

## KEY POINTS

### DIPLOMA COURSE INTRODUCTION TO FINANCE AND FINANCIAL ANALYSIS

#### MODULE 1 – INTRODUCTION TO CONCEPTS IN FINANCE

##### ***AN OVERVIEW OF ETHICS***

---

- Ethical behavior is based on written and unwritten codes of principles and values held in society.
- Ethics reflect beliefs about what is right, what is wrong, what is just, what is unjust, what is good, and what is bad in terms of human behavior.
- Ethical principles and values serve as a guide to behavior on a personal level, within professions, and at the organizational level.

##### ***ETHICS TRAINING***

---

- There are four components of moral behavior: moral sensitivity, moral judgment, moral motivation, and moral character.
- To make moral assessments, one must first know what an action is intended to accomplish and what its possible consequences will be on others.
- Studies have uncovered four skill sets that play a decisive role in the exercise of moral expertise: moral imagination, moral creativity, reasonableness, and perseverance.

##### ***CULTURE AND ETHICS***

---

- Culture refers to the outlook, attitudes, values, goals, and practices shared by a group, organization, or society.
- Interpretation of what is moral is influenced by cultural norms, and different cultures can have different beliefs about what is right and wrong.
- According to the theory of cultural relativism, there is no singular truth on which to base ethical or moral behavior, as our interpretations of truths are influenced by our own culture.

##### ***THE MANAGER'S ROLE IN ETHICAL CONDUCT***

---

- Personal values provide an internal reference for what is good, beneficial, important, useful, beautiful, desirable, and constructive.
- Personal values take on greater meaning in adulthood as they are meant to influence how we carry out our responsibilities to others.
- To make ethical and moral choices, one needs to have a clear understanding of one's personal values.

##### ***BLURRING ETHICAL LINES***

---

- Identifying the ethical choice can be difficult since many situations are ambiguous and facts are subject to interpretation.
- In organizations, employees can look to the code of ethics or the statement of values for guidance about how to handle ethical gray areas.
- Individual ethical judgment can be clouded by rationalizations to justify one's actions.

##### ***INVESTMENT AND FINANCING***

---

- The primary goal of both investment and financing decisions is to maximize shareholder value.
- Investment decisions revolve around how to best allocate capital to maximize their value.
- Financing decisions revolve around how to pay for investments and expenses. Companies can use existing capital, borrow, or sell equity.

## ***INSTITUTIONS, MARKETS, AND INTERMEDIARIES***

---

- Financial intermediaries provide access to capital.
- Banks convert short-term liabilities (demand deposits) into long-term assets by providing loans; thereby transforming maturities.
- Through diversification of loan risk, financial intermediaries are able to mitigate risk through pooling of a variety of risk profiles.

## ***STOCK MARKETS***

---

- Pension funds are important shareholders of listed and private companies.
- Insurance companies are generally classified as either mutual or proprietary companies.
- A mutual fund is a type of professionally-managed collective investment vehicle that pools money from many investors to purchase securities.
- An index fund or index tracker is a collective investment scheme (usually a mutual fund or exchange-traded fund) that aims to replicate the movements of an index of a specific financial market, or a set of rules of ownership that are held constant, regardless of market conditions.
- An exchange-traded fund (ETF) is an investment fund traded on stock exchanges, much like stocks.
- A hedge fund is an fund that can undertake a wider range of investment and trading activities than other funds. It is generally only open to certain types of investors specified by regulators.

## ***NYSE***

---

- The origin of the NYSE can be traced to May 17, 1792, when the Buttonwood Agreement was signed by 24 stockbrokers outside of 68 Wall Street in New York under a buttonwood tree on Wall Street.
- The New York Stock Exchange (sometimes referred to as "the Big Board") provides a means for buyers and sellers to trade shares of stock in companies registered for public trading.
- The New York Stock Exchange is open for trading Monday through Friday from 9:30 am to 4:00 pm ET, with the exception of holidays declared by the NYSE in advance.
- Traders can gather around the appropriate post. There, a specialist broker acts as an auctioneer in an open outcry auction market environment to bring buyers and sellers together and to manage the actual auction.
- To be listed on the New York Stock Exchange, a company must have issued at least a million shares of stock worth \$100 million and must have earned more than \$10 million over the last three years.

## ***NASDAQ***

---

- NASDAQ was founded in 1971 by the National Association of Securities Dealers (NASD), who divested themselves of it in a series of sales in 2000 and 2001.
- NASDAQ quotes are available at three levels: Level 1 shows the highest bid and lowest offer; Level 2 shows all public quotes of market makers; Level 3 is used by the market makers and allows them to enter their quotes and execute orders.
- NASDAQ has a pre-market session from 7:00 am to 9:30 am, a normal trading session from 9:30 am to 4:00 pm, and a post-market session from 4:00 pm to 8:00 pm (all times in ET).
- Three market tiers are NASDAQ Capital Market – Small Cap, NASDAQ Global Market – Mid Cap, NASDAQ Global Select Market – Large Cap.

## ***MARKET REPORTING***

---

- The market index is a tool used by investors and financial managers to describe the market and to compare the return on specific investments.
- An index is a mathematical construct, so it may not be invested in directly.
- A 'world' or 'global' stock market index includes (typically large) companies without regard for where they are domiciled or traded.
- A 'national' index represents the performance of the stock market of a given nation—and by proxy, reflects investor sentiment on the state of its economy.

- Stock market indices provide invaluable information for investors and accountants.

### ***DEFINING STOCK***

---

- The stock (capital stock) of a company or business entity is equal to the original capital paid into the business by its founders.
- Stock serves as a security for creditors and investors in the business. While it may fluctuate in value, it is different from the assets and property of a business.
- A shareholder legally owns share of a stock in a public or private corporation, and has certain rights with regards to the company because of share ownership.

### ***CONTROL AND PREEMPTION***

---

- Shareholders gain certain rights with regards to a business entity when purchasing stock. These include being able to sell shares, voting rights and dividends.
- Shareholders have the right of preemption, meaning they have the first chance at buying newly issued shares of stock before the general public.
- Even if shareholders do have the option of using their preemptive right, they do not have to exercise it.

### ***TYPES OF STOCK***

---

- Common stock is a form of equity ownership. It is a type of security that is also known as a voting share or an ordinary share.
- Common stock shareholders will not receive assets after bankruptcy unless the bondholders, other creditors, and preferred shareholders are paid first. Common shareholders also do not get dividends unless preferred shareholders receive them first.
- Common shareholders do receive voting rights. Some shareholders may also be able to exercise preemptive rights.

### ***PREFERRED STOCK***

---

- Preferred stock is a security which has characteristics of both equity and debt securities.
- Preferred stock shareholders have rights to dividends and assets (in the case of bankruptcy) before Common stock shareholders.
- Preferred stockholders have a number of rights which will vary based on the business entity, but generally do not carry voting rights.

### ***RULES AND RIGHTS OF COMMON AND PREFERRED STOCK***

---

- Common stock and preferred stock are both forms of equity ownership but carry different rights and claims to income.
- Preferred stock shareholders will have claim to assets over common stock shareholders in the case of company liquidation.
- Preferred stock also has first right to dividends.

### ***VOTING RIGHT***

---

- Common stock shareholders can generally vote on issues, such as members of the board of directors, stock splits, and the establishment of corporate objectives and policy.
- While having superior rights to dividends and assets over common stock, generally preferred stock does not carry voting rights.
- Many of the voting rights of a shareholder can be exercised at annual general body meetings of companies. An annual general meeting is a meeting that official bodies, and associations involving the general public, are often required by law to hold.

### ***PURCHASING NEW SHARES***

---

- New share purchase is an important indicator of current shareholder belief in the health of the company and long term prospects for growth.
- Current Shareholders will often have preemptive rights that give them the right to purchase newly issued company shares before they go on sale to the general public.
- New shares can be purchased on exchanges, which offer a platform for the financial marketplace.

### ***PREFERRED STOCK RULES AND RIGHTS***

---

- Preferred stock generally does not carry voting rights, but this may vary from company to company.
- Preferred stock can gain cumulative dividends, convertibility to common stock, and callability.
- The rights that come with ownership of preferred stock are detailed in a "Certificate of Designation".

### ***PROVISIONS OF PREFERRED STOCK***

---

- If a preferred share has cumulative dividends, then it contains the provision that should a company fail to pay out dividends at any time at the stated rate, then the issuer will have to make up for it as time goes on.
- Convertible preferred stock can be exchanged for a predetermined number of company common stock shares.
- Often times companies will keep the right to call or buy back preferred shares at a predetermined price.
- Participating preferred issues offer holders the opportunity to receive extra dividends if the company achieves predetermined financial goals.
- Sometimes, dividends on preferred shares may be negotiated as floating; they may change according to a benchmark interest-rate index.

### ***COMPARING COMMON STOCK, PREFERRED STOCK, AND DEBT***

---

- Common stock and preferred stock fall behind debt holders as creditors that would receive assets in the case of company liquidation.
- Common stock and preferred stock are both types of equity ownership. They receive rights of ownership in the company, such as voting and dividends.
- Debt holders often receive a bond for lending and while this does not give the ownership rights of being a stockholder, it does create a superior claim to a company's assets in the case of liquidation.

