MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY, GORAKHPUR, U.P. INDIA

DEPARTMENT OF HUMANITIES AND MANAGEMENT SCIENCE

A Presentation on

Working Capital Management (MBA-FM1)

By- Dr. Kahkashan Khan
(Assistant Professor)
HMSD, MMMUT, Gorakhpur

UNIT-1

Introduction to Working Capital

Meaning of Working Capital

- This traditional definition of working capital shows how much cash (or liquid assets) is available to satisfy the short-term cash requirements imposed by current liabilities.
- Working capital management is a business strategy designed to ensure that a company operates efficiently by monitoring and using its current assets and liabilities to the best effect. The primary purpose of working capital management is to enable the company to maintain sufficient cash flow to meet its short-term operating costs and short-term debt obligations.

Nature of Working Capital

- Working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the interrelations that exist between them.

- Current assets refer to those assets which in the ordinary course of business can be, or will be, converted into cash within one year without undergoing a diminution in value and without disrupting the operations of the firm.

  Examples- cash, marketable securities, accounts receivable and inventory.

- Current liabilities are those liabilities which are intended, at their inception, to be paid in the ordinary course of business, within a year, out of the current assets or the earnings of the concern.

  Examples- accounts payable, bills payable, bank overdraft and outstanding expenses.

Objective of Working Capital Management

- The goal of working capital management is to manage the firm's current assets and liabilities in such a way that a satisfactory level of working capital is maintained.
- The interaction between current assets and current liabilities is, therefore the main theme of the theory of the working capital management

Concepts and Definitions of Working Capital

- There are two concepts of working capital:
  Gross and Net.
- Gross working capital- means the total current assets.
- Net working capital- can be defined in two way so
  The difference between current assets and current liabilities.
  The portion of current assets which is financed with long term funds.

Determining Financing-mix

- There are two sources from which funds can be raised for current assets financing-

1) Short term sources, like current liabilities and,

2) long term sources, such as share capital, long term borrowings, internally generated resources like retained earnings, etc.

The Operating-cycle and Working Capital Needs

- The working capital requirements of a firm depends, to a great extent upon the operating cycle of the firm. The operating cycle may be defined as the time duration starting from the procurement of goods or raw materials and ending with the sales realization.
- The length and nature of the operating cycle may differ from one firm to another depending upon the size and nature of the firm.
- The operating cycle of a firm consists of the time required for the completion of the chronological sequence of some or all of the following-

1) Procurement of raw materials and services.
2) Conversion of raw materials into work-in-progress.
3) Conversion of work-in-progress into finished goods.
4) Sale of finished goods.
5) Conversion of receivables into cash.

Operating Cycle

- Working capital is also called a circulating capital or revolving capital. That is the money/capital which circulates in various forms of current assets in a continued manner. For example, at a point of time, funds may be tied up in raw materials, then later converted into semi-finished products, then into finished/ final products and when these finished products are sold, it is converted either into account receivables or cash.
- The American Institute of Certified Public Accountants defined the operating cycle as: “the average time intervening between the acquisition of material or services entering the process and the final cash realization.”

The operating cycle or circulation flow of money can best be projected in the following manner

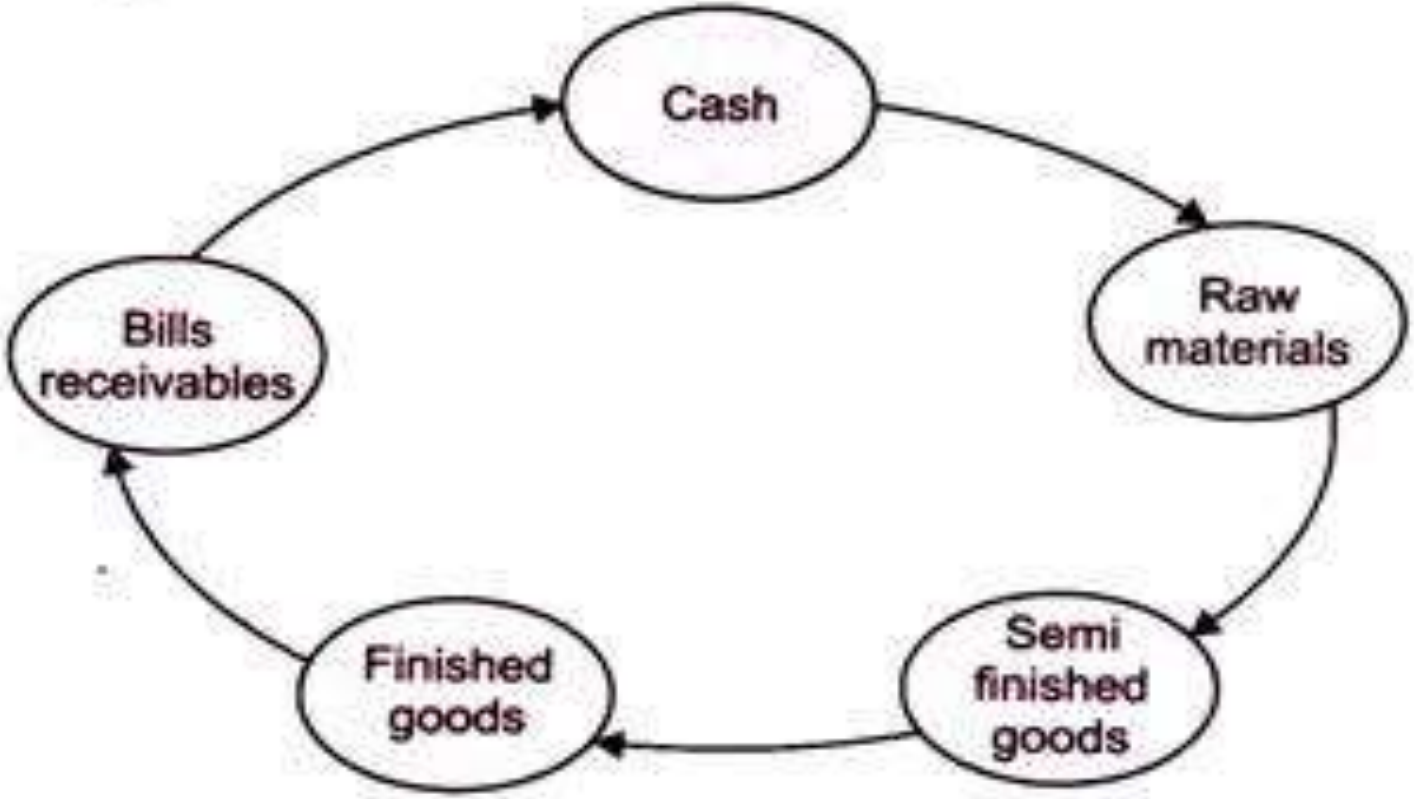


Figure 25.1: Working Capital Operating Cycle

Formula

- **Inventory conversion period**

  Avg. inventory

  = _____

  Cost of Goods Sold /365

- **Receivable conversion period**

  Accounts receivable

  = _____

  Total Net Sales /365

Continued…

- **Payables period**

$$= \frac{\text{Average Accounts payable}}{\text{Cost of Goods Sold/365}}$$

- ***Cash conversion cycle = operating cycle – payables*** period

Determinants of Working capital Requirement

- General nature of business
- Production cycle
- Business cycle fluctuations
- Production policy
- Credit policy
- Growth and expansion
- Profit level
- Level of taxes
- Dividend policy
- Depreciation policy
- Price level changes
- Operating efficiency

Working capital: Policy and Management

- The working capital management includes and refers to the procedures and policies required to manage the working capital.
- There are three types of working capital policies which a firm may adopt i.e.

