



ACCA Financial Management (FM)

Course Notes for Exams from December 2018 to December 2020

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Content

Chapter No.	Chapter Name	Page No.
1	Financial Management Function	1
2	The Economic Environment For Business	14
3	Financial Markets, Money Markets and Institutions	23
4	Working Capital	33
5	Inventory	37
6	Account Receivables	40
7	Cash	50
8	Investment Appraisal 1	57
9	Investment Appraisal 2	73
10	Business Finance	80
11	Cost Of Capital	95
12	Business Valuations	112
13	Foreign Currency Risk	124
14	Interest Rate Risk	130

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Financial Management Function

- **Financial management:**

It involves planning, controlling and decision making in order to ensure efficient and effective utilization of entity's financial resources.

- **Financial Accounting:**

It is concerned with preparations of financial statements and reporting of financial position and performance.

- **Management Accounting:**

It is mainly concerned with providing information to managers internally in the organization so that they can plan, control and are able to make informed business decisions.

- **Elements of financial management:**

- **Financial planning:** management needs to make sure that sufficient funding is available in order to meet business short and long term financial needs.
- **Financial control:** management needs to focus on financial controlling to ensure that financially business is meeting its objectives.
- **Financial Decision-making:** it relates investment financing and dividend distribution decisions. The link between three are as follows:
 - Decisions need to be made relating to investments which requires financing. Such financing can come from internal retained profits, selling new shares and obtaining bank loans.
 - Such options of financing needs to be considered thoroughly in order to make appropriate financing decisions.

- However, using internal retained profits as a source of finance will affect the distribution of dividends to shareholders. Such an adverse impact can make shareholders upset resulting withdrawals of current investment or withholding of future investment. A balance in all three needs to be maintained.

- **Corporate strategy:**

It is concerned with overall purpose and the scope of the organization and how value will be added to the different parts of the organization.

- **Corporate objectives:**

They are relevant to the organization as a whole, relating to the key factor for business success. Typically:

1. Profitability
2. Market share
3. Growth
4. Cash flow
5. Customer satisfaction
6. The quality of the firms products
7. Industrial relations

- **Financial objectives:**

1. Shareholders wealth maximization
2. Profit maximization
3. Steady growth in EPS
4. Restricted gearing
5. Target Profit retentions
6. Target operating profitability



- **Non-financial objectives:**

1. The welfare of employees
2. The welfare of management
3. The provision of service
4. The fulfillment of responsibility towards customers.
5. The fulfillment of responsibilities towards suppliers
6. The welfare of society as a whole.

- **Stakeholders objectives:**

1. Shareholders wants to maximize their wealth
2. Trade payables/creditors objective is of being paid full amount due by the date.
3. Long-term payables objective is to receive payment of interest and principal of loan by their due dates.
4. Employees want to maximize their reward paid to them in salaries and benefits.
5. Government objectives may be formulated on political and economic terms. Such as taxation, legislation on health and safety, provisions of grants etc.
6. Management wants to maximize their reward paid to them in salaries and benefits.

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- **Measuring the achievement of corporate objectives by Financial ratios analysis:**



- **Profitability ratios:**

1. **ROCE/ ROI:** it shows how well a company is using its assets to generate profits.

$$ROCE = \frac{\text{(operating profit) or profit before interest and tax}}{\text{capital employed}}$$

Where

Capital employed = all assets – current liabilities **OR**

Share capital + reserves + long term loans

EXAMPLE:

The following information relates to HENRY Co for the last financial year.

Revenue \$200 million

Asset turnover 10 times

Interest payable \$1.5 million

Interest cover ratio 5 times

What is the return on capital employed for HENRY Co for the year?

2. **Asset turnover:** it shows how well a company is utilizing its assets to generate the sales.

$$\text{Asset turnover} = \frac{\text{sales}}{\text{capital employed}}$$

3. **Operating profit margin:** it tells how much operating profit is earned in relation to sales.

$$\text{operating profit margin} = \frac{\text{operating profit}}{\text{sales}} \times 100$$

4. **Return on equity ROE:** this represents the amount of net income returned as a percentage of shareholders equity.



$$ROE = \frac{\text{profit after tax and preference dividend}}{\text{shareholders funds}} \times 100$$

Where

Shareholder funds = OSC + all reserves

5. **Gross profit margin:** it tells how much gross profit is earned in relation to sales.

$$\text{Gross profit margin} = \frac{\text{gross profit}}{\text{sales}} \times 100$$

6. **Net profit margin:** it tells how much net profit is earned in relation to sales.

$$\text{Net profit margin} = \frac{\text{net profit}}{\text{sales}} \times 100$$

- **Liquidity ratios:**

1. **Current ratio:**

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$$

2. **Quick ratio:**

$$\text{Quick ratio} = \frac{\text{current asset} - \text{stock}}{\text{current liabilities}}$$

3. **Working capital turnover:** it measures how much support the working capital is giving to support the sales.

$$WCT = \frac{\text{sales revenue}}{\text{current assets} - \text{current liabilities}}$$

4. **Inventory operating cycle ratios:** these ratios indicate average number of day's inventory is held in our premises.

$$\text{Inventory turnover} = \frac{\text{inventory}}{\text{cost of sales}} \times 365$$

And

$$\begin{aligned} \text{Inventory holding period (raw material)} \\ = \frac{\text{average RM inventory}}{\text{material usage or annual purchases}} \times 365 \end{aligned}$$

And

$$\text{Inventory holding period (WIP)} = \frac{\text{average WIP inventory}}{\text{production cost or cost of sales}} \times 365$$

And

$$\text{Inventory holding period (finished goods)} = \frac{\text{average FG inventory}}{\text{cost of sales}} \times 365$$

5. **Account receivable collection period:** the lesser the days the better is for company's liquidity position.

$$\text{Account receivable collection period} = \frac{\text{receivables}}{\text{credit sales}} \times 365$$

6. **Account payable payment period:** the higher payable days indicates greater use of supplier as source of finance however effect on goodwill needs to be considered.

$$\text{Account payable payment period} = \frac{\text{payables}}{\text{credit purchases or cost of sales}} \times 365$$



- **Gearing/ risk ratios:**

1. **Financial gearing:** it tells the risk that the company is facing due to its debt burden.

$$\text{financial gearing} = \frac{\text{debt}}{\text{debt} + \text{equity}} \times 100$$

Or

$$\text{financial gearing} = \frac{\text{debt}}{\text{equity}} \times 100$$

Where:

Debt = long term loans + preference share capital

Equity = OSC + share premium + retained profits

EXAMPLE:

The following is an extract of HENRYS statement of financial position.

	\$m	\$m
Total assets		1,000
\$1 Ordinary share capital	100	
Retained earnings	400	
Total equity	500	
Loan notes	500	
		1,000

The ordinary shares are currently quoted at \$5.50, and loan notes are trading at \$125 per \$100 nominal.

What is HENRYS financial gearing ratio (debt/debt+equity) using market values?

2. **Operational gearing:** it shows the risk the company is facing of making low profits due to high fixed cost.

$$\text{operational gearing} = \frac{\text{contribution}}{\text{PBIT}}$$

(In times)

Or

$$\text{operational gearing} = \frac{\text{fixed cost}}{\text{total cost}}$$

Or

$$\text{operational gearing} = \frac{\text{fixed cost}}{\text{variable cost}}$$

EXAMPLE:

A summary of HM Co's recent statement of profit or loss is given below:

	\$'000
Revenue	10,123
Cost of sales	(7,222)
Gross profit	2,901
Expenses	(999)
Profit before interest and tax	1,902
Interest	(1,000)
Tax	(271)
Profit after interest and tax	631

70% of cost of sales and 10% of expenses are variable costs.

What is HM Co's operational gearing?

3. **Interest gearing:** it shows how much amount for interest payments are absorbed by the profits in terms of percentage.

$$\text{Interest gearing} = \frac{\text{finance cost}}{\text{PBIT}} \times 100$$

4. **Interest cover:** it shows how many times the company's profits can pay the interest costs.(in times)

$$\text{Interest cover} = \frac{\text{PBIT}}{\text{finance cost}}$$

• **Investors ratios:**

1. **Earnings per share:** it shows the profit earned per share.

$$\begin{aligned} \text{Earnings per share} \\ = \frac{\text{profit after interest and tax} - \text{preference dividends}}{\text{number of shares}} \end{aligned}$$

2. **Dividend cover:** it shows how many times the company can pay dividend out of its profits.

$$\text{Dividend cover} = \frac{\text{profit after interest and tax}}{\text{dividend paid or too be paid}}$$

3. **Dividend yeild:** it shows how much a company pays out in dividend each year relative to its share price.

$$\text{Dividend yeild} = \frac{\text{dividend per share}}{(\text{opening})\text{current share price}} \times 100$$

4. **P/E ratio:** it gives an idea of what market is willing to pay for the company's earnings. The higher the P/E the more the market is willing to pay for the company's earnings.

$$\frac{P}{E} \text{ ratio} = \frac{\text{share price}}{\text{EPS}}$$

EXAMPLE:

A company has recently declared a dividend of 12c per share. The share price is \$3.72 cum div and earnings for the most recent year were 60c per share. What is the P/E ratio?

5. **Earnings yield:** it shows percentage of each dollar invested in stock that was earned by the company.

$$\text{Earnings yeild} = \frac{EPS}{\text{share price}} \times 100$$

6. **Dividend payout ratio:** this ratio indicates the amount % dividend paid by the company in relation to its earnings.

$$\text{Dividend payout ratio} = \frac{\text{dividend per share}}{EPS}$$

Or

$$\text{Dividend payout ratio} = \frac{\text{total dividend}}{\text{total earnings}}$$

7. **Total shareholder return:** this indicates the % return that the shareholders will get considering both dividend and capital gains.

$$TSR = \frac{\text{current dividend per share} + (\text{current share price} - \text{previous share price})}{\text{previous share price}} \times 100$$

EXAMPLE:

HENRY Co's share price is \$3.50 at the end of 20X1 and this includes a capital gain of \$0.75 since the beginning of the period. A dividend of \$0.25 has been declared for 20X1. What is the shareholder return (to 1 dp)?

- **Encouraging the achievement of stakeholders objectives:**

Goal congruence is accordance between the objectives of agents acting within an organization and the objectives of the organization as a whole.

It is argued that management will only make optimal decisions if they are monitored and appropriate incentives are given. Such remunerative incentives are:

1. Performance related pay
2. Rewarding managers with shares
3. Executive share option plans(ESOPs)

- **Advantages:**

1. Acts as incentive to achieve good performance level.
2. These schemes attract and keep the employees valuable to the organization.
3. Helps in communicating the exact role to employees creating organizational success.
4. These schemes help in keeping focus on continuous improvements.
5. They can motivate employees or managers to act in long term interest of organization.

- **Disadvantages:**

1. It can encourage dysfunctional behavior.
2. Decision can be made by managers that are contrary to wider purpose of the organization.
3. Schemes for long term achievements may not motivate employees /managers.
4. No scheme can provide a comprehensive assessment of what a single person achieves for an organization.
5. May compromise on team work.
6. May have bad effect on quality.

7. Standards and targets may have to be lowered, to maintain quality, bringing scheme purpose back to square one.
8. They undervalue intrinsic rewards.

- **Regulatory requirements:**

The achievement of stakeholder's objective can be enforced using the regulatory requirements such as:

- **Corporate governance code of best practices:**

CG is system by which entities are directed and controlled. CG involves ensuring the effectiveness of risk management and internal controls, accountability to shareholders and other stakeholders and conducting business in an ethical and effective way.

- **Stock exchange listing requirements:**

A stock exchange employs rules and regulations to ensure that stock market operates fairly and efficiently for all parties involved.

- **Not for profit organizations:**

NFP organization is an organization whose attainment of its prime goal is not assessed by economic measures. However, in pursuit of that goal it may take profit making activities.

- **Objectives NFP organizations:**

1. Surplus maximization
2. Revenue maximization
3. Usage maximization
4. Usage targeting
5. Full/partial cost recovery
6. Budget maximization
7. Client satisfaction
8. Producer satisfaction maximization

- **Value for money:**

Value for money can be defined as getting best possible combination of services from the least resources, which means maximizing the benefits for the lowest possible cost.

This usually involved application of:

- **Effectiveness:** is the extent to which declared objectives /goals are met.
 - **Efficiency:** is the relationship between inputs and outputs.
 - **Economy:** is attaining the appropriate quantity and quality of inputs at the lowest cost to achieve a certain level of outputs.
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The Economic Environment for Business

- **Microeconomics :**

Microeconomics is concerned with the economic behavior of individual firms and consumers or households.

- **Macroeconomics:**

Macroeconomics is concerned with the economy at large, and with the behavior of large aggregates such as the national income, the money supply and the level of employment.

- **Macroeconomics policies and objectives:**

Macroeconomics policy involves:

- **Policy objectives:** the ultimate aims of economic policy.
- **Policy targets:** quantified levels or ranges which policy is intended to achieve.
- **Policy instruments:** the tools used to achieve objectives.

The policy objectives are:

- **Economic growth:** it implies an increase in national income in real terms.
- **Control price inflation:** it implies managing inflation to low and stable level.
- **Full employment:** keeping low unemployment levels.
- **Balance of payments stability:** deficit in external trade with imports exceeding exports, might also be damaging for the prospects of economic growth.

- **Tools of Macroeconomics:**

1. Monetary policy
2. Fiscal policy
3. Exchange rate policy
4. External trade policy

- **Conflicts in policy objectives and instruments:**

A government might adopt a policy mix in an attempt to achieve the immediate and ultimate economic objective, however, attempt to full one objective will often have adverse effect on others:

- A. Growth in economy can be achieved by deployment of modern technology resulting in conflict between steady growth and full employment.
 - B. To create jobs and growth, demand needs to pick up, but once demands pick-ups it creates a surge on imports, negatively affecting balance of payment.
 - C. To keep value of currency stable interest rates might need to be kept high which deters companies from investing, impacting growth.
- Achieving best mix of policies involves a number of problems.
 - ✓ Inadequate information
 - ✓ Time lags
 - ✓ Political pressures
 - ✓ Unpredictable side effects
 - ✓ Influence on other countries
 - ✓ Conflict between policy instruments.

- **Fiscal policy:**

Fiscal policy is action by the government to spend money, or to collect money in taxes, with the purpose of influencing the conditions of the national economy.

- A government might influence in the economy by:
 - a) Spending more and financing this by borrowing.
 - b) Collecting more in taxes without increasing public spending.
 - c) Collecting more in taxes in order to increase public spending.
- Government spending is an injection into the economy, whereas taxes are withdrawal from the economy.
- Fiscal policy manages aggregate demand into the economy.

- a) If Government spends more it will increase expenditure in the economy and so raise demand.
- b) If the government kept its own spending at the same level but reduced the level of taxation, it would also stimulate demand.
- c) A Government can reduce demand in the economy by raising taxes or reducing its expenditure.

- **Fiscal policy and business:**

- a) By influencing the level of aggregate demand, macroeconomics policy affects the environment for business.
- b) Tax changes by fiscal policy affects businesses. E.g. employment taxes affects labor costs.

- **Monetary policy:**

Monetary policy is the regulation of the economy through control of the monetary system by operating such variables as the money supply, the level of interest rates and the condition for the availability of credit.

- Money is important because it oils the wheel of the economy and may have significant influence on economic activity and inflation.
- Targets of monetary policy:
 1. Growth in the size of the money supply.
 2. The level of interest rates.
 3. The volume of credit, or growth in the volume of the credit.
 4. The volume of expenditure in the economy.
- The money supply is the possible intermediate target of economic policy.
- Central banks set interest rates to remove the political influence.
- Interest rate changes affect the borrowing costs of the business. High interest rates mean fewer investments show positive returns. It has a downward pressure on share price and consumer demand due to high return requirements.

- **Exchange rates:**

Exchange rate is the rate at which one country's currency can be traded in exchange for another country's currency.

- **Factors influencing the exchange rate of a currency**

1. Demand from individuals, firms and governments.
2. The rate of inflation, compared with rate of inflation in other countries.
3. Interest rates compared with interest rates in other countries.
4. The balance of payments.
5. Speculation.
6. Government policy on intervention to influence the exchange rate.
7. Total income and expenditure (demand) in the domestic economy.
8. Output capacity and level of employment.
9. The growth in the money supply.