### ***EQUITY FINANCE***

---

- The equity, or capital stock (or stock) of a business entity represents the original capital paid into or invested in the business by its founders.
- Shares represent a fraction of ownership in a business. A business may declare different types or classes of shares, each having distinctive ownership rules, privileges, or share values.
- In finance, the cost of equity is the return (often expressed as a rate of return) a firm theoretically pays to its equity investors, (i.e., shareholders), to compensate for the risk they undertake by investing their capital.

### ***STOCK VALUATION***

---

- Companies generally either retain earnings for investment, or distribute them as dividend, according to their growth strategy.
- Clientele effects suggests that different dividend levels attract different types of investors.
- Value investors look for indications that a stock is undervalued. High dividends are one indication of undervaluation.

- Knowing a firm's cost of capital is needed in order to make better decisions. Managers make capital budgeting decisions while capital providers make decisions about lending and investment.

#### ***EXPECTED DIVIDENDS AND CONSTANT GROWTH***

---

- Companies are constantly changing, as well as the economy. Solely using historical growth rates to predict the future is not an acceptable form of valuation. Calculating the future growth rate requires personal investment research.
- A generalized version of the Walter model (1956), SPM considers the effects of dividends, earnings growth, as well as the risk profile of a firm on a stock's value.
- The Gordon model or Gordon's growth model is the best known of a class of discounted dividend models. It assumes that dividends will increase at a constant growth rate (less than the discount rate) forever.

#### ***RELATIONSHIP BETWEEN DIVIDENT PAYMENTS AND THE GROWTH RATE***

---

- Investors take into account how much capital is distributed to investors, and conversely how much capital is kept from investors.
- Investors hope that firms will use retained earnings to either maximize their current operations or invest in such as a way as to lead to higher profits.
- Some firms are unable to distribute earnings, since their funds are tied up in maintenance, repairs, et cetera.
- On the other hand, some companies can retain earnings and put that money back to work - i.e., invest in growth opportunities.

#### ***UNDERSTANDING FUTURE STOCK VALUE***

---

- Earnings Per Share is the total net income of the company divided by the number of shares outstanding; the Profits/Earnings ratio is the stock price divided by the annual EPS figure.
- Return on Invested Capital measures how much money the company makes each year per dollar of invested capital and approximates the expected level of growth; Return on Assets measures the company's ability to make money from its assets.
- To measure Market Capitalization (the value of all of a company's stock), multiply the current stock price by the fully diluted shares outstanding; Enterprise Value is equal to the total value the company is trading for on the stock market.
- Enterprise Value (EV) to earnings before interest, taxes, depreciation and amortization (EBITDA) is one of the best measurements of whether or not a company should be valued as cheap or expensive.

#### ***VALUING NONCONSTANT GROWTH DIVIDENDS***

---

- Limited high-growth approximation: When a stock has a significantly higher growth rate than its peers, it is sometimes assumed that the earnings growth rate will be sustained for a short time (say, 5 years), and then the growth rate will revert to the mean.
- Implied Growth Models: One can use the Gordon model or the limited high-growth period approximation model to impute an implied growth estimate.
- Imputed growth acceleration ratio: Subsequently, one can divide this imputed growth estimate by recent historical growth rates.

#### ***VALUING THE CORPORATION***

---

- Income approaches include Discount or capitalization rates, Capital Asset Pricing Model (CAPM), Modified Capital Asset Pricing Model, and Weighted average cost of capital ("WACC").
- The asset approach to business valuation is based on the principle of substitution: no rational investor will pay more for the business assets than the cost of procuring assets of similar economic utility.

- The market approach to business valuation is rooted in the economic principle of competition: in a free market the supply and demand forces will drive the price of business assets to a certain equilibrium.

---

#### ***DISCOUNTED DIVIDENT VS. CORPORATE VALUATION***

- $P = D1 / (r - g)$ . P is the current stock price, g is the constant growth rate in perpetuity expected for the dividends, r is the constant cost of equity for that company, and D1 is the value of the next year's dividends.
- The equation can also be understood to generate the value of a stock such that the sum of its dividend yield (income) plus its growth (capital gains) equals the investor's required total return.
- There are also problems with the model, such as the presumption of a steady and perpetual growth rate less than the cost of capital may not be reasonable.

---

#### ***THE SECURITY MARKETS***

- An initial public offering (IPO), or stock market launch, is a type of public offering where shares of stock in a company are sold to the general public, on a securities exchange, for the first time.
- A secondary market offering is a registered offering of a large block of a security that has been previously issued to the public.
- In the secondary market, securities are sold by and transferred from one investor or speculator to another. It is therefore important that the secondary market remain highly liquid.
- Private placement (or non-public offering) is a funding round of securities which are sold not through a public offering, but rather through a private offering, mostly to a small number of chosen investors.
- Stock repurchase (or share buyback) is the reacquisition by a company of its own stock.

---

#### ***TYPES OF MARKET ORGANIZATIONS***

- The primary market is that part of the capital markets that deals with the issue of new securities.
- Over-the-counter (OTC) or off-exchange trading is to trade financial instruments such as stocks, bonds, commodities, or derivatives directly between two parties.
- The secondary market, also called aftermarket, is the financial market in which previously issued financial instruments such as stock, bonds, options, and futures are bought and sold.
- One type of market structure is the auction market, where buyers and sellers are brought together directly, announcing the prices at which they are willing to buy or sell securities.
- Broker markets are usually only used for securities that have no public market, necessitating the middleman in the form of a broker. The broker works for a client to find a suitable trading partner.
- Dealer markets, also called quote-driven markets, centers on market-makers (or dealers) who provide the service of continuously bidding for securities that investors want to sell and offering securities that investors want to buy.

---

#### ***UNDERSTANDING RETURNS***

- Realized returns involve the sale of the asset while unrealized returns are based off of changes in the market value, but not a sale.
- Realized returns are taxed, while unrealized returns are not.
- When the value of an asset is based off of the market value at the end of the reporting period, the company is using the mark-to-market valuation method.

---

#### ***DOLLAR RETURNS***

- Dollar returns do not take into account things like the time value of money or the time frame of the investment.

- In security markets, the dollar return of the security is the difference in the final market price and the market price at which it was purchased.
- Dollar returns are useful for determining the nominal amount that the firm's assets will change.

---

### **PERCENTAGE RETURNS**

- Total percentage returns divide the dollar returns by the initial value of the investment. This is also the return on investment (ROI).
- Annual returns show the percentage by which the value of the asset changes in each individual year.
- Average annual percentage returns can be calculated by dividing ROI by the number of years, or by other methods such as the compound annual growth rate (CAGR) or internal rate of return (IRR).

---

### **HISTORICAL RETURNS: MARKET VARIABILITY AND VOLATILITY**

- Historical returns do not guarantee future returns.
- All markets have a degree of systemic risk which means that they have a risk of collapsing due to external factors. Companies are also interconnected, so the failure of one company can have far-reaching effects.
- "Animal spirits" describes general investor sentiment which can affect markets, even without changes in the underlying financials.

---

### **CALCULATING AND UNDERSTANDING AVERAGE RETURNS**

- Average return on investment (ROI) is the arithmetic average of the total cash returns divided by the initial investment. It is useful for quick calculations and specific securities (such as bonds purchased at par), but does not account for compounding returns.
- Compound annual growth rate (CAGR) is derived from the future value formula with compounding interest. It accounts for compounding returns.
- Internal rate of return (IRR) is the discount rate at which the NPV equals 0. It is used because it allows for easy comparison between investment options and is easy to understand.
- For all three methods, the higher the average rate of return, the more attractive the investment is.

---

### **MARKET EFFICIENCY**

- The efficient-market hypothesis (EMH) asserts that financial markets are "informationally efficient." As a result, one cannot consistently achieve returns in excess of average market returns on a risk-adjusted basis, given the information available at the time the investment is made.
- Historically, there was a very close link between EMH and the random-walk model and then the Martingale model. The random character of stock market prices was first modelled by Jules Regnault, a French broker, in 1863.
- The definitions for three forms of financial market efficiency: weak, semi-strong, and strong.

---

### **THE EFFICIENT MARKET HYPOTHESIS**

- In weak-form efficiency, future prices cannot be predicted by analyzing prices from the past.
- In semi-strong-form efficiency, it is implied that share prices adjust to publicly available new information very rapidly and in an unbiased fashion, such that no excess returns can be earned by trading on that information.
- In strong-form efficiency, share prices reflect all information, public and private, and no one can earn excess returns.

---

### **IMPLICATIONS AND LIMITATIONS OF THE EFFICIENT MARKET HYPOTHESIS**

- Empirical evidence has been mixed, but has generally not supported strong forms of the Efficient Market Hypothesis.

- Speculative economic bubbles are an obvious anomaly in that the market often appears to be driven by buyers operating on irrational exuberance, who take little notice of underlying value.
- Any anomalies pertaining to market inefficiencies are the result of a cost benefit analysis made by those willing to incur the cost of acquiring the valuable information in order to trade on it.
- The financial crisis of 2007–2012 has led to renewed scrutiny and criticism of the hypothesis, claiming that belief in the hypothesis caused financial leaders to adopt a "chronic underestimation of the dangers of asset bubbles breaking".

