

Advanced Financial Management

- Understand the impact of dividend decision on valuation of a firm.
- MM, Walter and Gordon's Approach.
- Determinants of dividend policy.
- Types of dividend policy.
- Effects and objects of bonus issue.
- SEBI Guidelines for the issue of bonus shares.
- Accounting for bonus issue.

INTRODUCTION

The term dividend refers to that part of profits of a company which is distributed by the company among its shareholders. It is the reward of the shareholders for investments made by them in the shares of the company. The investors are interested in earning the maximum return on their investments and to maximise their wealth. A company, on the other hand, needs to provide funds to finance its long-term growth. If a company pays out as dividend most of what it earns, then for business requirements and further expansion it will have to depend upon outside resources such as issue of debt or new shares. Dividend policy of a firm, thus affects both the long-term financing and the wealth of shareholders. As a result, the firm's decision to pay dividends must be reached in such a manner so as to equitably apportion the distributed profits and retained earnings. Since dividend is a right of shareholders to participate in the profits and surplus of the company for their investment in the share capital of the company, they should receive fair amount of the profits. The company should, therefore, distribute a reasonable amount as dividends (which should include a normal rate of interest plus a return for the risks assumed) to its members and retain the rest for its growth and survival.

DIVIDEND DECISION AND VALUATION OF FIRMS

The value of the firm can be maximised if the shareholders' wealth is maximised. There are conflicting views regarding the impact of dividend decision on the valuation of the firm. According to one school of thought, dividend decision does not affect the share-holders' wealth and hence the valuation of the firm. On the other hand, according to the other school of thought, dividend decision materially affects the shareholders' wealth and also the valuation of the firm. We have discussed below the views of the two schools of thought under two groups :

1. The Irrelevance Concept of Dividend or the Theory of Irrelevance, and
2. The Relevance Concept of Dividend or the Theory of Relevance.

1. THE IRRELEVANCE CONCEPT OF DIVIDEND OR THE THEORY OF IRRELEVANCE :

A. RESIDUAL APPROACH

According to this theory, dividend decision has no effect on the wealth of the shareholders or the

prices of the shares, and hence it is irrelevant so far as the valuation of the firm is concerned. This theory regards dividend decision merely as a part of financing decision because the earnings available may be retained in the business for re-investment. But, if the funds are not required in the business they may be distributed as dividends. Thus, the decision to pay dividends or retain the earnings may be taken as a residual decision. This theory assumes that investors do not differentiate between dividends and retentions by the firm. Their basic desire is to earn higher return on their investment. In case the firm has profitable investment opportunities giving a higher rate of return than the cost of retained earnings, the investors would be content with the firm retaining the earnings to finance the same. However, if the firm is not in a position to find profitable investment opportunities, the investors would prefer to receive the earnings in the form of dividends. Thus, a firm should retain the earnings if it has profitable investment opportunities otherwise it should pay them as dividends.

B. MODIGLIANI AND MILLER APPROACH (MM MODEL)

Modigliani and Miller have expressed in the most comprehensive manner in support of the theory of irrelevance. They maintain that dividend policy has no effect on the market price of the shares and the value of the firm is determined by the earning capacity of the firm or its investment policy. The splitting of earnings between retentions and dividends, may be in any manner the firm likes, does not affect the value of the firm. As observed by M.M. "Under conditions of perfect capital markets, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend policy may have no influence on the market price of the shares."¹

Assumptions of MM Hypothesis

The MM hypothesis of irrelevance of dividends is based on the following assumptions :

- (i) There are perfect capital markets.
- (ii) Investors behave rationally.
- (iii) Information about the company is available to all without any cost.
- (iv) There are no floatation and transaction costs.
- (v) No investor is large enough to effect the market price of shares.
- (vi) There are either no taxes or there are no differences in the tax rates applicable to dividends and capital gains.
- (vii) The firm has a rigid investment policy.
- (viii) There is no risk or uncertainty in regard to the future of the firm. (MM dropped this assumption later).

The Argument of MM

The argument given by MM in support of their hypothesis is that whatever increase in the value of the firm results from the payment of dividend, will be exactly off set by the decline in the market price of shares because of external financing and there will be no change in the total wealth of the shareholders. For example, if a company, having investment opportunities, distributes all its earnings among the shareholders, it will have to raise additional funds from external sources. This will result in the increase in number of shares or payment of interest charges, resulting in fall in the earnings per share in the future. Thus whatever a shareholder gains on account of dividend payment is neutralised completely by the fall in the market price of shares due to decline in expected future earnings per share. To be more specific, the market price of a share in the beginning of a period is equal to the present value of dividends paid at the end of the period plus the market price of the shares at the end of the period. This can be put in the form of the following formula :

$$P_0 = \frac{D_1 + P_1}{1 + K_e}$$

- Where P_0 = Market price per share at the beginning of the period, or prevailing market price of a share
 D_1 = Dividend to be received at the end of the period.

1. Miller, M.H. and F.Modigliani, " Dividend Policy, Growth and Valuation of Journal of Business, October 1961.

P_1 = Market price per share at the end of the period.
 K_e = Cost of equity capital or rate of capitalisation.

The value of P_1 can be derived by the above equation as under :

$$P_1 = P_0 (1 + k_e) - D_1$$

The MM hypothesis can be explained in another form also presuming that investment required by the firm on account of payment of dividends is financed out of the new issue of equity shares.

In such a case, the number of shares to be issued can be computed with the help of the following equation:

$$m = \frac{I (E - nD_1)}{P_1}$$

Further, the value of the firm can be ascertained with the help of the following formula :

$$nP_0 = \frac{(n+m)P_1 - (I - E)}{1 + k_e}$$

Where,

m = number of shares to be issued.

I = Investment required.

E = Total earnings of the firm during the period.

P_1 = Market price per share at the end of the period.

K_e = Cost of equity capital.

n = number of shares outstanding at the beginning of the period.