  Moderate working capital policy

  Conservative working capital policy

  Aggressive working capital policy.

  These policies describe the relationship between the sales level and the level of current assets.

Liquidity versus Profitability- A Risk-Return Trade-off

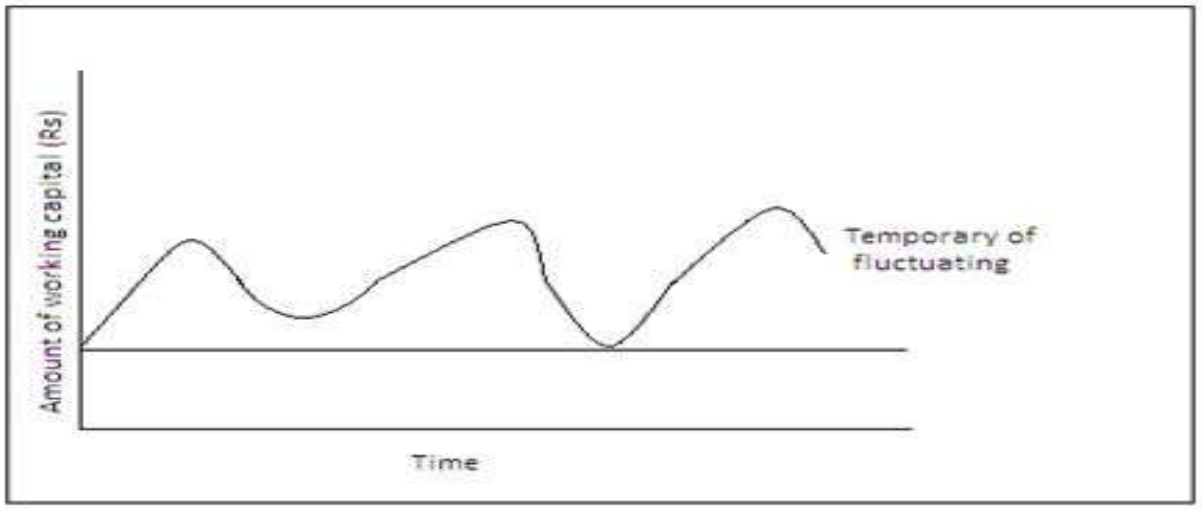
- An important aspect of a working capital policy is to maintain and provide sufficient liquidity to the firm. The decision on how much working capital be maintained involves a trade-off i.e., having a large net working capital may reduce the liquidity-risk faced by the firm, but it can have a negative effect on the cash flows. Therefore, the net effect on the value of the firm should be used to determine the optimal amount of working capital.

Types of working capital needs

- The working capital need can be bifurcated into permanent working capital and temporary working capital.
- **Permanent working capital- There is always a minimum** level of working capital which is continuously required by a firm in order to maintain its activities like cash, stock and other current assets in order to meet its business requirements irrespective of the level of operations.
- **Temporary working capital- Over and above the permanent** working capital, the firm may also require additional working capital in order to meet the requirements arising out of fluctuations in sales volume. This extra working capital needed to support the increased volume of sales is known as temporary or fluctuating working capital.

Difference between permanent & temporary working capital

Permanent or fixed, working capital is the minimum level of current assets. It is permanent in the same away as the firm's fixed assets. It is permanent in the same way as the firm's fixed assets are. Depending upon the changes in production and sales, the need for working capital, over and above permanent working capital, will fluctuate. For example, extra inventory of finished goods will have to be maintained to support the peak periods of sale, and investment in debtors (receivable) may also increase during such periods, On the other hands, investment in raw material, work-process and finished goods will fall if the market is slack.



If is shown that permanent working capital is stable over time, while temporary, working capital is fluctuating sometimes increasing and sometimes decreasing. However, the permanent working capital line need not be horizontal if the firm's requirement for permanent capital is increasing (or decreasing) over a period. For a growing firm the difference between permanent and temporary working capital can be depicted through figure 2.