### ***MARKET REGULATION***

---

- The 1933 Act's objectives are to provide investors with material financial and other corporate information about issuers of public securities.
- The primary purpose of the 1933 Act is to ensure that buyers of securities receive complete and accurate information before they invest.
- Among other things, registration forms call for: a description of the securities to be offered for sale; information about the management of the issuer; information about the securities (if other than common stock); and financial statements certified by independent accountants.
- Rule 144, promulgated by the SEC under the 1933 Act, permits, under limited circumstances, the sale of restricted and controlled securities without registration.
- Regulation S is a "safe harbor" that defines when an offering of securities is deemed to be executed in another country and therefore not be subject to the registration requirement under section 5 of the 1933 Act.

### ***SECURITIES EXCHANGE ACT OF 1934***

---

- The Securities Exchange Act of 1934 is a law governing the secondary trading of securities in the United States of America. The Act and related statutes form the basis for the regulation of the financial markets and their participants in the United States.
- One area subject to 34 Act regulation is the actual securities exchange: New York Stock Exchange, the American Stock Exchange, and regional exchanges like the Cincinnati Stock Exchange, Philadelphia Stock Exchange and Pacific Stock Exchange.
- The '34 Act also regulates broker-dealers without a status for trading securities. A telecommunications infrastructure was developed to provide for trading without a physical location.
- In 1938 the Exchange Act was amended by the Maloney Act, which authorized the formation and registration of national securities associations to supervise the conduct of their members subject to the oversight of the SEC.
- In the last 30 years, brokers have created two additional systems for trading securities. The alternative trading system, or ATS, is a quasi exchange where stocks are commonly purchased and sold through a smaller, private network of brokers, dealers, and other market participants.

### ***SECURITIES ACTS AMENDMENTS OF 1975***

---

- The 1975 amendments, also called the National Exchange Market System Act, directed the securities and exchange commission to work with the industry toward establishing a national market system together with a system for the nationwide clearance and settlement of securities transactions.
- The National Market System (NMS) is the national system for trading equities in the United States.
- A national market system plan (or NMS plan) is a structured method of transmitting securities transactions in real-time.
- In 2005, the rules promoting the national market system were consolidated into REG NMS.
- The order protection rule has generated controversies since it requires traders to transact on a trading venue at the lowest price rather than on a venue that offers the quickest execution or the most reliability.



### ***SARBANES-OXLEY ACT OF 2002***

---

- As a result of SOX, top management must now individually certify the accuracy of financial information. In addition, penalties for fraudulent financial activity are much more severe.
- SOX increased the independence of the outside auditors who review the accuracy of corporate financial statements, and increased the oversight role of boards of directors.
- The bill was enacted as a reaction to a number of major corporate and accounting scandals including those affecting Enron, Tyco International, Adelphia, Peregrine Systems, and WorldCom.
- Opponents claim it has reduced America's international competitive edge against foreign financial service providers.
- Proponents say that SOX has been a "godsend" for improving the confidence of fund managers and other investors with regard to the veracity of corporate financial statements.

### ***GLOBAL RESEARCH SETTLEMENT***

---

- The Global Settlement was an enforcement agreement reached on April 28, 2003 between the SEC, NASD, NYSE, and ten of the United States's largest investment firms to address issues of conflict of interest within their businesses.
- The central issue at hand that had been previously decided in court was the conflict of interest between the investment banking and analysis departments of ten of the largest investment firms in the United States.
- As part of the settlement decision published on December 20, 2002, several regulations designed to prevent abuse stemming from pressure by investment bankers on analysts to provide "favorable" appraisals were instantiated.
- Other than these regulatory actions, the firms involved in the settlement were also to pay fines to their investors, to fund investor education, and to pay for independent third-party market research.

## MODULE 2 – BONDS

### **UNDERSTANDING THE COST OF MONEY**

---

- The concept of the cost of money has its basis, as does the subject of finance in general, in the time value of money.
- The time value of money refers to the fact that a dollar in hand today is worth more than a dollar promised at some future time.
- The trade-off between money now (holding money) and money later (investing) depends on, among other things, the rate of interest you can earn by investing. Therefore, interest is the cost of money.

### **INTEREST RATE LEVELS**

---

- In the U.S., the Federal Reserve (often referred to as 'The Fed') implements monetary policies largely by targeting the federal funds rate.
- Expansionary monetary policy is traditionally used to try to combat unemployment in a recession by lowering interest rates in the hope that easy credit will entice businesses into expanding.
- Contractionary monetary policy is intended to slow inflation in hopes of avoiding the resulting distortions and deterioration of asset values.
- Crowding out is a phenomenon occurring when expansionary fiscal policy causes interest rates to rise, thereby reducing investment spending.

### **DRIVERS OF MARKET INTEREST RATES**

---

- A market interest rate is the rate at which interest is paid by a borrower for the use of money that they borrow from a lender in the market.
- Economists generally agree that the interest rates yielded by any investment take into account: the risk-free cost of capital, inflationary expectations, the level of risk in the investment, and the costs of the transaction.
- A basic interest rate pricing model for an asset is presented by the following formula:  $i_n = i_r + p_e + r_p + l_p$ .

### **THE TERM STRUCTURE**

---

- Term structure of interest rates is often referred to as the yield curve.
- The expectation hypothesis of the term structure of interest rates is the proposition that the long-term rate is determined by the market's expectation for the short-term rate plus a constant risk premium.
- The liquidity premium theory asserts that long-term interest rates not only reflect investors' assumptions about future interest rates but also include a premium for holding long-term bonds.
- In the segmented market hypothesis, financial instruments of different terms are not substitutable; therefore, supply and demand in the markets for short-term and long-term instruments is determined largely independently.

### **PAR VALUE**

---

- When a bond trades at a price above the face value, it is said to be selling at a premium. When a bond sells below face value, it is said to be selling at a discount.
- A bond's price fluctuates throughout its life in response to a number of variables, including interest rates and time to maturity.
- Pull to par is the effect in which the price of a bond converges to par value as time passes. At maturity, the price of a debt instrument in good standing should equal its par (or face value).

### **COUPON INTEREST RATE**

- Coupon interest rate is usually fixed throughout the life of the bond. It can also vary with a money market index.
- Not all bonds have coupons. Zero-coupon bonds are those that pay no coupons and thus have a coupon rate of 0%.
- Based on different coupon rates, there are fixed rate bonds, floating rate bonds, and inflation linked bonds.

### **MATURITY DATE**

- As long as all due payments have been made, the issuer has no further obligations to the bond holders after the maturity date.
- The length of time until the maturity date is often referred to as the term or tenor or maturity of a bond.
- In the market for United States Treasury securities, there are three categories of bond maturities: short term, medium term, and long term.

### **CALL PROVISIONS**

- A callable bond is a type of bond that allows the issuer of the bond to retain the privilege of redeeming the bond at some point before the bond reaches its date of maturity.
- If interest rates in the market have gone down by the time of the call date, the issuer will be able to refinance its debt at a cheaper level and so will be incentivized to call the bonds it originally issued.
- Most callable bonds allow the issuer to repay the bond at par. With some bonds, the issuer has to pay a premium, known as the call premium.
- $\text{Price of callable bond} = \text{Price of straight bond} - \text{Price of call option}$ . Price of a callable bond is always lower than the price of a straight bond because the call option adds value to an issuer.

### **SINKING FUNDS**

- Sinking fund provision of the corporate bond indenture requires a certain portion of the issue to be retired periodically.
- A sinking fund reduces credit risk but presents reinvestment risk to bondholders.
- For the creditors, the fund reduces the risk the organization will default when the principal is due: it reduces credit risk. However, if the bonds are callable, this comes at a cost to creditors, because the organization has an option on the bonds.

### **OTHER FEATURES**

- The yield is the rate of return received from investing in the bond. It usually refers either to the current yield, or to the yield to maturity or redemption yield.
- The market price of a tradeable bond will be influenced by the amounts, currency and timing of the interest payments and capital repayment due, the quality of the bond, and the available redemption yield of other comparable bonds which can be traded in the markets.
- Some bonds give the holder the right to force the issuer to repay the bond before the maturity date on the put dates. These are referred to as retractable or puttable bonds.

### **ADVANTAGES OF BONDS**

- Bonds are a debt security under which the issuer owes the holders a debt and, depending on the terms of the bond, is obliged to pay them interest (the coupon) and or repay the principal at a later date, which is termed the maturity.
- The volatility of bonds (especially short and medium dated bonds) is lower than that of equities (stocks). Thus bonds are generally viewed as safer investments than stocks.
- Bonds are often liquid – it is often fairly easy for an institution to sell a large quantity of bonds without affecting the price much.

- Bondholders also enjoy a measure of legal protection: under the law of most countries, if a company goes bankrupt, its bondholders will often receive some money back (the recovery amount).
- There are also a variety of bonds to fit different needs of investors.

### **DISADVANTAGES OF BONDS**

- A bond is an instrument of indebtedness of the bond issuer to the holders. It is a debt security under which the issuer owes the holders a debt and, depending on the terms of the bond, is obliged to pay them interest and possibly repay the principal at a later date, which is termed the maturity.
- Fixed rate bonds are subject to interest rate risk, meaning that their market prices will decrease in value when the generally prevailing interest rates rise.
- Bonds are also subject to various other risks such as call and prepayment risk, credit risk, reinvestment risk, liquidity risk, event risk, exchange rate risk, volatility risk, inflation risk, sovereign risk, and yield curve risk.
- A company's bondholders may lose much or all their money if the company goes bankrupt. There is no guarantee of how much money will remain to repay bondholders.
- Some bonds are callable. This creates reinvestment risk, meaning the investor is forced to find a new place for his money. As a consequence, the investor might not be able to find as good a deal, especially because this usually happens when interest rates are falling.

