Strategic Financial Management

Pawan Jhabak
Strategic Financial Management

(As per the Revised Syllabus 2016–17 of Mumbai University for T.Y.BMS, Semester – V)

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“Genius is the ability to reduce the complicated to the simple.”

… *Albert Einstein*

I earnestly hope that the book will make complicated subject *Strategic Financial Management* simple to understand and score high marks in exams.

I look forward for constructive suggestion from the readers and teachers.

I am thankful to one and all who have contributed directly or indirectly to make New Edition possible.

This book is user-friendly and different. As one goes through the book, one will feel the difference, and this will help to master Strategic Financial Management in an enjoyable manner, with lifetime utility.

The book covers ‘University’ prescribed syllabus with practical dimension !! Let’s learn !!

Best wishes!!

Million thanks.

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- Bhurani College.
- Poddar College etc.

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Strategic Financial Management
Course Code: UBMSFSV.7

Learning Objectives:
1. To match the needs of current market scenario and upgrade the learner’s skills and knowledge for long-term sustainability
2. Changing scenario in Banking Sector and the inclination of learners towards choosing banking as a career option has made study of financial management in banking sector inevitable
3. To acquaint learners with contemporary issues related to financial management

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Question Paper Pattern

Duration: 2.5 hours 75 Marks

N.B: 5 questions of 15 marks each.
All questions are compulsory

Q.1. Attempt any two: 15 Marks
   (a) Theory – Dividend Decision
   (b) Sum – Dividend Decision
   (c) Theory – XRBL

Q.2. Attempt any two: 15 Marks
   (a) Theory – Capital Budgeting
   (b) Sum – Capital Budgeting
   (c) Sum – Capital Rationing

Q.3. Attempt any two: 15 Marks
   (a) Sum – EVA
   (b) Sum – Corporate Restructuring
   (c) Theory – Corporate Governance

Q.4. Attempt any two: 15 Marks
   (a) Theory – Financial Management in Banking Sector
   (b) Sum – Working Capital Financing
   (c) Theory – Working Capital Financing

Q.5 Case Study/Numerical 15 Marks
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UNI I
Dividend Decision and XBRL

Chapter 1(a)

Dividend Decision

Structure:
1.1 Meaning and Forms of Dividend
1.2 Models of Dividend Policy
1.3 Legal and Procedural Aspect of Dividend
1.4 Retained Earnings as a Prudent Investment Policy
1.5 Factors Determining Dividend Policy
1.6 Discuss Retained Earnings as a Prudent Investment Policy
1.7 Payment of Dividends vs. Issue of Bonus Shares
1.8 Types of Dividend Policies
1.9 Problems and Solutions

1.1 Meaning and Forms of Dividend

That part of the profits of a company that is distributed to shareholders is called Dividend. Dividend disbursements are based on a percentage of the par value of the stock or are a certain sum per share of no-par-value stock. They become payable only when approved by the Board of Directors and are usually declared at regular intervals. Obviously, dividends should not be paid unless the company has accumulated a profit or surplus. Dividends may be both interim (and normally paid during the financial year) or final (and recommended by the directors for approval for the shareholders at the annual general meeting). Dividends are shown in the appropriation section of the Profit and Loss Account (Income Statement). A proposed dividend is shown in the balance though it is not a legal obligation at the date of the balance sheet.

Preference share dividends may be either cumulative or non-cumulative. If they are non-cumulative, shareholders are not entitled to receive later a dividend which has been passed through lack of profits. Arrears of cumulative dividends, on the other hand, must be disclosed in the notes to the accounts and paid before dividends on the ordinary shares are resumed.

Hence, various forms of dividend are: (i) Cash Dividend and Stock Dividend (Bonus Shares), (ii) Equity Dividend and Preference Dividend and (iii) Interim Dividend and Proposed Dividend.
1.2 Models of Dividend Policy

To distribute dividend or not is a debatable issue. A person investing in shares for fixed income will always want dividend while a person investing in the shares for capital gains will deem it indifferent. There have been many theories/arguments as to whether distribution of dividend is really important or not. Some of them are as follows:

**MM Model (Modigliani and Miller Model)**

**Argument**

Dividend Policy has no effects on share price of a firm and is therefore of no consequence. What matters is the investment policy through which the firm can increase its earnings and therefore the value of the firm.

**Assumptions**

1. Perfect capital markets, i.e., all investors are rational, information is available to all, free of cost, there are no transactional costs, securities are infinitely divisible, no floatation costs, etc.
2. No taxes or no difference in tax rates applicable to dividends and capital gains.
3. Firm has a given investment policy which does not change, i.e., risk extent will be constant.

**Justification**

If a company retains earnings instead of giving it out as dividends, the shareholder enjoys capital appreciation, which is equal to the amount of earnings retained. If it distributes dividends, the shareholder will enjoy dividend in amount by which capital would have appreciated had the company retained its earnings. Thus, it is quite irrelevant whether dividend is given or not.

**Walter’s Model**

**Argument**

A firm’s dividend policy will be determined by the relationship between the return on investment (ROI) and the expected rate of return.

Quantitatively, \( P = (D + (E - D) \frac{r}{k})/k \)

where \( P \), \( D \) and \( E \) have the same connotations as above, \( r \) is the internal rate of return on the investments and \( k \) is the cost of capital.

**Assumptions**

1. All financing through the retained earnings; no external source.
2. With additional business undertaken, firm’s business risk would not change. Thus, ROI \( (r) \) and required rate of return on capital \( (k) \) are constant.
3. There is no change in key variables, which are \( E \) and \( D \).
4. Perpetual life of the firm.

**Justification**

The firm would have an optimum relation of \( r \) and \( k \), i.e., if \( r > k \), then the firm will retain earnings. But if \( r < k \), then the firm would distribute dividend so that shareholders can earn some ROI from elsewhere. If \( r = k \), it becomes matter of indifference.
Dividend Decision

Gordon’s Model

Argument

Being risk averse, an investor will always prefer present income to future income.

Quantitatively, \( P = Y (1 - b)/(k - br) \)

where, \( P \) is the price per share, \( Y \) is the earnings per share, \( b \) is the retention ratio, \( 1 - b \) is the payout ratio, \( br \) is the growth rate, \( r \) is the return on investment and \( k \) is the rate of return required by shareholders.

On comparing \( r \) and \( k \), the relationship between market price and the payout ratio is exactly the same as compared to the Walter’s model.