D_1 = Dividend to be paid at the end of the period.

nP_0 = Value of the firm

Let us take the following illustration to illustrate MM hypothesis of irrelevance of dividend to the valuation of firm.

Illustration 1. ABC Ltd. belongs to a risk class for which the appropriate capitalisation rate is 10%. It currently has outstanding 5,000 shares selling at Rs.100 each. The firm is contemplating the declaration of dividend of Rs.6 per share at the end of the current financial year. The company expects to have a net income of Rs.50,000 and has a proposal for making new investments of Rs.1,00,000. Show that under the MM hypothesis, the payment of dividend does not effect the value of the firm.

Solution :

(A) Value of the firm when dividends are paid :

(i) Price of the share at the end of the current financial year

$$P_1 = P_0 (1 + k_e) - D_1$$

$$= 100 (1 + 10) - 6$$

$$= 100 \times 1.10 - 6$$

$$= 110 - 6 = \text{Rs. } 104$$

(ii) Number of shares to be issued

$$m = \frac{I - (E - nD_1)}{P_1}$$

$$= \frac{1,00,000 - (50,000 - 5,000 \times 6)}{104}$$

$$= \frac{80,000}{104}$$

(iii) Value of the firm

$$nP_0 = \frac{(n+m)P_1 - (I - E)}{1 + k_e}$$

$$= \frac{\left(5,000 + \frac{80,000}{104}\right) \times 104 - (1,00,000 - 50,000)}{1 + 10}$$

Criticism of MM Approach

MM hypothesis has been criticised on account of various unrealistic assumptions as given below.

1. Perfect capital market does not exist in reality.
2. Information about the company is not available to all the persons.
3. The firms have to incur flotation costs while issuing securities.
4. Taxes do exit and there is normally different tax treatment for dividends and capital gains.
5. The firms do not follow a rigid investment policy.
6. The investors have to pay brokerage, fees, etc. while doing any transaction.
7. Shareholders may prefer current income as compared to further gains.

2. THE RELEVANCE CONCEPT OF DIVIDEND OR THE THEORY OF RELEVANCE

The other school of thought on dividend decision holds that the dividend decisions considerably affect the value of the firm. The advocates of this school of thought include Myron Gordon, Jone Linter, James Walter and Richardson. According to them dividends communicate information to the investors about the firms' profitability and hence dividend decision becomes relevant. Those firms which pay higher dividends, will have greater value as compared to those which do not pay dividends or have a lower dividend pay out ratio. We have examined below two theories representing this notion:

(i) Walter's Approach, and (ii) Gordon's Approach

(i) WALTER'S APPROACH

Prof. Walter's approach supports the doctrine that dividend decisions are relevant and affect the value of the firm. The relationship between the internal rate of return earned by the firm and its cost of capital is very significant in determining the dividend policy to subservise the ultimate goal of maximising the wealth of the share holders. Prof. Walter's model is based on the relationship between the firm's (r) return on investment, i.e. r , and (k) the cost of capital or the required rate of return, $j.e.k$.

According to Prof. Walter, If $r > k$ i.e., if the firm earns a higher rate of return on its investment than the required rate of return, the firm should retain the earnings. Such firms are termed as growth firm's and the optimum pay-out would be zero in their case. This would maximise the value of shares.

In case of declining firms which do not have profitable investments, i.e., where $r < k$, the shareholders would stand to gain if the firm distributes its earnings. For such firms, the optimum pay-out would be 100% and the firms should distribute the entire earnings as dividends.

In case of normal firms where $r = k$, the dividend policy will not affect the market value of shares as the shareholders will get the same return from the firm as expected by them. For such firms, there is no optimum dividend pay out and the value of the firm would not change with the change in dividend rate.

Assumption of Walter's Model

- (i) The investments of the firm are financed through retained earnings only and the firm does not use external sources of funds.
- (ii) The internal rate of return (r) and the cost of capital (k) of the firm are constant.
- (iii) Earnings and dividends do not change while determining the value.
- (iv) The firm has a very long life.

Walter's Formula for Determining the Value of a Share

Walter has developed a mathematical equation to ascertain the market price of a share which enables a firm to arrive at the appropriate dividend decision. His equation is based on the following share valuation model :

$$P = \frac{D}{k_e - g}$$

Where ,

P = Price of equity share

D = Initial dividend per share

k_e = Cost of equity capital

g = Expected growth rate of earnings/dividend

Prof. Walter has given the following formula to ascertain the market price of a share :

$$P = \frac{D + r \frac{(E - D)}{k_e}}{k_e}$$

or

$$P = \frac{D}{k_e} + \frac{r(E - D)/k_e}{k_e}$$

where,

P = Market price per share

D = Dividend per share

r = Internal rate of return

E = Earnings per share

k_e = Cost of equity capital

Let us take the following illustration to understand the above equation.

Illustration 3. The following information is available in respect of a firm :

Capitalisation rate = 10%

Earnings per share = Rs.50

Assumed rate of return on investments :

(i) 12%

(ii) 8%

(iii) 10%

Show the effect of dividend policy on market price of shares applying Walter's formula when dividend pay out ratio is (a) 0% (b) 20%, (c) 40%, (d) 80%, and (e) 100%