### **THE NATURE OF BONDS**

- A bond is an instrument of indebtedness of the bond issuer to the holders. The issuer owes the holders a debt and, depending on the terms of the bond, is obliged to pay them interest (the coupon) and/or to repay the principal at a later date, termed the maturity.
- Bonds provide the borrower with external funds to finance long-term investments, or, in the case of government bonds, to finance current expenditure.
- Bonds and stocks are both securities, but the major difference between the two is that (capital) stockholders have an equity stake in the company (i.e. they are owners), whereas bondholders have a creditor stake in the company (i.e. they are lenders).

### **DURATION**

- A good approximation for bond price changes due to yield is the duration, a measure for interest rate risk.
- The Macaulay duration is the name given to the weighted average time until cash flows are received and is measured in years. It really makes sense only for an instrument with fixed cash flows.
- The modified duration is the name given to the price sensitivity and is the percentage change in price for a unit change in yield. It really makes sense only for an instrument with fixed cash flows.
- The modified duration is a derivative (rate of change) or price sensitivity and measures the percentage rate of change of price with respect to yield. The concept of modified duration can be applied to interest-rate sensitive instruments with non-fixed cash flows.

### **INDENTURE**

- Terms of indentures include the interest rate, maturity date, repayment dates, convertibility, pledge, promises, representations, covenants, and other terms of the bond offering.
- A bond indenture is held by a trustee. If the company fails to live up to the terms of the bond indenture, the trustee may bring legal action against the company on behalf of the bondholders.
- The offering memorandum, also known as a prospectus, is a document that describes a financial security for potential buyers.

## **RATINGS**

- Ratings play a critical role in determining how much companies and other entities that issue debt, including sovereign governments, have to pay to access credit markets; for example, the amount of interest they pay on their issued debt.
- The ratings are assigned by credit rating agencies such as Moody's, Standard & Poor's, and Fitch. Ratings to have letter designations (such as AAA, B, CC), which represent the quality of a bond.
- A bond is considered investment-grade (IG) if its credit rating is BBB- or higher by Standard & Poor's, or Baa3 or higher by Moody's, or BBB(low) or higher by DBRS. Bond ratings below BBB/Baa are not considered to be investment grade; such bonds are called junk bonds.

## **GOVERNMENT BONDS**

- A government bond is a bond issued by a national government, generally promising to pay a certain amount (the face value) on a certain date, as well as periodic interest payments. Such bonds are often denominated in the country's domestic currency.
- In the primary market, Government Bonds are often issued via auctions at Stock Exchanges. In the secondary market, government bonds are traded at Stock Exchanges.
- Although, government bonds are usually referred to as risk-free, there are currency, inflation, and default risks for government bondholders.

## **OTHER TYPES OF BONDS**

- Bonds directly linked to interest rates include fixed rate bonds, floating rate bonds, and zero coupon bonds.
- Convertible bonds are bonds that let a bondholder exchange a bond to a number of shares of the issuer's common stock. Exchangeable bonds allows for exchange to shares of a corporation other than the issuer.
- Asset-backed securities are bonds whose interest and principal payments are backed by underlying cash flows from other assets.
- Subordinated bonds are those that have a lower priority than other bonds of the issuer in case of liquidation.
- Foreign currency bonds are issued by companies, banks, governments, and other sovereign entities in foreign currencies, as it may appear to be more stable and predictable than their domestic currency.

## **ZERO-COUPON BONDS**

- Zero-coupon bonds may be created from fixed rate bonds by a financial institution separating ("stripping off") the coupons from the principal. In other words, the separated coupons and the final principal payment of the bond may be traded separately.
- Zero coupon bonds have a duration equal to the bond's time to maturity, which makes them sensitive to any changes in the interest rates.
- Pension funds and insurance companies like to own long maturity zero-coupon bonds since these bonds' prices are particularly sensitive to changes in the interest rate and, therefore, offset or immunize the interest rate risk of these firms' long-term liabilities.

## **FLOATING-RATE BONDS**

- FRBs are typically quoted as a spread over the reference rate. At the beginning of each coupon period, the coupon is calculated by taking the fixing of the reference rate for that day and adding the spread. A typical coupon would look like three months USD LIBOR +0.20%.
- FRBs carry little interest rate risk. A FRB has a duration close to zero, and its price shows very low sensitivity to changes in market rates. As FRBs are almost immune to interest rate risk. The risk that remains is a credit risk.

- Securities dealers make markets in FRBs. They are traded over the counter, instead of on a stock exchange. In Europe, most FRBs are liquid, as the biggest investors are banks. In the United States, FRBs are mostly held to maturity, so the markets aren't as liquid.

#### **PURCHASE PROCESS**

- Buying a bond involves setting up an account with a broker and requesting that the broker buy bonds on the buyer's behalf.
- An individual can also purchase bonds by investing in bond funds, which hold baskets of bonds rather than competing for individual bond sales.
- Most bond funds pay out dividends more frequently than individual bonds.

#### **PRICE TRANSPARENCY**

- A market is transparent if much is known—by many—about what products, services, or capital assets are available at what price and where.
- In most developed bond markets, such as the United States, Japan, and western Europe, bonds trade in decentralized, dealer-based, over-the-counter markets.
- Poor transparency contributes to investor differences in bond valuations, as well as other inefficiencies that may lead to economic losses for market participants and, ultimately, inhibit business development.

## MODULE 3 – CORPORATE FINANCE AND CORPORATE STRUCTURES

### **CORPORATE BONDS**

---

- The term corporate bond is typically applied to longer-term debt instruments with a maturity date falling at least a year after the issue date.
- Corporate bonds are often listed on major exchanges (and referred to as listed bonds) and ECNs, and the coupon (i.e., the interest payment) is usually taxable.
- Corporate debt falls into several broad categories: secured debt and unsecured debt; senior debt and subordinated debt.

### **CONVERTIBLE SECURITIES**

---

- A convertible bond is a type of bond that the holder can convert into shares of common stock in the issuing company or cash of equal value, at an agreed-upon price.
- Convertible preferred stocks are securities that contain a provision in which the holder may convert the preferred into the common stock of the company under certain conditions.
- Convertible arbitrage involves the simultaneous purchase of convertible securities and the short sale of the same issuer's common stock.
- Forced conversion usually occurs when the price of the stock is higher than the amount it would be if the bond were redeemed.

### **OPTIONS**

---

- An option that conveys the right to buy something at a specific price is called a call; an option that conveys the right to sell something at a specific price is called a put.
- Today, many options are created in a standardized form and traded through clearinghouses on regulated options exchanges, while other over-the-counter options are written as bilateral, customized contracts between a single buyer and seller.
- The most common options are European, which may only be exercised on expiration, and American, may be exercised on any trading day on or before expiration.
- Nearly all stock and equity options are American options, while indexes are generally represented by European options.

### **WARRANTS**

---

- A warrant's "premium" represents how much extra you have to pay for your shares when buying them through the warrant as compared to buying them the regular way.
- Warrants are issued by private parties, typically the corporation on which a warrant is based, rather than a public options exchange.
- A warrant's lifetime is measured in years (as long as 15 years), while options are typically measured in months.
- The market value of a warrant can be divided into two components: intrinsic value and time value.
- Warrants are often used as deal sweeteners, in order to entice hesitant investors.

### **DERIVATIVES**

---

- Derivatives are broadly categorized by the relationship between the underlying asset and the derivative, the type of underlying asset, the market in which they trade, and their pay-off profile.
- The most common types of derivatives are forwards, futures, options, and swaps. The most common underlying assets include commodities, stocks, bonds, interest rates, and currencies.
- Derivatives allow investors to earn large returns from small movements in the underlying asset's price.
- Conversely, investors could lose large amounts if the price of the underlying moves against them significantly.

- Derivatives contracts can be either over-the-counter or exchange-traded.

---

#### **MANAGING RISK WITH DERIVATIVES**

- Companies that produce or depend on the purchase of commodities are exposed to price fluctuations that occur in commodities markets.
- Hedging also occurs when an individual or institution buys an asset (such as a commodity, a bond that has coupon payments, a stock that pays dividends, etc. ) and sells it using a futures contract.
- Although a third party, called a "clearing house," insures a futures contract; not all derivatives are insured against counter-party risk.

---

#### **PRINCIPAL'S CONTRACT LIABILITY**

- The principal is liable on an agent's contract only if the agent was authorized by the principal to make the contract. Such authority is express, implied, or apparent.
- Express means made in words, orally or in writing
- Implied means the agent has authority to perform acts incidental to or reasonably necessary to carrying out the transaction for which she has express authority.
- Apparent authority arises where the principal gives the third party reason to believe that the agent had authority. The reasonableness of the third party's belief is based on all the circumstances—all the facts. Even if the agent has no authority, the principal may, after the fact, ratify the contract made by the agent.