- **Consequences of an exchange rate policy:**

- i. To rectify a balance of trade deficit, to bring fall in the exchange rate.
- ii. To prevent a balance of trade surplus from getting too large.
- iii. To stabilize the exchange rate, a stable currency increases confidence in the currency and promote international trade.

- **Fixed exchange rates:**

If a government cannot control inflation, the real value of its currency would not remain fixed. If exchange rates are fixed any changes in (real) interest rates in one country will create pressure for the movement of the capital into or out of the country.

- **Floating exchange rates:**

They are exchange rates which are allowed to fluctuate according to demand and supply conditions in the foreign exchange markets.

- A ruling exchange rate is always at equilibrium.
- A managed floating refers to system whereby, authorities will intervene in foreign exchange market.
 - To use their official reserve of foreign currencies to buy back their own domestic currency.
 - To sell their domestic currency to buy more foreign currency for the official reserves.
- Governments can only influence market rates with intervention whereas speculation has a much bigger short term impact.

- **Exchange rates and businesses:**

- **A lower exchange rate:**
 - i. Domestic goods are cheaper in foreign markets so demand for exports increases.
 - ii. Foreign goods are more expensive so demand for imports fall.
 - iii. Imported raw materials are more expensive so cost of production rises.
- **A higher exchange rate:**
 - i. Domestic goods are expensive in foreign markets so demand for exports falls.
 - ii. Foreign goods are cheaper so demand for imports rises.
 - iii. Imported raw materials are cheaper so cost of production falls.

- International trading companies can reduce their risk of suffering losses by:
 - i. Buy currencies forward at a fixed or known price.
 - ii. Dealing in hard currency.
 - iii. Operations can be managed.
 - iv. Invoicing can be in domestic currency.
 - v. Activities can be outsourced to the local market.
 - vi. Firms can aim at segments in the market which are not particularly price sensitive on the basis of quality and exclusivity.

- **Competition Policy:**

- **Regulation and market failure:**

- **Market failure:**

Market failure is said to occur when market mechanism of demand and supply fails to result in economic efficiency and therefore the outcome is sub optimal.

Role of the Government is the regulation of private markets where these fails to bring about an efficient use of resources.

Following are the cases where it's appropriate to regulate markets.

1. Imperfect competition
2. Social costs
3. Imperfect information
4. Equity

- **Types of regulations:**

Regulation can be defined as any form of state interference with the operation of the free market. In many markets the volunteers may decide a system of voluntary self-regulation, to avoid imposition of government control.

- **Monopolies and mergers:**
- **Advantages:**
 1. Economies of scale.
 2. Maximize profits.
- **Disadvantages:**
 3. Higher prices
 4. No incentive to improve their product or offer a wide range of products.
 5. No pressure to improve efficiency of the use of resources.

Oligopoly involves explicit or implicit collusion of firms, who together control the market.

Authorities must decide whether monopoly is acting against public interest or not. Countering such situation requires some of following measures:

1. Price cuts
2. Price and profit controls
3. Removal of entry barriers
4. The breaking of the firm

Authorities must watch for any mergers or acquisition that may result in monopoly.

- **Restrictive practices:**

It involves legislations that deals with restrictive practices that distort, restrict or prevent competition e.g. price fixing, predatory pricing, refusal of supplies to competitors.

- **Deregulation:**

It involves removal or weakening of barriers on free market activity by authorities to allow free market forces to determine the outcome. Its main aim is to introduce more competition.

- **Benefits:**

1. Improved incentive for internal/cost efficiency

2. Improved allocative efficiency

○ **Disadvantages:**

1. Loss of economies of scale
2. Lower quality or quantity of services
3. Need to protect competition

▪ **Privatization:**

Privatization takes three broad terms:

- i. The deregulation of industries
- ii. Contracting out work to private firms
- iii. Transferring the ownership of assets from state to private shareholders.

It can improve efficiency by:

- i. Increase competition
- ii. Industries more cost conscious

○ **Advantages:**

- i. Immediate source of money
- ii. Reduces bureaucratic and political meddling
- iii. Encourages wider share ownership

○ **Disadvantages:**

- i. State owned industries more likely to respond to public interest than profit.
- ii. Inadvisable where significant economies of scale can only be achieved by monopoly operations.
- iii. Privatized businesses act as monopolist or oligopolistic

● **Government assistance to businesses:**

Government incentives might be offered on:

- i. Regional basis (targeting depressed areas)
- ii. Selective national basis (specific industry)

- **Green policies:**

- **Pollution policy:**

Externalities whether positive or negative resulting from production and consumption activities effect third parties.

It involves levying taxes on polluters and provides subsidies to new machinery and equipment.

- **Legislation:**

Imposing legislations on pollutants such as waste may only be disposed of with prior consent and if exceeds limits than polluter is fined.

- **Advantages of environment friendly policies on businesses:**

- i. Environmental friendly customers are more inclined to buy its products.
- ii. Enhance relationship with the public in general.
- iii. People may prefer to work with environment friendly businesses.
- iv. Ethical investment funds may be more likely to buy the firms shares.

- **Corporate governance regulations:**

There is a significant impact of corporate governance requirement on businesses. Businesses that fail to comply with the law runs the risk of financial penalties and bad publicity. Corporate governance principles are guidelines rather than regulations however consequences of not complying impacts share price. Whereas obedience of law have extra cost.

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Financial markets, money markets and institutions

- **Financial intermediaries:**

A financial intermediary links those with surplus funds (e.g. lenders) to those with funds deficits (e.g. potential borrowers) thus providing aggregation and economies of scale, risk pooling and maturity transformation.

- **Examples of financial intermediary:**

1. Commercial banks
2. Finance houses
3. Mutual societies
4. Institutional investors such as pension funds and investment funds.

- **Benefits of financial intermediation:**

- 1) Convenient way for lender to save money.
- 2) Ready source of funds for borrowers even when money is in short supply.
- 3) Aggregate smaller savings and lending it to borrower in larger amounts.
- 4) Risk for individual lenders is reduced by pooling. Losses are borne by intermediary and shared among lenders in general.
- 5) Financial institutions offer diversified portfolios covering a varied range of different securities.
- 6) They provide maturity transformation i.e. gap between lenders wish of liquidity and desire of borrower for long-term loans.

- **Financial markets:**

Financial markets are markets where individuals with surplus funds lend funds to other individuals and organizations that want to borrow. It's a type of direct finance between lender/savers and borrower/spenders. These channelings of funds results in economic efficiency as savers are not always the people who have good investment opportunities.

- **Capital markets and money markets:**

- **Money markets:**

Money markets are markets for trading short term financial instruments and short term lending and borrowing.

- **Types of markets:**

Primary market	Capital market where new securities are issued and sold to investors.
Interbank market	Banks lend short term funds to each other
Eurocurrency market	Bank lends and borrow in foreign currency.
Certificate of deposit market	Market for trading in certificate of deposits (negotiable instruments acknowledging deposits).
Local authority market	Local authorities borrow short term funds by issuing and selling short term debt instruments.
Finance house market	Dealing in short term loans raised from money markets by finance houses.
Inter-company market	Direct short term lending between treasury departments of large companies commercial paper (short term unsecured borrowings by businesses with high credit ratings) and bills.

- **Capital markets:**

Capital markets are markets for trading long term financial instruments such as equities and corporate bonds.
- **Types of markets:**

In UK principal capital markets are:

 1. The stock exchange 'main market'(for companies with full stock market listing).
 2. The more loosely regulated 'second tier' alternative investment market AIM.
- **Ways to obtain funds:**
 1. They may raise share capital by inviting investors to take an equity stake in the company or to increase their existing equity stake.
 2. They may raise debt capital such as loan notes, corporate bonds or convertible bonds.
- **Primary and secondary markets:**
 - Primary markets enable organizations to raise new finance by issuing new shares or new bonds.
 - Secondary markets enable investors to buy and sell existing investments to each other.
- **Exchange traded instruments and over the counter markets:**
 - Secondary markets for financial instruments can be organized on exchanges e.g. London stock exchange, New York stock exchange, London international financial futures and options exchange etc.
 - Alternatively secondary markets can operate over the counter OTC markets where customer negotiates individual transactions usually with an intermediary, instead of exchange. OTC securities can be negotiable (can be resold) and non-negotiable (cannot be resold).

- **Institutional investors:**

Institutional investors are institutions which have large amount of funds which they want to invest in shares or bonds that offer satisfactory returns and security or lend it to companies e.g. of institutional investors are: pension funds, insurance companies, investment trust and venture capital organizations.

- **Securitization:**

It's a process of converting illiquid assets into marketable securities. These securities are backed by specific assets and are normally called asset backed securities (ABS).

- **Mortgage bond example:**

The most common type of asset securitization is the mortgage backed bonds or securities. The process of which is:

1. A financial entity purchases a number of mortgage loans from banks and pools them together.
2. The entity issues bonds to institutional investors. The money raised from issuing the bonds is used to pay for mortgage loans.
3. The institutional investors now have the right to receive the principle and the interest payments made on the mortgage.

- **Disintermediation:**

Securitization has led to disintermediation which is defined as decline in traditional deposit and lending relationship between banks and their customers and an increase in direct relationship between the ultimate suppliers and the users of financing.

❖ International money and capital markets:

• Eurocurrency markets:

Eurocurrency is currency which is held by individuals and institutions outside the currency of issue of that currency. When a company borrows in foreign currency that loan is called euro loan.

The Eurocurrency markets involve the depositing of funds with a bank outside the country of the currency in which the funds are denominated and relending these fund for a fairly short term typically 3 months.

• International bond markets:

A Eurobond is a bond denominated in a currency which often differ from that of the country of issue. There is also less highly developed market in international equity shares issue (euro equity).

Eurobonds are in fact long-term loans (10 -15 years) raised by international companies and sold to investors in several countries at the same time.

Eurobonds may be most suitable for multinational companies which:

- a. Require a long term loan to finance a big capital expansion program.
- b. Requires borrowings which are not subject to national exchange controls of any government.

An investor subscribing the bond issue will be concerned about the following factors.

1. Security
2. Marketability
3. Anonymity
4. The return on investment

- **Rates of interest rates and return:**

Interest rates on financial assets are influenced by the risk of the assets, the duration of the lending and their maturity.

The pattern of interest is a different thing from the general level of interest rates. Following factors influence the pattern of interest rates.

- Risk:** there is a trade-off between risk and return. Higher risk borrowers must pay higher yields.
- Need to make a profit on re-lending:** financial intermediaries make their profits from relending at a higher rate of interest than the cost of their borrowing.
- Duration of the lending:** longer-dated assets will earn a higher yield than smaller shorter-dated assets.
- Size of the loan on deposit:** administrative cost savings help to allow lower rates of interest to be charged by the bank on larger time deposits.
- Different type of financial assets:** they attract different type of return.

LIBOR or London interbank offer rate is the rate of interest at which banks borrow from each other in London interbank market.

The rates of interest paid on government borrowings provide a benchmark.

- Clearing banks might set the three months interbank rate LIBOR at about 1% above the Treasury bill rate.
- Banks intern lends at a rate higher than LIBOR.

- **The risk-return trade-off:**

There is a trade-off between risk and return. Investors in riskier assets expect to be compensated for the risk. In case of ordinary shares investors hope to achieve their return in the form of an increase in the share price (a capital gain) as well as from dividends.

Main forms of investments are listed below in ascending order of risk:

1. Government bonds
2. Company bonds
3. Preference shares
4. Ordinary shares

- **Reverse yield gap:**

Due to lower risk than equity debt yields has to be lower than equity yields, however, yield on shares are lower than on low risk debt; this situation is known as reverse yield gap which occurs because shareholders may be willing to accept lower returns now to make capital gains in future.

- **Interest rates and shareholders required rate of return:**

An increase in shareholders required rate of return due to increase in general level of interest rates will lead to fall in market value of shares.

- **Money market instruments:**

Money market instruments are traded over the counter between institutional investors. They include interest bearing instruments, discount instruments and derivatives and can be either negotiable or non-negotiable.

- **Money market deposits:**

Money market deposits are very short term loans between banks and depositors. These deposits can either be fixed deposits, where the rate of interest rates and maturity dates are agreed at the time of the transaction or call deposits where the interest is variable and the deposit can be terminated if notice is given.

- **Certificate of deposits:**

A certificate of deposit CD is a certificate of receipt for funds deposited at a bank (or other financial institutions) for a specified term and paying interest at a specified rate.

- **Repos:**

A repurchase agreement is an agreement between two counter parties under which one counter party agrees to sell a financial instrument to the other on an agreed date for an agreed price, and simultaneously agrees to buy back the instrument from the counter party at a later date for an agreed higher price.

- **Reverse repurchase agreement:**

A reverse repo is an agreement for the purchase of an instrument with the simultaneous agreement to resell the instrument at an agreed future date and agreed price.

- **Treasury bills:**

T-bills are debt instruments issued by the Governments with maturities ranging from one month to one year. Most are issued with maturity of 91 days.

- **Commercial paper:**

CP is short term unsecured debt with corporate maturity up to 270 days. The typical term of this debt is 30 to 60 days. Commercial paper can only be issued by large organizations with good credit ratings normally to fund short term expenditure.

$$\text{yeild on commercial paper} = \frac{\text{number of days in the year}}{\text{days held}} \times \frac{\text{selling price} - \text{purchase price}}{\text{purchase price}}$$

- **Bankers' acceptance:**

BAs are negotiable bills guaranteed by banks. A bill of exchange is a short term debt instrument that is issued (drawn) by one person on another (the drawee). When issued it is in fact a 'you owe me' instrument. The bill is then accepted by the drawee (who notifies acceptance by signing the bill), when it becomes a promise to pay- an 'I owe you'.

The BAs derives from the fact that bank has guaranteed the payment to the holder of the banker's acceptance; that is; bank has accepted responsibility for the payment. Banks

guarantee the payment by the company for a fee. Banker's acceptances are sold for a discontinued basis, like T-bills and commercial papers.

- **Futures, forwards and options:**

Foreign Currency Derivatives:

- **Currency futures:** are similar to forward exchange contracts except for the fact that they are tradable and are only available for standardized amount and date.

- **Currency Options:** are also similar to currency futures except for the fact that options provide right but not the obligation to buy or sell a currency, which means company can exercise options if it is in its benefit or let it lapse if it is giving a loss.

To enter into option a premium needs to be paid to option provider immediately. An option which gives the right to buy currency is called a call option and an option which gives the right to sell currency is a put option.

- **Currency swaps:** involves the exchange of principle and interest in one currency for the same in another currency. Currency swap maturities are negotiable for at least 10 years, making them a very flexible method of foreign exchange.

Interest rate derivatives:

- **Interest rates futures:** is a financial derivative with an interest bearing instrument as the underlying asset. The value of the interest rates futures is directly tied to interest rates.

Mechanism:

- a) The loan is taken in the normal way.
 - b) Future is separate contract either to borrow or lend money.
 - c) At expiry date the position is closed out by reversing the original deal.
 - d) The only cash flow that rises is the net interest paid or received.
- **Interest rates options or guarantees (IRG):** is an option on forward rate agreement FRA that is handled over the counter OTC. A call option IRG is called borrowers IRG and a put option IRG is called lenders IRG.
- Decision rule is simple, exercise the option if interest rates have moved adversely and allow the option to lapse if the interest rate has moved adversely.
- **Interest rates SWAP:** an agreement between two parties where one stream of future interest payments is exchanged for another based on a specified principal amount. Interest rates swaps often exchange fixed payment for a floating payment , because they trade OTC ,they are really just contracts set up between two or more parties, and thus can be customized in any number of ways.
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Working Capital

- **Working Capital:**

Working capital of a business is its current assets less current liabilities.

- Different businesses have different working capital characteristics.
 1. Holding inventory
 2. Taking time to pay supplier and other account payables.
 3. Allowing customers time to pay.
- The two objectives of working capital management are to ensure that:
 1. It has sufficient liquid resources to continue in business.
 2. To increase its profitability.
- A business should have clear policies for management of each component of working capital.
- **Cash operating cycle /working capital cycle /cash conversion cycle /trading cycle:**

A cash operating cycle is the period of time which elapses between the point at which cash begins to be expended on the production of a product and the collection of cash from purchaser.