Solution :

$$P = \frac{D}{k_e} + \frac{r(E - D)/k_e}{k_e}$$

Effect of dividend policy on market price of shares

(i) $r=12\%$

(ii) $r=8\%$

(iii) $r=10\%$

(a) When dividend pay-out ratio is 0%

$$P = \frac{0}{.10} + \frac{.12(50 - 0)/.10}{.10}$$

$$= 0 + \frac{.12(50)}{.10}$$

$$= \text{Rs. } 600$$

(b) When dividend pay-out is 20%

$$P = \frac{10}{.10} + \frac{.12(50 - 10)}{.10}$$

$$= 100 + \frac{48}{.10}$$

$$= \text{Rs. } 580$$

$$P = \frac{0}{.10} + \frac{.08(50 - 0)/.10}{.10}$$

$$= 0 + \frac{.08(50)}{.10}$$

$$= \text{Rs. } 400$$

$$P = \frac{10}{.10} + \frac{.08(50 - 10)}{.10}$$

$$= 100 + 320$$

$$= \text{Rs. } 420$$

$$P = \frac{0}{.10} + \frac{.10(50 - 0)/.10}{.10}$$

$$= 0 + \frac{.10(50)}{.10}$$

$$= \text{Rs. } 500$$

$$P = \frac{10}{.10} + \frac{.10(50 - 10)}{.10}$$

$$= 100 + 400$$

$$= \text{Rs. } 500$$

(c) When dividend pay out is 40%

$$P = \frac{20}{.10} + \frac{.12}{.10}(50 - 20)$$

$$= 200 + \frac{36}{.10}$$

$$= \text{Rs. } 560$$

$$P = \frac{20}{.10} + \frac{.08}{.10}(50 - 20)$$

$$= 200 + 240$$

$$= \text{Rs. } 440$$

$$P = \frac{20}{.10} + \frac{.10}{.10}(50 - 20)$$

$$= 200 + 300$$

$$= \text{Rs. } 500$$

(d) When dividend pay-out is 80%

$$P = \frac{40}{.10} + \frac{.12}{.10}(50 - 40)$$

$$= 400 + 120$$

$$= \text{Rs. } 520$$

$$P = \frac{40}{.10} + \frac{.08}{.10}(50 - 40)$$

$$= 400 + 80$$

$$= \text{Rs. } 480$$

$$P = \frac{40}{.10} + \frac{.10}{.10}(50 - 40)$$

$$= 400 + 100$$

$$= \text{Rs. } 500$$

(e) When dividend pay-out is 100%

$$P = \frac{50}{.10} + \frac{.12}{.10}(50 - 50)$$

$$= 500 + 0$$

$$= \text{Rs. } 500$$

$$P = \frac{50}{.10} + \frac{.08}{.10}(50 - 50)$$

$$= 500 + 0$$

$$= \text{Rs. } 500$$

$$P = \frac{50}{.10} + \frac{.10}{.10}(50 - 50)$$

$$= 500 + 0$$

$$= \text{Rs. } 500$$

Conclusion : From the above analysis we can draw the conclusion that when,

- $r > k$, the company should retain the profits, i.e., when $r = 12\%$, $k = 10\%$;
- r is 8% , i.e., $r < k$, the pay-out should be high; and
- r is 10% ; i.e., $r = k$; the dividend pay-out does not affect the price of the share.

Criticism of Walter's Model

Walter's model has been criticised on account of various assumptions made by Prof. Walter in formulating his hypothesis :

- The basic assumption that investments are financed through retained earnings only is seldom true in real world. Firms do raise funds by external financing.
- The internal rate of return, i.e., r , also does not remain constant. As a matter of fact, with increased investment the rate of return also changes.
- The assumption that cost of capital (k) will remain constant also does not hold good. As a firm's risk pattern does not remain constant, it is not proper to assume that k will always remain constant.

(ii) GORDON'S APPROACH

Myron Gordon has also developed a model on the lines of Prof. Walter suggesting that dividends are relevant and the dividend decision of the firm affects its value. His basic valuation model is based on the following assumptions:

- The firm is an all equity firm.
- No external financing is available or used. Retained earnings represent the only source of financing investment programmes.
- The rate of return on the firm's investment r , is constant.
- The retention ratio, b , once decided upon is constant. Thus, the growth rate of the firm $g = br$, is also constant.
- The cost of capital for the firm remains constant and it is greater than the growth rate, i.e. $k > br$.
- The firm has perpetual life.
- Corporate taxes do not exist.

According to Gordon, the market value of a share is equal to the present value of future stream of dividends. Thus,

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots$$

$$= \sum_{t=1}^{\infty} \frac{Dt}{(1+k)^t}$$

Gordon's basic valuation formula can be simplified as under :

$$P = \frac{E(1-b)}{ke-br}$$

$$P_0 = \frac{D_1}{ke-g} = \frac{D_0(1+g)}{ke-g}$$

where,

P = Price of shares

E = Earnings per share

b = Retention ratio

ke = Cost of equity capital

g = Growth rate in i.e., rate of return on investment of an all-equity firm

D₀ = Dividend per share

D₁ = Expected dividend at the end of year 1.

The implications of Gordon's basic valuation model may be summarised as below:

1. When the rate of return of firm on its investment is greater than the required rate of return, i.e. when $r > k$, the price per share increases as the dividend payout ratio decreases. Thus, given firm should distribute smaller dividends and should retain maximum earnings.
2. When the rate of return is equal to the required rate of return, i.e., when $r = k$, the price per share remains unchanged and is not affected by dividend policy. Thus, for a normal firm there is no optimum dividend payout.
3. When the rate of return is less than the required rate of return, i.e., when $r < k$, the price per share increases as the dividend payout ratio increases. Thus, the shareholders of declining firm will to gain if the firm distributes its earnings. For such firms, the optimum payout would be 100%.

Illustration 4. The following information is available in respect of the rate of return on investment (r), the cost of capital (k) and earning per share (E) of ABC Ltd.