---

#### **PRINCIPLE'S TORT LIABILITY**

- The principal will be liable for the employee's torts in two circumstances: first, if the principal was directly responsible, as in hiring a person the principal knew or should have known was incompetent or dangerous; second, if the employee committed the tort in the scope of business for the principal. This is the master-servant doctrine or respondeat superior.
- Respondeat superior imposes vicarious liability on the employer: the master (employer) will be liable if the employee was in the zone of activity creating a risk for the employer ("zone of risk" test), that is—generally—if the employee was where he was supposed to be, when he was supposed to be there, and the incident arose out of the employee's interest (however perverted) in promoting the employer's business.
- Special cases of vicarious liability arise in several circumstances.
- For example, the owner of an automobile may be liable for torts committed by one who borrows it, or if it is—even if indirectly—used for family purposes.
- Parents are, by statute in many states, liable for their children's torts.
- Similarly by statute, the sellers and employers of sellers of alcohol or adulterated or short-weight foodstuffs may be liable.

---

#### **PRINCIPLE'S CRIMINAL LIABILITY**

- The employer of one who commits a crime is not usually liable unless the employer put the employee up to the crime or knew that a crime was being committed.
- But some prophylactic statutes impose liability on the employer for the employee's crime—even if the employee had no intention to commit it—as a means to force the employer to prevent such actions.

---

#### **AGENT'S TORT LIABILITY**

- A person is always liable for her own torts, so an agent who commits a tort is liable; if the tort was in the scope of employment the principal is liable too.
- Unless the principal put the agent up to committing the tort, the agent will have to reimburse the principal.



### ***AGENT'S CONTRACT LIABILITY***

---

- An agent is not generally liable for contracts made; the principal is liable.
- The agent will be liable if he is undisclosed or partially disclosed, if the agent lacks authority or exceeds it, or, of course, if the agent entered into the contract in a personal capacity.

### ***TERMINATIONS OF AGENCY***

---

- Agencies terminate expressly or impliedly or by operation of law.
- An agency terminates expressly by the terms of the agreement or mutual consent, or by the principal's revocation or the agent's renunciation.
- An agency terminates impliedly by any number of circumstances in which it is reasonable to assume one or both of the parties would not want the relationship to continue.
- An agency will terminate by operation of law when one or the other party dies or becomes incompetent, or if the object of the agency becomes illegal.
- However, an agent may have apparent lingering authority, so the principal, upon termination of the agency, should notify those who might deal with the agent that the relationship is severed.

## **MODULE 4 – FINANCIAL STATEMENTS**

### ***DEFINING THE FINANCIAL STATEMENT***

---

- Financial statements are formally prepared documents communicating an entity's financial activities to parties including investors, management and tax officials.
- An entity's financial statement typically includes four basic components: a balance sheet, income statement, cash flow statement, and statement of changes in equity.
- The balance sheet reports a point-in-time snapshot of the assets, liabilities and equity of the entity.
- An income statement reports on a company's expenses and profits to show whether the company made or lost money.
- The cash flow statement reports the flow of cash in and out of the business, dividing cash into operating, investing and financing activities.
- A statement of changes in equity explains the changes of the company's equity throughout the reporting period, including profits or losses, dividends paid and issue or redemption of stock.

### ***USES OF THE FINANCIAL STATEMENT***

---

- Owners and managers use financial statements to make important long-term business decisions. For example: whether or not to continue or discontinue part of its business, to make or purchase certain materials, or to acquire or rent/lease certain equipment in the production of its goods.
- Prospective investors use financial statements to perform financial analysis, which is a key component in making investment decisions.
- A lending institution will examine the financial health of a person or organization and use the financial statement to decide whether or not to lend funds.

### ***LIMITATIONS OF FINANCIAL STATEMENTS***

---

- One limitation of financial statements is that they are open to human interpretation and error, in some cases even intentional manipulation of figures to inflate economic performance.
- Another set of limitations of financial statements arises from different ways of accounting for activities across time periods and across companies, which can make comparisons difficult.
- Another limit to financial statements as a window into the creditworthiness or investment attractiveness of an entity is that financial statements focus solely on financial measures. Some argue for a "triple bottom line" including social and environmental measures.

### ***THE INCOME STATEMENT***

---

- The income statement consists of revenues and expenses along with the resulting net income or loss over a period of time due to earning activities. The income statement shows investors and management if the firm made money during the period reported.
- The operating section of an income statement includes revenue and expenses. Revenue consists of cash inflows or other enhancements of assets of an entity, and expenses consist of cash outflows or other using-up of assets or incurring of liabilities.
- The non-operating section includes revenues and gains from non-primary business activities, items that are either unusual or infrequent, finance costs like interest expense, and income tax expense.
- The "bottom line" of an income statement is the net income that is calculated after subtracting the expenses from revenue. It is important to investors - also on a per share basis (as earnings per share, EPS) - as it represents the profit for the accounting period attributable to the shareholders.

### ***LIMITATIONS OF THE INCOME STATEMENT***

---

- Income statements include judgments and estimates, which mean that items that might be relevant but cannot be reliably measured are not reported and that some reported figures have a subjective component.

- With respect to accounting methods, one of the limitations of the income statement is that income is reported based on accounting rules and often does not reflect cash changing hands.
- Income statements can also be limited by fraud, such as earnings management, which occurs when managers use judgment in financial reporting to intentionally alter financial reports to show an artificial increase (or decrease) of revenues, profits, or earnings per share figures.

### ***EFFECTS OF GAAP ON THE INCOME STATEMENT***

---

- Items that create temporary differences due to the recording requirements of GAAP include rent or other revenue collected in advance, estimated expenses, and deferred tax liabilities and assets.
- Also there are events, usually one-time events, which create "permanent differences," such as GAAP recognizing as an expense an item that the IRS will not allow to be deducted.
- The four basic principles of GAAP can affect items on the income statement. These principles include the historical cost principle, revenue recognition principle, matching principle, and full disclosure principle.

### ***NON CASH ITEMS***

---

- Non-cash items should be added back in when analyzing income statements to determine cash flow because they do not contribute to the inflow or outflow of cash like other gains and expenses eventually do.
- Depreciation refers to the decrease in value of assets and the allocation of the cost of assets to periods in which the assets are used--for tangible assets, such as machinery.
- Amortization is a similar process to deprecation when applied to intangible assets, such as patents and trademarks.

### ***ASSETS***

---

- The main categories of assets are usually listed first, and normally, in order of liquidity. On a balance sheet, assets will typically be classified into current assets and non-current (long-term) assets.
- Current assets are those assets which can either be converted to cash or used to pay current liabilities within 12 months. Current assets include cash and cash equivalents, short-term investments, accounts receivable, inventories and the portion of prepaid liabilities paid within a year.
- A non-current asset cannot easily be converted into cash. Non-current assets include property, plant and equipment (PPE), investment property, intangible assets, long-term financial assets, investments accounted for using the equity method, and biological assets.

### ***LIABILITIES AND EQUITY***

---

- In financial accounting, a liability is defined as an obligation of an entity arising from past transactions or events, the settlement of which may result in the transfer or use of assets, provision of services or other yielding of economic benefits in the future.
- Equity is the residual claim or interest of the most junior class of investors in assets, after all liabilities are paid.
- The types of accounts and their description that comprise the owner's equity depend on the nature of the entity and may include: Common stock, preferred stock, capital surplus, retained earnings, treasury stock, stock options and reserve.

### ***WORKING CAPITAL***

---

- Net working capital is calculated as current assets minus current liabilities.
- Current assets and current liabilities include three accounts which are of special importance: accounts receivable, accounts payable and inventories.

- The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow. The management of working capital involves managing inventories, accounts receivable and payable, and cash.

### ***LIQUIDITY***

---

- Liquidity refers to a business's ability to meet its payment obligations, in terms of possessing sufficient liquid assets, and to such assets themselves. For assets, liquidity is an asset's ability to be sold without causing a significant movement in the price and with minimum loss of value.
- A standard company balance sheet has three parts: assets, liabilities and ownership equity. The main categories of assets are usually listed first, typically in order of liquidity.
- For a corporation with a published balance sheet there are various ratios used to calculate a measure of liquidity, namely the current ratio, the quick ratio, the operating cash flow ratio, and the liquidity ratio (acid test).

### ***DEBT TO EQUITY***

---

- The debt-to-equity ratio (D/E) is a financial ratio indicating the relative proportion of shareholders' equity and debt used to finance a company's assets. Closely related to leveraging, the ratio is also known as risk, gearing or leverage.
- Preferred stocks can be considered part of debt or equity. Attributing preferred shares to one or the other is partially a subjective decision.
- The formula of debt/ equity ratio:  $D/E = \text{Debt (liabilities)} / \text{equity} = \text{Debt} / (\text{Assets} - \text{Debt}) = (\text{Assets} - \text{Equity}) / \text{Equity}$ .

### ***MARKET VALUE VS. BOOK VALUE***

---

- Market value is the price at which an asset would trade in a competitive auction setting.
- Book value or carrying value is the value of an asset according to its balance sheet account balance. For assets, the value is based on the original cost of the asset less any depreciation, amortization or impairment costs made against the asset.
- In many cases, the carrying value of an asset and its market value will differ greatly. However, they are interrelated.

### ***LIMITATIONS OF THE BALANCE SHEET***

---

- Balance sheets do not show true value of assets. Historical cost is criticized for its inaccuracy since it may not reflect current market valuation.
- Some of the current assets are valued on an estimated basis, so the balance sheet is not in a position to reflect the true financial position of the business.
- The balance sheet can not reflect those assets which cannot be expressed in monetary terms, such as skill, intelligence, honesty, and loyalty of workers.