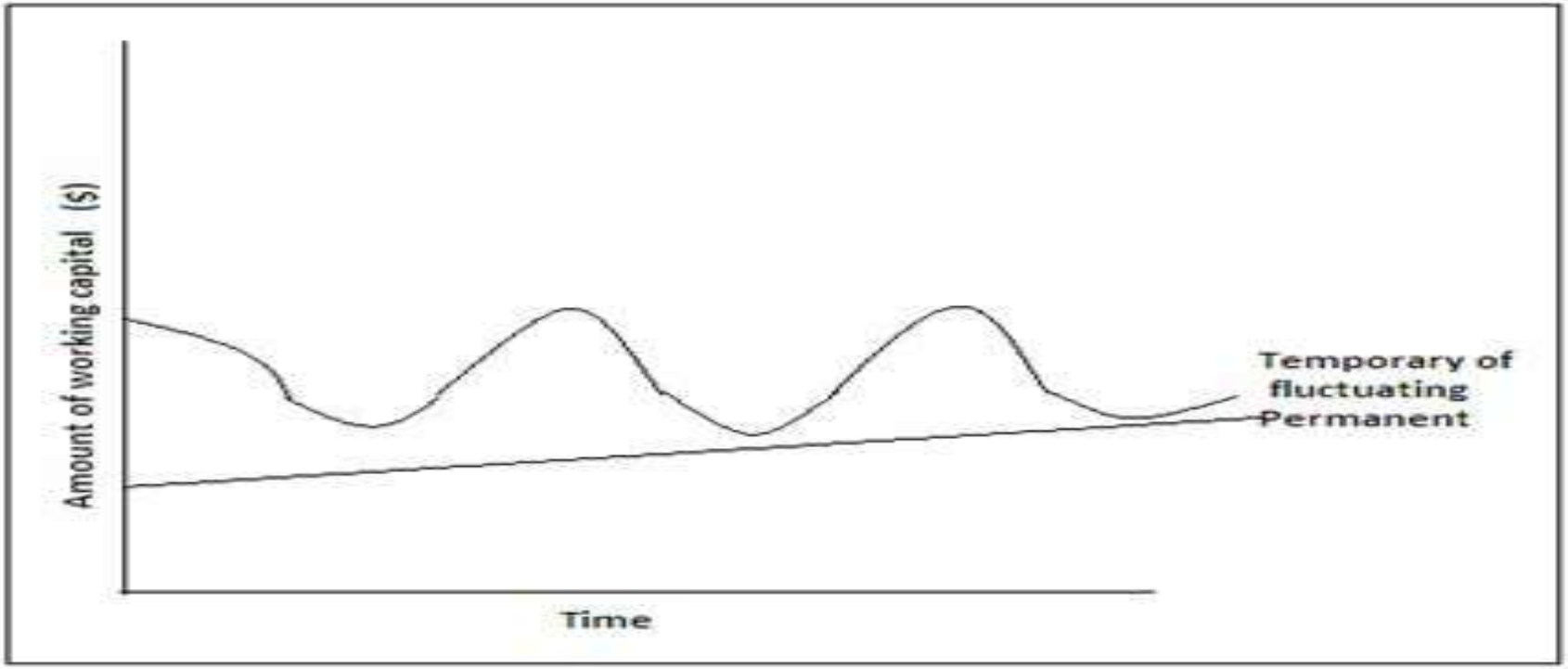


Figure. 2 Permanent and temporary working capital

Approaches to determine an appropriate Financing-mix

- There are three basic approaches to determine an appropriate financing mix:

  • Hedging approach, also called the matching approach,

  • Conservative approach,

  • Aggressive approach.

Hedging Approach/ Matching Approach

- According to this approach, the maturity of the sources of the funds should match the nature of the assets to be financed. For the purpose of analysis, the current assets can be broadly classified into two classes-

  1- which are required in a certain amount for a given level of operation and, hence, do not vary over time.

  2- those which fluctuate over time.
- The Hedging approach suggests that long term funds should be used to finance the fixed portion of current assets requirements in a manner similar to the financing of fixed assets.
- The purely temporary requirements, that is, the seasonal variations over and above the permanent financing needs should be appropriately financed with short term funds.
- This approach, therefore, divides the requirements of total funds into permanent and seasonal components, each being financed by a different source.

Matching approach to asset financing

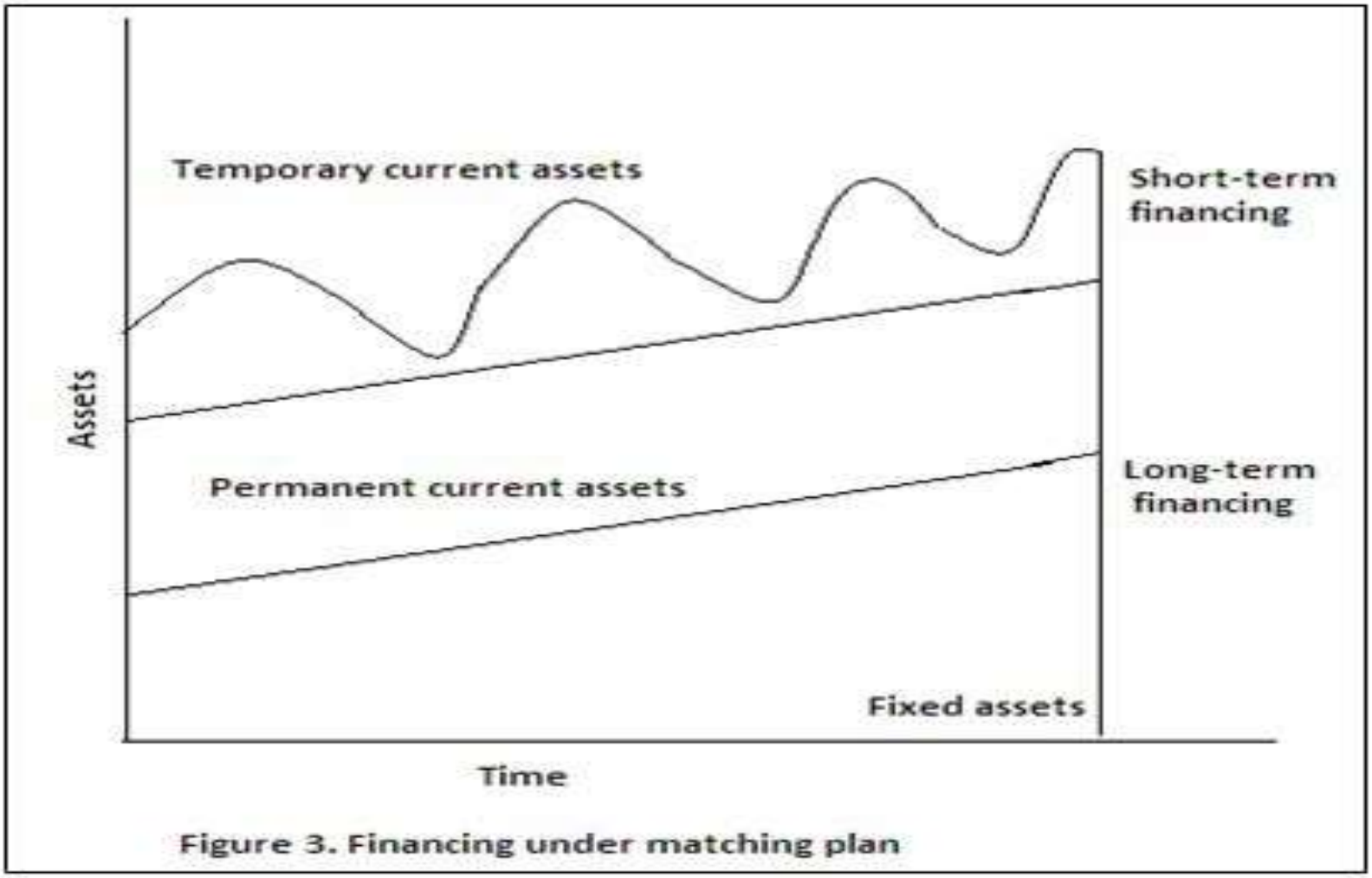


Figure 3. Financing under matching plan

Conservative Approach

- This approach suggests that the estimated requirement of total funds should be met from long term sources; the use of short term funds should b restricted to only emergency situations or when there is an unexpected outflow of funds.