Rate of return on investment (r) = (i) 15% ; (ii) 12% ; and (iii) 10%
 Cost of capital = (k) 12%
 Earning per share (E) = Rs. 10

Determine the value of its shares using Gordon's Model assuming the following :

| | Div ratio (1-b) | Retention ratio (b) |
|-----|-----------------|---------------------|
| (a) | 100 | 0 |
| (b) | 80 | 20 |
| (c) | 40 | 60 |

Solution :

$$P = \frac{E(1-b)}{ke-br}$$

Dividend Policy and the Value of Shares

| (i) $r = 15\%$ ($r > k$) | (ii) $r = 12\%$ ($r = k$) | (iii) $r = 10\%$ ($r < k$) |
|--|--|--|
| $P = \frac{10(1-0)}{0.12 - (0)(0.15)}$ $= \frac{10}{0.12}$ $= \text{Rs. } 83.33$ | $P = \frac{10(1-0)}{0.12 - (0)(0.12)}$ $= \frac{10}{0.12}$ $= \text{Rs. } 83.33$ | $P = \frac{10(1-0)}{0.12 - (0)(0.10)}$ $= \frac{10}{0.12}$ $= \text{Rs. } 83.33$ |

WORKING CAPITAL MANAGEMENT AND ANALYSIS

CHAPTER OBJECTIVES

- Understand the meaning, concept and kinds of working capital.
- Importance of adequate working capital.
- Factors determining the working capital requirements
- Management of working capital.
- Forecast/Estimate of working capital requirements
- Methods of estimating working capital requirements.
- Percentage of sales method, regression analysis method, cash forecasting method, operating cycle method and projected balance sheet method.
- Approaches to estimation of working capital; total approach and cash cost approach.
- Financing of working capital.
- Determining the working capital financing mix.
- Zero working capital approach.
- New trends in financing working capital by banks.

MEANING OF WORKING CAPITAL

Capital required for a business can be classified under two main categories viz.,

- (i) Fixed Capital, and
- (ii) Working Capital.

Every business needs funds for two purposes—for its establishment and to carry out its day-to-day operations. Long-term funds are required to create production facilities through purchase of fixed assets such as plant and machinery, land, building, furniture, etc. Investments in these assets represent that part of firm's capital which is blocked on a permanent or fixed basis and is called fixed capital. Funds are also needed for short-term purposes for the purchase of raw materials, payment of wages and other day-to-day expenses, etc. These funds are known as working capital. In simple words, working capital refers to that part of the firm's capital which is required for financing short term or current assets such as cash, marketable securities, stocks and inventories. Funds, thus, invested in current assets keep revolving fast and are being constantly converted into cash and this cash flows out again in exchange for other current assets. Hence, it is also known as *revolving or circulating capital* or short-term capital.

In the words of *Shubin*, "Working capital is the amount of funds necessary to cover the cost of operating the enterprise."

According to *Genestenberg*, "Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, as for example, from cash to inventories, inventories to receivables, receivables into cash."

CONCEPTS OF WORKING CAPITAL

There are two concepts of working capital :

- (A) Balance Sheet Concept
- (B) Operating Cycle or Circular Flow Concept

(A) Balance Sheet Concept

There are two interpretations of working capital under the balance sheet concept :

- (i) Gross Working Capital
- (ii) Net Working Capital

In the broad sense, the term working capital refers to the *gross working capital* and represents the amount of funds invested in current assets. Thus, the gross working capital is the capital invested in the current assets of the enterprise. Current assets are those assets which in the ordinary course of business, can be converted into cash within a short period of normally one accounting year. Examples of current assets are:

| CONSTITUENTS OF CURRENT ASSETS | |
|--------------------------------|---|
| 1. | Cash in hand and bank balances. |
| 2. | Bills Receivables. |
| 3. | Sundry Debtors (less provision for bad debts). |
| 4. | Short-term loans and advances. |
| 5. | Inventories of stocks as : <ul style="list-style-type: none"> (a) Raw materials, (b) Work-in-process (c) Stores and spares, (d) Finished goods. |
| 6. | Temporary Investments of surplus funds. |
| 7. | Prepaid Expenses. |
| 8. | Accrued Incomes. |

In a narrow sense, the term working capital refers to the net working capital. Net working capital is the excess of current assets over current liabilities, or say :

Net Working Capital = Current Assets—Current liabilities.

Net working capital may be positive or negative. When the current assets exceed the current liabilities the working capital is positive and the negative working capital results when the current liabilities are more than the current assets. Current liabilities are those liabilities which are intended to be paid in the ordinary course of business within a short period of normally one accounting year out of the current assets or the income of the business. Examples of current liabilities are :

| CONSTITUENTS OF CURRENT LIABILITIES | |
|-------------------------------------|--|
| 1. | Bills payable. |
| 2. | Sundry creditors or accounts payable. |
| 3. | Accrued or outstanding expenses. |
| 4. | Short-term loans, advances and deposits. |
| 5. | Dividends payable. |
| 6. | Bank overdraft. |
| 7. | Provision for taxation, if it does not amount to appropriation of profits. |

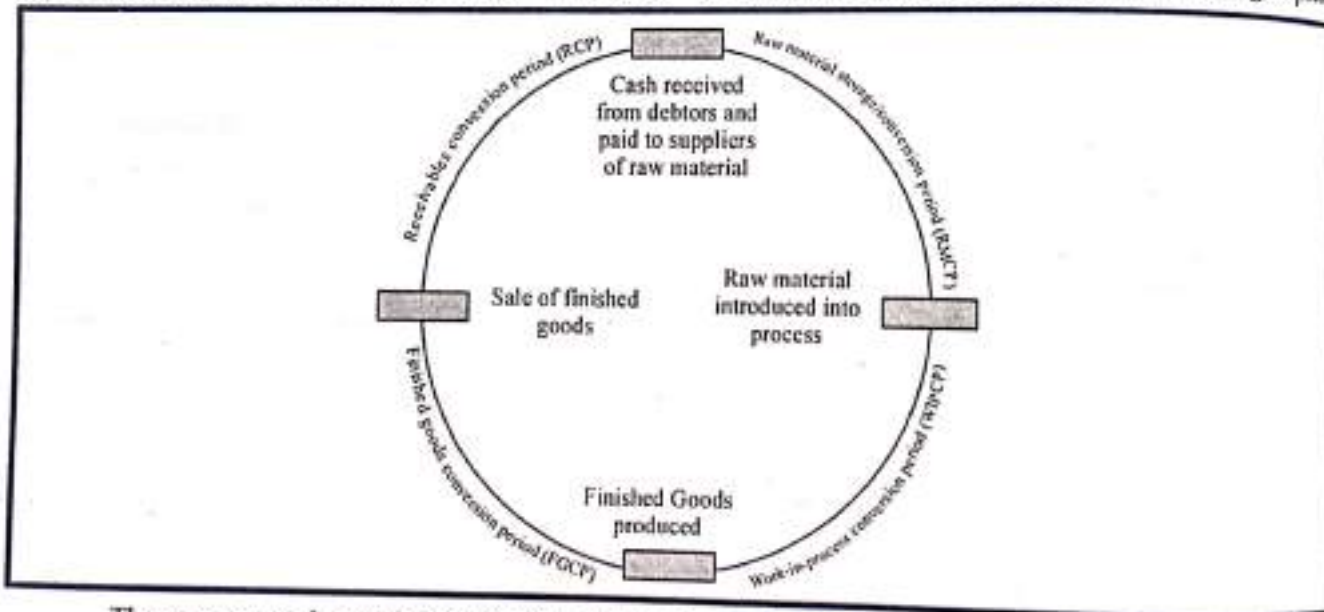
Total of Current Liabilities = 1,50,000+30,000+20,000+50,000+20,000+30,000 =Rs. 3,00,000
 W.C. (Net) = Rs. 3,80,000-3,00,000 = Rs. 80,000