Assumptions

1. Firm is an all equity firm.
2. ROI (\( r \)) and expected rate of return on capital (\( k \)) are constant.
3. Firm has perpetual life.
4. The retention ratio is constant.
5. Growth rate is constant and is less than expected rate of return on capital (\( k \)).
6. Investors are risk averse.
7. They put premium on certain investments and discount on uncertain.

Justification

‘Bird in the hand is worth two in the bush’ – is the bottom line of this argument.

If investors are risk averse, the rational investors in general would prefer dividend – they’ll avoid risk. The payment of current dividend removes any chance of risk. If firm retains earnings, dividends obviously will be received in future. Future dividend is uncertain. Thus, the rational investors will prefer current dividends and discount future dividends.

The argument that deems dividends to be irrelevant is the famous MM Model.

1.3 Legal and Procedural Aspect of Dividend

Dividend can be defined as:

A cash payment using profits that’s announced by a company’s Board of Directors to be distributed among the stockholders.

Conceptually, dividends may be in the form of cash, stock or property. The Board of Directors must declare all dividends.

Through the stocks, an investor can make income either through the capital gains or through the periodic dividends. A company announces dividend either quarterly, semi-annually or yearly. Thus, it is a steady periodic source of income. It is in proportion to the share of capital, which the investor actually holds in the company. Though dividend is usually offered, it is necessary to note that a company is under no obligation to pay the dividends. It may or may not pay the dividends. Even if it pays, there is no set level as to the payment of dividend. That is, there is no minimum or maximum limit on the amount of dividend that can be paid.

Most often, the dividend comes in the form of cash. A company will pay a small percentage of its profits to the owner of each share of stock. However, it is not unheard of for companies to pay
dividends in the form of stock. Dividends can be determined by a fixed rate known as preferred dividends, or a variable rate based on the company’s latest profits known as common dividends.

Usually, amount of profit made is announced in the AGMs or quarterly/semi-annual result. The company declares amount of dividend on each share (usually as percentage of face value). At this point of time, the BoD announces that ‘The dividend of the set amount will be paid to shareholders of record as of the record date and will be paid or distributed on distribution date’.

Record date is a concept to enable proper distribution of dividend.

A company issues shares, and once it starts operating, the shares begin to be traded in the stock market. Thus, ownership of a single share might pass even 1000 hands within a year. Thus, at the time of distributing dividends, it would have been very difficult to determine the exact owner of a share, if concept of ‘Record Date’ wouldn’t have existed. A company usually maintains record of its shareholders. It declares a date called ‘Record Date’, prior to which all the transferred names have to be entered into the company’s records. The company will give dividends only to those investors whose names are found in company’s records on the record date. Thus, even if share is sold on the day after record date, the concerned seller-investor will receive the dividend.

This is done because a dividend payout automatically reduces the value of the company (It comes from the company’s cash reserves), and the investor would have to absorb that reduction in value.

Dividend is quite unpredictable; but a trend might be understood by studying past pattern, future expectations, industry trends, etc.

On the distribution date, which as the name suggests is the date when dividends are distributed, the shareholders as on the record date will be mailed cheques.

The legal aspects of dividend distribution in the Indian context (as per Company Law) are as follows:

1. Companies can pay only cash dividends (with the exception of bonus shares).
2. Dividends can be paid only out of the profits earned during the financial year after providing for depreciation and after transferring to reserves such percentage of profits as prescribed by the law. The Companies (Transfer to Reserves) Rules, 1975 provide that, before dividend declaration, a percentage of profit as specified below should be transferred to the reserves of the company.
   - Where the dividend proposed exceeds 10% but not 12.5% of the paid-up capital, the amount to be transferred to the reserves shall not be less than 2.5% of the current profits.
   - Where the dividend proposed exceeds 12.5% but not 15%, the amount to be transferred to the reserves shall not be less than 5% of the current profits.
   - Where the dividend proposed exceeds 15% but not 20%, the amount to be transferred to the reserves shall not be less than 7.5% of the current profits.
   - Where the dividend proposed exceeds 20%, the amount to be transferred to reserves shall not be less than 10%.
3. Due to inadequacy or absence of profits in any year, dividend may be paid out of the accumulated profits of previous years. In this context, the following conditions as stipulated by the Companies (Declaration of Dividends out of Reserves) Rules, 1975, have to be satisfied:
The rate of the dividend declared shall not exceed the average of the rates of which dividend was declared by it in five years immediately preceding that year or 10% of its paid-up capital, whichever is less.

The total amount to be drawn from the accumulated profits earned in the previous years and transferred to the reserves shall not exceed an amount equal to one-tenth of the sum of its paid-up capital and free reserves and the amount so drawn shall first be utilised to set off the losses incurred in the financial year before any dividend in respect of preference or equity shares is declared.

The balance of reserves after such drawal shall not fall below 15% of its paid-up capital.

4. Dividends cannot be declared for past years for which the accounts have been closed.

1.4 Retained Earnings as a Prudent Investment Policy

DRIPs: These days, because of lack of investment initiatives, industries are encouraging the investors to reinvest their dividends. The concept is called DRIP or the Dividend Reinvestment Plan. As per this plan, the shareholder will be given choice of accepting dividend or reinvesting it. If he/she opts for the latter, his dividend is credited to his/her individual DRIP A/c and the equivalent shares will be allotted to him.

To Pay or Not to Pay: Since the company is under no obligation as to payment of dividend, ‘Should a company pay dividend?’ is an important issue of discussion. In general, it can be said that the younger companies in growth markets are far more likely to pay a small or no dividend so that they can find further expansion. In contrast, more mature companies in slower growing markets are likely to pay higher dividends because they do not have opportunity to invest in the expansion.

Thus, regular dividends are paid out to make holding the stock more appealing to investors, a move the company hopes will increase demand for the stock and therefore increase the stock’s price.

1.5 Factors Determining Dividend Policy

Following reasons result into payment of dividends.

- **Investor Preference for Dividends:** If taxes and transaction costs are ignored, dividends and capital receipts could be perfect substitutes. Yet, principles of self-control and aversion for regret lead to investor preference for dividends.

- **Self-control and Dividends:** Individuals often lack self-control. So, they rely on rules and programmes, which check their temptations. In the realm of personal financial management, individuals like to protect their principal from their spending tendencies. A simple way to do this is to limit their spending to the dividend income so that the capital amount is maintained intact.

- **Aversion to Regret and Dividends:** Although the dividend and the capital receipts are perfectly substitutable, when taxes and transaction costs are abstracted away, empirical evidence suggests that most people feel more regret when they sell the stock because they can readily imagine the consequences of that action.