Raw materials holding period:	X
WIP holding period:	X
Finished goods holding period:	X
Account receivable collection period:	X
Account payable payment period:	(X)
Cash operating cycle	<u>X</u>

- **EXAMPLE:**

The following has been calculated for HENRY Co: Receivables days: 58

Inventory turnover: 10 times per annum Payables days: 45

Non-current asset days: 36

What is the length of the cash operating cycle?

- **Liquidity Ratios:**

- **Current ratio:**

A company should have enough current assets to set of its current liabilities. A ratio in excess of 1 should be expected

- **Quick ratio:**

The ratio should ideally be at least 1 for companies with slow inventory turnover. For companies with fast inventory turnover a quick ratio can be less than 1 without suggesting that company is in cash flow difficulties.

- **The account receivable payment period:**

An increase in this period indicates increased investment in working capital (length of time taken by the company's account receivable to pay what they owe).

- **Inventory turnover period:**

This indicates average number of days that items of inventory are held for.

A lengthening inventory turnover period indicates:

1. A slowdown in trading.
2. A buildup in inventory levels.

- **The account payable payment period:**

This period often helps to assess a company's liquidity; an increase in account payable payment period is often a sign of lack of long term finance or poor management of current assets resulting in extended credit , bank overdraft etc.

- **Net working capital ratio:**

Working capital must increase in line with sales to avoid liquidity problems and this ratio can be used to forecast the level of WC needed.

- **Working capital needs of different type of businesses:**

- Businesses with lot of cash sales and few credit sales should have minimal account receivable.
- Businesses that are present solely to trade will only have finished goods in inventory whereas manufacturers will have raw materials and work in progress as well.
- Large companies may be able to use their strength as customers to obtain extended credit periods from their supplier.
- Some businesses will be receiving most of their monies at certain times of the year while incurring expenses throughout the year.

- **Over-capitalization and working capital:**

If there are excessive inventories, account receivable and cash and very few account payable, there will be an over investment by the company in current assets. Working capital will be excessive and company in this respect will be over capitalized.

Indicators of over-capitalization:

1. Sales/ working capital: compare year to year or with other companies.
2. Liquidity ratios: compare year to year or with other companies.
3. Turnover period: long turnover period for inventory and account receivables or short credit period from suppliers may be unnecessary.

- **Overtrading:**

Overtrading is when businesses try to do too much too quickly with too little long term capital so it is trying to support too large volume of trade with capital resources at its disposal.

Indicators of over-trading:

1. Rapid increase in sales revenue.
2. Rapid increase in volume of current assets and possible also non-current assets. Inventory turnover and account receivable turn over might slow down.
3. There is only small increase in proprietor's capital. The increased in assets is financed by credit; specially; trade account payables and bank overdraft.
4. Some debt ratios and liquidity ratios alter dramatically.
 - I. The proportion of total assets financed by proprietor's capital falls.
 - II. The current ratio and quick ratio falls.
 - III. The business might have liquid deficit i.e. excess of current liabilities over current assets.

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INVENTORY

- Inventory includes raw materials, work in progress and finished goods that are considered as one of the business assets that are ready or will be ready for sale.
- **Cost of inventory = Purchase cost + Ordering cost + Holding cost**
- The objective of inventory management is to minimize the inventory cost, which can be achieved by identifying appropriate inventory control levels and reorder quantity.
 - **Re-order level:** it determines the level at which the new order should be placed.
Formula: Maximum usage X Maximum lead time
 - **Minimum level:** it provides a signal to management that inventories are reaching dangerously low level, which might give rise to stock out.
Formula: Reorder level – (Average usage X Average lead time)
 - **Maximum level:** It provides signal to management that inventory is approaching a wasteful level.
Formula: Reorder level + Reorder quantity - (Minimum usage X Minimum lead time)
 - **Average inventory:** used in calculating holding cost on the assumption that inventory fluctuates between minimum and maximum stock.
Formula: Buffer Safety Inventory + Reorder quantity

- **Reorder Quantity / EOQ:**

It is the order quantity at which the holding cost and the ordering costs are same and the sum of these two is at minimum.

Formula

$$EOQ = \sqrt{\frac{2 Co D}{Ch}}$$

Co: cost of placing one order

Ch: holding cost per unit of inventory per annum

D: annual demand

Assumptions:

- I. The purchase price per unit is constant.
- II. No minimum inventory level
- III. Demand and lead time are unchanged.

- **EXAMPLE:**

HENRY Co has daily demand for ball bearings of 40 a day for each of the 250 working days (50 weeks) of the year. The ball bearings are purchased from a local supplier for \$2 each. The cost of placing an order is \$64 per order, regardless of the size of the order. The inventory holding costs, expressed as a percentage of inventory purchase price, is 25% per annum.

What is the economic order quantity?

- **Reorder level system:**

Uncertainties in demand and lead times taken to fulfill orders means that inventory will be ordered once it reaches a reorder level.



- If stock outs are worth taking then for each possible reorder level and therefore each possible level of buffer inventory calculate
 - ✓ The cost of holding buffer inventory per annum.
 - ✓ The cost of stock outs.

Cost of one Stock out X **expected number of stock outs per annum** X **Number of orders per annum**

- To decide if discount is worthy on ordering large quantities. It is necessary to minimize.
 - I. At the pre discount EOQ level, so that a discount is not worthwhile.
 - II. At the minimum order size necessary to earn the discount.
- **Inventory Management Just in Time JIT:**

Introducing JIT might bring the following potential benefits.

 - I. Reduction in inventory holding cost
 - II. Reduced manufacturing lead times
 - III. Improved labor productivity
 - IV. Reduced scrap / rework / warranty cost

JIT is not suitable in some cases e.g. a restaurant, a hospital etc. where stock outs could be fatal. Increase in prices by suppliers under JIT can cause problems to the company.

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Account Receivables

- **ACCOUNTS RECEIVABLES:**

Offering credit has a cost, the value of interest charged on an overdraft to fund the period of credit or the interest lost on the cash not received and deposited in the bank. An increase in profit from extra sales resulting from offering credit could offset this cost.

- **Formulation of credit control policy:**

1. The administrative cost of debt collection.
2. The procedure for controlling credit to individual customers and for debt collection.
3. The amount of extra capital required to finance an extension of total credit.
4. The cost of additional finance required for an increase in volume of account receivable. This cost might be bank overdraft.
5. Any savings or additional expenses in operating the credit policy.
6. The effects of easing credit i.e. high proportion of bad debt might be encouraged.
7. The ways in which credit control policy can be implemented.
 - I. Whether to give extended credit period. **OR**
 - II. Discount could be offered for early payment.

- **Elements of credit control policy:**

- I. Assessing credit worthiness
- II. Setting credit limits
- III. Collection of overdue debt
- IV. Monitor the credit system.

- **Assessing credit worthiness:**

The risk and cost of customer defaulting will need to be balanced against the profitability of the business provided by the customer.

- I. New customers should give two **good references** before being granted credit.
- II. **Credit ratings** might be checked through credit rating agency.
- III. A new customer credit limit should be **fixed** at a low level.
- IV. For large value customers a **file should be maintained** of any available financial information about the customer. Information is available from:
 - a) An analysis of company's reports and accounts.
 - b) External cards.
- V. **Press comments** might give information about what a company is currently doing.
- VI. The company should send a member of staff to **visit** the company concerned.

- **Setting credit limits:**

After assessing the credit rating of the new customer the next step is to set credit limit which should be in line with the senior management credit policy. In case of current customer credit extension, request should be carefully considered and it will be necessary to assess.

1. Amount of invoices already billed and not yet paid and outstanding days.
2. The extra sales, contribution and profit by allowing more credit.
3. The extra cost of allowing more credit, such as impact on bad debt and financing costs.
4. The rate of return required from additional investment in account receivables.

5. The rate of return required from additional investment from in account receivables.

General Format:

The benefit arising from extending the credit:

Increase in contribution /profit XXX

The cost arising from extending the trade credit:

Increase in finance cost due XXX

More cash tied in working capital XXX

Increase in bad debt XXX

Increase in administrative cost XXX

NET BENEFIT/LOSS XXX

▪ **Collection of overdue debt:**

Once the credit limit decisions are taken and credit limit set the next step is to send invoices promptly. The debt collection system should start the follow-up procedure immediately. Such follow-up procedure will include:

1. Reminders
2. Telephone calls
3. Personal visit
4. Supplies withheld
5. External debt agencies
6. Legal case

▪ **Early payment discounts:**

Offering early payment discounts may make the collection process less difficult.

Formula:

$$(1 + \% \text{ discount} / \% \text{ amount net of discount})^{\text{no of periods}} - 1$$

General Format:**The benefit arising from early payment discount:**

Increase in contribution /profit	XXX
Decrease in finance cost due to less cash tied in working capital	XXX
Decrease in bad debts	XXX
Decrease in administrative cost	XXX

The cost arising from early payment discount:

Cost of discount	XXX
Decrease in contribution or profit	XXX
Increase in finance cost due to more cash tied in working capital	<u>XXX</u>

NET BENEFIT/LOSS XXX

- EXAMPLE:**

Henry Co has annual credit sales of \$20 million and accounts receivable of \$4 million. Working capital is financed by an overdraft at 12% interest per year. Assume 365 days in a year.

What is the annual financial effect if management reduces the collection period to 60 days by offering an early settlement discount of 1% that all customers adopt?

- **External debt collection and finance:**

The options available to business are:

1. Factoring
2. Invoice discounting
3. Credit insurance

- **Factoring:**

Factoring also known as account receivable financing is an arrangement in which a specialist trade debt management and collection company recover sum payable by the clients customers on clients behalf. The types of services offered by factor are as follows

1. Administrative and collection
2. Factor financing

- **Administrative and collection:**

This involves handing over complete sales ledger, clients invoicing and debt collection. Such selling of debt collection can be recourse and non-recourse

1. With recourse factoring the factor will not bear the loss of any irrecoverable debt.
2. With non-recourse the factor will bear the loss of bad debts and will pay the client the amount of debt.

Due to reduced risk of bad debt involved non-recourse factoring is expensive than recourse.

- **Factor financing:**

Here the factor becomes the financier for the company by paying the company upto 80% of the value of debt and in return charges 1.5% to 3% above the bank base rate as finance cost.

General Format:**The benefit arising from factoring:**

Decrease in finance cost due to less cash tied in working capital	XXX
Decrease in bad debts	XXX
Decrease in administrative cost	XXX

The cost arising from factoring:

Factoring fee	XXX
Additional interest cost of factor finance	XXX
Decrease in contribution or profit	XXX
One off payment*	<u>XXX</u>

NET BENEFIT/LOSS XXX

*if annual payment take full charge

*if only one off payment then charge loss interest because of one off payment made.

○ Advantages:

1. The company's cash flow position is improved as company receives 80% financing within a day.
2. The company can keep optimum inventory levels allowing growth in sales.
3. The company will save in admin cost by outsourcing.
4. Factoring (non-recourse) provides security against the irrecoverable debt.

- Disadvantage:

1. Factor can upset customers as factor does intervene between the client and the customer.
2. The company loses the decision power over whom should be allowed credit and actions against non-payment. This can affect the company's image in the perception of the customer who can decide not to continue with the company.
3. The company's financial stability might be questioned by the supplier and the customer.

- **Invoice discounting:**

Invoice discounting is an alternative method to factoring for raising finance. Its same as factoring with only one major difference, in invoice discounting the invoice discounter does not retain the control over business sales ledger and the arrangement is confidential one from customer perspective but will only become obvious in case of default made by customer.

STEPS:

1. Once sales deal is finalized with customer the business then sends invoices and reminders to customers, who is unaware of invoice discounting services the business is availing.
2. A copy of invoice is sends to invoice discounter, who advances 80% of the invoice value against the finance charge which is usually 3-4% above base rate.
3. The customers pay to company in normal way in bank account which is controlled by invoice discounter.
4. The invoice discounter pays remaining amount of invoice after deducting fiancé and admin charges which is 0.5 to 1%.

5. The finance company will require regular reports on sales ledger and credit control process to ensure its adequacy.

▪ **Credit Insurance:**

Credit insurance companies provide insurance to business against bad debts. The company opting for C.I is required to submit credit proposals depending upon the assessment results.

• **Monitoring the credit system:**

The position of account receivables should be reviewed regularly so that the corrective action can be taken timely. This can be achieved by:

1. Aging analysis will provide a list of outstanding debts and will assist in deciding which debts require prompt action.
2. Ratio analysis will provide an indication about the trends in credit levels changes in account receivables.
3. Credit utilization report will indicate total credit limits utilized.
4. Customer payment analysis will indicate breaches or attempted breaches of credit limit that requires prompt action.

• **ACCOUNTS PAYABLES:**

It represents money owed to suppliers. It is considered as free source of finance; however, it has a cost in the form of adverse company goodwill and loss of early settlement discount. An effective account payable will involve.

1. Striking balance between liquidity and profitability.
2. Obtaining good credit term from suppliers.
3. In times of liquidity problems extending the credit period without affecting relationship with suppliers.
4. Evaluation of the option of obtaining early payment discount.

Formula:

$$(1 + \% \text{ discount} / \% \text{ amount net of discount})^{\text{no of periods}} - 1$$

- **FOREIGN TRADE RECEIVABLES AND PAYABLE:**

- **Account receivable:**

Selling goods in foreign countries requires an effective management of credit risk and recovery of receivables. Exporters are subject to following problems.

1. Complex documentation.
2. Increased investment tied in inventories and receivables which have to be financed.
3. The risk of delay in payment or bad debts due to insolvency of customers, unconvertible currencies, political risk, failure of bank.
4. The foreign exchange risk. The solution to this is hedging.

- **Ways of reducing foreign currency credit risk:**

- **General policies:**

1. Assessing credit worthiness of customer.
2. Proper documentation of sales, shipping and delivery.
3. Proper chase up procedure once the payment becomes due.
4. Goods should be released once payment has been made or against negotiable instruments.

- **Banks as intermediaries:**

Following are the services which banks can offer:

1. Advance against collection. This is when banks are requested to handle the collection by the exporters on their behalf. The bank might also advance up to 80% of the receivable value.
2. Negotiable bills or cheque; they are same as above with only difference is they are payables outside the exporters country.

3. Discount bill of exchange; the bank buys the bills from exporter but at a discount.
4. Documentary credit; it provides 100% security to exporter against risk of bad debt.

- **Export financing:**

The services offered by foreign factored company are same as local factored services as discussed above.

- **Export credit insurance:**

Private insurance companies will provide export credit insurance services which insure the company against risk of bad debt against high premium.

- **Limitations:**

- I. Not all business can arrange documentary credit due to their small size.
- II. Those who can arrange it, might face high cost and inflexibility.
- III. The need for proper documentation might be cumbersome.
- IV. The sale should be in currency acceptable by both customer and seller.

- **Foreign currency account payables:**

Companies that are require paying in foreign currency face exchange rate risk. The solution to this is hedging.

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CASH

- **CASH MANAGEMENT:**

Cash being most liquid asset needs to be invested in order to earn return (profitability) but at the same time should be sufficient enough to meet short term liabilities (liquidity). Following are the reasons for holding cash.

- **Transaction motive:** it requires cash to be kept to meet day to day expenses e.g. trade payables, payroll, taxes etc.
- **Precautionary motive:** it requires cash to be kept to meet unforeseen contingencies.
- **Speculative motive:** This motive requires cash to be kept in order to take benefit of market investment opportunities.

Businesses face cash flow problems due to following reasons.

1. Making losses continuously will take company into cash flow problems.
2. Businesses may face cash flow problems in high inflationary environment as it needs increasing amount of cash to be replacing the depreciated asset.
3. In period of growth business will require cash for purchasing new non-current assets and for supporting inventories and receivables.
4. When nature of the business is seasonal so it may face cash flow problems at certain times of the year.
5. Any one-off expenditure can cause cash flow problem for the business.

CASH MANAGEMENT MODEL:

- **Baumol Model:**

Formula:

Formula

$$EOQ = \sqrt{\frac{2 Co D}{Ch}}$$

Co = transaction cost arising from sale of security or moving funds from deposit accounts.