Positive or Negative Working Capital

The net working capital of a firm may be positive or negative. When the total current assets exceed the current liabilities, the working capital is positive and the negative working capital results when the current liabilities are more than the current assets. The position of negative working capital does not allow a firm to utilise efficiently the fixed assets due to non-availability of liquid funds and it adversely affects its profitability or the rate of return. In fact, no firm can continue business for a long-term with a negative working capital. The business of the firm may have to be closed due to technical insolvency.

(B) Operating Cycle or Circular Flow Concept

As discussed earlier, working capital refers to that part of firm's capital which is required for financing short-term or current assets such as cash, marketable securities, debtors and inventories. Funds, thus, invested in current assets keep revolving fast and are being constantly converted into cash and this cash flows out again in exchange for other current assets. Hence, it is also known as revolving or circulating capital. The circular flow concept of working capital is based upon this operating or working capital cycle of a firm. The cycle starts with the purchase of raw material and other resources and ends with the realisation of cash from the sale of finished goods. It involves purchase of raw material and stores, its conversion into stock of finished goods through work-in-progress with progressive increment of labour and service costs, conversion of finished stock into sales, debtors and receivables and ultimately realisation of cash and this cycle continues again from cash to purchase of raw material and so on. The speed/time duration required to complete one cycle determines the requirements of working capital-longer the period of cycle, larger is the requirement of working capital.



The gross operating cycle of a firm is equal to the length of the inventories and receivables conversion periods. Thus,

$$\text{Gross Operating Cycle} = \text{RMCP} + \text{WIPCP} + \text{FGCP} + \text{RCP}$$

Where,

- RMCP = Raw Material Conversion Period
- WIPCP = Work-in-Process Conversion Period
- FGCP = Finished Goods Conversion Period
- RCP = Receivables Conversion Period

However, a firm may acquire some resources on credit and thus defer payments for certain period. In that case, net operating cycle period can be calculated as below :

CLASSIFICATION OR KINDS OF WORKING CAPITAL

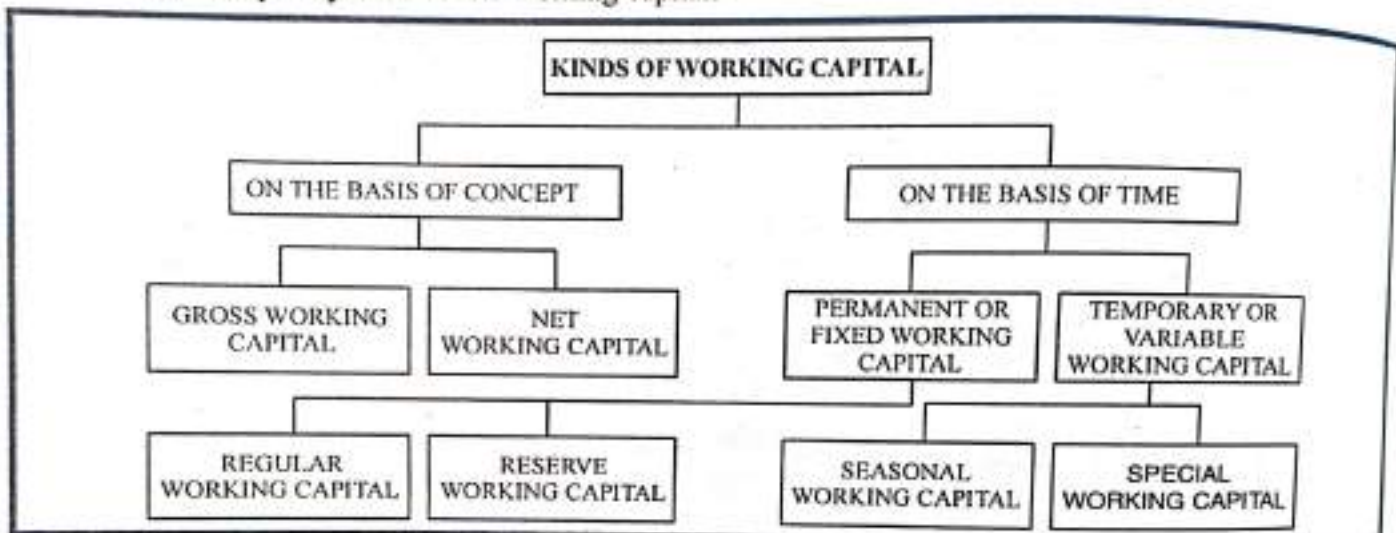
Working capital may be classified in two ways :

- (a) On the basis of concept.
- (b) On the basis of time.

On the basis of concept, working capital is classified as *gross working capital* and *net working capital* as discussed earlier. This classification is important from the point of view of the financial manager.

On the basis of time, working capital may be classified as :

- 1. Permanent or fixed working capital.
- 2. Temporary or variable working capital.