- **Information Signaling:** Management often has significant information about the prospects of the firm that it cannot (or prefers not to) disclose to the investors. The information gap between management and shareholders generally causes stock prices to be less than what they would be under conditions of information symmetry. According to signaling theory, these firms need to take actions that cannot be easily imitated by firms that do not have such promising projects. One such action is to
pay more dividends. Increasing dividends suggest to the market that the firm is confident of its earning prospects that will enable it to maintain higher dividends in future as well. By the same token, a decrease in dividends is perceived as a negative signal, because firms are reluctant to cut dividends. This leads to consequent drop in stock prices.

- **Funds Requirement:** The dividend payout ratio of firms depends on the firm’s future requirements for funds. Long-term financial forecasting of funds can assess this requirement. Usually, firms, which have plans for substantial financial investment, need funds to exploit the available opportunities. Thus, they keep their dividend payout ratio low. On the other hand, firms which have very few investment avenues have larger dividend payout ratio.

- **Liquidity:** It is another factor which influences the dividend payout ratio as dividends involve cash payment. Firms, which desire to pay dividends, may not do so, because of insufficient liquidity. This usually happens in the case of profitable and expanding firms, which have very low liquidity because of substantial investments.

- **Availability of External Sources of Financing:** Firms which have easy access to external sources of funds enjoy a great deal of flexibility in deciding the dividend payout ratio. For such firms, dividend payout decision is somewhat independent of its investment decision as well as its liquidity position. Such firms are usually more generous in their dividend policies. While on the other hand, firms, which do not have easy access to external sources of funds, have to rely on the internal sources of funds or investment purposes. Such firms are usually very conservative in their dividend policy decisions.

- **Difference in the Cost of External Equity and Retained Earnings:** The cost of equity in all cases except for those raised by way of rights issue is higher than the cost of retained earnings. Depending on the extent of this difference in cost, firms decide the relative proportion of external equity and retained earnings to be used. This affects the dividend policy decision of the company.

- **Control:** Raising money from external resources may lead to dilution of control, in case money is raised by issuing public equity. Internal financing, on the other hand, does not lead to any dilution of control. Hence, if management and shareholders are averse to dilution of control, then firms prefer to rely more on retained earnings. Thus, such companies may adopt the conservative dividend policy.

- **Taxes:** In India, dividend income for the individuals is free; however, capital gains are taxable. Thus, in that case, shareholders who are in high tax bracket may prefer dividend income rather than capital gains. However, if tax on dividends is viewed from point of view of corporates, they have to pay dividend tax. Thus, this may influence the companies’ dividend policy.

- **Clientele Effect:** Investors have diverse preferences. Some want more dividend income; others want more capital gains; still others want a balanced mix of both. Over a period of time, investors naturally migrate to the firms, which have a dividend policy that matches their preferences. The concentration of investors in companies with dividend policies that are matched to their preferences is called clientele effect. The existence of clientele effect implies that: (A) Firms get the investors they deserve and (B) It will be difficult for firm to change an established dividend policy.

### 1.6 Discuss Retained Earnings as a Prudent Investment Policy

Depreciation charges and retained earnings represent the internal sources of finance available to the company. If depreciation charges are used for replacing worn-out equipment, retained earnings
represent the only internal source for financing expansion and growth. Companies normally retain 30% to 80% of profit after tax for financing growth. Hence, these are an important source of long-term financing.

Retained earnings can be reviewed for their advantages and disadvantages from:

1. Firm’s Point of View
   
   Advantages:
   
   (a) They are readily available internally. They do not require talking to outsiders.
   
   (b) They effectively represent infusion of additional equity in the firm. Use of retained earnings, in lieu of external equity, eliminates issue costs and losses on account of underpricing.
   
   (c) There is no dilution of control when a firm relies on retained earnings.

   Disadvantages:
   
   (a) The amount that can be raised by way of retained earnings may be limited. Further, the quantum of retained earnings tends to be highly variable.
   
   (b) The opportunity cost of retained earnings is quite high, since it is nothing but the dividends foregone by the equity shareholders.

2. Shareholder’s Point of View
   
   Advantages:
   
   (a) Compared to dividend income, the capital appreciation that arises as a sequel to retained earnings is subject to a lower rate of tax.
   
   (b) Reinvestment of profits may be convenient for many shareholders as it relieves them to some extent of the problem of investing on their own.

   Disadvantages:
   
   (a) Shareholders who want a current income higher than the dividend income may be highly averse to converting a portion of capital appreciation into current income, as it calls for selling some shares.
   
   (b) Many firms do not fully appreciate the opportunity cost of retained earnings.

1.7 Payment of Dividends vs. Issue of Bonus Shares

Why do investors have strong preference for dividend rather than bonus share?

In a closely held company, is it preferred to issue bonus shares or dividends?

A dividend is a portion of a company’s earnings that is returned to shareholders. Dividends provide an added incentive (in the form of a return on the investment) to own stock in stable companies even if they are not experiencing much growth. Many companies—mature and young, large and small—pay a regular dividend to their stockholders. Companies use dividends to pass on their profits directly to their shareholders. Dividend can be defined as follows:

A cash payment using profits that’s announced by a company’s Board of Directors to be distributed among the stockholders.

In other words, dividends refer to a part of the firm’s net earnings, which is paid to the shareholders. Net earnings mean the profit remaining after the payment of interest and taxes (PAT), some part of this may be transferred to the reserves and surpluses, while the remaining part is usually
distributed as dividend. The shareholders are the actual owners of the company and should therefore get a return on the investment made by them.

As mentioned earlier, the dividend can be paid out either quarterly, semi-annually or even annually. Sometimes, the companies may also declare an extra or special dividend, usually to share profits made due to some temporary changes in the market, or on special occasion in the company – genesis (e.g., HDFC completing 25 years).

Most often, the dividend comes in the form of cash. A company will pay a small percentage of its profits to the owner of each share of stock. However, it is not unheard of for companies to pay dividends in the form of stock. Dividends can be determined by a fixed rate known as preferred dividends, or a variable rate based on the company’s latest profits known as common dividends.

Bonus shares are the shares issued to existing shareholders as a result of capitalisation of reserves. In the wake of a bonus issue:

- The shareholders’ proportional ownership remains unchanged.
- The book value per share, the earnings per share, the market price per share decrease, but the number of shares increase.

Following are the reasons for issue of bonus shares.

- The bonus issue tends to bring the market price per share within a more popular range.
- It increases the number of outstanding shares. This promotes more active trading.
- The nominal rate of dividend tends to decline. This may dispel the impression of profiteering.
- The share capital base increases and the company may achieve a more respectable size in the eyes of investing community.
- Shareholders regard a bonus issue as a firm indication that the prospects of the company have brightened and they can reasonably look for increase in total dividends.
- It improves the prospects of raising additional funds. In recent years, many firms have issued bonus shares prior to issue of convertible debentures or other financing instruments.