Ch = cost of holding cash (the opportunity cost from investing somewhere or cost of borrowing)

D=demand for cash over the period

Q=the amount that needs to be deposited in current account or transfer to short term investment.

Assumptions:

1. The cash required for the period is predictable and remains constant.
2. There is no buffer inventory of cash.
3. Daily cash needs are funded from current accounts.

- **Miller-Orr-model:**

It allows businesses to manage daily cash flow variation.

This model provides two control limits. The upper control limit and lower control limit as well as return point.

1. When the firm's cash limits fluctuates at random and touches the upper limit, the firms buy sufficient marketable securities to come back to a normal level of cash balance i.e. the return point.
2. Similarly, when the firm's cash flow wander and touch the lower limit, it sells sufficient marketable securities to bring the cash balance back to normal level i.e. the return point.

Upper limit = lower limit + spread

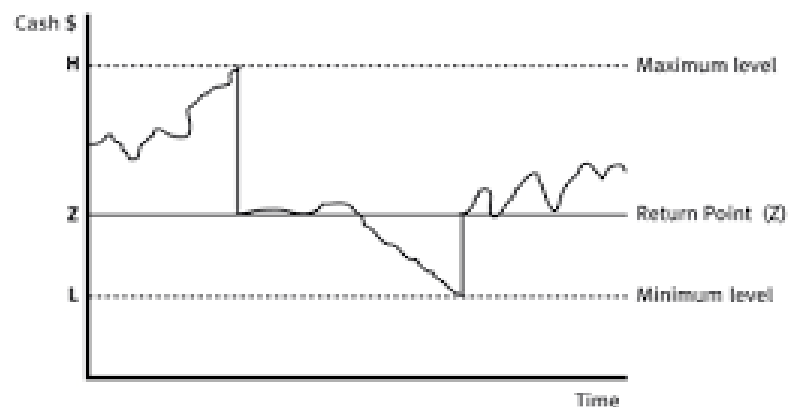
Return point = lower limit + (1/3 x spread)

Whereas spread is calculated by using following formula

Spread = $3 \left(\frac{3}{4} \times \text{transaction cost} \times \text{variance of cash flows} \right)^{1/3}$

Interest rates

NOTES: variances and interest rates should be expressed in daily terms. In case if you are given with standard deviation then you will need to square it to calculate variance.



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CASH FLOW FORECASTING AND BUDGETS:

Following are the cash position that will be identified by cash flow forecast:

Short term surplus 1. Short term investment 2. Payment to suppliers 3. Increase sales which will increase inventory and receivables	Short term deficit 1. Overdraft facility. 2. Reduction in inventory 3. Reduction in receivables 4. Increase in payables
long term surplus 1. Purchase new assets. 2. Diversify and expand. 3. Make long term investment.	Long term deficit 1. Closure of loss making activities 2. Raising of long term finance

Format:

Period	1	2	3
Receipts	X	X	X
Payments	(X)	(X)	(X)
Net cash flows	XX	XX	XX
Operating balance	X	X	X
Closing balance	XX	XX	XX

Important points:

1. There are receipts and payments which does not affect income statement.
2. Non cash flow items will not be considered in cash flow forecast
3. The timing of cash flow will not coincide with recording of it in income statement.

EXAMPLE:

HENRY Co has budgeted that sales will be \$300,100 in January 20X2, \$501,500 in February, \$150,000 in March and \$320,500 in April. Half of sales will be credit sales. 80% of receivables are expected to pay in the month after sale, 15% in the second month after sale, while the remaining 5% are expected to be bad debts. Receivables who pay in the month after sale can claim a 4% early settlement discount.

What level of sales receipts should be shown in the cash budget for March 20X2 (to the nearest \$)?

- **Centralized treasury department:**

1. In centralization each division will hold sufficient cash balance to meet daily cash requirements, with excess cash is remitted to head office.
2. The duplication of work will be eliminated.
3. The borrowing requirement can be arranged in bulk resulting in lower interest rates.
4. Company can benefit from greater opportunities from short term investments.
5. Lower bank charges.

- **Decentralized treasury department:**

1. In decentralization each division will be responsible for the entire treasury work.
2. The local will have a better idea of local needs and will be able to respond quickly.
3. Motivation in employees as greater autonomy is given to employees.
4. It increases the skills of local managers who will be trained for future corporate positions.

- **Working capital policy:**

- **Investment policy:**

- a) **Aggressive:**

1. Company keeping lower levels of inventory and receivables leading to shorter cash operating cycle.
2. It will result in less cost but higher risk of stock out.

b) Conservative:

- 1) Company keeping higher levels of inventory and receivables leading to longer cash operating cycle.
- 2) It will result in higher cost but decreasing risk of stock out.

c) Moderate:

1. The company will keep a balance level of inventory and receivables.

▪ **Financing policy:**

A. Aggressive:

1. Company finances all its fluctuating current assets and most of its permanent current assets using short term sources of finance.
2. Only a small proportion of its permanent current assets is financed using long term source of finance.
3. This will result in less cost but with a corresponding high risk.
4. This has the effect of increasing its profitability but with a potential risk of facing liquidation.

B. Conservative:

- 1) Company finances all its permanent current assets and most of its fluctuating current assets using long term sources of finance.

- 2) Only a small proportion of its fluctuating current assets are financed using short term source of finance.
- 3) This will result in high cost but with a corresponding low risk.
- 4) This has the effect of increasing in liquidity but with decreasing profitability.

C. Moderate:

1. Short term source of finance will be used to finance fluctuating current assets.
2. Long term source of finance will be used to finance permanent current assets.
3. This will result in balance of risk and cost.
4. This will result in balance of liquidity and profitability.

▪ **Other factors to consider when deciding optimum working capital.**

1. Nature of business.
 2. Working method.
 3. Liquidity vs profitability.
 4. Supplier term
 5. Company credit terms.
 6. Growth approach.
-

Investment Appraisal

- **Capital expenditure:**

It represents expenditure which results in acquisition of non-current assets or an improvement in their earning capacity.

- **Revenue expenditure:**

It represents expenditure which is incurred for the purpose of trade of the business e.g. admin expenses, sales and distribution expenses etc. or to maintain the existing capacity of non-current assets.

- Investment in non-current assets results in significant amount of time between investment and recovery from investment. Whereas investment in working capital results in short amount of time between payment of resources and their eventual recovery from sales.

- Investment by commercial organizations is based on financial considerations alone. E.g. investment in plant and machinery, research, advertising etc.

- Investments by not for profit organization is based on social costs and social benefits and very few investments will focus on earning a return. Their rate of return is determined by govt. and therefore their investments are **not** evaluated using commercial rate of return.

- **Capital budgeting:**

The capital expenditure budget identifies the amount of cash a company will invest in projects by identifying, analyzing and selecting investment projects. Following are the stages involved in capital budgeting process.

1. Identifying the capital investment requirements which will be linked with company's objectives.

2. Find the suitable projects to fulfill the capital requirement also called project screening.
3. Appraise each potential project (cost vs. benefit) both qualitative and quantitative.
 - I. NPV
 - II. IRR
 - III. Payback
 - IV. ROCE
4. Select the best options which then will be approved (risk analysis)
5. Make capital expenditure
6. Continuously monitor the result of project by comparing planned with actual results.

- **Relevant cost in capital budgeting:**

In capital budgeting it's more useful to use cash flows rather than profit which might be subject to manipulation.

Relevant cost represents cash flows arising as a direct consequence of a decision. Following are the relevant cost

1. Incremental cost e.g. infrastructure cost ,marketing , HR etc
2. Opportunity cost e.g. returns from bank, expansion of existing business.
3. Differential cost e.g. investment in project A or B
4. Avoidable cost e.g. variable costs.
- 5.

EXAMPLE:

HENRY Co has a barrel of chemicals in its warehouse that it purchased for a project a while ago at a cost of \$1,000. It would cost \$400 for a professional disposal company to collect the barrel and dispose of it safely.

However, the chemicals could be used in a potential project which is currently being assessed.

What is the relevant cost of using the chemicals in a new project proposal?

- **Irrelevant cost:**

Costs which are not considered to be relevant are known as irrelevant cost. Following are irrelevant cost.

1. Sunk cost
2. Committed cost
3. Noncash flow
4. Notional cost

- **Payback Period:**

Payback is the time it takes the cash inflows from a capital investment project to equal the cash outflows, usually expressed in years.

Some organizations may have targeted payback for project appraisals.

- **Formula:**

$$\text{Payback period} = \frac{\text{Cost of the project}}{\text{Cash flow per period}}$$

- **Advantages:**

1. Simple to calculate and understand.
2. It uses cash flows and not profits.
3. It provides good ranking to projects that would return money early, thus reducing business and financial risk.

- **Disadvantages:**

1. Ignores timing of cash flows within payback period.
2. Ignores time value of money.
3. It does not consider cash flows that occur after the payback period.
4. Total profitability is ignored.

- **Accounting rate of return ARR or return on capital employed ROCE:**

ARR computes return, generated from the proposed capital investment. It is useful when comparing investments, the higher the more attractive the investment.

- **Decision rule:** The ARR is the percentage returns so if the ARR is greater than or equal to required rate of return, the project is acceptable otherwise it should be rejected.

- **Formula:**

$$\text{ARR} = \frac{\text{Average annual profits before interest and tax}}{\text{Initial capital cost}} \times 100$$

Or

$$\text{ARR} = \frac{\text{Average annual profits before interest and tax}}{\text{Average capital investment}} \times 100$$

- **Advantages:**

1. It is based on accounting information.
2. Easy to calculate.
3. It measures the profitability of project.

- **Disadvantages:**

1. ARR ignores the time value of money.
2. It ignores cash flow from investment.
3. It does not measure absolute gain.
4. Different accounting policies may result in variation in results.

❖ Discounted Cash Flow Techniques:

- **Important terms:**

- **Time value of money:** money available at present time is more than the money available in future due to following factors:

1. Interest
2. Inflation
3. Risk

- **Compounding:** it calculates future value of sum invested today

$$FV = PV (1+I)^n$$

Where

PV = present value

I = interest rates

N = number of periods

FV = future value

- **Discounting:** it calculates present value of future amount

$$PV = FV \frac{1}{(1+I)^n}$$

Where

PV = present value

I = interest rates

N = number of periods

FV = future value

EXAMPLE:

HENRY Co is appraising an opportunity to invest in some new machinery that has the following cash flows.

Initial investment \$40,000

Net cash inflows for 5 years in advance \$12,000 per annum

Decommissioning costs after 5 years \$15,000

At a cost of capital of 10% what is the net present value of this project (to the nearest \$100)?

- **Simple annuity:** can be computed if cash flows are constant, period is defined and cash flows starts from year 1

$$\frac{1 - \left(\frac{1}{1+i}\right)^n}{i}$$

Where

I = cost of capital

N = number of years

In **advance annuities** cash flow starts from year 0.

In **delayed annuities** cash flow starts from year after year 1.

EXAMPLE:

An investor Mr. Henry has a cost of capital of 10%. She is due to receive a 5 year annuity starting in 3 year's time of \$7,000 per annum.

What lump sum amount would you need to offer today to make her indifferent between the annuity and your offer?

- **Simple perpetuity:** can be computed if cash flows are constant in perpetuity and cash flows starts from year 1

$$\text{cash flow} \times \frac{1}{i}$$

Where

I = cost of capital

In **advance perpetuities** cash flow starts from year 0.

In **delayed perpetuities** cash flow starts from year after year 1.

EXAMPLE:

A newspaper reader Mr. Henry has won first prize in a national competition and they have a choice as to how they take the prize:

Option 1 Take \$90,000 per annum indefinitely starting in 3 years' time (and bequeath this right to their children and so on); or

Option 2 Take a lump sum of \$910,000 in 1 year's time

Assuming a cost of capital of 10%, which would you advise and why?

- **Cost of capital:** it refers to costs of company's funds (both debt and equity). It is used to evaluate new projects of a company as it is the minimum return that investors expect for providing capital to the company.
- **Discounted payback period:**

This method is same as discounted payback period but considers discounted cash flows.

 - **Advantages:**
 1. Considers time value of money.
 2. Considers riskiness of project cash flows (through cost of capital).
 - **Disadvantages:**
 1. Cost of capital is an estimate.
 2. It does not consider cash flows that occur after the payback period.

- **Net Present Value (NPV):**

The difference between the present value of cash inflows and the present value of cash outflows. NPV shows the impact of the project on the shareholder wealth i.e. whether the project will lead to shareholder wealth maximization or not.

Decision rule:

- Positive NPV = covering cost of capital and also generating shareholders wealth. The project should be accepted.
- Negative NPV = not covering cost of capital. The project should be rejected.
- 0 NPV = Just covering cost of capital. Breakeven result.

Assumptions:

1. The initial investment will be made in year 0 i.e. now. All other cash flows will arise from year 1.
2. Any cash flow arising during the year is assumed to have occurred during the end of that year.
3. Any cash flow arising at the beginning of the year is assumed to have occurred at the end of the previous year.
4. Interest cost will not be considered as it will be incorporated in NPV.

EXAMPLE:

HENRY Co is considering investing \$10,000 immediately in a 1 year project with the following cash flows.

Income \$100,000

Expenses \$35,000

The cash flows will arise at the end of the year. The above are stated in current terms. Income is subject to

10% inflation; expenses will not vary. The real cost of capital is 8% and general inflation is 2%.

Using the money cost of capital to the nearest whole %, what is the net present value of the project?

Inflation:

It is defined as sustained increase in the general level of prices for goods and services. In case of inflation the investors requires:

1. Real return
2. Additional return to compensate above real return.

The overall return is called nominal rate of return. The link between these three is:

$$(1 + n) = (1 + r)(1 + i)$$

Where

r = real rate

i = inflation rate

▪ **Inflation and cash flow:**

1. Cash flow without inflation effect = real cash flows. These are discounted at real rate.
2. Cash flows with inflation effect = money or nominal cash flows. These are discounted at nominal rate.

▪ **Types of inflation:**

1. Specific inflation rate is one in which each cash flow is effected by specific rate.
2. General inflation rate affects the cash flows of all kinds.

Working capital:

Projects may require working capital adjustments. Following are the working capital adjustment.

1. Initial investment in working capital will occur at the start of the project i.e. year 0.
2. Any incremental investment in working capital in later years due to business expansion.
3. In case of inflation working capital will be inflated.
4. All invested working capital will be shown as inflows in the last year of the project.

Taxation:

Investment appraisal requires consideration of taxation. Such impacts of taxation are as follows.

1. On operating cash flows i.e. inflows will be taxed while outflows will be tax relief both at the corporation tax rate.
2. Investment can claim capital allowances (written down allowance WDA) as an alternate to depreciation.
3. In case of losses the corresponding tax relief will be considered as inflows with the basic assumption that sufficient profit is available elsewhere in the organization.

▪ TAX assumptions:

1. Tax payment is one year after the arising of operating cash flows.
2. WDA is 25% on reducing balance method and can be claim at every year of ownership except for the year of disposal. The balancing allowance or charge is then calculated.

Calculation:

Value of assets not already claimed WDA	X
Asset disposal value	<u>X</u>
Balancing charge / allowance	<u>X</u>

3. In case of taxation the discount rate used should be post tax rate.
4. Asset purchased at the end of year 0 will qualify for first WDA at the same time i.e. year 0. Asset purchased at the start of the year 1 will qualify for first WDA at the same time i.e. year 1.
5. If nothing is indicated when to begin with tax relief then it's given from year 1.

EXAMPLE:

HENRY Co has a 31 December year end and pays corporation tax at a rate of 30%, 12 months after the end of

the year to which the cash flows relate. It can claim tax allowable depreciation at a rate of 25% reducing balance. It pays \$1m for a machine on 31 December 20X4. SW Co's cost of capital is 10%.

What is the present value on 31 December 20X4 of the benefit of the first portion of tax allowable depreciation?

Advantages NPV:

1. It considers time value of money.
2. It's an absolute measure and has good correlation with shareholders value.
3. It is based on cash flows to decrease the probability of manipulation and subjective decision.
4. Considers the whole life of the project.