Conservative approach to asset financing

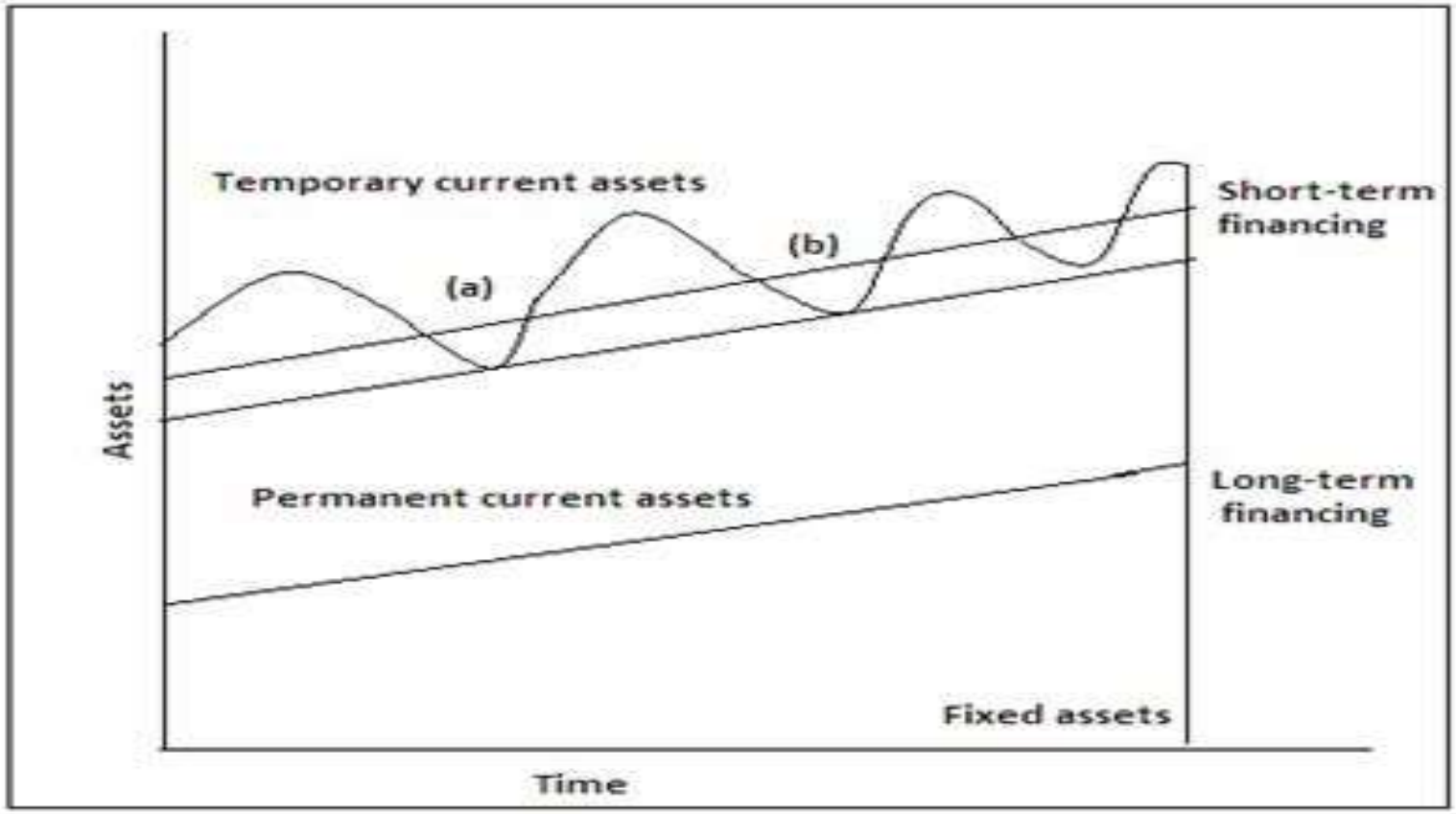


Figure 4 : Conservative financing

Aggressive approach

- A working capital policy is called an aggressive policy if the firm decides to finance a part of the permanent working capital by short term sources. The aggressive policy seeks to minimize excess liquidity while meeting the short term requirements. The firm may accept even greater risk of insolvency in order to save cost of long term financing and thus in order to earn greater return.
- The trade-off between risk and profitability depends largely on the financial manager's attitude towards risk, yet while doing so he must take care of the following factors