Thus, the motives differ as regards to the issue of bonus shares and payment of dividends.

Since compared to receipt of dividends, receipt of additional stock is a risk. Hence, investors do not prefer it.

Similarly, in case of a closely held company, since no active trading occurs, there is no point in increasing the investor liquidity. Thus, practice of issuing bonus shares is rarely followed in a closely held company.

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<td>1 No liquidity in hand.</td>
<td>Liquidity in hand in the form of cash.</td>
</tr>
<tr>
<td>2 More number of shares with the same amount of investment as it is free.</td>
<td>No such addition to the shares held by the individual.</td>
</tr>
<tr>
<td>3 Company is perceived to have huge profits, huge reserves.</td>
<td>Company is perceived to be financially stable.</td>
</tr>
<tr>
<td>4 No tax is paid when bonus shares are received.</td>
<td>Company pays dividend distribution tax.</td>
</tr>
<tr>
<td>5 The fall in share price after the bonus becomes effective is much steeper.</td>
<td>The decrease in the market price of the share is comparatively lower.</td>
</tr>
</tbody>
</table>
1.8 Types of Dividend Policies

- **Generous dividend and Bonus Policy:** Such firms reward shareholders generously by stepping up total dividend payment overtime. Typically, these firms maintain the dividend rate at a certain level (50% to 75%) and issue bonus shares when reserves position and earnings potential permit. Such firms naturally have a strong shareholder orientation.

- **More or Less Fixed Dividend Policy:** Some firms have a target dividend rate which is usually in the range 10% to 20% which they consider as a reasonable compensation to equity shareholders. Such firms normally do not issue bonus shares. Infrequently, may be once in a few years, the dividend rate may be slightly raised to provide somewhat higher compensation to equity shareholders to match the higher returns from other forms of investment.

- **Erratic Dividend Policy:** Firms which follow this dividend policy seem to be indifferent to the welfare of equity shareholders. Dividends are paid erratically whenever management believes that it will not strain its resources.

1.9 Problems and Solutions

Q.1 The earnings per share of B Ltd. is ₹ 4 and the rate of capitalisation applicable is 10%. The company has before it an option of adopting: (i) 50% (ii) 75% and (iii) 100% dividend payout ratio. Compute the market price of company’s shares as per Walter’s model if it can earn a return of 10% on its retained earnings.

**Solution:**

Computation of market price of company’s share:

\[ P = \frac{D + \frac{r}{K_e} (E - D)}{K_e} \]

where,  
\( P \) = Market price per share  
\( E \) = Earnings per share  
\( D \) = Dividend per share  
\( (E - D) \) = Retained earnings per share  
\( r \) = Rate of return on investment  
\( K_e \) = Capitalisation rate

\[ \therefore P = \frac{2 + \frac{0.10}{0.10}(4 - 2)}{0.10} \]

<table>
<thead>
<tr>
<th>D</th>
<th>50% of 4</th>
<th>D</th>
<th>75% of 4</th>
<th>D</th>
<th>100% of 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>= ₹ 2</td>
<td></td>
<td>= ₹ 3</td>
<td></td>
<td>= ₹ 4</td>
<td></td>
</tr>
<tr>
<td>E = 4</td>
<td></td>
<td>E = 4</td>
<td></td>
<td>E = 4</td>
<td></td>
</tr>
<tr>
<td>r = 10%</td>
<td></td>
<td>R = 10%</td>
<td></td>
<td>r = 10%</td>
<td></td>
</tr>
<tr>
<td>K_e = 10%</td>
<td></td>
<td>K_e = 10%</td>
<td></td>
<td>K_e = 10%</td>
<td></td>
</tr>
</tbody>
</table>
Q.2 Following are the details regarding three companies X Ltd., Y Ltd. and Z Ltd.

<table>
<thead>
<tr>
<th></th>
<th>X Ltd.</th>
<th>Y Ltd.</th>
<th>Z Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$r = 15%$</td>
<td>$r = 15%$</td>
<td>$r = 10%$</td>
</tr>
<tr>
<td>$K_e$</td>
<td>$10%$</td>
<td>$10%$</td>
<td>$10%$</td>
</tr>
<tr>
<td>$E$</td>
<td>$\text{₹} , 8$</td>
<td>$\text{₹} , 8$</td>
<td>$\text{₹} , 8$</td>
</tr>
</tbody>
</table>

Calculate the value of equity share of each of the company applying Walter’s model, when dividend payout ratio is: (a) $50\%$, (b) $75\%$ and (c) $25\%$. You are required to offer your comments on the result.

Solution:

(1) Value of Equity Shares as per Walter’s Model:

<table>
<thead>
<tr>
<th>Dividend Payout Ratio</th>
<th>X Ltd.</th>
<th>Y Ltd.</th>
<th>Z Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>75%</td>
<td>$6 + \frac{0.15}{0.10} \times (8 - 6)$</td>
<td>$6 + \frac{0.05}{0.10} \times (8 - 6)$</td>
<td>$6 + \frac{0.10}{0.10} \times (8 - 6)$</td>
</tr>
<tr>
<td></td>
<td>$= \text{₹} , 90$</td>
<td>$= \text{₹} , 70$</td>
<td>$= \text{₹} , 80$</td>
</tr>
<tr>
<td>25%</td>
<td>$2 + \frac{0.15}{0.10} \times (8 - 2)$</td>
<td>$2 + \frac{0.05}{0.10} \times (8 - 2)$</td>
<td>$2 + \frac{0.10}{0.10} \times (8 - 2)$</td>
</tr>
<tr>
<td></td>
<td>$= \text{₹} , 110$</td>
<td>$= \text{₹} , 50$</td>
<td>$= \text{₹} , 80$</td>
</tr>
</tbody>
</table>

Comments: The value of ‘X’ Ltd.’s share is the highest at $\text{₹} \, 110$ when Dividend Payout Ratio is lowest, i.e., $25\%$. The value of ‘Y’ Ltd. goes on declining with every increase in the earnings retained by it. In case of Z Ltd., the value of share continues to be $\text{₹} \, 80$ in all three situations.