Disadvantages NPV:

1. Difficult to calculate and understand.
2. The calculation is based on certain assumptions such as timings and duration of cash flows and appropriate cost of capital.
3. Unlike profit measures it is not a good measure for motivating the managers.

- **Internal rate of return IRR:**

It represents the discount rate where NPV is 0. In other words it represents breakeven cost of capital.



- **Decision rule:** any project having a greater IRR than the firms cost of capital should be accepted.
- **Formula:**

$$IRR = r_a + \frac{NPV_a}{NPV_a - NPV_b} (r_b - r_a)$$

r_a = lower discount rate chosen
 r_b = higher discount rate chosen
 N_a = NPV at r_a
 N_b = NPV at r_b

EXAMPLE:

HENRY Co is appraising an opportunity to invest in some new machinery that has the following cash flows.

Initial investment \$40,000

Net cash inflows for 5 years in advance \$12,000 per annum

Decommissioning costs after 5 years \$15,000

What is the internal rate of return of the project (to the nearest whole %)?

- **Advantages:**

1. It's easy to understand as IRR is simply compared to firms cost of capital.
2. It considers time value of money.
3. It provides information about how risky is the project i.e. sensitivity analysis.
4. Considers the whole life of the project.
5. If IRR of any project exceeds the cost of capital then such project should increase the shareholders' value.

- **Disadvantages:**

1. Difficult to calculate.
2. It is not an absolute measure of profitability.
3. It is an estimate based on interpolation so any projects having sensitive returns may be subject to wrong decision.
4. In case of mutually exclusive projects NPV is a superior measure to IRR.
5. Non-conventional projects having different cash flow patterns may give rise to multiple IRR or no IRR.
6. It cannot deal with interest rates changes.

- **Risk and uncertainty:**

All investment appraisal decisions are subject to risk and uncertainty, so it's important for decision maker to consider risk and uncertainty.

- **Risk:** it represents situation probability of occurrence can be calculated. In project appraisal the likelihood of risk increases as variability of return increases.
- **Uncertainty:** it is the situation where probabilities to possible outcomes cannot be assigned. In project appraisal the uncertainty increase as project life increases.

- **Ways to deal with risk and uncertainty:**

- **Sensitivity analysis:**

- It indicates which project variable is the key or critical variable, i.e. variable where smallest relative change makes the NPV zero.

- **Formula:**

$$\text{sensitivity analysis} = \frac{NPV}{\text{present value of cash flows under consideration}}$$

- **Decision rule:**

- The lower the percentage answer will be the more sensitive the project NPV will be i.e. small change in the variable will lead the project from acceptance to rejection.

- **Advantages:**

1. Simple to compute.
2. It identifies the critical variables which are crucial to the project success.

- **Disadvantages:**

1. It does not provide an absolute decision rule.
2. It considers changes in variables in isolation.
3. It tells the percentage change in variables but not the probability of such a thing.

- **Expected value:**

EV is the weighted average or long term average provided the event should occur over and over again. It is useful when:

1. The decision is relatively small one in relation to the size of the business.
2. The decision of this type is common in the business.
3. The forecast and probability estimates are made on reasonable basis.

- **Advantages:**

1. Simple to compute.
2. Considers the probability of different outcomes and leads to simple decision rules.

- **Disadvantages:**

1. The probabilities used are itself estimates so can be inaccurate.
2. It ignores the investor's attitudes towards risk as different investors have different attitude towards risks.
3. Cannot be used in case of one off decisions.

- **Simulation:**

Simulation models can be used to deal with decision making problems involving a number of uncertain variables changing at same time. The steps are as follows:

1. Identify major variables.
2. Identify the relationship between variables.
3. Simulate the environment by using computer models by selecting different values of each variable but should be within set parameters.
4. Repeat the process many times so that probability distribution of NPV is created.

- **Advantages:**
 1. Considers all the possible outcomes in decision making.

 - **Disadvantages:**
 1. Models can become complex and cost might exceed the benefit.

 - **Risk adjusted discount rate:** to be discussed in WACC.
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Asset investment decision▪ **Lease vs. Buy decision:**

On approval of the project the next step is to finance the project. There are two options i.e. buy the asset or lease it. Such a decision is separate from the investment decision and the only relevant cash flows pertaining to financing decision will be considered.

- **Decision rule:** first the NPV of all the options are calculated and the lowest cost option is then selected.

○ **Buying option:**

This option is based on the assumption that bank loan is required for making the investment rather the retained profits. Following are the relevant cash flows in considering buying decisions.

1. The investment and its scrap value.
2. Tax effects of WDA.
3. Maintenance and servicing cost.
4. Tax relief on maintenance and servicing cost.

5. **Notes:**

- a. Cost of capital is cost of borrowing.
- b. Discount rate should be post tax rate due to tax relief on interest payments.
- c. If cost of borrowing is not available then consider after tax cost of capital.

○ **Leasing option:**➤ **Basic terms:**

1. A lease is a contractual agreement calling for the lessee to pay the lessor for use of an asset.
2. Lessor is one who owns the asset.

3. Lessee is the one who has asset possession and uses the asset.

➤ **Operating leases:**

1. Lessor retains the significant risk and rewards of the assets.
2. The maintenance and servicing is the responsibility of the lessor.
3. Such arrangement is for short time period.
4. The asset is shown in lessor statement of financial position.
5. Relevant cash flows are lease payments and tax relief on lease payments.

➤ **Finance lease:**

1. Lease in which risk and rewards are transferred to lessee.
2. The maintenance and servicing is the responsibility of the lessee.
3. This arrangement is for most or all of the life of the asset.
4. The asset is shown in lessee statement of financial position.
5. Relevant cash flows are lease payments, tax relief on lease payments, maintenance and servicing cost and tax relief on maintenance and servicing cost.

➤ **Sales and lease back:**

This is the arrangement in which the business sells the asset to the financial institution and then leases it back in return for fix rentals. Such arrangements release funds from fixed assets.

- **Asset replacement decision:**

Asset purchased for long term projects needs to be replaced at regular intervals with identical assets since old assets loose productivity and are costly to maintain. So it is important to compute the optimum replacement cycle by comparing different possible replacement strategies available. This is done by EAC.

- **Equivalent annual cost method EAC:**

The EAC is the cost per year of owning and operating an asset over its entire life span. Following are the factors that need to be considered in replacement decision.

1. The capital cost and resale value of an asset and the time period.
2. The operating cost of running the asset and also its time period.

- **Steps:**

1. Compute NPV of each replacement cycle over one cycle only.
2. Convert the NPV of each replacement into EAC.
formula is:

$$EAC = \frac{PV \text{ of cost}}{\text{annuity factor}}$$

3. Choose the replacement cycle with lowest EAC.

EXAMPLE:

HENRY Co is deciding whether to replace its delivery vans every year or every other year. The initial cost of a van is \$20,000. Maintenance costs would be nil in the first year, and \$5,000 at the end of the second year.

Second-hand value would fall from \$10,000 to \$8,000 if it held on to the van for two years instead of just one. PD Co's cost of capital is 10%.

How often should PD Co replace their vans, and what is the annual equivalent cost ('EAC') of that option?

➤ **Assumptions / limitations:**

1. All machines have same operational efficiency.
2. All the assets have same cash inflows from trading, which are not considered relevant.
3. Ignores non-financial aspects such as pollution and safety issues relating to old assets.
4. Replacement made every time is like with like, which may not be the case due to changing technology, inflation and changing market condition.

▪ **Capital rationing:**

Capital rationing occurs when there is a restriction on an organization's ability to invest in all projects due to insufficient funds. Such restrictions on funds mean shareholders wealth will not be maximized.

○ **Hard capital rationing:**

HCR occurs when a company faces problem in raising finance due to external factors. Some of the reasons are:

1. Company is perceived to be too risky due to high gearing.
2. Company market may be depressed.
3. Company wise factors such as poor trading prospects or previous records.

- **Soft capital rationing:**

SCR occurs when conditions or limitations are imposed by the management of the company. Some reasons are:

1. Encourage ranking between projects.
2. To avoid further interest payments by obtaining further loans.
3. To avoid dilution of control by issuing shares.

- **Single period capital rationing:**

This occurs for a single period only for e.g. a year.

Solution:

- **Profitability index:**

If a project is divisible a proportion of the project can be taken and the returns are expected to be in the same proportion of the capital undertaken. In this case profitability index is used.

Formula:

$$PI = \frac{NPV}{Investment}$$

Steps:

1. Calculate PI of each project.
2. On the basis of PI rank each project.
3. On the basis of ranking allocate the funds.

EXAMPLE:

HENRY Co is faced with an immediate capital constraint of \$100 million available to invest.

It is considering investing in 4 divisible projects:

	Initial cost	NPV
	\$m	\$m
Project 1	40	4
Project 2	30	5
Project 3	50	6
Project 4	60	5

What is the NPV generated from the optimum investment programme?

○ **Trial and Error:**

If the project is not divisible then it can be undertaken fully or not undertaken at all and this can only be achieved through trial and error. Any unused funds are assumed to have been invested at only cost of capital generating 0 NPV.

EXAMPLE:

HENRY Co is faced with an immediate capital constraint of \$100 million available to invest.

It is considering investing in 4 divisible projects:

	Initial cost	NPV
	\$m	\$m
Project 1	40	4
Project 2	30	5
Project 3	50	6
Project 4	60	5

What is the NPV generated from the optimum investment programme if the projects were indivisible?

- **Multi period capital rationing:**

This occurs for more than one period or for one year only. The solution to this is linear programming.



Sources of finance

- **Introduction:**

Finance is the money available to spend on business needs to ensure growth and day to day running of the business. Following are the sources of finance available to the company.

1. Debt
2. Equity

The choice of the appropriate finance source requires the consideration of the following factors.

- 1) **Cost:** Debt finance is considered cheaper than equity finance.
- 2) **Duration:** The finance required for short term is cheaper than finance required for longer term because risk is involved for longer time period.
- 3) The relationship between **risk and return**.
- 4) **Gearing:** The level of gearing required by the company will also affect the choice of sources of finance.
- 5) **Accessibility:** The availability of finance easily is one another factor to consider because not all the companies have easy access to all the sources of finance.

- **Equity Sources of Finance:**

- **Equity:**

Following are the main sources of equity finance.

1. Retained earnings
2. Rights issues
3. New share issues

- **Retained Earnings:**

These represent internal undistributed profits which is attributable to ordinary shareholders. Financing through retained earnings is quicker and cheaper however dividend payout needs to be considered.

○ **Right Issues:**

Right issues are issuing rights to a company's current shareholders to buy additional shares at a given price (usually at a discount) within a fixed period so that it seems to be attractive in the perception of shareholders. Rights are transferable, allowing the holder to sell them on the open market if they themselves are not willing to take up the shares.

Theoretical ex-right share price (TERP):

TERP is a calculated price for a company's shares after issuing new rights-shares with the assumption that all these newly-issued shares are taken up by the current shareholders.

$$\text{Ex-right Price} = \frac{\text{MV of shares before right} + \text{Proceeds of right issue}}{\text{Total number of shares after right issue}}$$

EXAMPLE:

HENRY Co is a listed company with a share price of \$2 per share. It announces a 1-for-4 rights issue at \$1.60 per share.

What is the theoretical ex-rights price?

Value of Right:

It is the theoretical gain the shareholders can make by exercising his right. It is calculated by the following formula.

$$\text{Value} = \text{TERP} - \text{issue price}$$

Options to shareholders:

- 1) Exercise or take up the rights
- 2) Renounce the rights and sell them in the market
- 3) Do nothing

- **New equity issue:**

- ❖ **Placing:**

The sale of share to a relatively small number of selected investors (institutional investors) such as large banks, mutual funds, insurance companies and pension funds. Such a private placement does not have to be registered with the Securities and Exchange Commission and there is no need for detail financial information and prospectus.

- ❖ **Public Offer:**

The sale of equity shares by an organization to the public in order to raise funds for business expansion and investment. The term public offering includes initial public offering and as well as subsequent offerings. In other words it's an invitation to buy shares in the company according to the information given in the prospectus which also contains the information about the company's past performance and future prospects.

- ❖ **Obtaining stock listing:**

Company can raise funds through general public by obtaining listing on stock exchange. However cost is involved when going for stock listing which are as follows.

- 1) Stock listing fee
- 2) Underwriting cost
- 3) Issuing house fee
- 4) Printing cost of prospectus
- 5) Prospectus distribution cost
- 6) Newspaper advertising cost

❖ **Methods to obtain listing:**



1) Initial public offer: It is part of public offer, which is an invitation to apply for shares based on the information contained in prospectus. In such an IPO a large block of shares are issued to issuing house who then will sell to the public and other investing institutions. Such issuing houses are normally investment bank that purchase a block of shares from company or earns a fee by organizing public issue. Following are the other services they provide.

- i. Underwriting services: the underwriter will guarantee a certain price for a certain number of shares to the party that is issuing the shares. In case shares are undersubscribed the underwriter will bear the loss.
- ii. Marketing services
- iii. Assist in pricing shares

2) Introduction:

In this method, the company obtains listing without issuing new shares and raising new capital because the public already holds at least 25% (minimum stock requirement) of the shares in the company. Once the shares become listed than the new members can buy shares from the current shareholders only.

3) Advantages and Disadvantages of stock listing:

Advantages:

- a) Leads access to larger pool of funds.
- b) Leads to easier growth for the business.
- c) Improves the marketability of shares.

Disadvantages:

- a) Greater public accountability and scrutiny.
- b) Increase in legal requirement and company also have to abide the stock exchange rules.
- c) Additional cost will be incurred.



○ **Factors to consider when deciding the sources of equity finance:**

1. The availability of the fiancé for the company i.e. consideration of quoted and unquoted.
2. The amount of finance required.
3. Following are the rankings of options in terms from cost from cheap to expensive.
 - a) Placing
 - b) Right issue
 - c) New share issue
4. Following are the rankings of options in terms of pricing of shares.
 - a) Placing
 - b) Right issue
 - c) New share issue
5. The effect of the control after the issue should also be considered.
 - a) Placing = Yes
 - b) Right issue = No
 - c) New share issue = Yes

○ **Other equity sources of finance:**

A. Venture capital:

Venture capital helps unquoted companies to grow and succeed for example if an entrepreneur is looking to startup, expand or buy out a business in which he works. Venture capital is invested in exchange for an equity stake in a business. The venture capital firm will invest in companies by considering the following factors:

- I. The nature of the product.
- II. Expertise in production and management.
- III. Future profit and market competition.
- IV. Board membership of VC.
- V. The risk taken up by current owners.

B. Enterprise investment scheme:

A scheme which provides income and capital gains tax relief for people prepared to risk investing in a single unquoted or AIM- listed trading company. Where a loss arises on disposal, the investor can claim income tax relief for the amount of the loss (less any income tax relief given) against the income of the year of disposal or previous year, instead of being set off against previous gains.

▪ **Debt sources of finance:**

Long term debt is alternate to equity finance which is considered less costly than equity.

- **Bond:** it represents a written and signed promise to pay certain sum of money on a certain date, or on fulfillment of specified condition. All documented contracts and loan agreements are bonds. Such bond can be redeemable or irredeemable. Following are the types of bonds or loan notes.

i. **Debentures:**

A type of debt instrument that is not secured by physical asset or collateral. Debentures are backed only by the general creditworthiness and reputation of the issuer.

EXAMPLE:

HENRY Co has 10% redeemable loan notes in issue trading at \$90. The loan notes are redeemable at a 10%

premium in 5 years' time, or convertible at that point into 20 ordinary shares. The current share price is \$2.50

and is expected to grow at 10% per annum for the foreseeable future. BRW Co pays 30% corporation tax. What is the best estimate of the cost of these loan notes?

ii. **Deep discount bonds:**

A deep discount bond is the bond that sells at a price which is 20% or more below the face value of the bond and carries a low rate of interest during the term of the bond.

iii. **Zero coupon bonds:**

A bond which pays no interest is sold at a deep discount to its face value and matures at face value.

iv. **Convertible bonds:**

A debt that can be converted into a predetermined amount of the company's equity instrument, at a certain time in future, usually at the discretion of the bond holder.

Issuing convertible bonds is one way for a company to minimize negative investor's interpretation of its corporate actions.