1) Flexibility of the mix

2) Cost of financing

3) Risk attached with financing mix

Aggressive approach to asset financing

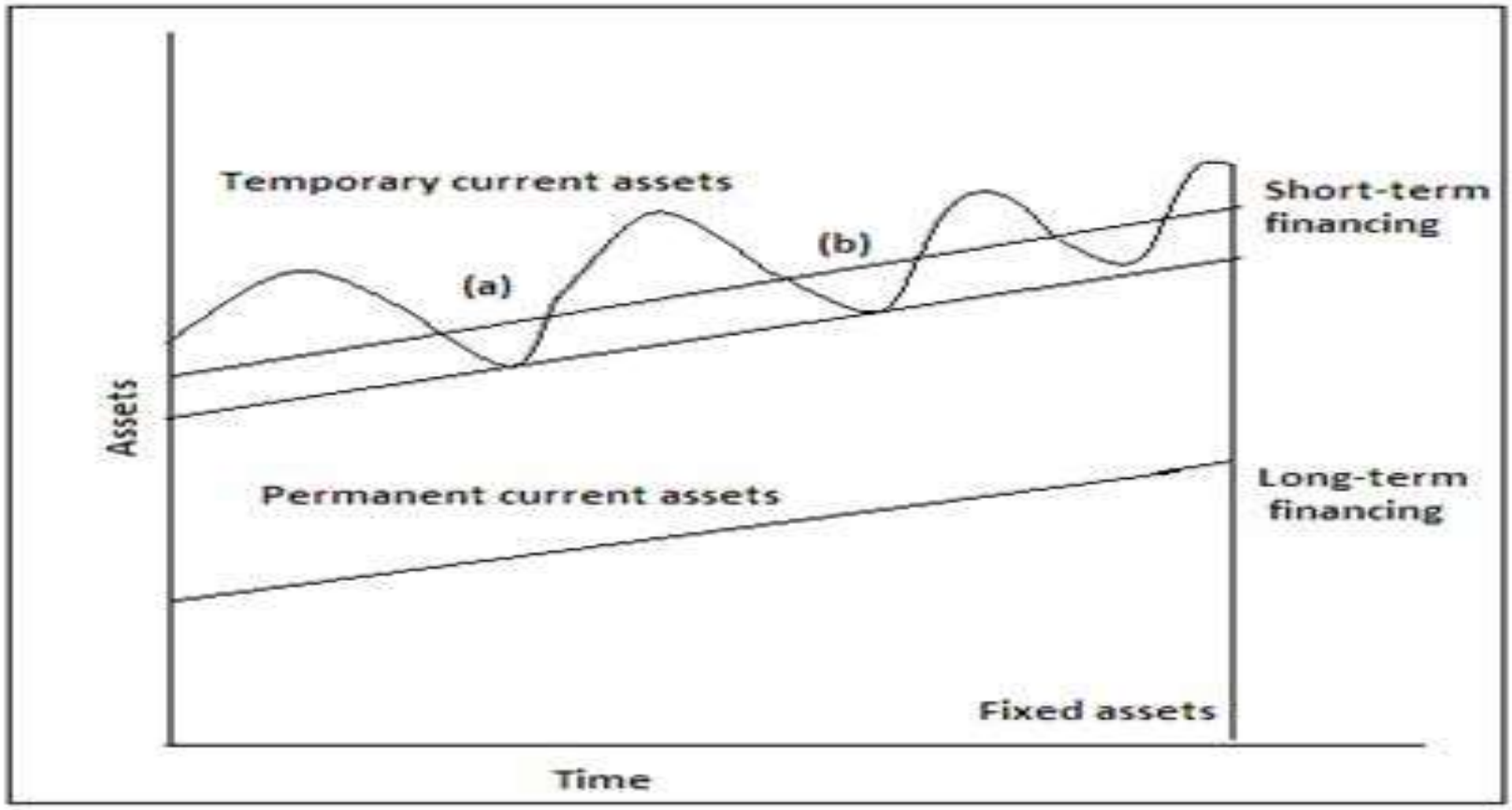


Figure 5 Aggressive Financing

Forecasting / Estimation of Working Capital Requirements

Factors to be considered

1) Total costs incurred on *materials, wages and overheads*

2) The *length of time for which raw materials remain in stores before they* are issued to production.

3) The length of the production cycle or WIP, i.e., *the time taken for conversion of RM into FG.*

4) The *length of the Sales Cycle during which FG are to be kept waiting for* sales.

5) The average period of *credit allowed to customers.*

Continued…

6) The amount of cash required to pay day-to-day expenses of the business.

7) The amount of cash required for advance payments if any.

8) The average period of credit to be allowed by suppliers.

9) Time – lag in the payment of wages and other overheads.

PROFORMA -WORKING CAPITAL ESTIMATES
Trading Concern

PROFORMA - WORKING CAPTIAL ESTIMATES

1. TRADING CONCERN

STATEMENT OF WORKING CAPITAL REQUIREMENTS

	Amount (Rs.)
Current Assets	
(i) Cash	----
(ii) Receivables (For…..Month's Sales)----	----
(iii) Stocks (For……Month's Sales)-----	----
(iv)Advance Payments if any	----
Less : Current Liabilities	
(i) Creditors (For….. Month's Purchases)-	----
(ii) Lag in payment of expenses	----
WORKING CAPITAL (CA – CL)	xxx
Add : Provision / Margin for Contingencies	-----
NET WORKING CAPITAL REQUIRED	XXX

Manufacturing Concern

1. MANUFACTURING CONCERN

STATEMENT OF WORKING CAPITAL REQUIREMENTS

	Amount (Rs.)
Current Assets	
(i) Stock of R M(for ....month's consumption)	-----
(ii)Work-in-progress (for...months)	
(a) Raw Materials	-----
(b) Direct Labour	-----
(c) Overheads	-----
(iii) Stock of Finished Goods (for ...month's sales)	
(a) Raw Materials	-----
(b) Direct Labour	-----
(c) Overheads	-----
(iv) Sundry Debtors (for ...month's sales)	
(a) Raw Materials	-----
(b) Direct Labour	-----
(c) Overheads	-----
(v) Payments in Advance (if any)	-----
(iv) Balance of Cash for daily expenses	-----
(vii)Any other item	-----
Less : Current Liabilities	
(i) Creditors (For..... Month's Purchases)	-----
(ii) Lag in payment of expenses	-----
(iii) Any other	-----
WORKING CAPITAL (CA – CL)xxxx	
Add : Provision / Margin for Contingencies	-----
NET WORKING CAPITAL REQUIRED	XXX

UNIT- 2

Working Capital Financing

Working Capital Finance

- Working Capital is a financial metric which represents operating liquidity available to a business.

  The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses.

Need and Objectives of Financing Working Capital

- The primary objective of working capital management is to ensure smooth operating cycle of the business. Secondary objectives are to optimize the level of working capital and minimize the cost of such funds.
- The superior objective of financial management is wealth maximization and that can be gained by profit maximization accompanied with sustainable growth and development. For sustainable growth and development, the objectives of all the stakeholders including customers, suppliers, employees, etc should be aligned to the growth of the organization.

Continued..

This implies that the operating cycle i.e. the cycle starting from the acquisition of raw material to its conversion to cash should be smooth. It is Objectives of Working Capital Management not easy; it is as good as circulating 5 balls with two hands without dropping a single one. If following 6 points can be managed, this operating cycle can be management well.

- It means raw material should be present on the requirement and it should not be a cause to stoppages of production.
- All other requirements of production should be in place before time.
- The finished goods should be sold as early as possible once they are produced and inventoried.
- The accounts receivable should be collected on time.
- Accounts payable should be paid when due without any delay.
- Cash should be available as and when required along with some cushion

Sources of Permanent Working Capital Finance

1. Shares
2. Debentures
3. Public Deposits
4. Ploughing Back of Profits

Shares

- The issue of shares is the most common method of raising long term funds. Every company uses this method of financing.
- The capital of a company is divided into units of a fixed value. These units are called shares. In other words, a share is a fractional part of the capital of a company. According to sec 2(6) of the Company's Act, 1956 "A Share is the share in the capital of the company and includes stock except where a distinction between stock and share is expressed or implied".
- A person who holds one or more shares is called a shareholder or a member of the company. A shareholder receives dividend from the company as a consideration for investing his money into the company. However, the payment of dividend is not compulsory. The power to recommend dividend rests in the board of directors of the company.

Preference Shares

- Preference shares are those shares who have got preferential rights over other type's shares regarding payment of dividend and repayment of capital in the event of liquidation or winding up. Preference shareholders are entitled for a fixed rate of dividend on preference share capital.
- Preference shareholders do not have voting rights as they have no say in the management of the company. However, they can vote if their own interests are affected. Those investors who want their money to fetch a constant rate of return in case of low earning will prefer to invest in preference shares.

Equity Shares

- According to the Companies Act 1956, equity shares are those which are not preference shares. They do not carry any preferential rights either in respect of dividend or in respect of repayment of capital at the time of liquidation of the company. Equity shares are also known as ordinary shares or common shares, and they represent the owner's capital in a company.
- The holders of these shares are the real owners of the company. They have control over the working of the company. They are paid dividend after paying it to the preference shareholders. The rate of dividend on these shares depends upon the profits of the company. They may be paid a higher rate of dividend in case of huge profits and allow rate of dividend in case of less profits.
- Equity shares are the main sources of finance and it is contributed by owners of the company. In the case of new companies, the promoters must contribute to equity shares first and then the balance of shares is issued to the public. When an existing company issues new equity shares to the existing shareholders, it is called as rights issue. When a company distributes the profits to the shareholders in the form of equity shares they are called as bonus shares.