(2) Gordon Growth Valuation Model:

The Gordon Growth Model is a theoretical model used to value the shares of a company. The model considers the retentions of earnings and growth of dividends. Therefore, it is called ‘Dividend Growth Model’. The main proposition of model is that the value of a share reflects the value of the future dividends accruing to that share. Therefore, the dividend payments and growth are relevant in valuation of shares. The model holds that share price is equal to the sum of share’s discounted future dividend payments. The value of a share, as per Gordon Growth Model, is determined as follows:

$$P_o = \frac{D_0 \times (1 + g)}{K_e - g} = \frac{D_t}{K_e - g}$$
where, \( P_0 \) = Current ex-dividend market price of a share
\( D_0 \) = Current year’s dividend
\( D_1 \) = Expected dividend
\( K_e \) = Cost of equity capital
\( g \) = Expected future growth rate of dividends

The shareholder’s required rate of return \((K_e)\) can also be calculated by using the Capital Asset Pricing model. The model requires the estimation of future growth of dividends. The Gordon’s Growth Model using dividend capitalisation can also be used as follows:

\[
P_0 = \frac{E_1 (1 - b)}{K_e - br}
\]

where, \( P_0 \) = Current ex-dividend market price of equity share
\( E_1 \) = Expected earnings per share
\( b \) = Retention ratio
\( (1 - b) \) = Dividend payout ratio
\( K_e \) = Cost of capital or capitalisation rate
\( br \) = \( g \) = Growth rate of earnings and dividends

The implications of the Gordon’s Growth Model is that when the rate of return is greater than the discount rate, the price per share increases as the dividend ratio increases. The price per share remains unchanged when the rate of return and discount rate are equal.

The Gordon Growth Valuation Model is based on the following assumptions:
(i) The firm is an all-equity firm and has no debt in its capital structure.
(ii) Retained earning is the only source of financing.
(iii) The internal rate of return is the firm’s cost of capital ‘\( k \)’. It remains constant and is taken as the appropriate discount rate.
(iv) Future growth rate of dividend is expected to be constant.
(v) Growth rate of the firm is the product of retention ratio and its rate of return.
(vi) Cost of capital is always greater than the growth rate.
(vii) Corporate taxes do not exist.
(viii) The growth rate \( g = br \) is constant forever.

**Q.3** X Ltd. has an investment of ₹ 5,00,000 in assets and 50,000 shares outstanding at ₹ 10 each. It earns a rate of 15% on its investment and has a policy of retaining 50% of the earnings. If the appropriate discount rate is 10%, determine the price of company’s share using Gordon’s Growth Model. What will be the share price if the company has a payout of 80% or 40%?

**Solution:**

Gordon’s Share Valuation Model.

\[
P_0 = \frac{D_1}{K_e - g} \quad \text{or} \quad \frac{E_1 (1 - b)}{K_e - br}
\]
where, $P_0$ = Current ex-dividend market price  
$D_1$ = Expected dividend  
$K_e$ = Rate of return required by shareholders  
$g$ = Growth rate of earnings and dividends  
$E_1$ = Earnings per share  
$b$ = Fraction of earnings the firms ploughs back  
$r$ = Rate of return earned on investments

1. If dividend payout is 50%,

$$P_0 = \frac{(10 \times 0.15) (1 - 0.2)}{0.10 - (0.15 \times 0.5)}$$

$$= \frac{0.75}{0.025} = \text{Rs} \ 30$$

2. If dividend payout is 80%,

$$P_0 = \frac{(10 \times 0.15) (1 - 0.2)}{0.10 - (0.15 \times 0.5)}$$

$$= \frac{1.20}{0.07} = \text{Rs} \ 17.14$$

3. If dividend payout is 40%,

$$P_0 = \frac{(10 \times 0.15) (1 - 0.6)}{0.10 - (0.15 \times 0.60)}$$

$$= \frac{0.6}{0.01} = \text{Rs} \ 60$$

**Q.4** Ruchi Soya Ltd. is an established company having its shares quoted in the stock market. The company has distributed dividend at 20% p.a. The paid-up capital of the company was Rs 50 lakh shares of Rs 10 each. Annual growth rate in dividend expected is 3%. The expected rate of return on its equity capital is 15%. Calculate the value of shares of Ruchi Soya Ltd. based on Gordon’s dividend growth model.

**Solution:**

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

$$= \frac{2 (1 + 0.03)}{(0.15 - 0.03)}$$

$$= \frac{2.06}{0.12}$$
Dividend Decision

According to MM Hypothesis, the market value of a share in the beginning of the period is equal to the present value of dividends paid at the end of the period plus the market price of the share at the end of the period. The value can be determined with the help of the following formula:

\[
P_0 = \frac{D_1 + P_1}{(1 + K_e)}
\]

where, 
- \( P_0 \) = Current market price of a share
- \( K_e \) = Cost of equity capital
- \( D_1 \) = Dividend to be received at the end of period
- \( P_1 \) = Market price of a share at the end of period

The above equation can be modified as under:

\[
P_1 = P_0 (1 + K_e) - D_1
\]

The MM Hypothesis is based on the following assumptions:
(i) Capital markets are perfect.
(ii) Information is freely available to the investors and there are no transaction costs.
(iii) The firm has a fixed investment policy.
(iv) There are no taxes or there are uniform taxes.
(v) Risk or uncertainty does not exist.

Q.5 D Ltd. belongs to a risk class for which the appropriate capitalisation rate is 10%. It has 25,000 shares outstanding. The current market price of the share is ₹ 100. The company is contemplating the declaration of dividend of ₹ 5 per share at the end of the current year. The company expects to have a net income of ₹ 2,50,000 and has a proposal for making new investments of ₹ 5,00,000. You are required to calculate:

(a) Market price per share when dividend is declared.
(b) Market price per share when dividend is not declared.
(c) Number of new shares to be issued.
(d) Show that the payment of dividend does not affect the value of the firm.

