

International Financial Reporting Standards (IFRS) These are a set of high-quality global standards with an objective of harmonising standards for international accounting.

The Financial Reporting Council (FRC) It is a body in the UK whose objective is to ensure high standards of reporting and audit to promote investor confidence, enable the capital markets to operate efficiently and therefore to help drive economic growth.

Corporate Governance Its purpose is to facilitate effective, entrepreneurial and prudent management that can deliver the long-term success of the company.

The main principles of the UK Corporate Governance Code are:

- Board Leadership and Company Purpose
- Division of Responsibilities
- Composition, Succession and Evaluation
- Audit, Risk and Internal Control
- Remuneration.

Financial Decisions Finance involves two basic issues: Investment Decisions; and Financing Decisions.

Investment Decision (Capital Budgeting Decision) It is the decision of investing or not in real assets in order to create value.

Financing Decision It is the decision of choosing the best combination of different sources of funds to finance investment and the operations.

Capital Markets refer to the financial markets where companies can raise funds by issuing various types of securities to investors. For large, publicly quoted companies, the stock market serves as a performance monitor.

Key effects of the capital markets on a firm's decisions include:

- Sound investment decisions require accurate measurement of the cost of capital.
- Limitations in the supply of capital focus attention on methods of raising finance.
- Mergers and takeovers create threats and opportunities to be exploited.
- 'Externalities' require managers to determine the appropriate role of organisation.

Agency Theory refers to the relationship between a principal (Shareholder) and an agent of that principal (Directors/Top Management), namely to situations when the former do not act in the best behalf of the former. It includes issues such as the nature of the agency costs, conflicts of interest (and how to avoid them) and how agents may be motivated and incentivised.

Agency Problem (Principal-Agent Problem) refers to a conflict of interest that may arise when the interest of the principal (shareholder) is not aligned with those of the agent (manager).

Agency Costs refers to the expenses/costs that arise when there is a conflict of interest between shareholders and management in a context of separation between the ownership and control of the company.

Conflicts of Interest arises because the agent (managers) may be motivated by objectives which are at variance with the desires and interests of the principals (shareholders).

Information Asymmetries often exist between the various classes of stakeholder because all parties do not share the same insights into the fortunes of the company. More commonly referred about shareholders and management.

Value of an Asset Present value of its expected cash flows/returns.

Present Value of Cash Flows

$$= \frac{\text{Future Cash Flow(CF)}_n}{(1+r)^n}$$

Discount Rate (r)

$$= \left(\frac{\text{Future Cash Flow}}{\text{PV}}\right)^{\frac{1}{n}} - 1$$

Economic Value Added (EVA)

$$= \text{Net Operating Profit After Taxes} - (\text{Invested Capital} \times \text{Weighted Average Cost of Capital})$$

Dimensions of Ethical Considerations in Finance and Corporate Governance:

- Responsibilities of Principals and Agents.
- Environmental and Social Governance Goals(ESG).
- Personal and Professional Responsibility.

COMPANY OWNERSHIP

The following are types of Business Entities:

- Sole Trader.
- Partnership.
- Limited Companies.
- Limited Liability Partnerships
- Social Enterprises.

Sole Trader is a business which is owned by one person and which is not a limited company. Sole traders have unlimited legal liability for their business debts.

Partnership is a business which is owned by more than one person and is not a limited company. The owners have unlimited liability.

Limited Company is a business which has a legal identity separate from the owners of the business. The owners of the company are called shareholders. The owners' liability is limited to the fully paid value of their shares.

A Limited Liability Partnership (LLP) is a new corporate identity, which was introduced in the UK in 2001. This is a business vehicle that gives the benefits of limited liability whilst retaining other characteristics of a traditional business partnership.

A Public Limited Company is a company whose documentation states that it is a public company and which has an issued share capital of at least £50,000. The name of a public limited company must end with the words 'public limited company' (or the abbreviation PLC or plc). Only PLC can be listed in a stock exchange.

A Private Limited Company All limited companies that are not Public Limites Company. A Private Limited Company or just Private Company is not allowed to offer its shares to the public and its name must end with the word 'limited' (or the abbreviation LTD or ltd).

A Social Enterprise is a business entity which has a clear social or environmental mission. This might be, for example, to provide low-cost loans to small farmers in poor countries, provide low-cost private schools or support vaccination programmes.

The types of Long-Term Capital of a business are:

- **Loan capital ('Debt')**: money borrowed from creditors. In exchange, the firm pays interest and an eventual return on capital.
- **Ordinary shares ('Equities')**: Represent a fraction of the equity of the firm. Shareholders are the owners of the firm and are entitled with voting rights and a share part of the company's profits.

The types of Medium-Term Company Finance of a business are:

- **Credit sale**: A credit sale is a normal sale of a good together with an agreement that payment will be made by a series of regular instalments over a set period.
- **Leasing**: A lease is an agreement where the owner of an asset gives the lessee the right to use the asset over a period, in return for a regular series of payments.
- **Bank loans**: bank loan is a form of medium-term borrowing from a bank where the full amount of the loan is paid into the borrower's current account and the borrower undertakes to make interest payments and capital.repayments on the full amount of the loan
- **Private equity funds**: Investment funds that invest in private companies, instead of public companies.

The types of Short-Term Company Finance of a business entity are as follows:

- **Bank overdrafts**: An overdraft is a form of short-term borrowing from a bank where the borrower is granted a facility to draw money out of a current account such that it becomes negative, down to an agreed limit.
- **Trade credit**: Agreement between a company and one of its suppliers to pay for goods or services after they have been supplied.
- **Factoring**: Non-recourse factoring is where the supplier sells on its trade debts to a factor in order to obtain cash payment of the accounts before their actual due date. Recourse factoring only provides early payment of invoices.
- **Bills of exchange**: A bill of exchange is effectively a claim to the amount owed by a purchaser of goods on credit and may be 'accepted' by a bank (for a fee).
- **Commercial paper**. Single name form of short-term borrowing (short-term bonds) used by large companies.