From investors perspective a convertible bond has a value added component built in it; it is essentially a bond with a stock option hidden inside. Thus, it tends to offer a lower rate of return in exchange for the value of the option to trade the bond into stock.

v. **Loan notes with warrants (hybrids):**

Loan notes with warrants are the right given to the holder to subscribe for a certain number of shares at a fixed future date and at a pre-determined lower price.

Such loan note warrants are not converted to equity but gives the bond holder the right to:

- a) To subscribe for those shares by making cash payment for those shares.
- b) Retains the loan notes until reaches redemption.

Advantages of warrants are:

- a. The holder can purchase the shares at attractive price.
- b. The issuer of bond can enjoy the benefit of low interest rates and may raise loan without security.
- c. The cost of buying loan cost can be reduced by the bond holder by selling the warrants.

○ **Bank loan:**

Banks provide short and long term loans to customer who borrows the fixed amount and pays it back with interest. A company can offer security in order to secure a loan.

○ **Leasing:**

Finance leasing is a medium term source of finance whereas operating lease is a short term source of finance.

○ **Bank overdraft:**

With an overdraft facility the borrower can borrow through their current account on short term basis up to an agreed limit. Interest is only charged on overdrawn amount; however, overdrafts are repayable on demand.

○ **Trade credit**

○ **Factors to consider when deciding sources of finance:**

- a) Security
- b) Amount
- c) Interest rate

- d) Duration
- e) Type
 - a. Fixed
 - b. Floating



ISLAMIC FINANCE

- **Basic concept of Islamic finance:**

Islamic banking is based on the foundations of Sharia and Islamic faith. The Islamic finance is mainly based on:

- 1) The concept of sharing risk and rewards between borrower and lender and the financial transactions should be free from RIBA (interest) which is prohibited in Islam. Following are the reasons why RIBA is haram.
 - a) The borrower has to pay interest whether he earns profits or incurs loss making it a burden on the part of the borrower.
 - b) The unfair distribution of wealth, as the funds will be provided to person with good credit rating rather than to one who can utilize funds efficiently, bringing instability in the economic system.
 - c) In high inflation environment the return will be likely be less than rate of inflation making it unfair for the lender.
- 2) The concept that in Islam that rewards should be attached with risk.
- 3) The concept that in Islam the profit is not the only factor which the enterprises should pursue but they should also focus on factors such as social welfare and full environment.

- **Principles of Islamic banking and finance:**

- 1) Financial transactions should be interest free.
- 2) Economic activities do not contain oppression.
- 3) Economic activities should not be based on speculation.
- 4) The presence of Islamic tax.
- 5) The prohibition of provision of goods and services which are against Islamic value.

- **Sharia compliant sources of finance:**

- **Mudaraba:**

- 1) It is a special kind of partnership where investment comes from one partner rub-ul-mal while management and work is the responsibility of the other who is called mudarib.
- 2) It's necessary for mudaraba that parties agree to the share of profit at the beginning of arrangement.
- 3) The rub-ul-mal will bear the financial losses only while the mudarib will loses his time and effort only.
- 4) Contract can be terminated by either party by giving prior notice.

- **Musharaka:**

- 1) A musharaka contract is an agreement where two or more parties, called musharik agree to contribute to the capital – in cash or in kind no debt is accepted – of the partnership in equal or in varying amounts.
- 2) In this kind of contract all parties must provide work but equality of the share of work is not a requirement.
- 3) The profits will be shared according to the ratios agreed in the original contract but losses will be shared according to the capital contributions.

- **Murabaha:**

- 1) Murabaha involves purchase of a commodity by a bank on behalf of a client and its resale to the later on cost-plus-profit basis. Under this arrangement the bank discloses its cost and profit margin to the client.
- 2) It is sale of a commodity for cash or deferred price.
- 3) It is important to note that to prevent RIBA, the intermediary cannot charge any late penalty.

- **Ijara contract:**

- 1) Ijara means lease, rent or wage. Under this agreement the bank makes available to the customers the asset for a fixed price and period.
- 2) The asset remains the property of the lessor who retains risk associated with the asset however day to day maintenance is managed by lessee.
- 3) The duration must be specified.
- 4) After the expiry of the lease the lessor has the right to take the asset back or renew lease or lease it to someone else or sell it.
- 5) The lessor can gift the asset to lessee however no such condition can be included in Ijara contract. The parties can however sign a separate contract to gift or sell the asset after the lease term.

- **Sukuk:**

- 1) Sukuk represents undivided shares in the ownership of the tangible assets relating to particular projects or special investment activity.
- 2) Sukuk holders are entitled to shares in the revenue generated by the sukuk asset.
- 3) The sale of sukuk represents sale of proportionate share in the asset.

- 4) Sukuk to be tradable must be owned by sukuk holders, with all rights and obligations of ownership, in real assets.
- 5) The company or owner issuing sukuk must certify the transfer of ownership of such assets in its books and must not keep them as his own assets.

- **Others:**

- 1) **Stock split:** a stock split is a procedure that increases or decreases corporations total number of shares outstanding without altering the firm's market value or the proportionate ownership interest of current shareholders. Normally companies with extremely high value share price exercise this option to make their share more tradable, e.g. 2 for 1 stock split will result in \$100 share be divided into two \$50 shares.
- 2) **Scrip Issue:** An issue of shares made by a company free of charge to current shareholders out of company's reserves i.e. bonus issue.
- 3) **Share repurchase:** A program by which company buy back its own shares from market place, reducing the number of outstanding shares.
 - **Advantages:**
 1. Surplus cash will be utilized.
 2. EPS will increase share price.
 3. Increase in gearing without obtaining loan finance.
 - **Disadvantages:**
 1. Tax implications to shareholders due to capital gains.
 2. Will be perceived as company failing to utilize funds effectively.

- **Dividend Policy:**

The company having retained earnings will have two options.

1. Use it as a source of finance for investment opportunities.
2. Choose to pay dividends to shareholders.

Following are the theories on dividend policy that will answer those problems.

- **Dividend Irrelevancy Theory:**

The theory says that the shareholders will be indifferent whether company uses retained earnings to pay dividends or make investments in opportunities in perfect capital market. The theory suggests that shareholders are only concerned with their wealth increment, irrespective of whether it comes from dividends or capital gains.

1. A cut in dividend by using retained earnings in investment opportunities will have no impact on shareholders who will be completely aware that current cut in dividend will be compensated by capital gains.
2. If company raise new equity finance and use retained earnings to pay dividend this will reduce the share price but that loss will be completely compensated by the dividend paid to shareholders resulting in no effect on shareholders.

However shareholders who require dividend can sell their shares to make homemade dividends.

- **Residual Theory:**

According to this theory the dividends are important but the pattern of them is not. Therefore the company first should use their retained earnings in positive NPV projects and then any residual amounts should be paid as dividends. The theory is based on certain

assumption like in M&M that perfect capital market is present and there is cost of raising new finance.

- **Dividend Irrelevancy Theory:**

This theory is of the view that there are market imperfections and any decrease in the dividends will affect the shareholders adversely as it will result in negative signaling effect about the company's future prospects. Such a reaction by the shareholders will be because:

1. Liquidity positions of the investors get affected as there are many investors who prefer cash dividends in order to meet liquidity requirements. For e.g. many institutional investors make regular payments for e.g. pensions and insurance claims.
2. Variation in their tax planning because there is different tax rules for dividend and capital gain, so this can affect the investor's income preference.

So it's important for the company to adopt stable or rising dividend policy in place and keep the shareholders informed about all the changes.

- **The Clientele Effect:**

There are three types of investors:

1. Investors want a company that does not pay dividends but instead invest that money in growing that business.
2. Investors prefer shares that pay high dividend.
3. Investors that require a balanced payout and reinvestment.

If a company changes its dividend policy substantially, it is said to be subject to a clientele effect as some of its investors (its established clientele) decide to sell the stock due to the change.

- **Other Considerations when setting Dividend Policy:**

1. The inflation effect
2. The liquidity position
3. The condition to meet gearing position or restrictive covenants on dividends placed by banks.

4. Repayment of debt in near future.
5. Government restrictions on dividend.

- **Dividend Alternatives:**

- **Scrip dividend:**

A scrip dividend is a scrip issue made in lieu of a cash dividend. Shareholders are able to choose whether to receive cash dividend or shares.

- **Advantages:**

1. The company's liquidity position will not be affected.
2. The new shares will improve company's earning position.
3. The investors will prefer due to tax advantage.
4. Investors will increase their holding without paying for transaction cost for new shares.

- **Disadvantages:**

1. Might give negative signal to the market, who will consider the option of scrip dividend as company's critical cash position.
2. The total amount of cash, to pay dividend will increase because of new share issue.

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The Cost of Capital:

- The cost of capital has two aspects to it:
 - The cost of funds that company raises and uses.
 - The minimum return that company should make on its own investments.

- Opportunity Cost:
 - The banks interest rates are the opportunity cost of lending for the banks.
 - The yield on the shares is the opportunity cost to the shareholders of not investing somewhere else.

- The relationship between cost of capital and risk:

Risk free Rate of return	+	Premium for business risk	+	Premium for financial risk	=	Cost of Capital
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1- Risk Free Rate of Return: The return which would be required from an investment if it was completely free from risk e.g. government securities.

2- Premium for Business Risk: The additional rate of return which would be required due to the existence of uncertainty about the future and about the firms business prospects

3- **Premium for financial Risk:** The further additional rate of return which would be required by the providers of funds due to high gearing of the company's capital structure.

4- **Note:** The cost of debt is lower than cost of equity because debt is less risky (i.e. in case of liquidation) and debt is also corporation tax deductible.

The Dividend Growth Model:

- **The cost of ordinary share capital:**

New funds from equity share holders are obtained either from issue of new shares or from retained earnings, both of these have costs.

- Unless the return on shareholders' investment is attractive, they will not be ready to provide funds for new issue of shares.
- Retained earnings also have a cost (i.e. dividend forgone by shareholders).

- **Dividend Valuation Model:**

- Formula for perpetuity:

$$PV = C / r$$

C= constant cash flow every period

r= cost of capital

- The ex-dividend share price is calculated by:

$$K_e = d / P_0$$

K_e = Cost of equity capital

D = the annual dividend per share starting at year 1 and then continuing annually in perpetuity

P_0 = the ex-dividend share price (i.e. new owners of shares are not entitled to dividend)

EXAMPLE:

HENRY Co is about to pay a \$0.50 dividend on each ordinary share. Its earnings per share was \$1.50.

Net assets per share is \$6. Current share price is \$4.50 per share.

What is the cost of equity (to the nearest whole percent?)

EXAMPLE:

HENRY Co has a cost of equity of 25%. It has 4 million shares in issue, and has done for many years.

Its dividend payments in the years 20X9 to 20Y3 were as follows.

End of year Dividends

	\$'000
20X9	220
20Y0	257
20Y1	310
20Y2	356
20Y3	423

Dividends are expected to continue to grow at the same average rate into the future.

According to the dividend valuation model, what should be the share price at the start of 20Y4?

- **The dividend growth model:**

The market value of shares is the present value of the discounted future cash flows of revenues from shares.

Or

Market value of shares is directly related to expect future dividend on shares.

$$P_0 = \frac{d_0(1+g)}{K_e - g}$$

K_e = Cost of equity capital

P_0 = the ex-dividend share price (i.e. new owners of shares are not entitled to dividend)

d_0 = is the current net dividend

g = is the expected annual growth in dividend payment

- **Formula to compute growth:**

$$g = br$$

g = annual growth rate in dividend

b = proportions of profit that are retained

r = is the rate of return on new investments

And

$$\left(\frac{\text{Latest year dividend}}{\text{earliest year dividend}} \right)^{1/n} - 1 \times 100$$

n = no of years



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Dividends are expected to continue to grow at the same average rate into the future.

According to the dividend valuation model, what should be the share price at the start of 20Y4?

- **Weaknesses in dividend growth model:**
 - The model does not explicitly incorporates risk
 - Dividends do not grow smoothly in reality so g is only an approximation.
 - The model fails to take capital gain into account, however it is argued that change of shares ownership does not affect the present value of the dividend stream.
 - No allowance is made for the effects of taxation although the model can be modified to incorporate tax.
 - It assumes that there are no issue costs for new shares.
 - It does not produce meaningful results where no dividend is paid (if $d=0$, then $K_e=0$).

The Capital Asset Pricing Model (CAPM):

- Portfolio theory assumes that investors can reduce risk altogether by diversifying their portfolios, in this way the investment which performed good and investment which performed bad can cancel out each other.
- **Unsystematic risk:** Risks that can be diversified away are referred to as unsystematic risk. The investor is responsible for dealing with unsystematic risk.
- **Systematic risk:** The inherent risk, systematic risk or market risk cannot be diversified away. Systematic risk includes for e.g. global recession, war or natural disasters.

In return for accepting systematic risk, a risk averse investor will expect to earn a return which is higher than the return on risk free investments.

- **Implications of systematic and un systematic risk:**
 - If an investor wants to avoid risk altogether he must invest entirely in risk free securities.
 - If investor holds shares in just a few companies, there will be some systematic risk as well as unsystematic risk in his portfolio.
 - If investor holds balanced portfolio of all the stocks and shares on stock market. He will incur systematic risk exactly equals to the systematic risks in stock market.
 - Shares in individual companies will have different systematic risk characteristics.
- CAPM is mostly concerned with how systematic risk affects required return and share price.
- Beta Factor is the measure of the systematic risk of a security relative to a market portfolio. The higher the beta factor the more sensitive the security is to systematic risk.
 - Beta < 1** : security is less sensitive to systematic risk than market average
 - Beta = 1** : security exposure to systematic risk matches the market average.
 - Beta > 1** : security is more sensitive to systematic risk than the market average.

- CAPM theory proposes the following prepositions.
 - Companies and investors in shares will want a return in excess of risk free rate to compensate for systematic risk.
 - Unsystematic risk can be diversified away so premium for unsystematic risk is not required.
 - Companies and investors should want a bigger return where systematic risk is greater.

- **Market Risk Premium or Equity Risk Premium:** is the difference between the expected rate of return on a market portfolio and the risk free rate of return on the same period.

- **The CAPM Formula:**

$$E_{(ri)} = R_f + \beta_i (E_{(rm)} - R_f)$$

$E_{(ri)}$ = is the cost of equity capital

R_f = is the risk free rate of return

β_i = is the beta factor of individual security

$E_{(rm)}$ = is the return from the market as a whole

- **Problems with applying CAPM in practice:**
 - The need to determine excess return ($E_{(rm)} - R_f$). Expected rather than historical return should be used.
 - The need to determine the risk free rate. A risk free investment might be a government security (interest rates may vary with terms of lending).
 - Errors in statistical analysis used to calculate β values. Betas may also change over time.
 - The CAPM is also unable to forecast accurately returns for companies with low price/earnings ratios and to take account of seasonal or month of the year affects that appears to influence the returns on shares.

- **The Cost of Debt:**

The cost of debt is the return an enterprise must pay to its lenders.

- For **irredeemable debt** this is the post-tax interest as the percentage of the ex-interest market value of the bond.

$$K_d = i(1-T) / P_o$$

K_d =is the cost of debt capital

P_o =is the current market price of the debt capital ex-interest

i =is the annual interest payment

T =rate of corporation tax

EXAMPLE:

HENRY Co has in issue 10% irredeemable loan notes, currently traded at 95% cum-interest.

If the tax rate changes from 30% to 20% for the company, what will happen to the cost of irredeemable debt?

- For **redeemable debt** the cost is given by internal rate of return(IRR) of the debt capital.
- For **variable or floating rate debt** the cost of equivalent fixed interest debt should be substituted.
- For **short term debt** such as bank loan or overdraft, the cost of capital is the interest rates charged on such funds.

- **The Cost of Convertible Debt:**

The cost of convertible debt depends upon whether or not conversion is likely to happen.

- If the conversion is not expected the conversion value is ignored and the bond is treated as redeemable debt using the IRR method.