Solution:

1. Calculation of market price when dividend is declared:

\[
P_1 = P_0 (1 + K_e) - D_1
\]

\[
= 100 (1 + 0.1) - 5
\]

\[
= ₹ 100 \times 1.1 - 5
\]

\[
= 110 - 5
\]

\[
= 105
\]

2. Calculation of market price per share when dividend is not declared:

\[
P_1 = P_0 (1 + K_e) - D_1
\]

\[
= 100 (1 + 0.1) - 0
\]
3. Calculation of number of new shares to be issued:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Dividend Declared</th>
<th>Dividend Not Declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income (₹)</td>
<td>2,50,000</td>
<td>2,50,000</td>
</tr>
<tr>
<td>Less: Dividend paid</td>
<td>1,25,000</td>
<td></td>
</tr>
<tr>
<td>Retained earnings</td>
<td>1,25,000</td>
<td>2,50,000</td>
</tr>
<tr>
<td>New investments</td>
<td>5,00,000</td>
<td>5,00,000</td>
</tr>
<tr>
<td>Amount to be raised by issue of new shares</td>
<td>3,75,000</td>
<td>2,50,000</td>
</tr>
<tr>
<td>Market price per share</td>
<td>₹105</td>
<td>₹110</td>
</tr>
<tr>
<td>∴ Number of new shares to be issued</td>
<td>3,75,000</td>
<td>2,50,000</td>
</tr>
<tr>
<td></td>
<td>105</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>= 3,571</td>
<td>= 2,273</td>
</tr>
</tbody>
</table>

4. Verification of MM Dividend Irrelevancy Theory:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Dividend Declared</th>
<th>Dividend Not Declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing shares</td>
<td>25,000</td>
<td>25,000</td>
</tr>
<tr>
<td>New shares to be issued</td>
<td>3,571</td>
<td>2273</td>
</tr>
<tr>
<td>Total Shares</td>
<td>28,571</td>
<td>27,273</td>
</tr>
<tr>
<td>Market price per share</td>
<td>₹105</td>
<td>₹110</td>
</tr>
<tr>
<td>Total market value of shares at the end of the year</td>
<td>30,00,000</td>
<td>30,00,000</td>
</tr>
</tbody>
</table>

Thus, whether dividends are paid or not, the value of the firm remains the same.

Q.6 Bajaj Ltd. has 1,20,000 shares outstanding and selling at ₹ 20 each in the market. The company hopes to make a net income of ₹ 3,50,000 during the year ended 31st March, 2009. The company is considering to pay a dividend of ₹ 2 per share at the end of the current year. The capitalisation rate for class of this company has been estimated to be 15% using MM Dividend Valuation Model.

(a) What will be the price of a share at the end of the year: (i) if dividend is paid and (ii) if dividend is not paid?

(b) How many new shares must the company issue if the dividend is paid and the company needs ₹ 7,40,000 for an approved investment expenditure during the year?

Solution:

(a) Calculation of market price per share under MM Dividend Valuation Model:

\[ P_t = P_0 (1 + r_c) - D_t \]

(i) If dividend is declared:

\[ P_t = P_0 (1 + r_c) - D_t \]

\[ = 20 (1 + 0.15) - 2 \]
Dividend Decision

= 20 (1.15) – 2
= ₹ 23

(ii) If dividend is not declared:

\[ P_1 = P_0 (1 + K_e) - D_1 \]
\[ = 20 (1 + 0.15) - 0 \]
\[ = 20 (1.15) \]
\[ = ₹ 23 \]

(iii) Calculation of number of shares of new shares to be issued:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Dividend Declared</th>
<th>Dividend Not Declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income (₹)</td>
<td>3,50,000</td>
<td>3,50,000</td>
</tr>
<tr>
<td>Less: Dividend paid</td>
<td>2,40,000</td>
<td>–</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>1,10,000</td>
<td>3,50,000</td>
</tr>
<tr>
<td>New investments</td>
<td>7,40,000</td>
<td>7,40,000</td>
</tr>
<tr>
<td>Amount to be raised by issue of new shares</td>
<td>6,30,000</td>
<td>3,90,000</td>
</tr>
<tr>
<td>Market price per shares</td>
<td>21</td>
<td>23</td>
</tr>
</tbody>
</table>

\[ \therefore \text{Number of new shares to be issued} = 30,000 \]

Q.7 The following information is available in respect of a company:

Capitalisation rate \((K_e) = 0.12\)

EPS \(= ₹ 15\)

Rate of return on investments \((r)\): (i) 0.15 and (ii) 0.10

The company wants to know the effect on the market price of its shares under the two possibilities of \(r\) (i.e., 0.15 and 0.10) under two options: (i) if it does not declare any dividend and (ii) if it declares ₹ 15 as dividend. Using Walter’s Model, explain the results obtained by you.

\((MU; MMS; Dec. 2008)\)

Solution:

\[
\text{D/P Ratio} = P = \frac{D + \frac{r}{K_e} (E - D)}{K_e}
\]

<table>
<thead>
<tr>
<th>Calculation of Market Price of Company’s Share</th>
<th>100%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividend Payout Ratio</td>
<td>15%</td>
<td>0%</td>
</tr>
<tr>
<td>(D = 15)</td>
<td>15 + (\frac{0.15}{0.12} (15 - 15))</td>
<td>0 + (\frac{0.15}{0.12} (15 - 0))</td>
</tr>
<tr>
<td>(P = \frac{0.12}{0.12})</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>(= ₹ 125)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(= ₹ 156.25)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Using Walter’s Model, the market price of a share remains the same in case the value of ‘r’ is changed and dividend is declared by the company. However, the value of share is reduced if the value of ‘r’ is reduced and if the company does not declare dividend.

Q.8 A company expects to generate the following net income and incur the following capital expenditure in the next five years as per the following details:

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Profit</td>
<td>75</td>
<td>60</td>
<td>45</td>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>Capital Expenditure</td>
<td>40</td>
<td>45</td>
<td>55</td>
<td>47</td>
<td>50</td>
</tr>
</tbody>
</table>

The total number of outstanding shares are 18,00,000 and Current Dividend is ₹ 6.5 per share. You are required to:

(a) Determine the Dividend Per Share, if the company follows a residual dividend policy.
(b) Determine the amount of external financing if the current dividend is maintained.
(c) Determine the amounts of external financing if the company maintains a 50% Dividend Payout Ratio.
(d) Identify under which of the above three policies the aggregate dividends are maximised and under which policy the amount of external financing is minimised.

Solution:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Profit</td>
<td>75</td>
<td>60</td>
<td>45</td>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>Less: Capital expenses</td>
<td>40</td>
<td>45</td>
<td>55</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td>Residual Profit</td>
<td>35</td>
<td>15</td>
<td>NIL</td>
<td>NIL</td>
<td>NIL</td>
</tr>
<tr>
<td>(A) Dividend per share:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Profit/No. Shares</td>
<td>1.94</td>
<td>0.83</td>
<td>NIL</td>
<td>NIL</td>
<td>NIL</td>
</tr>
<tr>
<td>External finance required</td>
<td>NIL</td>
<td>NIL</td>
<td>10</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>(B) Funds required for dividend</td>
<td>117</td>
<td>117</td>
<td>117</td>
<td>117</td>
<td>117</td>
</tr>
<tr>
<td>(Current dividend 6.5 × 18)</td>
<td>40</td>
<td>45</td>
<td>55</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td>Add: Funds required for Capital Expenses</td>
<td>157</td>
<td>162</td>
<td>172</td>
<td>164</td>
<td>167</td>
</tr>
<tr>
<td>Internal Funds</td>
<td>157</td>
<td>162</td>
<td>172</td>
<td>164</td>
<td>167</td>
</tr>
<tr>
<td>Less: Net Profit</td>
<td>75</td>
<td>60</td>
<td>45</td>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>External Finance Required</td>
<td>82</td>
<td>102</td>
<td>127</td>
<td>124</td>
<td>142</td>
</tr>
</tbody>
</table>

Q.9 Pradeep Enterprises is a fast growing firm in a manufacturing sector. Following is the balance sheet of the company for the year ending 2010-2011:
The management of the company has been following a dividend payout of 40% constantly in the past.