Debentures

- A debenture is a document issued by a company as an evidence of a debt due from the company with or without a charge on the assets of the company. It is an instrument issued by a company under its common seal acknowledging a debt due by it to its holders.
- According to section 2(12) of the Companies Act, 1956, “Debenture includes debenture stock, bonds and any other securities of a company whether constituting a charge on the assets of the company or not”.
- The persons to whom the debentures are issued are called Debenture holders. Debenture holders are not the owners of the company. They are just the loan creditors of the company.

Public Deposits

Often companies find it easy and convenient to raise short- term funds by inviting shareholders, employees and the general public to deposit their savings with the company. It is a simple method of raising funds from public for which the company has only to advertise and inform the public that it is authorized by the Companies Act 1956, to accept public deposits.

Public deposits can be invited by offering a higher rate of interest than the interest allowed on bank deposits. However, the companies can raise funds through public deposits subject to a maximum of 25% of their paid up capital and free reserves.

Advantages of raising funds through public deposits

- 1. It is less costly method for raising short term as well as medium term funds required by the business.
- 2. The procedure for raising funds through public deposits is more simple and convenient.
- 3. There is no need for creation of any charge on the assets of the company for raising funds through public deposits.
- 4. The company can take advantage of trading on equity as the maturity period of deposits and the rates of interest are fixed.

Disadvantages of raising funds through public deposits

- 1. The quantum of funds that can be raised through public deposits is limited.
- 2. Raising funds through public deposits is not reliable and definite source of finance.
- 3. The maturity period of public deposits is also short.
- 4. A heavy reliance on public deposits for medium term financing by companies may adversely affect the shares and debentures to general public.

Ploughing Back of Profits

- The Ploughing back of profits is a financial management technique under which an organization can retain certain amount of profits for reinvestment in the company. The process of retaining certain amount of profit every year and utilizing the same in the business is known as Ploughing back of profits or retained earnings.
- It is an economical source of financing because an organization need not incur any expenditure to raise this source of financing. From all the practices of financial management, this system of Ploughing back of profits is desirable as it helps in the financial and economic stability of the concern.

Need For Ploughing Back of Profits

- **The need for Ploughing back of profits or retained earnings arises due to the following reasons:**

1. For expansion of business.
2. For replacement of an old asset.
3. For contributing towards fixed and working capital needs of the company.
4. For redemption of debts or debentures.
5. For development of existing business.

Sources of Temporary Working Capital Finance

1.Loans from commercial banks

2. Letter of Credit

3. Trade credit

4. Factoring

5. Discounting bills of exchange

6. Bank overdraft and cash credit

7. Advances from customers

8. Accrual accounts

9. Certificates of Deposits

10. Commercial Papers

Loans from Commercial Banks

Small-scale enterprises can raise loans from the commercial banks with or without security. This method of financing does not require any legal formality except that of creating a mortgage on the assets. Loan can be paid in lump sum or in parts. The short-term loans can also be obtained from banks on the personal security of the directors of a country.

Such loans are known as clean advances. Bank finance is made available to small- scale enterprises at concessional rate of interest. Hence, it is generally a cheaper source of financing working capital requirements of enterprise. However, this method of raising funds for working capital is a time-consuming process.

Letter of Credits

It is a document that a financial institution issues to a seller of goods or services which says that the issuer will pay the seller for goods/services the seller delivers to a third-party buyer. The issuer then seeks reimbursement from the buyer or from the buyer's bank. The document is essentially a guarantee to the seller that it will be paid by the issuer of the Letter of Credit, upon the failure of the buyer to pay. In this way, the risk that the buyer fails to pay is transferred from the seller to the issuer of a Letter of Credit

Trade Credit

Just as the companies sell goods on credit, they also buy raw materials, components and other goods on credit from their suppliers. Thus, outstanding amounts payable to the suppliers i.e., trade creditors for credit purchases are regarded as sources of finance. Generally, suppliers grant credit to their clients for a period of 3 to 6 months.

Thus, they provide, in a way, short- term finance to the purchasing company. As a matter of fact, availability of this type of finance largely depends upon the volume of business. More the volume of business more will be the availability of this type of finance and vice versa.

Factoring

Factoring is a financial service designed to help firms in managing their book debts and receivables in a better manner. The book debts and receivables are assigned to a bank called the 'factor' and cash is realised in advance from the bank. For rendering these services, the fee or commission charged is usually a percentage of the value of the book debts/receivables factored.

This is a method of raising short-term capital and known as 'factoring'. On the one hand, it helps the supplier companies to secure finance against their book debts and receivables, and on the other, it also helps in saving the effort of collecting the book debts.

The disadvantage of factoring is that customers who are really in genuine difficulty do not get the opportunity of delaying payment which they might have otherwise got from the supplier company.

Continued..

In the present context where industrial sickness is spreading like an epidemic, the reason for which particularly in SSI sector being delayed payments from their suppliers; there is a clear-cut rationale for introduction of factoring system. There has been some progress also on this front.

The recommendations of the Study Group (RBI 1996) to examine the feasibility of setting up of factoring organisations in the country, under the Chairmanship of Shri C. S. Kalyanasundaram have been accepted by the Government of India. The Group is of the view that factoring for SSI units could prove to be mutually beneficial to both Factors and SSI units and Factors should make every effort to orient their strategy to crystallize the potential demand from the sector.

Discounting Bills of Exchange

When goods are sold on credit, bills of exchange are generally drawn for acceptance by the buyers of goods. The bills are generally drawn for a period of 3 to 6 months. In practice, the writer of the bill, instead of holding the bill till the date of maturity, prefers to discount them with commercial banks on payment of a charge known as discount.

The term 'discounting of bills' is used in case of time bills whereas the term, 'purchasing of bills' is used in respect of demand bills. The rate of discount to be charged by the bank is prescribed by the Reserve Bank of India (RBI) from time to time. It generally amounts to the interest for the period from the date of discounting to the date of maturity of bills.

Continued..

If a bill is dishonoured on maturity, the bank returns the dishonoured bill to the company who then becomes liable to pay the amount to the bank. The cost of raising finance by this method is the amount of discount charged by the bank. This method is widely used by companies for raising short-term finance.

Bank Overdraft and Cash Credit

- Overdraft is a facility extended by the banks to their current account holders for a short-period generally a week. A current account holder is allowed to withdraw from its current deposit account upto a certain limit over the balance with the bank. The interest is charged only on the amount actually overdrawn. The overdraft facility is also granted against securities.
- Cash credit is an arrangement whereby the commercial banks allow borrowing money up to a specified-limit known as 'cash credit limit.' The cash credit facility is allowed against the security. The cash credit limit can be revised from time to time according to the value of securities. The money so drawn can be repaid as and when possible.