Alternative methods of raising finance outside the regular banking system include the following:

- **Shadow banking**: Shadow banks are non-bank financial institutions that engage in unregulated banking activities by borrowing short-term funds in the money market and investing them long-term..
- **Project financing**: Project financing is commonly employed for large infrastructure projects. It relies on non-recourse funding involving a consortium of lenders from both the host country and abroad..
- **Peer-to-peer lending**: Loans available on peer-to-peer lending platforms.
- **Crowdfunding** The practice of funding a project or venture by raising money from a large number of people who each contribute a relatively small amount, typically via the internet.
- **Microfinance**: are small loans that are usually easier and faster to secure than the traditional loans. No interest is paid on the loan and the investor has the benefit of being involved in initiating a venture.

TAXATION

Personal Income Tax = Taxable Income × Applicable Personal Tax Rate

Capital Gains Tax = Capital Gain × Capital Gains Tax Rate

Chargeable Gain = Selling Price − Purchase Price − Allowable Deductions

Company Taxation refers to the process of imposing taxes on the profits and income earned by businesses or corporations.

Corporate Taxable Profits = Income − Allowable Expenses + Capital Gains.

Corporate Income Tax = Corporate Taxable Profits × Applicable Corporate Tax Rate

Offshore Investments Funds refers to investment funds that are established in jurisdictions outside of an individual's home country. Differences between tax systems can make international investment complex and may lead investors to pay more tax than is intended within the jurisdiction in which they live.

Double Taxation Relief (DTR) means that the local tax authority will allow companies and individuals with overseas income or capital gains to offset tax paid overseas against their liability to domestic tax on that income or capital gains. "The maximum offset is the rate of tax that would have been paid locally."

Other taxes In addition to income taxes, taxation systems also include VAT, custom duties, Stamp duty, Inheritance taxes and property taxes among others.

FINANCIAL INSTRUMENTS

Debentures are loans which are secured on some or all assets of the company. This means that, if the company fails to make one of the coupon payments or the capital repayment, various actions are available to the stock holders.There are two types of debenture: Mortgage debenture (fixed charge) and Floating charge debenture.

Fixed Charge Debenture A fixed charge means that there are specific secured assets mentioned in the legal documentation for the mortgage debenture.

Floating Charge Debenture The company can change the secured assets in the normal course of business. When a company fails to make an interest or capital payment, the debenture holders can apply to the courts to convert the floating charge to a fixed charge.

Unsecured Loan Stock Here there is no specific security for the loan. If the company defaults, the loan stock holders' only remedy is to sue the company. To compensate for the additional risk, the Gross Redemption Yield will be higher.

Gross Redemption Yield The Gross Redemption Yield or Yield to Maturity is the annual return if the loan stock is hold until maturity and there are no default event.

Eurobonds are a particular category of international debt security that are issued in a currency other than the currency of the country or countries where the bond is issued. Despite their name, Eurobonds can be issued in a variety of other currencies and not only euros.

Equity capital refers to the total amount of capital that a company raises by issuing and selling its shares of stock to investors or shareholders. It represents the ownership stake or ownership interest that shareholders hold in the company.

Deferred shares Shares with no right to dividends until certain conditions are met or only after a set period. Deferred shares often have limited capital rights and no right to vote.

Redeemable Ordinary Shares "Redeemable Ordinary Shares" refer to a type of company shares that carry the feature of being redeemable by the issuing company at a predetermined future date or under specific conditions. These shares are considered a hybrid between ordinary (common) shares and debt instruments.

Non-Voting Shares is a class of ownership interest in a company that do not have the right to vote on specific corporate matters at shareholder's meetings.

Shares with Multiple Voting Rights are a type of equity ownership in a company that gives their owners more voting power than those of ordinary or common shares.

Golden Share is often used to describe a special class of shares that give their bearer unique and important rights, frequently within a company, in addition to the regular rights attached to common shares.

Preference Shares a class of shares in a company that entitles the holders to receive certain preferential rights and privileges over ordinary (common) shareholders. These rights often include a fixed dividend payment and priority in receiving assets in the event of liquidation. Typically, preference shares do not have voting rights.

Convertible Unsecured Loan Stocks are unsecured loan stocks which give the right to convert into ordinary shares of the company at a later date. The investor does not pay anything to convert other than surrendering the convertible preference shares.

Convertible Preference Shares are preference shares which give the right to convert into ordinary shares at a later date. The investor does not pay anything to convert other than surrendering the convertible preference shares.

Rest Period is the period prior to the first possible date for conversion of preference shares.

Conversion Premium is the difference between the cost of obtaining one ordinary share by purchasing the required number of convertible securities and the market price of the share.

Contingent Convertibles are loan stocks that convert into ordinary shares of the issuing company once a specified trigger is reached.

Floating rate notes (FRNs) are medium-term debt securities issued in the Euro market whose interest payments 'float' with short-term interest rates, possibly with a stipulated minimum rate.

Subordinated Debt Debt that ranks below the firm's general creditors (but ahead of preference shareholders and the ordinary shareholders). The subordinated lender holds a junior debt and is paid after all senior debt holders are satisfied.

Junior Debt is a type of debt that ranks lower in priority for repayment compared to other forms of debt issued by a company. It is called "junior" because it is subordinate to senior debt in the hierarchy of debt repayment.

Senior Debt is a type of debt that holds the highest priority for repayment in the event of a company's financial distress, liquidation, or bankruptcy. It is called "senior" because it is at the top of the hierarchy of debt repayment.

Asset-backed securities (ABSs) are securities backed by ring-fenced pools of assets (which are held in trusts). Investors are repaid through interest and capital payments made from the pools of assets.