However, it is not sure as to whether it should continue the practice as it has enough investment opportunities in store. It has, therefore, approached you for advice and needs you to answer the following questions with reason if any:

(a) If it continues the earlier dividend policy, what is the rate of dividend it will be declaring and how much is the cash outflow?

(b) Can it give out bonus shares in lieu of dividend to avoid the cash outflow in the form of dividend payment?

(c) If it wants to give out dividends @ 40%, then how much is the cash outflow?

(d) If the current market price of the share is ₹ 50, what would be the P/E ratio?

(e) If in the future years it incurs a loss due to incorrect investments, then can it still pay out dividends?

**Solution:**

\[
\text{Dividend Payout Ratio} = \frac{\text{DPS}}{\text{EPS}} \times 100
\]

\[
\text{DPS} = \frac{\text{DPS}}{3.33} \times 100
\]

\[
\therefore \text{DPS} = ₹ 1.33
\]

\[
\text{DPS} = ₹ 40
\]

\[
\text{EPS} = \frac{\text{NPAT} - \text{Preference Dividend}}{\text{No. of Equity Shares}}
\]

\[
= \frac{1,00,000}{30,000}
\]

\[
= ₹ 3.33
\]

\[
\text{Rate of Dividend} = \frac{\text{DPS}}{\text{Face Value/Paid-up Value}} \times 100
\]
= \frac{1.33}{10} \times 100
= 13.3\%

(a) Cash Outflow = \text{No. of Shares} \times \text{DPS}
= 30,000 \times 1.33
= \text{₹} 39,900

or

= \text{PAT} \times 40\%
= 1,00,000 \times 40\%
= 40,000

(b) No, the company cannot give out Bonus Shares in lieu of Dividend to avoid cash outflow, as it is forbidden by SEBI Regulations.

(c) Dividend per Share = \text{Rate of Dividend} \times \text{Face Value}
= \frac{40}{100} \times 10
= \text{₹} 4

\therefore \text{Cash Outflow} = \text{No. of Shares} \times \text{DPS}
= 30,000 \times 4
= \text{₹} 1,20,000

(d) \text{P/E Ratio} = \frac{\text{MPS}}{\text{EPS}} = \frac{50}{3.33} = 15 \text{ times}

(e) Yes, the company can declare dividend in future year if it incurs a loss, after satisfying below condition of Companies Act 1956:

1. First set off current year loss against Accumulated Profits of previous year.
2. The Rate of Dividend Declared cannot exceed Average Rate of Dividend of last five years.
3. The balance left in Reserves should not follow below 15% of the paid-up capital

Q.10 BPR Ltd. is a listed company set up by new entrepreneurs for the manufacture of refractories. Refectory is a consumable which, if not made available to the still industry, would render operations impossible because it is the refeactory which confines the heat inside the furnace. But unfortunately for the greenfield promoters, the steel industry worldwide has hit a trough. The domestic industry, in particular, is being buffered by falling demand growth and large-scale imports at the same time. BPR which has been in existence for less than year has not yet achieved the projected first year capacity of 60%.

For above company, state whether you would expect it to distribute high or low proportion of earnings as dividend and whether you would expect them to have a relatively high or low price earning ratio.
Solution:

Comments:
1. As the company has not achieved projected first year capacity and the steel industry has just now entered in recession phase, the company is advised to distribute lower proportion of earnings as dividend. This will help to generate profits to meet future contingencies.
2. As the future growth prospects and earning prospects are not too good, the shares of the company will be traded at relatively low P/E Ratio.

Q.11 IFL Ltd. is an acknowledged leader in the pump industry with over 60% of the market share. The product range consists of a wide range of power driven pumps including submersible pumps, special pumps for application in fertiliser, chemical and petrochemical industries. The company paying steady dividends had a turnover growth at an annual Compound Annual Growth Rate (CAGR) of 28% over the last five years and the company had been maintaining its market share in spite of the intense competition. But unexpectedly for the current financial year, the company reported a net loss of over ₹ 10 crore. This has mainly been attributed to the loss of a major order as well as IFL extending credit period to customers.

For above company, state whether you would expect it to distribute high or low proportion of earnings as dividend and whether you would expect them to have a relatively high or low price earning ratio.

Solution:

IFL Ltd.

Facts of the Case Study:
1. IFL Ltd. is an acknowledged leader with over 60% market share.
2. The company has diversified product portfolio/range of pumps.
3. The company is paying steady dividend in past years.
4. Turnover growth is at a CAGR of 28%.
5. Unexpectedly for the current financial year, the corporate net loss of ₹ 10 crore.
6. The reason for lower profitability/loss is:
   (i) Loss of a major order and extending credit period to customers.
   (ii) Loss of a major order.

Observations:
1. IFL Ltd. is a reputed company.
2. The company follows steady dividend per share policy in spite of increase in profits.

F.V. to rate of dividend = 50%

\[
\frac{5}{10} \times 100 = 50\%
\]

\[
\frac{5}{15} \times \frac{5}{20} \times \frac{5}{25} \times \frac{5}{30} \times \frac{5}{35}
\]

EPS keeps on changing = 14%
DPS remain the same
3. Healthy growth in turnover/profits and low dividend policy (Low Dividend Payout Ratio) will result into huge retained earnings.

4. The reason for loss are temporary and it is viewed that future outlook of the company is good.

**Recommendations/Conclusions:**

1. The company is advised to follow same rate of dividend or marginally higher rate of dividend.
   
   This will result into distributing high proportion of earnings as dividends.
   
   This is because company has huge retained earnings, future outlook is good, etc.

2. One needs to compare the company’s P/E with other companies in the same field and not with the company’s previous P/E.
   
   It is the market leader and it is expected that the company will bounce back in future, the shares of the company will be traded at relatively high P/E ratio.