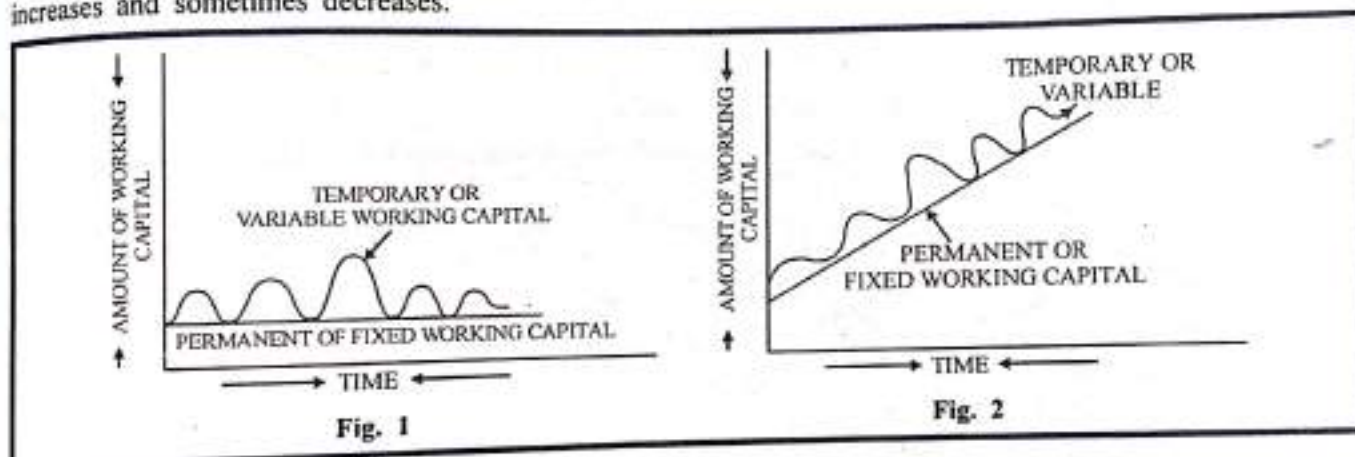
1. Permanent or Fixed Working Capital. Permanent or fixed working capital is the minimum amount which is required to ensure effective utilisation of fixed facilities and for maintaining the circulation of current assets. There is always a minimum level of current assets which is continuously required by the enterprise to carry out its normal business operations. For example, every firm has to maintain a minimum level of raw materials, work-in-process, finished goods and cash balance. This minimum level of current assets is called permanent or fixed working capital as this part of capital is permanently blocked in current assets. As the business grows, the requirements of permanent working capital also increase due to the increase in current assets. The permanent working capital can further be classified as regular working capital and reserve working

capital required to ensure circulation of current assets from cash to inventories, from inventories to receivables and from receivables to cash and so on. Reserve working capital is the excess amount over the requirement for regular working capital which may be provided for contingencies that may arise at unstated periods such as strikes, rise in prices, depression, etc.

2. Temporary or Variable Working Capital. Temporary or variable working capital is the amount of working capital which is required to meet the *seasonal demands and some special exigencies*. Variable working capital can be further classified as *seasonal working capital and special working capital*. Most of the enterprises have to provide additional working capital to meet the seasonal and special needs. The capital required to meet the seasonal needs of the enterprise is called *seasonal working capital*. Special working capital is that part of working capital which is required to meet special exigencies such as launching of extensive marketing campaigns for conducting research, etc.

Temporary working capital differs from permanent working capital in the sense that it is required for short periods and cannot be permanently employed gainfully in the business. Figures given below illustrate the difference between permanent and temporary working capital.

In Fig. 1, permanent working capital is stable or fixed over time while the temporary or variable working capital fluctuates. In Fig. 2, permanent working capital is also increasing with the passage of time due to expansion of business but even then it does not fluctuate as variable working capital which sometimes increases and sometimes decreases.



IMPORTANCE OR ADVANTAGES OF ADEQUATE WORKING CAPITAL

Working capital is the life blood and nerve centre of a business. Just as circulation of blood is essential in the human body for maintaining life, working capital is very essential to maintain the smooth running of a business. No business can run successfully without an adequate amount of working capital. The main advantages of maintaining adequate amount of working capital are as follows :

- 1. Solvency of the business.** Adequate working capital helps in maintaining solvency of the business by providing uninterrupted flow of production.
- 2. Goodwill.** Sufficient working capital enables a business concern to make prompt payments and hence helps in creating and maintaining goodwill.
- 3. Easy loans.** A concern having adequate working capital, high solvency and good credit standing can arrange loans from banks and others on easy and favourable terms.
- 4. Cash discounts.** Adequate working capital also enables a concern to avail cash discounts on the purchases and hence it reduces costs.
- 5. Regular supply of raw materials.** Sufficient working capital ensures regular supply of raw materials and continuous production.
- 6. Regular payment of salaries, wages and other day-to-day commitments.** A company which has ample working capital can make regular payment of salaries, wages and other day-to-day

- commitments which raises the morale of its employees, increases their efficiency, reduces wastages and costs and enhances production and profits.
7. **Exploitation of favourable market conditions.** Only concerns with adequate working capital can exploit favourable market conditions such as purchasing its requirements in bulk when the prices are lower and by holding its inventories for higher prices.
8. **Ability to face crisis.** Adequate working capital enables a concern to face business crisis, emergencies such as depression because during such periods, generally, there is much pressure on working capital.
9. **Quick and regular return on investments.** Every investor wants a quick and regular return on his investments. Sufficiency of working capital enables a concern to pay quick and regular dividends to its investors as there may not be much pressure to plough back profits. This gives the confidence of its investors and creates a favourable market to raise additional funds in the future.
10. **High morale.** Adequacy of working capital creates an environment of security, confidence, high morale and creates overall efficiency in a business.

EXCESS OR INADEQUATE WORKING CAPITAL

Every business concern should have adequate working capital to run its business operations. It should have neither redundant or excess working capital nor inadequate or shortage of working capital. Both excess as well as short working capital positions are bad for any business. However, out of the two, it is the inadequacy of working capital which is more dangerous from the point of view of the firm.