Mortgage-Backed Securities	refers to assets-backed securities (ABSs) which may be backed by mortgages.
Collateralised Debt Obligations (CDOs)	are a form of Asset-Backed Securities. A CDO works by pooling together a variety of assets and then repackaging them into different tranches of securities with varying levels of risk and return.
Covered Bonds	are bonds issued by banks or building societies with ring-fenced pools of assets that will repay investors if the issuing institutions fail.
Executive Stock Options	are options issued by a company on its own shares and issued to senior managers as part of their remuneration package, with strike prices that are intended to represent a performance target for the executive.
Futures Contract	is a standardised, exchange tradable contract between two parties to trade a specified asset on a set date in the future at a specified price.
Bond Futures	are financial contracts that require both the buyer and seller to deliver a quantity of a certain bond at predetermined price and date in the future. For delivery, the contract requires physical delivery of a bond. If the contract is specified in terms of a notional stock, then there needs to be a linkage between it and the cash market.
Short Interest Rate Futures	Short interest rate futures are standardized agreements to buy or sell a short-term interest rate instrument at a predetermined future date and at a price agreed upon today.
Stock Index Futures	Stock Index Futures allow traders and investors to speculate on or hedge against movements in the overall stock market without directly buying or selling the underlying stocks..
Currency Futures	are financial contracts that obligate the buyer to purchase and the seller to deliver, a specific quantity of a particular currency at a predetermined exchange rate on a specified future date.
Forwards	are non-standard contracts traded in the Over-the-Counter Market to buy or sell an asset on an agreed basis in the future. Unlike futures contracts, forward contracts are not standardised contracts and cannot be traded in a recognised exchange.
Uses of Financial Futures	Future and Forwards contracts can be used to lock future selling and buying prices of different asset classes.
An option	gives an investor with a long position the right, but not the obligation, to buy or sell a specified asset on a specified future date. The writer has the corresponding obligation.
Call Option	The buyer of the option has the right, but not the obligation, to buy a specified asset on a set date in the future for a specified price. The respective seller has the obligation to sell
Put Option	The buyer of the option has the right, but not the obligation, to sell a specified asset on a set date in the future for a specified price. The respective seller has the obligation to buy.
An American Style Option	is an option that can be exercised on any date before until its expiry.
An European Style Option	is an option that can be exercised only at its expiry.
Uses of Options	Options allow a company to protect itself against adverse movements in the financial environment while retaining the ability to profit from favourable movements.

A Swap is a contract between two parties under which they agree to exchange a series of payments according to a prearranged formula.

Interest Rate Swap Here one party agrees to pay to the other a regular series of fixed amounts for a certain term. In exchange, the second party agrees to pay a series of variable amounts based on the level of a short-term interest rate.

A Currency Swap is an agreement to exchange a fixed series of interest payments and a capital sum in one currency for a fixed series of interest payments and a capital sum in another currency.

The following are uses of swaps:

- Risk management: A company can use swaps to reduce risk by matching its assets and liabilities.
- Reducing the cost of debt: Companies can use an interest rate swap to reduce the total cost of financing, such that both benefit from a lower cost of debt.

FINANCIAL INSTRUMENTS - BOND VALUATION

Yield to Maturity (YTM_T)
$$= \left(\frac{\text{Face Value}}{p_0}\right)^{\frac{1}{T}} - 1$$

Price of a Bond Today (P_0)
$$= \frac{CPN}{1+\text{YTM}_1} + \frac{CPN}{(1+\text{YTM}_2)^2} + \ldots + \frac{CPN+\text{FV}}{(1+\text{YTM}_T)^T}$$

Where:

T	-	Term to maturity
CPN	-	Coupon Payment
FV	-	Face Value

FINANCIAL INSTRUMENTS - STOCK VALUATION

Cost of Equity (r_E)
$$= \frac{DIV_1 + P_1 - P_0}{P_0}$$

Stock Price (P_0)
$$= \frac{Div_1}{r_E - g}$$

Plowback Ratio
$$= 1 - \text{Payout Ratio} = 1 - \frac{\text{DIV}}{\text{EPS}}$$

Earnings growth rate (g)
$$= \text{Plowback Ratio} \times \text{ROE}$$

Stock Price (P_0)
$$= \frac{FCF_1}{1+r_E} + \frac{FCF_2}{(1+r_E)^2} + \ldots + \frac{FCF_H}{(1+r_E)^H} + \frac{PV_H}{(1+r_E)^H}$$

Stock Price (P_0)
$$= \frac{DIV_1}{1+r_E} + \frac{DIV_2}{(1+r_E)^2} + \ldots + \frac{DIV_T}{(1+r_E)^T} + \frac{P_T}{(1+r_E)^T}$$

Cost of Equity (r_E)
$$= \frac{Div_1}{P_0} + g$$

Where:

DIV	-	Dividend per share
T	-	Time
FCF	-	Free Cash Flow to the Firm
ROE	-	Return on Equity

ISSUES OF SECURITIES

Stock Exchange Quotation

If a company successfully obtains a quotation on a Stock Exchange, the price of its securities will be included on the exchange's official list.

Quoted Securities

refers to financial instruments such as stocks that are traded on an exchange market (stock exchange market in the case of stock).

Listed Securities

are securities which are quoted and their price included on the stock exchange's official list.

The reasons for seeking a quotation are as follows:

- To raise capital for the company.
- To make it easier for the company to raise further capital.
- To give existing shareholders an exit route.
- To make the shares more marketable and easy to value.

The Disadvantages of Remaining a Private Company:

- Restricted access to funds as: Cannot sell shares to the public and Lenders cannot rely on the company satisfying the requirements of a stock exchange.
- A limited market for shares and so a limited exit route for shareholders, low liquidity and high transactions costs.
- Shares are not easy to value.

The advantages of remaining or becoming a private company are:

- Shares are likely to remain with a small group of shareholders who retain control of the company.
- A less diverse group of owners means that principal–agent problems are reduced and thus the company can be managed more effectively to meet the objectives of shareholders.
- Fewer rules and regulations mean less onerous disclosure and reporting requirements.
- When companies are owned by families, trusts, and so on, there may be reasons why the owners prefer not to give control to outside parties.

Issuing Shares

Issuing shares refers to the process by which a company issues and sells its shares or stocks to investors in the primary market. Trading shares is the activity of buying and selling shares of publicly traded companies on the secondary market.

Offer for Sale (at a fixed price)

In an offer for sale at a fixed price a predetermined number of shares (or other securities) is offered to the general public at a specified price. Rather than selling shares directly to the public, the company or existing shareholders sell the shares to an issuing house.

An Offer for Sale by Tender

In this method, the issuing house invites members of the public to submit a tender stating the number of shares which they are prepared to buy, and the price which they are prepared to pay.

Offer for Subscription

These are similar to offers for sale. They are normally at a fixed price, but can be by tender. However, the whole issue is not underwritten. The company sells shares directly to the public.