### ***CORPORATE TAXES***

---

- Legal forms of corporations include sole proprietorships, partnerships, C corporations, S corporations, and LLCs.
- The type of corporation chosen will determine such factors as liability and taxation on the entity.
- Taxable income for a corporation is defined as all gross income (sales plus other income minus cost of goods sold and tax exempt income) less allowable tax deductions and tax credits.

### ***TAX DEDUCTIONS***

---

- Business expenses are those that are incurred in order to generate profit for a company, such as cost of goods sold.
- Ordinary expenses, such as interest paid on debt, are typically deductible as long as they are appropriate to the nature of the business, the sort expected to help produce income, and are not lavish and extravagant.

- In a progressive tax system, the marginal tax rate must be used in order to calculate the after-tax cost of a deductible expense.
- While a deduction is a reduction of the level of taxable income, a tax credit is a sum deducted from the total amount of tax owed.

### **DEPRECIATION**

---

- To determine depreciation expense, the useful life of an asset under depreciation is estimated in time-units. Then the corresponding depreciation rate is calculated that will extinguish the value of the asset from the books when the estimated useful life ends.
- The straight-line method of depreciation reduces the book value of an asset by the same amount each period.
- The declining balance method of depreciation provides for a higher depreciation expense in the first year of an asset's life and gradually decreases expenses in subsequent years.
- Activity depreciation methods are not based on time but on a level of activity, such as miles driven or cycle counts.
- Depreciation allows a company to properly identify the amount of income it generates in a given period.

### **INDIVIDUAL TAXES**

---

- A direct tax is one imposed upon an individual person or on property, as opposed to an indirect tax that is imposed upon a transaction.
- Income tax is levied on the total income of the individual, less deductions and credits.
- Sales tax is levied on the state level on retail sale, lease, and rental of many goods, as well as some services.
- Property tax is levied on interests in real property (land, buildings, and permanent improvements).
- Estate tax is an excise tax levied on the right to pass property at death.

### **CASH FLOW FROM OPERATIONS**

---

- Operating cash flows refers to the cash a company generates from the revenues it brings in, excluding costs associated with long-term investment on capital items or investment in securities (these are investing or financing activities).
- GAAP and IFRS vary in their categorization of many cash flows, such as paying dividends. Some activities that are operating cash flows under one system are financing or investing in another.
- Major operating activities such as manufacturing products or selling a product may appear on the income statement but not on the cash flow statement, because cash has not yet changed hands.

### **CASH FLOW FROM INVESTING**

---

- Assets included in investment activity include land, buildings, and equipment.
- Receiving dividends from another company's stock is an investing activity, although paying dividends on a company's own stock is not.
- An investing activity only appears on the cash flow statement if there is an immediate exchange of cash.

### **CASH FLOW FROM FINANCING**

---

- Financing activities can be seen in changes in non-current liabilities and in changes in equity in the change-in-equity statement.
- A positive financing cash flow could be really great for a company (it just went issued stock at a great price) or could be due to the company having to take out loans to stay out of bankruptcy.
- Issuing credit is not a financing activity though taking on credit is. Like all cash flows, such activities only appear on the cash flow statement when the exchange of money actually takes place.

### **INTERPRETING OVERALL CASH FLOW**

---

- The three types of cash flow are cash from operations, investing, and financing.
- Having positive cash flows is important because it means that the company has at least some liquidity and may be solvent.
- A positive cash flow does not guarantee that the company can pay all of its bills, just as a negative cash flow does not mean that it will miss its payments.
- When preparing the statement of cash flows, analysts must focus on changes in account balances on the balance sheet.
- Cash flows from operating activities are essential to helping analysts assess the company's ability to meet ongoing funding requirements, contribute to long-term projects and pay a dividend.
- Analysis of cash flow from investing activities focuses on ratios when assessing a company's ability to meet future expansion requirements.
- The free cash flow is useful when analysts want to see how much cash can be extracted from a company without causing issues to its day to day operations.

### **THE STATEMENT OF EQUITY**

---

- The statement breaks down changes in the owners' interest in the organization. Line items typically include profits or losses from operations, dividends paid, issue or redemption of stock, and any other items charged or credited to retained earnings.
- Owners' equity = assets – liabilities.
- The statement of equity uses information from the income statement and provides information to the balance sheet.
- Ending retained earnings = beginning retained earnings – dividends paid + net income.

### **DEPRECIATION**

---

- Depreciation refers to the allocation of the cost of assets to periods in which the assets are used (depreciation with the matching principle).
- Generally this involves four criteria: cost of the asset, expected salvage value (residual value of the asset), estimated useful life of the asset, and a method of apportioning the cost over such life.
- There are several methods for calculating depreciation, generally based on either the passage of time or the level of activity of the asset: straight-line depreciation, accelerated depreciation methods, activity depreciation methods, sum-of-years' digits method, and units-of-production method.

### **FREE CASH FLOW**

---

- There are four different methods for calculating free cash flows.
- Free cash flow measures the ease with which businesses can grow and pay dividends to shareholders.
- Net income and free cash flows are different. Some investors prefer using free cash flow instead of net income to measure a company's financial performance because free cash flow is more difficult to manipulate than net income.

### **MVA AND EVA**

---

- Market Value Added (MVA) is the difference between the current market value of a firm and the capital contributed by investors.
- Economic Value Added or EVA, is an estimate of a firm's economic profit – being the value created in excess of the required return of the company's investors (being shareholders and debt holders).
- The firm's market value added, or MVA, is the discounted sum (present value) of all future expected economic value added:  $MVA = \text{Present Value of a series of EVA values}$ .

## MODULE 5 – ANALYZING FINANCIAL STATEMENTS AND RATIOS

### **BALANCE SHEETS**

---

- Of the four basic financial statements, the balance sheet is the only statement which applies to a single point in time of a business' calendar year.
- The main categories of assets are usually listed first (in order of liquidity) and are followed by the liabilities.
- The difference between the assets and the liabilities is known as "equity".
- Balance sheets can either be in the report form or the account form.
- A balance sheet is often presented alongside one for a different point in time (typically the previous year) for comparison.
- Guidelines for balance sheets of public business entities are given by the International Accounting Standards Board and numerous country-specific organizations/companies.

### **INCOME STATEMENTS**

---

- Income statement displays the revenues recognized for a specific period, and the cost and expenses charged against these revenues, including write offs (e.g., depreciation and amortization of various assets) and taxes.
- The income statement can be prepared in one of two methods: The Single Step income statement and Multi-Step income statement.
- The income statement includes revenue, expenses, COGS, SG&A, depreciation, other revenues and expenses, finance costs, income tax expense, and net income.

### **CLASSIFICATION OF RATIOS**

---

- Ratio analysis consists of the calculation of ratios from financial statements and is a foundation of financial analysis.
- A financial ratio, or accounting ratio, shows the relative magnitude of selected numerical values taken from those financial statements.
- The numbers contained in financial statements need to be put into context so that investors can better understand different aspects of the company's operations. Ratio analysis is one method an investor can use to gain that understanding.

### **OPERATING MARGIN**

---

- The operating margin equals operating income divided by revenue.
- The operating margin shows how much profit a company makes for each dollar in revenue. Since revenues and expenses are considered 'operating' in most companies, this is a good way to measure a company's profitability.
- Although It is a good starting point for analyzing many companies, there are items like interest and taxes that are not included in operating income. Therefore, the operating margin is an imperfect measurement a company's profitability.

### **PROFIT MARGIN**

---

- Profit margin is the profit divided by revenue.
- There are two types of profit margin: gross profit margin and net profit margin.
- A higher profit margin is better for the company, but there may be strategic decisions made to lower the profit margin or to even have it be negative.

### **RETURN ON TOTAL ASSETS**

---

- ROA is net income divided by total assets.
- The ROA is the product of two common ratios: profit margin and asset turnover.

- A higher ROA is better, but there is no metric for a good or bad ROA. An ROA depends on the company, the industry and the economic environment.
- ROA is based on the book value of assets, which can be starkly different from the market value of assets.

### **BASIC EARNING POWER (BEP) RATIO**

- The higher the BEP ratio, the more effective a company is at generating income from its assets.
- Using EBIT instead of operating income means that the ratio considers all income earned by the company, not just income from operating activity. This gives a more complete picture of how the company makes money.
- BEP is useful for comparing firms with different tax situations and different degrees of financial leverage.

### **RETURN ON COMMON EQUITY**

- ROE is net income divided by total shareholders' equity.
- ROE is also the product of return on assets (ROA) and financial leverage.
- ROE shows how well a company uses investment funds to generate earnings growth. There is no standard for a good or bad ROE, but a higher ROE is better.

### **INVENTORY TURNOVER RATIO**

- Inventory turnover = Cost of goods sold / Average inventory.
- Average days to sell the inventory = 365 days / Inventory turnover ratio.
- A low turnover rate may point to overstocking, obsolescence, or deficiencies in the product line or marketing effort.
- Conversely, a high turnover rate may indicate inadequate inventory levels, which may lead to a loss in business as the inventory is too low.

### **DAYS SALES OUTSTANDING**

- Days sales outstanding is a financial ratio that illustrates how well a company's accounts receivables are being managed.
- DSO ratio = accounts receivable / average sales per day, or DSO ratio = accounts receivable / (annual sales / 365 days).
- Generally speaking, higher DSO ratio can indicate a customer base with credit problems and/or a company that is deficient in its collections activity. A low ratio may indicate the firm's credit policy is too rigorous, which may be hampering sales.