Disadvantages of Redundant or Excessive Working Capital

1. Excessive Working Capital means idle funds which earn no profits for the business and hence the business cannot earn a proper rate of return on its investments.
2. When there is a redundant working capital, it may lead to unnecessary purchasing and accumulation of inventories causing more chances of theft, waste and losses.
3. Excessive working capital implies excessive debtors and defective credit policy which may cause higher incidence of bad debts.
4. It may result into overall inefficiency in the organisation.
5. When there is excessive working capital, relations with banks and other financial institutions may not be maintained.
6. Due to low rate of return on investments, the value of shares may also fall.
7. The redundant working capital gives rise to speculative transactions.

Disadvantages or Dangers of Inadequate Working Capital

1. A concern which has inadequate working capital cannot pay its short-term liabilities in time. Thus, it will lose its reputation and shall not be able to get good credit facilities.
2. It cannot buy its requirements in bulk and cannot avail of discounts, etc.
3. It becomes difficult for the firm to exploit favourable market conditions and undertake profitable projects due to lack of working capital.
4. The firm cannot pay day-to-day expenses of its operations and it creates inefficiencies, increases costs and reduces the profits of the business.
5. It becomes impossible to utilize efficiently the fixed assets due to non-availability of liquid funds.
6. The rate of return on investments also falls with the shortage of working capital.

THE NEED OR OBJECTS OF WORKING CAPITAL

The need for working capital cannot be over emphasised. Every business needs some amount of working capital. The need for working capital arises due to the time gap between production and realisation of cash from sales. There is an operating cycle involved in the sales and realisation of cash. There are time gaps in purchase of raw materials and production; production and sales; and sales and realisation of cash. Thus, working capital is needed for the following purposes:

1. For the purchase of raw materials, components and spares.
2. To pay wages and salaries.
3. To incur day-to-day expenses and overhead costs such as fuel, power and office expenses, etc.
4. To meet the selling costs as packing, advertising, etc.
5. To provide credit facilities to the customers.
6. To maintain the inventories of raw material, work-in-progress, stores and spares and finished stock.

For studying the need of working capital in a business, one has to study the business under varying circumstances such as a new concern, as a growing concern and as one which has attained maturity. A new concern requires a lot of liquid funds to meet initial expenses like promotion, formation, etc. These expenses are called preliminary expenses and are capitalised. The amount needed as working capital in a new concern depends primarily upon its size and the ambitions of its promoters. Greater the size of the business unit, generally, larger will be the requirements of working capital. The amount of working capital needed goes on increasing with the growth and expansion of business till it attains maturity. At maturity the amount of working capital needed is called normal working capital. There are many other factors which influence the need of working capital in a business and these are discussed in the next pages.

FACTORS DETERMINING THE WORKING CAPITAL REQUIREMENTS

The working capital requirements of a concern depend upon a large number of factors such as nature and size of business, the character of their operations, the length of production cycles, the rate of stock turnover and the state of economic situation. It is not possible to rank them because all such factors are of different importance and the influence of individual factors changes for a firm over time. However, the following are important factors generally influencing the working capital requirements.

1. Nature or Character of Business. The working capital requirements of a firm basically depend upon the nature of its business. Public utility undertakings like Electricity, Water Supply and Railways need very limited working capital because they offer cash sales only and supply services, not products, and as such no funds are tied up in inventories and receivables. On the other hand trading and financial firms require less investment in fixed assets but have to invest large amounts in current assets like inventories, receivables and cash; as such they need large amount of working capital. The manufacturing undertakings also require sizable working capital alongwith fixed investments. Generally speaking it may be said that public utility undertakings require small amount of working capital, trading and financial firms require relatively very large amount, whereas manufacturing undertakings require sizable working capital between these two extremes.

2. Size of Business/Scale of Operations. The working capital requirements of a concern are directly influenced by the size of its business which may be measured in terms of scale of operations. Greater the size of a business unit, generally larger will be the requirements of working capital. However, in some cases even a smaller concern may need more working capital due to high overhead charges, inefficient use of available resources and other economic disadvantages of small size.

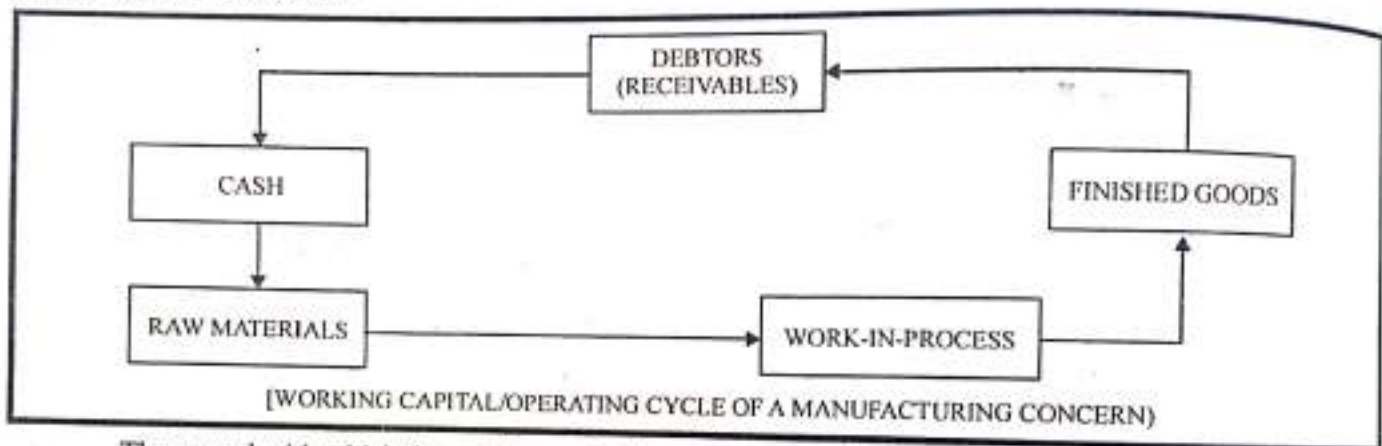
3. Production Policy. In certain industries the demand is subject to wide fluctuations due to seasonal variations. The requirements of working capital, in such cases, depend upon the production policy. The production could be kept either steady by accumulating inventories during slack periods with a view to meet high demand during the peak season or the production could be curtailed during the slack season and increased during the peak season. If the policy is to keep production steady by accumulating inventories it will require higher working capital.