Placings

This is a simpler, cheaper method of making small issues. The issuing house first buys the securities from the company. It will then individually approach institutional investors such as pension funds and life offices directly.

Introductions

do not involve the sale of any shares. They simply mean that the existing shares will in future be quoted on the London Stock Exchange.

Underwriting is a form of insurance against the risk of an unsuccessful issue. Underwriting is always used for an offer for sale although it may also be used for other share issues.

Fully Subscribed Issue Here the issue goes ahead, and is fully subscribed. The issuing house and the sub-underwriters will have made an underwriting profit equal to their underwriting commission less any administrative expenses.

Partly Subscribed Issue Here the issue goes ahead, but not all of the shares are purchased. The underwriters and sub-underwriters get their fee/commission, but they also need to pay for all the shares that have not been purchased.

A Rights Issue is where a company already quoted offers further shares, at a given price, to existing shareholders in proportion to their existing holdings.

The main effects of a successful rights issue are:

- New shares are created.
- New money is raised for the company.
- The total value of the whole company should be increased by the extra money raised.
- The price per share will fall depending on the extent of the discount and the number of new shares issued.

Market Capitalization $= P(\text{Price per Share}) \times \text{Number of Shares}$

Price Per Share $= \dfrac{\text{Market Capitalisation}}{\text{Number of Shares}}$

Price Per Share after a Rights Issue $= \dfrac{\text{Original Market Capitalisation} + \text{Extra Value}}{\text{Total New Number of Shares}}$

Issuing and Trading Shares

- **Public Companies**: Once the shares have been issued, shareholders are free to trade their shares between themselves, through the markets and stock exchanges on which the shares are listed and traded.
- **Private Companies**: Shares can be issued and sold directly only to selected investors. These shares can be very illiquid, as buyers and sellers have to find each other outside of a designated market place

CAPITAL STRUCTURE AND DIVIDEND POLICY

The components of the capital of a limited company are:

- Equity capital
- Short- and medium-term debt
- Long-term debt

Assets of a business can be divided into:

- Non-current assets such as land, property, plant, equipment and 'intangibles'.
- Current assets such as inventories, work-in-progress, debtor balances, cash (and equivalents).

Non-Current Assets Assets of the entity which:

- it does not expect to realise, or intend to sell or consume, in its normal operating cycle;
- it does not hold primarily for the purpose of trading;
- it does not expect to realise within 12 months after the reporting;
- are cash or cash equivalents restricted from being exchanged or used to settle a liability for at least 12 months after the reporting period.

Current Assets Assets of an entity which are not non-current assets.

Degree of Acceptable Gearing

The extent to which a firm's investments and operations can be funded by lenders versus shareholders, without compromissing its value.

Gearing Ratio

$$\text{Gearing Ratio (as in Core Reading)} = \frac{\text{Debt}}{\text{Equity}}$$

A Leveraged Firm

is a company or firm that also relies on debt or borrowed capital to finance its operations, investments, and growth.

Market and Capital Structure

The stock market will consider every aspect of a company in making the assessment of worth that culminates in a share price. If the market considers the capital structure inappropriate or does not appear consistent with the other features of the firm, the price will change to take that into account.

Taxation and Capital Structure

The main features of taxation regarding the capital structure are:

- Interest payments are tax deductible.
- Capital allowances on new plant and equipment are deductible.
- Lease of plant and equipment receives tax relief.
- Property rental payments are tax deductible.

Dividends

refers to the periodic payments made by a company to its shareholders, typically in the form of cash or additional shares of stock as a distribution of the company's profits or earnings.

Fundamentals of dividend policy

Dividends can be seen as a financing decision – money paid out by way of dividend is no longer available for investment in the business and changes the gearing ratio. This is particularly relevant for unlisted companies since:

- The company does not have the option of raising further funds in the stock market.
- The borrowing powers of unlisted companies tend to be more restricted.

Alternative Distribution of Profits

In addition to regular dividends, a one-off extra or special dividends may be paid occasionally. Alternatives to cash dividends include:

- Scrip, stock or share dividends – either 'pure', where the shareholder has no option to take cash, or as a scrip alternative to a cash dividend
- Share buybacks.

Stock or Share Dividends

are paid in the form of extra shares, rather than cash. Such a dividend will be shown in the company accounts as a transfer from retained earnings to equity capital.

Scrip Dividend

is a type of dividend payment made by a company to its shareholders in the form of a "debt" certificate, that gives them the option to receive a cash dividend or additional shares of the company's stock at a later moment.

Share Buybacks

are a strategic initiative implemented by companies to repurchase their own outstanding shares from existing shareholders. Also known as Share Repurchase.

Automatic Dividend Reinvestment Plan

is a plan offered by a company to its shareholders that allows them to automatically reinvest their cash dividend payments into additional shares of the company's stock.

Dividend Policy and Market Valuation

The market valuation of a firm can be calculated as the present value of its future dividends. So, any unexpected change in the dividend policy will impact the market value of the value either by increasing or decreasing its value.

GROWTH AND RESTRUCTURING OF COMPANIES

Motives for growth

Many businesses believe that they need to grow to provide a better return for shareholders, which is often vital for a company's survival. The motives for growth can therefore be found in the many ways in which growth can help a company achieve its overall aim, including:

- Increased profitability;
- Increased security;and
- Increased motivation for managers and employees.

Internal Growth

is the expansion of a firm in its own operations.Firms may opt for internal growth to maintain control, avoid disruption from foreign business cultures, minimize the risk of dealing with unscrupulous firms, and circumvent unnecessary government intervention.

External Growth

is the expansion of a firm through mergers and acquisition with another firm or firms.It can provide companies with a faster means of expansion, particularly for geographic expansion, as well as opportunities to acquire assets and expertise, share financial responsibilities and risks in projects, and efficiently employ surplus cash for mature companies.

Divestment

refers to the strategic action taken by a company to sell off or discontinue ownership and control of subsidiaries, business units, or assets, often due to various reasons such as inadequate return on equity, the belief that another buyer can manage the assets more effectively, or a shift in the company's strategic focus or international interests.

A Merger

occurs when two or more firms agree to combine their business operations into a new legal entity.