### **FIXED ASSETS TURNOVER RATIO**

- Fixed asset turnover = Net sales / Average net fixed assets.
- The higher the ratio, the better, because a high ratio indicates the business has less money tied up in fixed assets for each unit of currency of sales revenue. A declining ratio may indicate that the business is over-invested in plant, equipment, or other fixed assets.
- Fixed assets, also known as a non-current asset or as property, plant, and equipment (PP&E), is a term used in accounting for assets and property that cannot easily be converted into cash.

### **TOTAL ASSETS TURNOVER RATIO**

- Total assets turnover = Net sales revenue / Average total assets.
- Net sales are operating revenues earned by a company for selling its products or rendering its services.
- Anything tangible or intangible that is capable of being owned or controlled to produce value and that is held to have positive economic value is considered an asset.



- Companies with low profit margins tend to have high asset turnover, while those with high profit margins have low asset turnover.

### **CURRENT RATIO**

- The liquidity ratio expresses a company's ability to repay short-term creditors out of its total cash. The liquidity ratio is the result of dividing the total cash by short-term borrowings.
- The current ratio is a financial ratio that measures whether or not a firm has enough resources to pay its debts over the next 12 months.
- $\text{Current ratio} = \text{current assets} / \text{current liabilities}$ .
- Acceptable current ratios vary from industry to industry and are generally between 1.5 and 3 for healthy businesses.

### **QUICK RATIO (ACID-TEST RATIO)**

- $\text{Quick Ratio} = (\text{Cash and cash equivalent} + \text{Marketable securities} + \text{Accounts receivable}) / \text{Current liabilities}$ .
- $\text{Acid Test Ratio} = (\text{Current assets} - \text{Inventory}) / \text{Current liabilities}$ .
- Ideally, the acid test ratio should be 1:1 or higher, however this varies widely by industry. In general, the higher the ratio, the greater the company's liquidity.

### **TOTAL DEBT TO TOTAL ASSETS**

- The debt ratio measures the firm's ability to repay long-term debt by indicating the percentage of a company's assets that are provided via debt.
- $\text{Debt ratio} = \text{Total debt} / \text{Total assets}$ .
- The higher the ratio, the greater risk will be associated with the firm's operation.

### **TIMES-INTEREST-EARNED RATIO**

- Times interest earned (TIE) or Interest Coverage ratio is a measure of a company's ability to honor its debt payments. It may be calculated as either EBIT or EBITDA divided by the total interest payable.
- Interest Charges = Traditionally "charges" refers to interest expense found on the income statement.
- $\text{EBIT} = \text{Revenue} - \text{Operating expenses (OPEX)} + \text{Non-operating income}$ .
- EBITDA = Earnings before interest, taxes, depreciation and amortization.
- Times Interest Earned or Interest Coverage is a great tool when measuring a company's ability to meet its debt obligations.

### **THE DUPONT EQUATION**

- By splitting ROE into three parts, companies can more easily understand changes in their returns on equity over time.
- As profit margin increases, every sale will bring more money to a company's bottom line, resulting in a higher overall return on equity.
- As asset turnover increases, a company will generate more sales per asset owned, resulting in a higher overall return on equity.
- Increased financial leverage will also lead to an increase in return on equity, since using more debt financing brings on higher interest payments, which are tax deductible.

### **ROE AND POTENTIAL LIMITATIONS**

- Return on equity is an indication of how well a company uses investment funds to generate earnings growth.
- Returns on equity between 15% and 20% are generally considered to be acceptable.
- $\text{Return on equity} = \text{net income (after preferred stock dividends but before common stock dividends)} / \text{total shareholder equity (excluding preferred shares)}$ .

- Stock prices are most strongly determined by earnings per share (EPS) as opposed to return on equity.

### **ASSESSING INTERNAL GROWTH AND SUSTAINABILITY**

- The internal growth rate is a formula for calculating the maximum growth rate a firm can achieve without resorting to external financing.
- Sustainable growth is defined as the annual percentage of increase in sales that is consistent with a defined financial policy.
- Another measure of growth, the optimal growth rate, assesses sustainable growth from a total shareholder return creation and profitability perspective, independent of a given financial strategy.

### **DIVIDEND PAYMENTS AND EARNINGS RETENTION**

- Many corporations retain a portion of their earnings and pay the remainder as a dividend.
- Dividends are usually paid in the form of cash, store credits, or shares in the company.
- Cash dividends are a form of investment income and are usually taxable to the recipient in the year that they are paid.
- Dividend payout ratio is the fraction of net income a firm pays to its stockholders in dividends.
- Retained earnings can be expressed in the retention ratio.

### **RELATIONSHIPS BETWEEN ROA, ROE, AND GROWTH**

- Return on equity measures the rate of return on the shareholders' equity of common stockholders.
- Return on assets shows how profitable a company's assets are in generating revenue.
- In other words, return on assets makes up two-thirds of the DuPont equation measuring return on equity.
- Capital intensity is the term for the amount of fixed or real capital present in relation to other factors of production. Rising capital intensity pushes up the productivity of labor.

### **EVALUATING FINANCIAL STATEMENTS**

- Ratio analysis is a tool for evaluating financial statements but also relies on the numbers in the reported financial statements being put into order to be used for comparison. With a few exceptions, the majority of the data used in ratio analysis comes from the financial statements.
- Prior to the calculation of financial ratios, reported financial statements are often reformulated and adjusted by analysts to make the financial ratios more meaningful as comparisons across time or across companies.
- In terms of reformulation, earnings might be separated into recurring and non-recurring items. In terms of adjustment of financial statements, analysts may adjust earnings numbers up or down when they suspect the reported data is inaccurate due to issues like earnings management.

### **INDUSTRY COMPARISONS**

- One of the advantages of ratio analysis is that it allows comparison across companies. However, while ratios can be quite helpful in comparing companies within an industry and even across some similar industries, cross-industry comparisons may not be helpful and should be done with caution.
- An industry represents a classification of companies by economic activity, but "industry" can be too broad or narrow a definition for ratio analysis comparison. When comparing ratios, companies should be comparable in terms of having similar characteristics in the statistics being analyzed.
- Valuation using multiples only reveals patterns in relative values. For multiples to be useful, the statistic involved must bear a logical, meaningful relationship to the market value observed, which is something that can vary across industry.

### **BENCHMARKING**

- Financial ratios allow for comparisons and, therefore, are intertwined with the process of benchmarking, comparing one's business to that of relevant others or of the same company at a different point in time processes on a specific indicator or series of indicators.
- Benchmarking can be done in many ways and ratio analysis is only one of these. One benefit of ratio analysis as a component of benchmarking is that many financial ratios are well-established calculations derived from verified data.
- Benchmarking using ratio analysis can be useful to various audiences; for example, investors and managers interested in incorporate quantitative comparisons of a company to peers.

### **LIMITATIONS OF FINANCIAL STATEMENT ANALYSIS**

- Ratio analysis is hampered by potential limitations with accounting and the data in the financial statements themselves. This can include errors as well as accounting mismanagement, which involves distorting the raw data used to derive financial ratios.
- Proponents of the stronger forms of the efficient-market hypothesis, technical analysts, and behavioral economists argue that fundamental analysis is limited as a stock valuation tool, all for their own distinct reasons.
- Ratio analysis can also omit important aspects of a firm's success, such as key intangibles, like brand, relationships, skills and culture. These are primary drivers of success over the longer term even though they are absent from conventional financial statements.
- Other disadvantages of this type of analysis is that if used alone it can present an overly simplistic view of the company by distilling a great deal of information into a single number or series of numbers that may not provide adequate context or be comparable across time or industry.

### **IMPACT OF INFLATION ON FINANCIAL STATEMENT ANALYSIS**

- Many of the historical numbers appearing on financial statements are not economically relevant because prices have changed since they were incurred.
- Since the numbers on financial statements represent dollars expended at different points of time and, in turn, embody different amounts of purchasing power, they are simply not additive.
- Reported profits may exceed the earnings that could be distributed to shareholders without impairing the company's ongoing operations.
- Future earnings are not easily projected from historical earnings. Future capital needs are difficult to forecast and may lead to increased leverage, which increases the risk to the business.
- The asset values for inventory, equipment and plant do not reflect their economic value to the business.

### **DISINFLATION**

- Disinflation occurs when the increase in the "consumer price level" slows down from the previous period when the prices were rising. Disinflation is the reduction in the general price level in the economy but for a very short period of time.
- The causes of disinflation may be a decrease in the growth rate of the money supply. If the central bank of a country enacts tighter monetary policy, the supply of money reduces, and money becomes more upscale and the demand for money remains constant.
- Disinflation may result from a recession. The central bank adopts contractionary monetary policy, goods, and services are more expensive. Even though the demand for commodities fall, the supply still remains unaltered. Thus, the prices would fall over a period of time leading to disinflation.

### **DEFLATION**

- In the IS/LM model (Investment and Saving equilibrium/ Liquidity Preference and Money Supply equilibrium model), deflation is caused by a shift in the supply-and-demand curve for goods and services, particularly a fall in the aggregate level of demand.