Continued..

The interest is charged on the actual amount drawn during the period rather on limit sanctioned. The rate of interest charged on both overdraft and cash credit is relatively higher than the rate of interest given on bank deposits. Arranging overdraft and cash credit with the commercial banks has become a common method adopted by companies for meeting their short- term financial, or say, working capital requirements.

Advances from Customers

One way of raising funds for short-term requirement is to demand for advance from one's own customers. Examples of advances from the customers are advance paid at the time of booking a car, a telephone connection, a flat, etc. This has become an increasingly popular source of short-term finance among the small business enterprises mainly due to two reasons.

First, the enterprises do not pay any interest on advances from their customers. Second, if any company pays interest on advances, that too at a nominal rate. Thus, advances from customers become one of the cheapest sources of raising funds for meeting working capital requirements of companies.

Accrual Accounts

Generally, there is a certain amount of time gap between incomes is earned and is actually received or expenditure becomes due and is actually paid. Salaries, wages and taxes, for example, become due at the end of the month but are usually paid in the first week of the next month. Thus, the outstanding salaries and wages as expenses for a week help the enterprise in meeting their working capital requirements. This source of raising funds does not involve any cost.

Commercial Paper

Commercial paper, also called CP, is a short-term debt instrument issued by companies to raise funds generally for a time period up to one year. It is an unsecured money market instrument issued in the form of a promissory note and was introduced in India for the first time in 1990.

Companies that enjoy high ratings from rating agencies often use CPs to diversify their sources of short-term borrowings. This gives investors an additional instrument. They are typically issued by large banks or corporations to cover short-term receivables and meet short-term financial obligations, such as funding for a new project.

Continued..

- CPs have a minimum maturity of seven days and a maximum of up to one year from the date of issue. However, the maturity date of the instrument should typically not go beyond the date up to which the credit rating of the issuer is valid. They can be issued in denominations of Rs 5 lakh or multiples thereof.

  Since such instruments are not backed by collateral, only firms with high ratings from a recognised credit rating agency can sell such commercial papers at a reasonable price. CPs are usually sold at a discount to their face value, and carry higher interest rates than bonds.

Certificates of Deposits

- The Certificate of Deposit (CD) is an agreement between the depositor and the bank where a predetermined amount of money is fixed for a specific time period
- Issued by the Federal Deposit Insurance Corporation (FDIC) and regulated by the Reserve Bank of India, the CD is a promissory note, the interest on which is paid by the bank
- The Certificate of Deposit is issued in dematerialised form i.e. issued electronically and may automatically be renewed if the depositor fails to decide what to do with the matured amount during the grace period of 7 days
- It also restricts the holder from withdrawing the amount on demand or paying a penalty, otherwise. When the Certificate of Deposit matures, the principal amount along with the interest earned is available for withdrawal.

Features of COD

- **Eligibility:** Not all institutions or banks are allowed to issue Certificates of Deposit and not every individual or organization can purchase one. There are certain conditions laid down by the RBI that allow the purchase of CDs
- **Maturity Period:** A Certificate of Deposit issued by the commercial banks can have a maturity period ranging from 7 days to 1 year. For financial institutions, it ranges from 1 year to 3 years
- **Minimum investment amount**– A CD can be issued to a single issuer for a minimum of Rs.1 Lakh and its multiples
- **Transferability:** Certificates that are available in Demat forms must be transferred according to the guidelines followed by Demat securities. While dematerialised/electronic certificates can be transferred by endorsement or delivery
- **Non-availability of loan:** Since these instruments do not have any lock-in period, banks do not grant loans against them. In fact, banks cannot even buy back certificates of deposit before maturity
- **Discount offered**– Certificate of deposit is issued at a discounted rate on the face value. Moreover, banks and financial institutions can also issue CDs on a floating rate basis

Recent Developments

1.EVA (Economic Value Added)

2.MVA (Market Value Added)

3.CAPM (Capital Asset Pricing Model)

EVA (Economic Value Added)

- Economic value added (EVA) is a performance measure developed by Stern Stewart & Co. (now known as Stern Value Management) that attempts to measure the true economic profit produced by a company. It is frequently also referred to as "economic profit," and provides a measurement of a company's economic success (or failure) over a period of time. Such a metric is useful for investors who wish to determine how well a company has produced value for its investors, and it can be compared against the company's peers for a quick analysis of how well the company is operating in its industry.
- Economic profit can be calculated by taking a company's net after-tax operating profit and subtracting from it the product of the company's invested capital multiplied by its percentage cost of capital.

MVA (Market Value Added)

- Market value added (MVA), on the other hand, is simply the difference between the current total market value of a company and the capital contributed by investors (including both shareholders and bondholders). It is typically used for companies that are larger and publicly-traded. MVA is not a performance metric like EVA but instead is a wealth metric, measuring the level of value a company has accumulated over time.
- As a company performs well over time, it will retain earnings. This will improve the book value of the company's shares, and investors will likely bid up to the prices of those shares in expectation of future earnings, causing the company's market value to rise. As this occurs, the difference between the company's market value and the capital contributed by investors (its MVA) represents the excess price tag the market assigns to the company as a result of its past operating successes.

Formula of MVA

MVA = Market Value of Shares – Book Value of Shareholders' Equity

CAPM (Capital Asset Pricing Model)

- The Capital Asset Pricing Model (CAPM) is a model that describes the relationship between the expected return and risk of investing in a security. It shows that the expected return on a security is equal to the risk-free return plus a risk premium, which is based on the beta of that security. Below is an illustration of the CAPM concept.
- The capital asset pricing model is a formula that can be used to calculate an asset's expected return versus its systematic risk. An asset's expected return refers to the loss or profit that you anticipate based on its anticipated or known rate of return. The capital market line is a tangent line and represents asset and investment mixtures that provide an optimal combination of risk and returns.

Systematic risk vs. unsystematic risk

- Unsystematic risk is a type of risk that affects a particular company. Unsystematic risk is also referred to as non-systematic risk. You cannot completely dissolve unsystematic risk with diversification. Instead, unsystematic risk can only be reduced by allocating your assets or hedging.
- When you hedge, you offset an investment against another one. Your asset allocation is how you apportion your capital assets in your investment account. Allocating your assets helps you to protect against risk.