An Acquisition (or takeover)

occurs when one firm (the acquirer) buys sufficient shares in another firm (the target) to take control of that firm.

An Acquirer

refers to the firm that initiates and carries out the process of acquiring another company, purchasing a sufficient number of shares in the target firm to gain control.

The Target

refers to the firm that is being acquired or taken over by another company (the acquirer).

Synergy

refers to the specific advantage or benefit that arises from the combination of two companies.It means that both firms combined generate more value then the sum of the value created by each one on a stand alone basis.

CAPITAL STRUCTURE - FORMULAE

Value of a Leverage Firm (V_L) $= V_U$ (without taxes).

Value of a Leverage Firm (V_L) $= V_U + PV(ITS)$ (with taxes).

Value of a Leverage Firm (V_L) $= V_U + \tau_c D$ (with taxes and perpetual constant debt).

Value of a Leverage Firm (V_L) $= V_U + PV(ITS) - PV(FDC)$ (with taxes and financial distress costs)

Cost of Equity (r_E) $= r_A + \frac{D}{E}(r_A - r_D)$ (without taxes).

Cost of Equity (r_E) $= r_A + \frac{D}{E}(r_A - r_D)(1 - \tau_c)$ (with taxes).

Relative Advantage Formula (RAF)

$$= \frac{1-\tau_p}{(1-\tau_{p_E})(1-\tau_c)}$$

Where:

V_U	-	Value of an Unleverage
PV(ITS)	-	Present Value of the Intereset Tax Shield
PV(FCD)	-	Present Value of the Financial Distress Cost
τ_c	-	Corporate Tax Rate
D	-	Debt
R_A	-	Cost of Capital of the Unlevered Firm/ Cost of Capital of the Assets
R_D	-	Cost of Debt
E	-	Equity
τ_p	-	Personal Tax Rate
τ_{p_E}	-	Personal Tax Rate of Earnings from Equity

THE COST OF CAPITAL

Capital Asset Pricing Model (CAPM)

is a financial model which attempts to provide a coherent framework for estimates returns by understanding the interaction of risk and return. Its expression is:

$$\bar{r}_i = r_f + \beta_i\,(\bar{r}_m - r_f)$$

where $\bar{r}_i$ is the expected return of a security, r_f is the return of a risk free asset, β is a measure of risk, and $\bar{r}_m$ is the expected market return.

Cost of Equity (r_e)

The cost of equity is the expected return of an investment in equity, given its risk level:

$$r_e = \textit{Risk Free Rate} + \textit{Risk Premium}$$

In the context of CAPM the Risk Premium is given by $\beta_i\,(\bar{r}_m - r_f)$.

Real Rate

is the rate after considering taxes. The real rate is approximately equal to Nominal Interest Rate – Inflation Rate or more precisely:

$$(1 + r_{nominal}) = (1 + r_{real})\,(1 + inflation\ rate)$$

Nominal Rate

It represents the actual rate of interest earned on the principal amount without considering the impact of inflation.

Real Cashflows

These are cash flows which should be discounted at a real rate of return.

Nominal Cash flows

These are cash flows which should be discounted at a nominal rate of return.

Stock Price Volatility

measures the fluctuation of the stock price. Higher (lower) volatility (measured by the standard deviation of its price) implies higher (lower) levels of risk. Volatility is more often calculated for returns.

Diversification

is a risk management strategy that involves spreading investments across different securities and asset classes. The primary goal of diversification is to reduce the overall risk of a portfolio without compromising return by taking advantage of non positively perfect correlation.

Specific Risk

The specific risk is the risk specific of each firm and that can be diversified away on a large well spread portfolio.

Systematic Risk

Systematic risk is the volatility of the individual share return compared to the market return as a whole and which cannot be eliminated by diversification. The market return is used as a proxy to the risk factors that affect all firms.

Correlation Coefficient

is a statistical measure that assess the degree to which two or more variables (assets' return) move in relation to each other. It measures the linear relationship between the variables.

Portfolio Variance

$$= \sum_{i=1}^{n}\sum_{j=1}^{n}(x_i \cdot x_j \cdot \rho_{ij}\sigma_i\sigma_j)$$

where x_i, x_j are the proportions of stock i and j held, σ_i and σ_j are the standard deviations of stock returns and ρ_{ij} is the correlation coefficient between the returns on stocks i and j.

Beta(β) of a stock for company i

Beta is a measure of the systematic risk of a firm and can be estimated as

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2},$$

where σ_m^2 is the variance of the market index and σ_{im} is the covariance between the individual stock's return and that of the market.

Geared Beta

$$\text{Geared } \beta = \text{Ungeared } \beta \left[1 + \frac{D}{E}(1 - t_c)\right],$$

where D stand for Debt, E stand for Equity and t_c stand for corporate tax rate.

Ungeared (Unleveraged) Beta

$$\text{Ungeared } \beta = \frac{\text{Geared (Leveraged) } \beta}{\left[1 + \frac{D}{E}(1 - t_c)\right]},$$

where D stand for Debt, E stand for Equity and t_c stand for corporate tax rate.

Net Cost of Debt (r_d)

The cost of debt is the expected return of an investment in corporate debt, given the risk level of the invesment and after tax effects:

$$\text{Net } r_d = r_d(1 - t_c),$$

where r_d is the cost of debt and t_c is the corporate tax rate.

Weighted Average Cost of Capital (WACC)

$$\text{After-Taxes } WACC = r_e\frac{E}{E+D} + r_d(1 - t_c)\ \frac{D}{E+D},$$

where r_e is the cost of equity, E is equity, D is debt, r_d is the cost of debt, and t_c is the corporate tax rate.