- In more recent economic thinking, deflation is related to risk: where the risk-adjusted return on assets drops to negative, investors and buyers will hoard currency rather than invest it. This can produce a liquidity trap.
- In monetarist theory, deflation must be associated with either a reduction in the money supply, a reduction in the velocity of money or an increase in the number of transactions. But any of these may occur separately without deflation.
- In mainstream economics, deflation may be caused by a combination of the supply and demand for goods and the supply and demand for money; specifically the supply of money going down and the supply of goods going up.
- The effects of deflation are: decreasing nominal prices for goods and services, increasing buying power of cash money and all assets denominated in cash terms, possibly decreasing investment and lending if cash holdings are seen as preferable, and benefiting recipients of fixed incomes.

### **DISCREPANCIES**

- At the end of each month when you get your bank or credit card statement, you will need to reconcile each account in your accounting program against the statement.
- You will want to double check that you entered the correct starting and ending balances for the account, and if you did, go back through all the transactions until you find the problem. Then correct it and you can proceed with your reconciliation.
- In accounting, reconciliation refers to a process that compares two sets of records (usually the balances of two accounts) to make sure they are in agreement.
- It depends on the type of discrepancies, most accounting discrepancies are due to the lack of accuracy (decimal places) when breaking down a large figure. Although more decimal places in your calculations can help solve discrepancies it can look rather unsightly on a report.

### **EXTRAORDINARY GAINS AND LOSSES**

- Extra gains or losses are nonrecurring, onetime, unusual, non-operating gains or losses that are recorded by a business during the period.
- No items may be presented in the income statement as extraordinary items under IFRS regulations, but are permissible under US GAAP. (IAS 1.87) The amount of each of these gains or losses, net of the income tax effect, is reported separately in the income statement.
- Examples of extraordinary items are casualty losses, losses from expropriation of assets by a foreign government, gain on life insurance, gain or loss on the early extinguishment of debt, gain on troubled debt restructuring, and write-off of an intangible asset.

### **SELECTED FINANCIAL RATIOS AND ANALYSES**

- When using comparative financial statements, the calculation of dollar or percentage changes in the statement items or totals from one period to the next or for the timeframe presented is referred to as horizontal analysis.
- Vertical analysis performed on an income statement is especially helpful in analyzing the relationships between revenue and expense items, such as the percentage of cost of goods sold to sales.
- Financial ratios, which compare one value in relation to another value over a 12 month period, are computed using information from a company's financial statements. Ratios can identify various financial attributes, such as solvency and liquidity, profitability, and return on equity.
- An example of a financial ratio is the current ratio, used to determine a company's liquidity, or its ability to meet its short term obligations. When comparing two companies, in theory, the entity with the higher current ratio is more liquid than the other.
- Often a financial ratio, which is a relative magnitude of two selected numerical values taken from a company's financial statements is used to find out a specific piece of information such as the quality of income.

## MODULE 6 – FORECASTING AND PRO FORMA FINANCIAL STATEMENTS

### **SALES FORECAST INPUT**

- Net sales are operating revenues earned by a company for selling its products or rendering its services.
- Gross sales are the sum of all sales during a time period. Net sales are gross sales minus sales returns, sales allowances, and sales discounts.
- The purpose of profit-based sales target metrics is to ensure that marketing and sales objectives mesh with profit targets.

### **INPUTS TO THE PRODUCTION SCHEDULE**

- A good purchased as a "raw material" goes into the manufacture of a product.
- A good only partially completed during the manufacturing process is called "work in process".
- When the good is completed as to manufacturing but not yet sold or distributed to the end-user, it is called a "finished good".
- Inventory management is primarily about specifying the shape and percentage of stocked goods.
- Basic reasons for keeping an inventory involve time, uncertainty and economics of scales.

### **INPUTS TO COGS**

- Costs include all costs of purchase, costs of conversion, and other costs incurred in bringing the inventories to their present location and condition.
- The key components of cost generally include: parts - raw materials and supplies used, labor - including associated costs such as payroll taxes and benefits, and overhead of the business allocable to production.
- A miscalculation or faulty estimation can be amplified drastically, causing a vastly different forecasted amount of income than what will actually come to pass.

### **OTHER EXPENSES**

- Other expenses include operation expenses section and non-operation expenses section.
- Operation section expenses include SG&A, depreciation, amortization, and R&D expenses.
- Non-operation section expenses include finance costs, income tax expense, and discontinued operations expenses.
- SG&A is usually understood as a major portion of non-production related costs, in contrast to production costs such as direct labor.

### **PRO FORMA INCOME STATEMENT**

- The *pro forma* accounting is a statement of the company's financial activities while excluding "unusual and nonrecurring transactions" when stating how much money the company actually made.
- Income statement is a company's financial statement that indicates how the revenue is transformed into the net income during a certain period of time.
- *Pro forma* Income statement includes revenue, COGS, operational expenses and non-operational expenses.

### **PRO FORMA BALANCE SHEET**

- The *pro forma* accounting is a statement of the company's financial activities while excluding "unusual and nonrecurring transactions" when stating how much money the company actually made.
- In business, *pro forma* financial statements are prepared in advance of a planned transaction, such as a merger, an acquisition, a new capital investment, or a change in capital structure such as incurrence of new debt or issuance of equity.

- Pro forma figures should be clearly labeled as such and the reason for any deviation from reported past figures clearly explained.

### **BALANCE SHEET ANALYSIS**

- Balance sheet is a summary of the financial balances of a sole proprietorship, a business partnership, a corporation or other business organization. Assets, liabilities and ownership equity are listed as of a specific date, such as the end of its financial year.
- Balance sheet analysis (or financial analysis) the process of understanding the risk and profitability of a firm (business, sub-business or project) through analysis of reported financial information, particularly annual and quarterly reports.
- Financial ratio analysis should be based on regrouped and adjusted financial statements. Two types of ratio analysis are performed: 3.1) Analysis of risk and 3.2) analysis of profitability.
- Balance sheet analysis consists of 1) reformulating reported Balance sheet, 2) analysis and adjustments of measurement errors, and 3) financial ratio analysis on the basis of reformulated and adjusted Balance sheet.

### **RECEIPTS**

- Cash receipts come from internal sources, such as cash from sales and accounts receivable, and external sources, such as bank loans or accounts receivable financing.
- A company needs to understand the timing involved with cash-producing or cash-depleting activities before it can properly plan for cash flows.
- The receipt cycle is the total time between when products or services are delivered and when payment from the customer clears the bank.
- The overall objective for a company should be to decrease the receipt cycle.

### **PAYMENTS**

- Cash payments must be made for relevant expenses, which include those to suppliers for inventory or other supplies, employees for wages, government for taxes, and lenders for interest on borrowed money.
- A company's objective in regards to the cash disbursement cycle should be to increase the cycle time, or delay making payments until they are due.
- Typical cash outflows from investing activities include purchase of capital assets, purchase of bonds/notes or shares of other entities, and loans to other entities.
- Typical cash outflows from financing activities include payments of dividends to the company's own shareholders, redemption (repurchase) of company's own shares, and repayment of principal and interest on company's own bonds or notes.

### **THE FORECAST BUDGET**

- Cash is the most liquid of assets, and it represents the lifeblood for growth and investment.
- If a business runs out of cash and is not able to obtain new financing, it will become insolvent.
- In order to generate cash, a company manages activities. such as billing customers as quickly as possible, disbursing payments only when they come due, collecting cash on overdue accounts, and investing idle cash.
- What a cash flow forecast does is estimate cash inputs and outputs over a period of time, usually at least 90 days, in order to give you assurance that your business will have the cash necessary to meet its obligations to others.

### **RATIO ANALYSIS AND EPS**

- Financial analysts use financial ratios to compare the strengths and weaknesses in various companies.

- Financial ratios quantify many aspects of a business and are an integral part of the financial statement analysis. Financial ratios are categorized according to the financial aspect of the business which the ratio measures.
- Earnings per share (EPS) is the amount of earnings per each outstanding share of a company's stock.

#### **IMPACTS OF FORECASTING ON A BUSINESS**

- Business planning and forecasting refers to the set of activities where business operations are planned against the business strategy.
- Forecasting financial statements comprises the estimation of several values - including sales, costs, and expected interest rates.
- It is always easier to forecast future performance of a business if your business is already up and running because there are past trading results to look at.
- Forecasting can be used in Supply Chain Management to make sure that the right product is at the right place at the right time.
- On a broader level, economic forecasting is the process of making predictions about the economy as a whole.

#### **REGRESSION ANALYSIS FOR FORECAST IMPROVEMENT**

- Regression Analysis is a causal / econometric forecasting method. Some forecasting methods use the assumption that it is possible to identify the underlying factors that might influence the variable that is being forecast.
- Regression analysis includes several classical assumptions.
- Regression analysis includes many techniques for modeling and analyzing several variables when the focus is on the relationship between a dependent variable and one or more independent variables.
- A large body of techniques for carrying out regression analysis has been developed. Familiar methods, such as linear regression and ordinary least squares regression, are parametric.

#### **IMPACT OF MODIFYING INPUTS ON BUSINESS OPERATIONS**

- Accounts receivable has a great effect on a firm's expected cash inflows, and thus modifying this input on a forecast will affect how much cash a company decides to have on hand.
- Because of its prevalence as an expense, modifying the amount of inventory will have far reaching consequences on all forecasted financial statements.
- Accounts payable will influence the current liabilities of a business; therefore, its modification will change a company's perspective on the amount of cash-on-hand needed.