The CAPM formula

$$ERi = Rf + \beta i(ERm - Rf)$$

where:

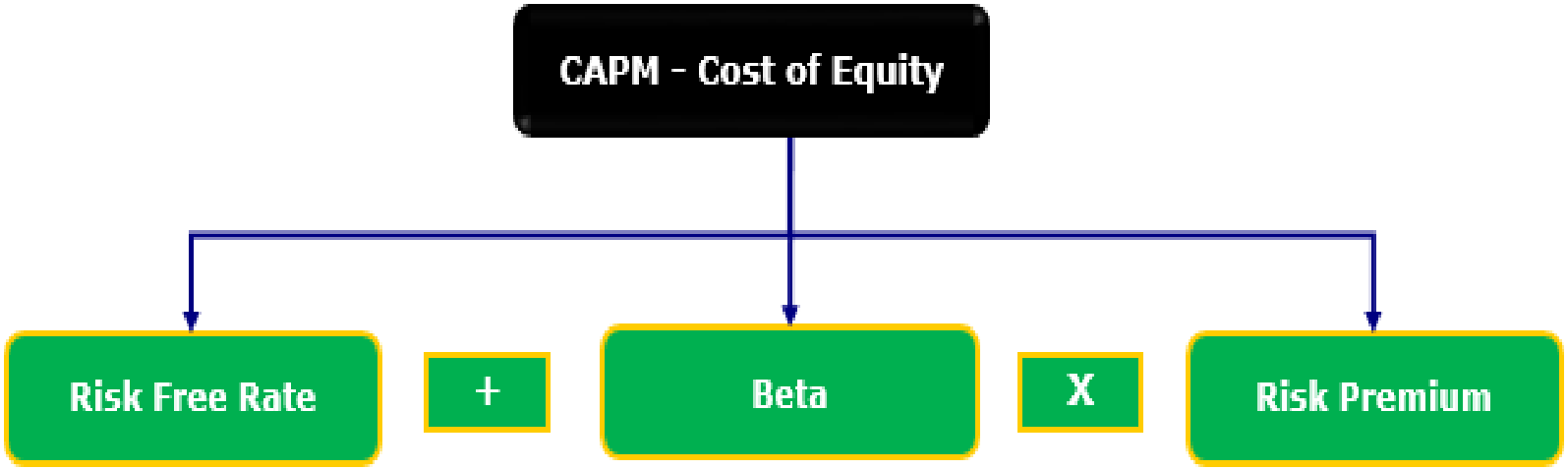
ERi=expected return of investment

Rf=risk-free rate

βi=beta of the investment

$(ERm - Rf)$=market risk premium

Components of Capital Asset Pricing Model (CAPM)

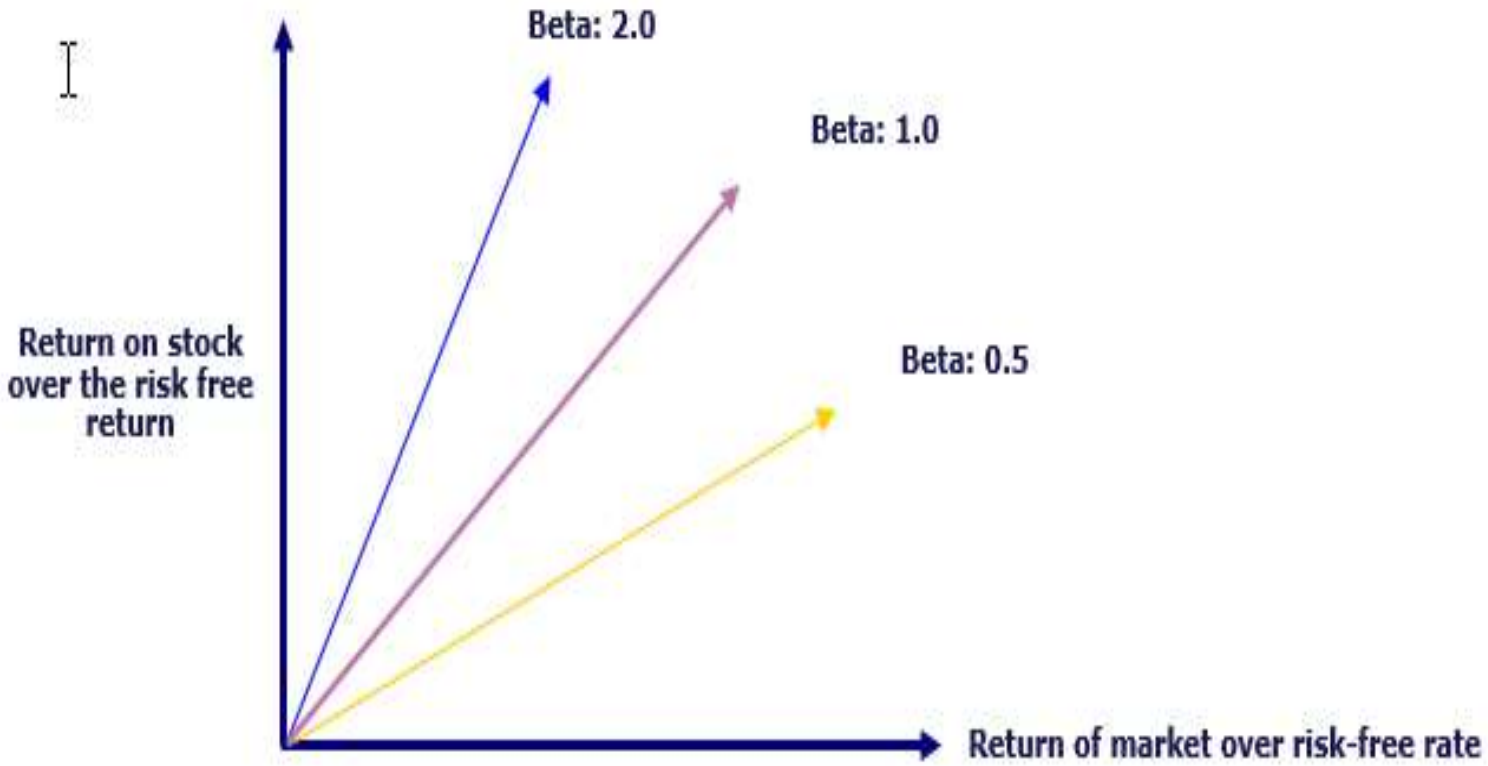


- The return investor expects from a completely risk free investment
- Should be in the currency cash flow

- The degree to which a company's equity returns vary with the return of the overall market
- Beta is a function of both the business risk as well as the financial risk
- Beta is a measure of systematic risk

- Investing in stock market is riskier than investing in government bond
- Investors expect a higher return to induce them to take the higher risk of investing in equities

Capital Asset Pricing Model (CAPM)



Example

- Suppose a stock has the following information. It is listed on the London stock exchange and operates throughout Europe. The yield on a U.K 10 year treasury is 2.8%. The stock in question supposed to earn 8.6% as per historical data. The Beta for the stock is 1.4 i.e. it is 140% volatile to the changes in the general stock market.

- **CAPM Formula** (Expected return) = Risk free return (2.8%) + Beta (1.4) * Market risk premium (8.6%-2.8%)
- = 2.8 + 1.4*(5.8)
- = 2.8 + 8.12
- **Expected Rate of Return = 10.92**