COST OF CAPITAL - FORMULAE

Cost of Capital (r_i)

$$= r_f + \beta_i\,(r_M - r_f)$$

Pretax Weighted Average Cost of Capital (WACC)

$$= r_e\frac{E}{E+D} + r_d\frac{D}{E+D}$$

Weighted Average Cost of Capital (WACC)

$$= r_E\frac{E}{E+D} + r_D(1-\tau_c)\frac{D}{E+D}$$

Unleveraged/Ungeared Beta (β_{Assets})

$$= \beta_E\left(\frac{E}{E+D}\right) + \beta_D\left(\frac{D}{E+D}\right)$$

Leveraged/Geared Beta (β_L)

$$= \beta_U\left[1 + (1-\tau_c)\frac{D}{E}\right] - \beta_d(1-\tau_c)\frac{D}{E}$$

Cost of Debt (r_d)

$$= y - pL$$

Leveraged Beta (β_L)

$$= b_U \left[1 + (1 - \tau_c)\frac{D}{E}\right]$$

Where:

R_f	-	Risk-free return
β	-	Beta
R_m	-	Market Return
β_E	-	Beta of the Equity
β_D	-	Beta of the Debt
τ_c	-	Corporate Tax Rate
D	-	Debt
E	-	Equity
Y	-	Yield to Maturity
P	-	Probability of Default
L	-	Loss Rate

CAPITAL PROJECT APPRAISAL

Discounted Cash Flow Approach is a valuation method used to estimate the value of a project based on the present value of its expected future cash flows. This approach is used to make an initial valuation of the likely wealth generated by the project.

The net present value or NPV The NPV Of a series of cash flows $C_0, C_1, \ldots, C_n$ at a cost of capital r is the sum of the present values of the cash flows generated by the project:

$$NPV = C_0 + \frac{C_1}{(1+r)} + \frac{C_2}{(1+r)^2} + \cdots + \frac{C_n}{(1+r)^n} = \sum_{t=0}^{n} \frac{C_t}{(1+r)^t}$$

If the result is positive, then the project will create value (improve shareholders' wealth) and should be done.

The Internal Rate of Return (IRR) The IRR is the return of the project assuming that the cash flows of the project are reinvested at the same rate. The IRR rule states that a project should be accepted if the cost of capital is lower than the IRR. It is essentially the same in method of calculation as the NPV, the difference being that rather than discounting at the cost of capital, a solution is found for the return rate that gives the project a zero NPV:

$$NPV = \sum_{t=0}^{n} \frac{C_t}{(1+r)^t} = 0$$

Annual Capital Charge is a method that expresses the capital outlay as an annual charge, writing off the capital steadily over a period of years. This charge may then be offset against the benefits, and if the net result is positive, the project or capital expenditure can be approved.

Shareholder Value Approach Shareholder value represents the present value of all expected current and future cash flows available to shareholders. The shareholder value method is based on but extends the NPV approach. The method has the important distinction that it is looking at the company from the point of the external shareholder and less on the internal issues governingthe attractiveness of a project.

PayBack Period is defined as the time it takes for the accumulated cash flow to become neutral (equal to 0). A project should accepted if the payback is lower or equal to a predefined threshold. When comparing projects, the one with the faster payback period will be preferred.

Nominal returns is a variant of the payback period where one simply compares the ratio of cash generated to cash consumed over a period.

Strategic Fit refers to the alignment between different elements of a company's strategy. Strategic fit will normally form part of every project evaluation, as every project should fit logically with the business, building on its areas of expertise, resources or customer base.

The Opportunity Cost Method The opportunity cost is the return rate of the best alternative with a risk level similar to the project. In the NPV method, it is the cost of capital. It simply answers the question 'What alternative ways could we spend this money and what return would be achieved?'

Hurdle Rate In this method the emphasis is that the company sets a target rate of return, or a hurdle rate. This could typically be quite high and well in excess of the true cost of capital.

Receipts/Costs Ratio The receipts/costs ratio is defined as:

$$\text{Receipts/Costs ratio} = \frac{\text{NPV of Gross Revenues}}{\text{NPV of Capital and Running Costs}}$$

Simulation Having modelled the project for the purposes of valuation, we may wish to apply sensitivity analysis to see how the value of the project changes under different future conditions.

Sensitivity Analysis breaks the NPV calculation into its component assumptions and shows how the NPV varies as each underlying assumption change.

Scenario Testing Here we consider some plausible combinations of input values and see what effect these have on the project.

Risk Analysis in a Project With any project, there are risks, and these can be divided into two types:

- Systematic Risk: This type of risk is 'in the system' and which affect the whole area of the business into which the project falls, e.g. price of land for a building project;
- Diversifiable Risk: This type of risk is 'specific to the project' and which can be diversified away by the company, e.g. the risk of a cold summer reducing ice-cream sales diversified by also selling hot dogs.

Identification of risks is the process of systematically recognizing and listing risks, uncertainties or events that could negatively impact a project or objective. Refer to the methodology Risk Assessment and Management of Projects.

Risk Assessment and Management of Projects (RAMP) A methodology for risk assessment and management of projects developed jointly between the Faculty and Institute of Actuaries and Institute of Civil Engineers.

Risk Mitigation refers to the strategies and actions taken to control, or minimize the impact of potential risks on a project. It is a crucial component of risk management and is aimed at decreasing the likelihood of risk occurring or lessening its effects.

Certainty Equivalents

Instead of account for risk at the cost of capital, the projected cash flows are adjusted for risk, resulting in a series of 'certain' cash flows that can be discounted at the risk free rate.

CAPITAL PROJECT APPRAISAL - FORMULAE

Net Present Value (NPV)

$$= \sum_{t=0}^{T} \frac{C_t}{(1+r)^t}$$

Free Cash Flow (FCF)

$$= \text{EBIT}(1-\tau_c) + \text{D} - \text{CAPEX} - \Delta\text{NWC}$$

Where:

C	-	Cash Flow
R	-	Cost of Capital
EBIT	-	Earning Before Interest and Taxes
D	-	Depreciation
CAPEX	-	Capital Expenditures
NWC	-	Net Working Capital

INTRODUCTION TO FINANCIAL REPORTING

Users of Financial Statements

All stakeholders of a firm are users of their financial statements, including:

- Equity Investors (i.e. both actual and potential shareholders).
- Loan creditors (both long term and short term).
- Employees.
- Business contacts (i.e. customers and suppliers).
- Government agencies (including the tax authorities).
- Competitors.
- Potential predators.

Statutory Requirements

play a pivotal role in financial reporting, shaping the content and form of companies' financial statements. For instance, the UK's Companies Act mandates specific elements, including the statement of financial position, the statement of profit or loss, detailed disclosures, a directors' report, and an auditors' report. These regulations are crucial for ensuring transparency and accountability in financial reporting.