- If conversion is expected, the IRR method is used but the number of years to redemption is replaced by the number of years to conversion and the redemption value is replaced by conversion value i.e. the market value of shares into which the debt is to be converted.
- Formula:

$$P_o = (1+g)^n R$$

P_o = is the current ex-dividend ordinary share price
 g = is the expected annual growth of the ordinary share price
 n = number of years to conversion
 R = is the numbers of shares received on conversion

- For preference shares the cost of capital is calculated by formula

$$K_{pref} = d/P_o$$

- **The Weighted Average Cost of Capital:**

WACC is the average cost of the company's finance (equity, bonds, bank loans) weighted according to the proportions each element bears to the total pool of capital.

$$WACC = \frac{E}{D + E} (r_e) + \frac{D}{D + E} (r_d)(1 - t)$$

Where:

E = market value of equity

D = market value of debt

r_e = cost of equity

r_d = cost of debt

t = corporate tax rate

NOTES:

- ❖ $r_e = K_e$
- ❖ $r_d = K_d$
- ❖ Market values should be used as compared to book values.
- ❖ Book values may under estimate WACC and as a result unprofitable projects may be accepted.

EXAMPLE:

HENRY Co has a capital structure as follows.

	\$m
10m \$0.50 ordinary shares	5
Reserves	20
13% Irredeemable loan notes	7
	32

The ordinary shares are currently quoted at \$3.00, and the loan notes at \$90. IDO Co has a cost of equity of

12% and pays corporation tax at a rate of 30%.

What is HENRY Co's weighted average cost of capital?

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Capital Structure

- **Traditional theory of cost of capital:**

Under the traditional view there is an optimal capital mix at which the average cost of capital weighted according to different forms of capital employed is minimized.

Under the traditional theory of cost of capital the cost of capital, the cost declines initially and then rises as gearing increases. The optimal capital structure will be the point at which WACC is lowest.

- **Assumptions of traditional theory:**

- The company pays out all its earnings as dividends.
- The gearing of the company can be changed immediately by issuing shares to repurchase debt. There are no transaction costs for issue.
- The earnings of the company are expected to remain constant in perpetuity and all investors share the same expectations about those future earnings.
- Business risk is also constant, regardless of how the company invests its funds.
- Taxation for the time being is ignored.

- **The traditional view:**

- As the level of gearing increases the cost of debt remains unchanged up to a certain level of gearing.
- The cost of equity rises as the level of gearing increases and financial risk increases.
- The WACC does not remain constant but falls initially as the proportion of debt capital increases and then begins to increase as the rising cost of equity.
- The optimum level of gearing is where the company's WACC is minimized.

- **The net operating income theory of WACC (Modigliani – miller MM):**

MM stated that in the absence of tax, a company's capital structure would have no impact upon its WACC and the total market value of a company is determined by two factors.

- The total earnings of the company
- The level of operating (business) risk attached to those earnings.

- **Assumptions of MM:**

- A perfect capital market exist, in which investors have the same information upon which they act rationally, to arrive at the same expectations about future earnings and risks.
- There are no tax or transaction costs.
- Debt is risk free and is freely available to investors and company's alike.

- **Justifications by MM:**

- Arbitrage: is when a purchase and sale of a security takes place simultaneously in different markets, with the aim of making a risk free profit through the exploitation of any price difference between the markets.

- **Implications:**

- The cost of debt remains unchanged as the level of gearing increases.
- The cost of equity rises in such a way as to keep WACC constant.

- **Problems with MM:**

- MM later modified their theory and admits that tax relief on interest payments does lower WACC. However WACC will continue to fall up to gearing of 100%.

- Companies should have capital structure made up entirely of debt. This does not happen in practice due to market imperfections.
- MM assumes perfect capital market so a company will always be able to raise finance and avoid bankruptcy. In reality it's not possible and high gearing level will increase risk and in turn required return by shareholders.
- High gearing levels also creates agency costs as a result of action taken by concerned debt holders. They may impose restrictive covenants.
- As companies increases their gearing they may reach a point where there are not enough profits from which to obtain all available tax benefits.

- **Pecking order theory:**

According to pecking order theory, the order of preference of debt will be:

1. Retained earnings
2. Straight debt
3. Convertible debt
4. Preference shares
5. Equity shares

- **Reasons to follow P.O.T:**

- It's easier to use retained earnings than go the trouble of obtaining external finance and have to line up to the demands of the external finance providers.
- There is no issue cost of retained earnings and low issue cost of debt.
- Investors prefer safer securities that are debt with guaranteed income and priority on liquidation.
- Debt issues have better signaling affect than equity issues on the market. The market assumes that businesses are confident of making sufficient profits to fulfill their obligations on debt and that they believe that shares are undervalued.

- **Consequences of pecking order theory:**
 - Businesses will try to match investment opportunities with internal finance.
 - It is not possible to match investment opportunities with internal finance.
 - Establishing an ideal debt-equity mix will be problematic because of list of preferences.

- **Limitations of pecking order theory:**
 - It fails to take into account taxation, financial distress, agency costs and how investment opportunities available may influence the choice of finance.
 - Pecking order theory is an explanation of what businesses actually do rather than what they should do.

- **Impact of cost of capital on investment:**

The lower the company's WACC, the higher will be the net present value of its future cash flows and therefore the higher will be its market value.

- **WACC in investment appraisal:**
 - **Using WACC in investment appraisal:**
 1. The project being appraised is small relative to the company.
 2. The current capital structure will be maintained.
 3. The project has the same business risk as the company.

 - **Arguments against using WACC:**
 1. New investment undertaken by a company might have different business risk characteristics from the company's current operations.

2. The finance that is raised to fund a new investment might substantially change the capital structure and the perceived financial risk of investing in the company.
 3. Many companies raise floating rate debt capital as well as fixed interest debt capital as floating rate debt capital is difficult to incorporate in to WACC computations and best alternate is to substitute an equivalent fixed interest det capital cost in place of the floating rate debt cost.
- **CAPM in investment appraisal:**
 - **Using CAPM in investment appraisal:**
 1. Its main advantage is that it produces discount rate which is based on the systematic risk of the individual investment.
 2. It can be used to compare projects of all different risk classes and is therefore superior to NPV.
 3. It assumes that company should assume that a shareholder wishes investments to be evaluated as if they were securities.
 4. It assumes that all shareholders will have diversified portfolios and will not look to the company to achieve diversification for them.
 - **Limitations of using CAPM in investment appraisal:**
 1. It is harder to estimate return on projects under different economic environments
 2. The CAPM is really just a single period model. Few investments projects last for one year. It is possible to apply the CAPM for each time period thus arriving at successive discount rates, one for each year of project life. This makes the discounting process much more cumbersome.
 3. It may be hard to determine risk free rate of return

4. Betas calculated using statistical techniques often overestimate high betas and underestimate low betas, particularly for small companies.

- **CAPM and MM combined- gearing betas:**

When the investment has different business and finance risks from current business, geared betas may be used to obtain an appropriate required return.

The beta values of the geared company will be higher than the beta value of a company identical in every respect except that it is all equity financed. This is because of extra financial risk.

- **Formula:**

$$\beta_a = \left[\frac{V_e}{(V_e + V_d(1-T))} \beta_e \right]$$

β_a = asset beta

β_e = equity beta

V_e = market value of company's shares

V_d = market value of company's debt

$((V_e + V_d(1 - T)))$ = after tax market value of company

T = company profit tax rate

- **Using the geared and ungeared beta formula to estimate a beta factor:**

Another method to estimate Beta factor is to use data about the returns of other quoted companies which have similar operating characteristics to estimate the beta value for the company under consideration.

STEP 1: Get an estimate of systematic risk characteristics of the projects operating cash flows by obtaining published beta values for companies in the industry into which the company is planning to diversify.

STEP 2: Adjust these beta values to allow for company's gearing level. This is done by:

1. Convert the beta value of other companies in the industry to ungeared betas using the formula:

$$B_a = B_e (V_e / V_e + V_d(1-T))$$

2. Having obtained an ungeared beta value B_a convert it back to a geared beta B_e which reflects the company's own gearing ratio.

$$B_e = B_a (V_e + V_d(1-T)) / V_e$$

STEP 3: Having obtained the project specific geared beta use the CAPM to estimate a project specific cost of equity.

- **Weaknesses in the formula:**

- It is difficult to find other firms with identical operating characteristics
 - Estimates of beta values from share price information are not wholly accurate i.e. they are based on statistical analysis of historical data.
 - There may be differences in Beta values between firms caused by
 - 1 Different cost structure
 - 2 Size differences between firms
 - 3 Debt capital not being risk free
 - If the firm for which an equity beta is being estimated has opportunities for growth that are recognized by investors and which will affect its equity beta, estimates based on this equity beta will be inaccurate because the opportunities for growth will not be allowed for.
 - Link between MM and CAPM assumes that the cost of debt is the risk free rate of return which is unrealistic.
-

- There are many ways of putting a value on a business or on shares in an unquoted company. It makes sense to use several methods of valuations and to compare the values they produce.

- **When valuations are required?**
 - For quoted companies when there is a takeover bid and the offer price is to be estimated.
 - For Unquoted companies when:
 1. Company wishes to go public and must fix an issue price for its shares
 2. There is a scheme of merger
 3. Shares are sold
 4. Shares need to be valued for the purpose of taxation
 5. Shares are pledged as collateral for a loan.
 6. For subsidiary companies when group holding company is negotiating a sale for the subsidiary
 7. For any company where shareholder wishes to dispose of his or her shares holding
 8. For any company when a company is being broken up in a liquidation situation.
 - **Take over:**

A takeover is the acquisition by a company of a controlling interest in the voting share capital of another company usually achieved by the purchase of majority of the voting shares.
 - **Market capitalization:**

Market capitalization is the market value of a company's shares multiplied by number of issued shares.
 - **Asset valuation bases:**

$$\text{AVB} = \text{Net Tangible Assets} / \text{Number Of Shares}$$

▪ **Performa:**

Total assets	X
Less: good will (except tangible assets that can be sold)	(X)
: Total liabilities	(X)
Add: development expenditure (if shown in F/S)	<u>X</u>
Net asset value of equity	<u>X</u>
	/
No of shares	Y
Value per share	X/Y

• **Choice of Valuation base:**

- Realizable value----- if asset is to be sold
- Replacement basis-----if assets are to be used on-going basis

EXAMPLE:

The following is a summary of HENRY Co's statement of financial position:

	\$m
Non-current assets	5
Net current assets	3
	8
Financed by:	
\$1 Ordinary shares	1
Reserves	5
Loan notes	2
	8

Non-current assets include machinery which cost \$10 million when purchased 7 years ago and has a useful life of 10 years. Monkton Co uses straight-line depreciation. These assets were recently professionally valued at \$1 million.

What is the value per share using the realisable value basis of valuation?

- Factors that must be considered:

1. Do the assets need professional valuation?
2. Have the liabilities been accurately quantified?
3. How have the current assets been valued?
4. Can any hidden liabilities be accurately assessed?
5. Is there any available market in which the assets can be realized?
6. Are there any prior charges on the assets?
7. Does the business have regular revaluation and replacement policy?
8. What shareholdings are being sold?

- **Use of net asset basis:**

The NAB might be used in following circumstances.

1. As a measure of security in a share value. The value might be higher or lower than the net assets value per share. The asset backing for shares provides a measure of the possible loss.
2. As a measure of comparison in a scheme of merger.
3. As a floor value for a business that is up for sale.

- **Income based valuation basis:**

- It is the method of valuing controlling interest in a company, where the owner can decide on dividend and retention policy

- **Formula 1:**

$$\text{P/E ratio} = \text{Market value} / \text{EPS}$$

$$\text{EPS} = \frac{\text{Profit and loss attributable to ordinary shareholders}}{\text{Weighted average number of ordinary shares}}$$

Weighted average number of ordinary shares

- **Formula 2:**

$$\text{Market capitalization} = \text{P/E ratio} \times \text{EPS}$$

Or

$$\text{Market capitalization} = \text{P/E ratio} \times \text{total earnings}$$

- **Significance of high P/E ratio:**

1. Expectations that EPS will grow rapidly:

A high price is being paid for future profits prospects. Many small but successful and fast growing companies are valued on the market on high P/E ratio.

2. Security of earnings:

A well-established low risk company would be valued on a high P/E ratio than a similar company whose earnings are subject to greater uncertainty.

3. Status:

If quoted company made a share for share takeover bid for an unquoted company, it would normally expect its own shares to be valued on high P/E ratio than the target company's shares.

▪ Problems with using P/E ratio:

Using P/E ratio of quoted company to value unquoted companies may be problematic.

- a) Finding quoted companies with similar range of activities may be difficult. Quoted companies are often diversified
- b) A single period P/E ratio may not be a good basis, if earnings are volatile or the quoted companies share price is at abnormal value for example due to the expectations of takeover bid.
- c) If P/E ratio trend is used, then historical data will be used to value how unquoted company will do in the future.
- d) The quoted company may have different capital structure to unquoted company.

▪ Guidelines for P/E ratio based valuation:

A list of other factors affecting the valuers choice of P/E ratio is given below.

- I. General economic and financial conditions
 - II. The type of the industry and the prospects of the industry.
 - III. The size of the undertaking and its status within its industry.
 - IV. Marketability of shares
 - V. The diversity of shareholdings and the financial status of any principal shareholder.
 - VI. The reliability of profit estimates and the past profit record.
 - VII. Asset backing and liquidity.
 - VIII. Gearing (A high gearing ratio will generally mean greater financial risk.
- **Forecast of earnings growth should only be used if :**
 - i. There are good reasons to believe that earnings growth will be achieved.
 - ii. A reasonable estimate of growth can be made.
 - iii. Forecast supplied by target company director are made in good faith and using reasonable assumptions and fair accounting policies.

- **The earnings yield Valuation method:**

$$EY = \text{EPS} / \text{market price per share} \times 100\%$$

Or

$$\text{Market value} = \text{Earnings} / EY$$

A stable earnings yield may suggest company with low risk characteristics.

If earnings growth is incorporated

$$\text{Market Value} = \text{Earnings} \times (1 + g) / (EY - g)$$

- **Cash Flow based valuations model:**

- **The dividend valuation model:**

Equilibrium market price is present value of a future expected income stream.

$$MV_{(ex-div)} = D / K_e$$

MV = Ex dividend market value of shares

D = constant annual dividend

K_e = shareholders required rate of return

EXAMPLE:

HENRY Co is a company which is financed by equity only. It has just paid a dividend of \$60m and earnings retained and invested were 60%. Return on investments is 20% and the cost of equity is 22%.

What is the market value of the company (to the nearest whole million)?

- **The dividend growth model:**

$$P_o = d_o(1+g) / K_e - g$$

K_e = shareholders required rate of return

P_o = the ex-dividend share price (i.e. new owners of shares are not entitled to dividend)

d_o = is the current net dividend

g = is the expected annual growth in dividend payment

- **Assumptions of dividend model:**

The dividend models are underpinned by a number of assumptions.

- I. Investors act rationally and homogeneously. The model fails to take into account different expectations of shareholders.
- II. The d_o figure used does not vary significantly from the trend of dividends
- III. The estimates of future dividend and prices used and also the cost of capital are reasonable.

- IV. Investor's attitude to receiving different cash flows at different times can be modeled using discounted cash flow arithmetic.
- V. Directors use dividends to signal the strength of the company's position.
- VI. Dividends either show no growth or constant growth.
- VII. Other influences on share prices are ignored.
- VIII. The company's earnings will increase sufficiently to maintain dividend growth levels.
- IX. The discount rate used exceeds the dividend growth rate.

The method is useful if one company buys the assets of another company and makes further investments to improve cash flows in future.

- **Selection of an appropriate cost of capital:**

- I. The business risk of the new investment may not match that of the investing company.
- II. The method of finance of the new investment may not match the current debt/equity mix of the investing company.

- **The valuation of debt:**

- **Irredeemable debt:**

$$P_0 = i(1-t)/K_d$$

Notes about debt computations:

- I. Debt is always quoted in \$100 nominal units.
- II. Debt can be quoted as values or % e.g. 97% or \$97. Both means that \$100 nominal value debt is worth \$97 market value.
- III. Interest on debt is stated as a % of nominal value.
- IV. The examiner sometimes use interest yield, defined as coupon market price.
- V. Always use ex-interest prices in any calculations.