4. Manufacturing Process/Length of Production Cycle. In manufacturing business, the requirements of working capital increase in direct proportion to length of manufacturing process. Longer the process period of manufacture, larger is the amount of working capital required. The longer the manufacturing time, the raw materials and other supplies have to be carried for a longer period in the process with progressive increment

of labour and service costs before the finished product is finally obtained. Therefore, if there are alternative processes of production, the process with the shortest production period should be chosen.

5. Seasonal Variations. In certain industries raw material is not available throughout the year. They have to buy raw materials in bulk during the season to ensure an uninterrupted flow and process them during the entire year. A huge amount is, thus, blocked in the form of material inventories during such season, which gives rise to more working capital requirements. Generally, during the busy season, a firm requires larger working capital than in the slack season.

6. Working Capital Cycle. In a manufacturing concern, the working capital cycle starts with the purchase of raw material and ends with the realisation of cash from the sale of finished products. This cycle involves purchase of raw materials and stores, its conversion into stocks of finished goods through work-in-progress with progressive increment of labour and service costs, conversion of finished stock into sales, debtors and receivables and ultimately realisation of cash and this cycle continues again from cash to purchase of raw material and so on.



The speed with which the working capital completes one cycle determines the requirements of working capital—longer the period of the cycle larger is the requirement of working capital.

7. Rate of Stock Turnover. There is a high degree of inverse co-relationship between the quantum of working capital and the velocity or speed with which the sales are effected. A firm having a high rate of stock turnover will need lower amount of working capital as compared to a firm having a low rate of turnover. For example, in case of precious stone dealers, the turnover is very slow. They have to maintain a large variety of stocks and the movement of stocks is very slow. Thus, the working capital requirements of such a dealer shall be higher than that of a provision store.

8. Credit Policy. The credit policy of a concern in its dealings with debtors and creditors influence considerably the requirements of working capital. A concern that purchases its requirements on credit and sells its products/services on cash requires lesser amount of working capital. On the other hand a concern buying its requirements for cash and allowing credit to its customers, shall need larger amount of working capital as very huge amount of funds are bound to be tied up in debtors or bills receivables.

9. Business Cycles. Business cycle refers to alternate expansion and contraction in general business activity. In a period of boom *i.e.*, when the business is prosperous, there is a need for larger amount of working capital due to increase in sales, rise in prices, optimistic expansion of business, etc. On the contrary in the times of depression *i.e.*, when there is a down swing of the cycle, the business contracts, sales decline, difficulties are faced in collections from debtors and firms may have a large amount of working capital lying idle.

10. Rate of Growth of Business. The working capital requirements of a concern increase with the growth and expansion of its business activities. Although, it is difficult to determine the relationship between the growth in the volume of business and the growth in the working capital of a business, yet it may be concluded that for normal rate of expansion in the volume of business, we may have retained profits to provide for more working capital but in fast growing concerns, we shall require larger amount of working capital.

Illustration 11. ABC Ltd. sells its products on a gross profit of 20% on sales. The following information is extracted from its annual accounts for the year ended 31st March 2008 :

| | Rs. |
|---|-----------|
| Sales (3 months credit) | 40,00,000 |
| Raw materials | 12,00,000 |
| Wages (15 days in arrears) | 9,60,000 |
| Manufacturing expenses (one month in arrears) | 12,00,000 |
| Administration expenses (one month in arrears) | 4,80,000 |
| Sales promotion expenses (payable half yearly in advance) | 2,00,000 |

The company enjoys one month's credit from suppliers of raw materials and maintains 2 months stock of raw materials and one and a half months finished goods. Cash balance is maintained at Rs. 1,00,000 as a precautionary balance. Assuming a 10% margin, find out the working capital requirements of ABC Ltd. Cost of sales for computation of debtors and stock of finished goods may be taken at sales minus gross profit as per rate of gross profit given.

Solution

Statement of Working Capital Requirements

| Current Assets | | Rs. |
|---|---------------|-------------------------|
| Stock of raw materials $\left(12,00,000 \times \frac{2}{12}\right)$ | | 2,00,000 |
| Stock of finished goods at cost $\left(40,00,000 \times \frac{80}{100} \times \frac{3}{2} \times \frac{1}{12}\right)$ (as gross profit is 20% on sales, so cost is 80% of sales) | | 4,00,000 |
| Debtors at cost $\left(40,00,000 \times \frac{80}{100} \times \frac{3}{12}\right)$ | | 8,00,000 |
| Advance payment of sales promotion expenses $\left(2,00,000 \times \frac{6}{12}\right)$ | | 1,00,000 |
| Cash balance | | <u>1,00,000</u> |
| | | 16,00,000 |
| Less : Current Liabilities : | Rs. | |
| Creditors for raw materials $\left(12,00,000 \times \frac{1}{12}\right)$ | 1,00,000 | |
| Wages outstanding (15 days taken for 1/2 months in arrears, $9,60,000 \times \frac{1}{24}$) | 40,000 | |
| Manufacturing expenses outstanding $\left(12,00,000 \times \frac{1}{12}\right)$ | 1,00,000 | |
| Administration expenses outstanding $\left(4,80,000 \times \frac{1}{12}\right)$ | <u>40,000</u> | |
| | | 2,80,000 |
| Net Working Capital | | 13,20,000 |
| Add : 10% Margin for contingencies | | 1,32,000 |
| Working Capital Required | | <u><u>14,52,000</u></u> |