The International Accounting Standards Board

The International Accounting Standards Board (IASB) is a body that develops, issues, and withdraws accounting standards.

Sustainability Development

As defined by the 1987 Brundtland Report, recognizes the importance of meeting present needs without compromising the ability of future generations to do the same.

Sustainability Reporting

enables organisations to measure, understand and communicate the economic, social and environmental effects of their activities. A sustainability report also presents the organisation's goals, values and model of governance.

Global Reporting Initiative (GRI)

is an international independent organisation, which provides the world's most widely used standards on sustainability reporting.

Alternative Reporting

There are two main alternatives:

- Non-financial Reporting.
- Integrated Reporting.

Non-financial reporting refers to the practice of disclosing information related to a company's environmental, social, and governance (ESG) performance and impacts, in addition to its financial performance. In the UK it includes directors' report and a strategic report.

Integrated Reporting The aim of integrated reporting is to communicate a rounded picture of an organisation's performance and prospects, so in an integrated report, the organisation needs to present not only its financial numbers but to place those numbers in a more holistic context.

Annual Report The annual report of a company listed on the UK Stock Exchange can easily run to 60 or 70 pages. Much of this is 'promotional' material which is published on a voluntary basis.The core of the report is, however, subject to the stringent rules imposed by the Companies Act 2006 and the detailed regulations imposed by the accountancy profession.

Auditors' Report Auditors comment on whether, in their opinion, the statement of financial position and statement of profit or loss have been properly prepared in accordance with the Companies Acts and relevant accounting standards, and whether, in their opinion, the accounts give a true and fair view.

Emphasis of Matter Paragraphs If there is a significant uncertainty which has been disclosed in the accounts, the auditor should point this out for the sake of emphasis.

Qualified Opinion The auditor would issue a qualified opinion in circumstances where a restriction has been placed on the evidence that the auditor can access or where the auditor disagrees with the treatment of a matter.

Disclaimer of Opinion If the auditor is faced with such extreme uncertainty about the financial statements that it is impossible to express an opinion, then the auditor would issue a disclaimer instead ('we are unable to form an opinion ...').

Adverse Opinion The auditor issues an adverse opinion in extreme cases of disagreement where the financial statements have been rendered so misleading that it must be stated that they do not give a true and fair view.

Accounting Concepts Accounting standards are based on concepts and conventions which have gradually come together and evolved over the many years since bookkeeping and accountancy came into being.

The Cost Concept Under that concept, non-current assets generally appear in the statement of financial position at their original cost less depreciation to date, subject to a possible impairment write-down.

Money Measurement Concept This concept states that accounting statements restrict themselves to matters which can be measured objectively in money terms.

Going Concern Concept It is usually assumed that a business will continue indefinitely in its present form.

Business Entity Concept It states that The affairs of the business are kept separate from those of the owners.

Realisation Concept It states that income is recognised as and when it is 'earned'. It is not, therefore, necessary to wait until the customer settles his or her bill.

Accruals Concept It states that expenses are recognised as and when they are incurred, regardless of whether the amount has been paid.

Matching Concept It states that income and expenses which relate to each other should be matched together and dealt with in the same statement of profit or loss.

Dual Aspect Concept

The dual aspect concept recognises that every transaction or adjustment will affect two figures.

Materiality

There is little point in providing information which is so detailed as to be unintelligible. The statements can, therefore, be made clearer by showing totals such as 'administrative expenses' instead of listing every item which makes this heading up.

Prudence

This concept states that the financial statements should avoid presenting an unduly optimistic set of results regarding uncertain revenues and expenses.

Consistency

It states that the figures published by the company should be comparable from one year to the next. Accounting policies should not, therefore, be changed from one year to the next unless there is a very good reason for doing so.

The Statement of Financial Position

summarises the company's financial position. Effectively, the statement consists of two lists:

- Everything owned by the business.
- The sources of finance used to fund these acquisitions.

Accounting Equation

is a simple relationship between assets, liabilities and equity:

$$\text{Assets} = \text{Liabilities} + \text{Shareholder's Equity}$$

The Statement of Profit or Loss

provides an insight into a company's trading activities. It compares the income generated from trading with the costs associated with earning that income, the difference being the profit or loss for the year.

The cash flow statement

The cash flow statement intents to identify the major causes of changes between the cash balance between the end of the previous year and the end of the current year.

Statement of Changes in Equity

The Statement of changes in equity summarises the changes in the capital and reserves attributable to equity holders of the company over the accounting period, and so reconciles the amounts shown in the statement of financial position at the start and end of the period.

Notes to the Accounts

UK legislation requires companies to produce accounts which include detailed disclosures – appropriate explanatory notes and additional information. These are normally presented as a series of notes to the accounts.

INTERPRETATION OF ACCOUNTS

Measuring Risk Associated with Loan Capital

There are a number of ratios which can be used to measure the risks borne by the shareholders because of the company's borrowing policy. These should not be confused with the risks which arise because of any volatility in the underlying business itself.

Interest Cover

is defined to be profit on ordinary activities before interest and taxation, divided by the annual interest payments due on that issue of the loan capital and on all prior ranking loan capital.

Interest Coverage Ratio

$$= \frac{\text{EBIT}}{\text{Interest Expense}}$$

Interest Priority Percentages

show the slice of profit on ordinary activities before interest and tax, which covers the annual interest payments due on each issue of loan capital.

Asset Cover - Alternative 1

$$= \frac{\text{Total assets} - \text{Current liabilities} - \text{Intangible assets}}{\text{Loan capital} + \text{Prior ranking debt}}$$

Asset Cover - Alternative 2

$$= \frac{\text{Total assets} - \text{Current liabilities} - \text{Intangible assets}}{\text{Total loan capital}}$$

Asset Priority Percentages

show the slice of total assets less current liabilities less intangible assets which is available to cover the nominal value of each issue of loan capital.

Gearing

refers to the relative proportions of long-term debt and equity finance in a company. High gearing means that the company has a high level of debt financing.