- **Redeemable debt:**

Value of debt = (interest earnings + annuity factor) + (redemption value X discounted cash flow factor)

- **Convertible debt:**

When convertible bonds are traded on a stock market, its minimum market price will be the price of straight bonds with same coupon rate of interest.

The actual market price of convertible bond will depend upon

- 1) The price of straight debt
- 2) The current conversion values
- 3) The length of time before conversion may takes place.
- 4) The market expectations as to future equity returns and the associated risk.

Formula:

$$\text{Conversion value} = P_0(1+g)^n R$$

P_0 = is the current ex dividend share price

g = is the expected annual growth of ordinary share price

n = number of years to conversion

R = is the number of shares received on conversion

Market Efficiency

- **Efficiency:**

The efficient market hypothesis is the hypothesis that stock market reacts immediately to all the information that is available. Thus a long term investor cannot obtain higher than average return from a well-diversified share portfolio.

Different types of efficiency are:

- **Allocative Efficiency:**

If financial markets allow funds to be directed towards firms which make the most productive use of them; then there is allocative efficiency in these markets.
- **Operational Efficiency:**

Transaction costs are incurred by participants in financial markets. Financial markets have operational efficiency if transaction costs are kept as low as possible. Transaction cost is low where there is open competition between market participants.
- **Informative processing Efficiency:**

The information processing efficiency of a stock market means the ability of a stock market to price stocks fairly and quickly that reflects all the available information.
- **Features of efficient market:**

UK and USA markets are efficient markets that are market in which:

 - a) The prices of securities bought and sold reflect all the relevant information which is available to the buyers and sellers.
 - b) No individual dominates the markets
 - c) Transaction costs of buying and selling are not so high as to discourage trading significantly.
 - d) There are low or no cost of acquiring information.
- **Impact of efficiency on share prices:**

If the stock market is efficient, share prices should vary in rational way.

 - a. If a company makes an investment with a positive NPV, shareholders will get to know about it and the market price of its shares will rise in anticipation of future dividend increase.
 - b. If a company makes a bad investment shareholders will find out and its share price will fall.
 - c. If interest rates rise, shareholders will want a higher return from their investments, so market prices will fall.

- **Varying degree of efficiency:**

There are three degrees or forms of efficiencies.

- **Weak-form efficiency:**

Under the weak form hypothesis of market efficiency, share prices reflect all available information about past changes in the share price. Since new information arrives unexpectedly, changes in share price should occur in a random fashion. Therefore using technical analysis will not give anyone an advantage.

- **Semi-strong form efficiency:**

If stock market displays semi strong efficiency, current share prices reflect both:

- a. All relevant information about past prices movements and their implications.
- b. All knowledge which is available publically.

The individuals cannot beat the market by reading the newspapers or annual reports, since the information contained in these will be reflected in share prices e.g.

If two companies plan a merger, share prices of the two companies will change as the merger is announced. The market will show semi strong efficiency, if it were able to anticipate such an announcement, so the share prices of the companies concerned will change in advance of the merger plans being concerned.

- **Strong form efficiency:**

If stock market displays strong form of efficiency, share prices reflect all information whether publically available or not.

- a. From past price changes.
- b. From public knowledge or anticipation.
- c. From specialist or experts insider knowledge (e.g. investment merger).

- **Implications of efficient market hypothesis:**

If markets are strongly efficient the main consequence for financial managers will be to simply improve or minimize the NPV of company's investments to maximize the wealth of shareholders.

Financial managers cannot mislead market if market is strongly efficient:

- There is no point to identify the date of issue of shares.
- The market will identify any attempts to window dress the accounts
- The market will decide what level of return is required for the risk involved for making an investment.

If markets is semi strong efficient, the financial manager may possess inside information that would significantly alter the company's share price if released into the market could they perhaps gain an advantage however this insider information may breach the insider dealing laws.

The difference between strong and semi strong form efficient markets concerns when the share price change and not by how much prices eventually change.

- **The valuation of shares:**

- I. Fundamental analysis is based on the theory that share prices can be derived from an analysis of future dividends.
- II. Technical analysts or chartist works on the basis that past price patterns may be repeated.
- III. Random walk theory is based on the idea that share prices will alter when new information becomes available.
- IV. Share prices are also affected by marketability and liquidity of shares, availability and source of information, market imperfections and pricing anomalies, market capitalization and investors speculation.

NOTE: all shares have intrinsic and fundamental value that changes with the availability of new information.

Exchange Rates:

- An exchange rate is the rate at which one country's currency can be traded in exchange for another country's currency.
- Spot rate is the exchange rate currently offered on particular currency for immediate delivery
- A forward rate is the exchange rate set now for currencies to be exchanged at a future date.

Foreign Currency Risks:

- Foreign exchange risk is a two way risk i.e it can favorable or unfavorable.
- **Translation risk:** is the risk that the organization will make exchange losses when the accounting results of its foreign branches or subsidiaries are translated into home currencies.
- **Transaction risk:** is the risk of adverse exchange rate movements occurring in the course of normal international trading transactions. In case of credit transactions the risk is that the profit will be eroded if movement in exchange rates acted unfavorably.
- **Economic risk:** is the risk that over time a currency will depreciate or appreciate in value against other currencies, so a country's economy becomes more or less competitive. Diversification of the supplier and customer base will reduce this kind of exposure to risk. (e.g importing supplies in to UK from US).

Causes of Exchange Rate fluctuations:

- Currency supply and demand
- **Interest rate parity:** suggest difference between spot and forward rates between two currencies reflects difference in interest rates between two countries.

$$F_o = S_o \times (1 + i_c) / (1 + i_b)$$

F_o –forward rate

S_o – spot rate

i_c – interest rate in country c (overseas)

i_b - interest rate in country b (base country)

- **Purchasing power parity:** suggests an exchange rate of foreign currency depends upon the relative purchasing power of each currency in its own country and spot exchange rates vary over time according to relative price changes.

$$S_1 = S_o \times (1 + h_c) / (1 + h_b)$$

F_o –forward rate

S_o – spot rate

h_c – expected inflation rate in country c (overseas)

h_b – expected inflation rate rate in country b (base country)

- **The fisher effect:** is used to look at relationship between interest rates and expected rates of inflation.

$$(1 + i_c) / (1 + i_b) = (1 + h_c) / (1 + h_b)$$

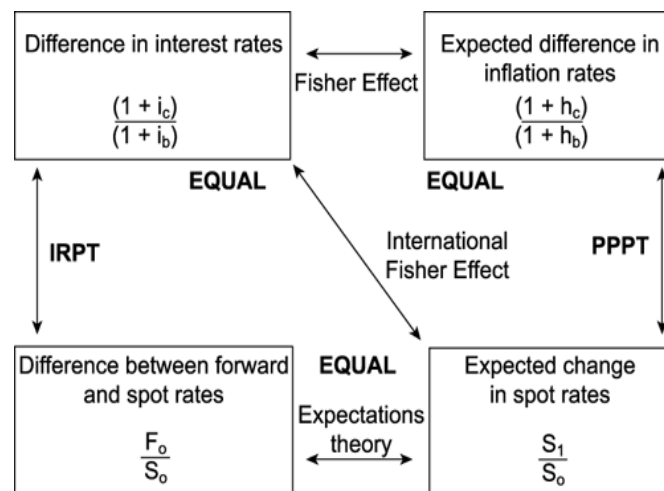
i_c – interest rate in country c (overseas)

i_b - interest rate in country b (base country)

h_c – expected inflation rate in country c (overseas)

h_b – expected inflation rate rate in country b (base country)

- **Four-way equivalence:** states that in equilibrium, difference between forward and spot rates, difference in interest rates, expected differences in inflation rates and expected changes in spot rates are equal to one another.



Foreign Currency Risk Management:

Risk management involves either reducing risk or avoiding particular kinds of risk. Following are the methods of reducing risk.

- **Currency of invoice:** invoicing foreign customer in domestic currency will transfer exchange rate risk to overseas buyer. In case of overseas supplier or exporter: to gain marketing advantage, to offset payments or to obtain loan.
- **Matching receipts and payments:** reduce or eliminate its foreign exchange transaction exposure by matching receipts and payments in a foreign currency.
- **Matching assets and liabilities:** US dollar receivables can be hedged by taking out a US dollar overdraft.

- **Leading and lagging:**

Lead payments: payments in advance for goods purchased in foreign currency.

Lagged payments: delaying payments beyond their due date for goods purchased in foreign currency.

- **Netting:** netting is a process in which credit balances are netted off against debit balances so that only the reduced net amounts remain due to be paid by actual currency flows. Netting results in reduction in foreign exchange purchase cost and less loss of interest from having money in transit.
- **Forward Exchange Contracts:** fixes an exchange rate now for the settlement of a transaction at a future date. This removes uncertainty about what exchange rate will be at future date. This hedge against the risk of adverse movement in spot exchange rate but also results in loss of opportunity to gain from favorable movement.

EXAMPLE:

The current euro / US dollar exchange rate is €1 : \$2. ABC Co, a Eurozone company, makes a \$1,000 sale to a US customer on credit. By the time the customer pays, the Euro has strengthened by 20%.

What will the Euro receipt be?

- **Money market hedging:** involves borrowing in one currency, converting the money borrowed into another currency and putting the money on deposit until the time the transaction is completed hoping to take advantage of favorable exchange rate movements.

Receipts > Borrow from foreign bank > Sell at spot > Deposit at local bank

Payments > Deposit at foreign bank > Buy at spot > Borrow from local bank

EXAMPLE:

A US company owes a European company €3.5m due to be paid in 3 months' time. The spot exchange rate is \$1.96 - \$2 : €1 currently. Annual interest rates in the two locations are as follows:

Borrowing Deposit

US 8% 3%

Europe 5% 1%

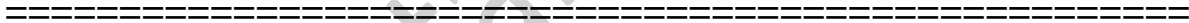
What will be the equivalent US \$ value of the payment using a money market hedge?

Foreign Currency Derivatives:

- **Currency futures:** are similar to forward exchange contracts except for the fact that they are tradable and are only available for standardized amount and date.
- **Currency Options:** are also similar to currency futures except for the fact that options provide right but not the obligation to buy or sell a currency , which means company can exercise options if it is in its benefit or let it lapse if it is giving a loss.

To enter into option a premium needs to be paid to option provider immediately. An option which gives the right to buy currency is called a call option and an option which gives the right to sell currency is a put option.

- **Currency swaps:** involves the exchange of principle and interest in one currency for the same in another currency. Currency swap maturities are negotiable for at least 10 years, making them a very flexible method of foreign exchange.



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- **Interest rates:**

The interest rates on financial assets are influenced by the risk of the assets and, the duration of the lending and the size of the loan. Interest rates are effectively the cost of borrowing and lending.

Investors in riskier assets expected to be compensated for the risk.

- **Interest rates risk:**

Interest rates risk relates to the sensitivity of profits and cash flows to change in interest rates.

Interest rates risk is faced by companies with floating and fixed rate debt it can arise from gap exposure or basis risk.

- **Floating Interest rate debt:**

In case of a company the volatility of cash flows associated with high proportions of floating interest rate debt may prove fatal. Interest rates will rise or fall based on LIBOR.

This sort of risk can be mitigated by matching assets with liabilities. For e.g. higher interest on payable or loans can be compensated by higher interest received on assets.

- **Fixed Interest rate debt:**

The only risk faced by a company in this case is if interest rates fall sharply the company will suffer a loss from competitive advantage.

- **Gap exposure:**

Gap exposure is based on the principal of grouping together assets and liabilities which are sensitive to interest rate changes.

A. A negative gap: if a firm has larger amount of interest sensitive liabilities as compared to interest sensitive assets maturing at the same time is called a negative gap and the difference between the two amounts indicates net exposure.

B. A positive gap: if a firm has larger amount of interest sensitive assets as compared to interest sensitive liabilities maturing at the same time is called a negative gap.

▪ **Basis risk:**

Basis risk involves the risk of basis points. It may seem that size matched asset and liabilities may not result in interest rate exposure, however, this may not be the case for e.g. if one loan is linked to 1 month LIBOR and another to 6 month LIBOR so if one rate changes the other may change by different amount or it may change later.

• **Causes of interest rate fluctuations:**

The causes of interest rate fluctuations include the structure of interest rates and yield curves and changing economic factors.

▪ **The structure of interest rates:**

1. **Risk:** higher risk borrowers must pay higher rates on their borrowings, to compensate lenders for the greater risk involved.
2. **The need to make profits on relending:** financial intermediary relends money at a higher interest rate than the cost of their borrowing.
3. **The size of the loan:** deposits above a certain amount may attract higher interest rates than smaller deposits.
4. **Different types of financial assets:** attracts different rates of of interests.
5. **The duration of the lending**

- **Yield Curve:**

A curve that shows the relationship between yields and maturity dates for a set of similar bonds.

1. A normal yield curve is one in which longer maturity bonds have a higher yield compared to shorter term bonds due to the risk associated with time.
2. An inverted yield curve is one in which the shorter term yields are higher than the longer term yields, which can be a sign of upcoming recession.
3. A flat yield curve is one in which the shorter and longer term yields are very close to each other, which is also a predictor of economic transition.

- **Theories for yield curve:**

The shape of the yield is because of three of the following theories acting together:

1. **Liquidity preference theory:** the idea that investors demand a premium for securities with longer maturities, which entail greater risk because they would prefer to hold cash which entails less risk.
2. **Expectation theory:** this theory is of view that forward interest rate is based on the expectations of interest rates movements. If there is an expectation that interest rates will increase in future so the long term rates will be higher than the short term rates.
3. **Market segmentation theory:** a modern theory pertaining to interest rates says there is no necessary relationship between long and short term interest rates. Furthermore short and long term markets fall into two different categories. Therefore yield curve is shaped according to demand and supply of securities within each maturity length.

- **Usefulness of yield curve:**

1. Yield curve are form of economic indicator that may use to predict the direction of the economy.
2. The comparison of the short and long term yield curves gives managers some indicators as to whether they'll be facing recession, recovery growth or fluctuation.
3. If yield curve suggest that interest will rise than short term floating or long term fixed rates will be used.

- **Hedging Techniques:**

- i. **Forward rate agreements:**

An over the counter contract between parties that determines rate of interest to be paid or received on an obligation beginning at a future start date.

Mechanism:

1. It is a separate contract from the loan itself that locks the company into agreed forward fixed rate.
2. In normal way the company pays the interests.
3. In case of increase in the interest rates as compared to FRA, the bank pays the difference to the company.
4. In case of the decrease in interest rates as compared to FRA , the company pays the difference to the bank.

NOTE: in FRAS the higher rate is the borrowing rate and the hedging period will be from 1 to 2 years.

EXAMPLE:

Interest rates are currently 5%. HENRY Co needs a \$4 million six month loan in 3 months' time and buys a 3-9

Forward Rate Agreement (FRA) at 8%. When ADB Co signs the loan they agree to a rate of 7%.

What is the payment or receipt HENRY Co will make or receive under the FRA?

ii. **Matching:**

This is an internal hedging technique in which the assets and liabilities with same interest rates are matched together in order to eliminate the impact of interest rates movements. This method is easily sued by banks.

iii. **Smoothing:**

This is an internal hedging technique in which company maintains a balance between fixed and floating borrowing rates.

• **Derivatives:**

- **Interest rates futures:** is a financial derivative with an interest bearing instrument as the underlying asset. The value of the interest rates futures is directly tied to interest rates.

Mechanism:

- e) The loan is taken in the normal way.
 - f) Future is separate contract either to borrow or lend money.
 - g) At expiry date the position is closed out by reversing the original deal.
 - h) The only cash flow that rises is the net interest paid or received.
- **Interest rates options or guarantees (IRG):** is an option on forward rate agreement FRA that is handled over the counter OTC. A call option IRG is called borrowers IRG and a put option IRG is called lenders IRG.
Decision rule is simple, exercise the option if interest rates have moved adversely and allow the option to lapse if the interest rate has moved adversely.

- **Interest rates SWAP:** an agreement between two parties where one stream of future interest payments is exchanged for another based on a specified principal amount. Interest rates swaps often exchange fixed payment for a floating payment , because they trade OTC ,they are really just contracts set up between two or more parties, and thus can be customized in any number of ways.
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