Debt-to-Equity Ratio (Asset Gearing)

$$= \frac{\text{Total Debt}}{\text{Total Equity}} = \frac{\text{Borrowings}}{\text{Equity}}$$

Debt-to-Capital Ratio (Asset Gearing)

$$= \frac{\text{Total Debt}}{\text{Total Equity} + \text{Total Debt}} = \frac{\text{Borrowings}}{\text{Borrowings+Equity}}$$

Debt-to-Enterprise Value Ratio

$$= \frac{\text{Net Debt}}{\text{Enterprise Value}}$$

Shareholders' Equity Ratio

$$= \frac{\text{Shareholders' Equity} - \text{Intangibles}}{\text{Total Assets} - \text{Current Liabilities} - \text{Intangibles}}$$

Income Gearing

$$= \frac{\text{Interest on Borrowings}}{\text{Profit on Ordinary Activities Before Interest and Tax}}$$

Measures Used by Investors in Shares

Investors will want to know about a company's profitability, efficiency, earnings for ordinary shareholders and dividends.

Market-to-Book Ratio

$$= \frac{\text{Market Value of Equity}}{\text{Book Value of Equity}}$$

Earnings Per Share

$$= \frac{\text{Net Profit After Tax}}{\text{Number Of Shares Outstanding}}$$

Price Earnings Ratio (P/E Ratio)

$$= \frac{\text{Market Price of an Ordinary Share}}{\text{Earnings Per Share}}$$

Dividend Yield

$$= \frac{\text{Dividends Per Share}}{\text{Market Price of an Ordinary Share}}$$

Dividend Cover

$$= \frac{\text{Earnings Per Share}}{\text{Dividends Per Share}}$$

Payout Ratio

$$= \frac{\text{Dividends Per Share}}{\text{Earnings Per Share}}$$

Earnings Before Interest and Taxes (EBIT)

$$= \text{Revenues} - \text{Operating Expenses}$$

EBITDA

$$= \text{EBIT} + \text{Depreciation} + \text{Amortisation}$$

Net Asset Value Per Share

$$= \frac{\text{Ordinary Shareholders' Equity} - \text{Intangible Assets}}{\text{Number of Issued Ordinary Shares}}$$

Ordinary Shareholders' Equity

means called up share capital, other reserves, including share premium account and revaluation reserve and retained earnings.

Profitability Ratios

are used to check that the company is generating an acceptable return on revenues.

Gross Profit Margin

$$= \frac{\text{Gross Profit}}{\text{Sales/Revenues/Turnover}}$$

Operating Margin

$$= \frac{\text{Operating Income}}{\text{Sales/Revenues/Turnover}}$$

Earnings before interest and taxes (EBIT) Margin

$$= \frac{\text{Earnings before interest and taxes (EBIT)}}{\text{Sales/Revenues/Turnover}}$$

Profit Margin

$$= \frac{\text{Profit Before Taxes}}{\text{Sales/Revenues/Turnover}}$$

Return Ratios

are used to check that the company is generating an acceptable return to the capital invested.

Return on Capital Employed (ROCE) - Alternative 1
$$= \frac{\text{Profit Before Tax and Interest}}{\text{Share Capital} + \text{Reserves} + \text{Long Term Debt}} \times 100$$

Return on Capital Employed (ROCE) - Alternative 2
$$= \frac{\text{Profit Before Tax}}{\text{Share Capital} + \text{Reserves}} \times 100$$

Asset Utilisation Ratio
$$= \frac{\text{Sales/Revenues/Turnover}}{\text{Share Capital} + \text{Reserves} + \text{Long Term Debt}}$$

Return on Assets
$$= \frac{\text{Net Income} + \text{Interest Expense}}{\text{Total Assets}}$$

Return on Invested Capital
$$= \frac{\text{EBIT} \times (1 - \text{Tax Rate})}{\text{Book Value of Equity} + \text{Net Debt}}$$

Return on Equity (ROE)
$$= \frac{\text{Profit after Interest and Tax ie Net Profit}}{\text{Share Capital} + \text{Reserves}} \times 100$$

Liquidity Ratios

While it is important for a business to be profitable, profit is not sufficient on its own to guarantee survival. There must be sufficient liquid assets available to ensure that short-term commitments can be met. Otherwise the company has insufficient liquidity and might be forced into liquidation. A situation of Insufficient Liquidity refers to a situation where a company does not have enough cash or easily convertible assets to meet its short-term financial obligations as they become due.

Current Ratio
$$= \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Quick Ratio
$$= \frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$$

Cash Ratio
$$= \frac{\text{Cash}}{\text{Current Liabilities}}$$

Efficiency Ratios

They give an insight into the effectiveness of the company's management of the components of working capital.

Inventory Turnover Period/ Inventory Days
$$= \frac{\text{Inventories}}{\text{Cost of Sales}} \times 365 = \frac{\text{Inventory}}{\text{Average Daily Cost of Sales}}$$

Inventory Turnover
$$= \frac{\text{Cost of Sales}}{\text{Inventory}}$$

Trade Receivables Turnover Period or Accounts Receivable Days
$$= \frac{\text{Trade Receivables}}{\text{Credit Sales}} \times 365 = \frac{\text{Accounts Receivable}}{\text{Average Daily Sales}}$$

Trade Receivable Turnover or Accounts Receivable Turnover
$$= \frac{\text{Annual/Credit Sales}}{\text{Trade/Accounts Receivable}}$$

Payables Turnover Period or Accounts Payable Days
$$= \frac{\text{Payables}}{\text{Credit Purchases}} \times 365 = \frac{\text{Accounts Payable}}{\text{Average Daily Cost of Sales}}$$

Trade/Accounts Payable Turnover
$$= \frac{\text{Annual Cost of Sales}^*}{\text{Trade/Accounts Payable}}$$

* Assuming a constant inventory level, such that $Cost\ of\ Sales = Purchases$.

Asset Turnover
$$= \frac{\text{Sales/Revenues/Turnover}}{\text{Total Assets}}$$

Fixed Asset Turnover
$$= \frac{\text{Sales/Revenues/Turnover}}{\text{Fixed Assets}}$$

Working Capital
$$= \text{Current Assets} - \text{Current Liabilities}$$

Working Capital Cycle
$$= \text{Inventory turnover period} + \text{Trade receivables turnover period} - \text{Trade payables turnover period}$$