3. The company is advised to improve the receivable management and take efforts to secure large orders.

**Q.12** The director of the following Indian company has approached you with their concern for the current business scenario and future prospects.

Cadbury Products Limited is an established company in the field of dairy products, chocolates and ice-creams. It has a decent track record of dividend, which average @ 40% p.a. The company has also a good record of bonus issue. The last bonus issue was made in September 2000.

The company feels that due to the conspiracy hatched by its competition with the help of widespread network of distributors, the company’s product were shown to have been contaminated and it was also widely shown on the media that under the wrappers of many of their chocolates and ice-cream, there was a layer of fungus and decayed dry fruits. The snaps and live interview of the consumers complaining about the inferior quality and “totally unsafe for human consumption” shouts, drastically brought down the sale in the last quarter of the financial year 2003-2004.

The directors immediately undertook damage controlling steps and through wide scale advertisement campaign tried to restore the public confidence. However, the current year’s performance is very much lower than the earlier years and any prudent financial consultant would not recommend dividend more than 20% this year.

The directors are of the opinion that the sale would again pick-up from the 2nd quarter of the next year and then will be normal thereafter.

Give your guidance in above case, with special reference to the issues related to dividend/bonus policy and future share price behaviour on the stock exchange.

**Solution:**

**Cadbury Products Limited**

**Facts:**

1. Cadbury’s Product Limited is an established, in the field of dairy products, chocolates and ice-creams.
2. The company has a decent track record of dividend which average 40% p.a.
3. The company also has a good record of bonus issue.
4. The last bonus issue was made in September 2000.
5. The company’s product were known to have been contaminated.
6. This brought down the sale in the last quarter of financial year 03-04.
7. The directors immediately undertook damage controlling steps to restore public confidence.
8. Current year performance is very much low than earlier year and prudent financial consultant would not recommend more than 20% this year.
9. The directors are of opinion that the sale would again pick-up from 2nd quarter of next year and then will be normal thereafter.

Observations:
1. It is a reputed FMCG leader.
2. The company believes in sharing wealth with shareholders in the form of cash dividend.
3. The company tries to maximise wealth by stock dividend at regular intervals.
   The last bonus issue was made 3 ½ years back.
4. Due to conspiracy hatched by competitor, the company’s product were shown on the media to be of inferior quality and to tally unsafe for human consumption.
5. The reduction in sales is a temporary phenomena and wide scale advertisement campaign and other measures would result into sales picking up from 2nd quarter of next year.

Recommendations:
1. The company is advised to declare marginally higher rate of dividend than last year. This will enhance confidence of shareholders regarding financial liquidity of the company.
2. The company is advised to introduce double packaging and improve storage facilities.
3. Because of sufficient retained profits and expectations of shareholders, the company is advised to declare bonus issue.
4. The company is also advised to train its sales staff and come up with incentive schemes for the distributors/retailers.

Conclusion:
1. Marginally higher rate of dividend, bonus issue and other measures will have a good impact on a future share price/shareholders wealth of the company.

Q.13 The director of the following Indian company has approached you with their concern for the current business scenario and future prospectus.
Infosys Software Ltd. is a well-established company in the field of software development, e-service provider and manpower consultancy service. Its clientele is mainly in the banking, airways and transport sector. Almost 60% of the revenue comes from overseas clients. It has shown a steady growth and progress for last five years and has paid dividend of 15%, 15%, 17%, 20% and 25%, and still a large amount of profits where ploughed back every year. Till December 2003, everything was going smoothly, but all of a sudden the overseas countries having maximum business associates, saw the rise of anti-outsourcing agitations. The problem got further aggravated by rupee becoming stronger day by day against the US dollar. The company somehow managed to complete the ongoing contract but is not so sure of the future
prospectus. The company is also in the process of finalising new business ventures with “non-affected countries” and also taking steps to expand its operations more in India. The company is hopeful of getting the better results for all its efforts.

Give your guidance in above case, with special reference to the issues related to dividend/bonus policy and future share price behaviour on the Stock Exchange.

Solution:

**Infosys Software Ltd.**

**Facts:**
1. Infosys Software Ltd. is a well-established software company.
2. Its clientele is mainly in banking, airways and transport sector.
3. Almost 60% of the revenue comes from overseas clients.
4. The company has shown steady progress and has paid dividend of 15%, 15%, 17%, 20% and 25%.
5. Till December 2003, everything was normal but all of a sudden the company saw the rise of anti-outsourcing agitation.
6. The problem got further aggravated by rupee becoming stronger under US dollar.
7. The company completed the ongoing contract but it is not so sure of future prospects.
8. The company is in process of finalising new business venture and also taking steps to expand its operation in India.

**Observations:**
1. Infosys Software Ltd. is a reputed software company.
2. It is a diversified company having its operation in different like banking, airways and transport sector.
3. The company believes in sharing wealth with the shareholders, i.e., the company believes in shareholders’ wealth maximisation because it has paid steady increase of dividend.
4. Till December 2003, everything was normal, but after that company had to face the problem of anti-outsourcing agitation and after that, situation got worse by rupee becoming stronger day by day against the US dollar.
5. In spite of all these problems, the company somehow manage to complete its existing contract.
6. The company is also in the project of finalising new business ventures with “non-affected countries” and is also taking steps to expand its operations more in India.

**Recommendations:**
1. The company, though follows a steady dividend policy, is advised to increase marginally so as to be retained the existing shareholders and also try attracting more.
2. The company is advised to concentrate on its new business ventures with non-affected countries as well as try to expanding operations more in India.
3. The company is also advised to make a bonus issue out of its retained profits, this will have positive outlook to the shareholders towards the company.
Conclusion:

1. Marginally higher rate of dividend at regular intervals bonus issue and company’s concentration on its future projects will have the company to maintain its position in the market and these steps may give the company new dimensions to expand domestically as well as internationally.

Q.14 Emami Ltd. is a Stock Exchange listed company making good profits every year. However, the Board of Directors are very conservative and has declared dividend at fixed rate of ₹4 per share, when EPS is always above ₹50 for the last five years. The last bonus issue was made six years ago. The salary packages are also not attractive. As a result, there is a high turnover of employees and low volume of company’s share on bourses. The young members of the director’s family wish to make the company more dynamic, employee friendly and darling of shareholders so as to make it most valued one. What steps you would suggest to achieve these objectives?

Solution:

Emami Ltd.

Facts:

1. Emami Ltd. is a stock listed company making good profits every year.
2. The Board of Directors are paying dividend @ 8% p.a. for the last five years.
3. The last bonus issue was six years ago.
4. The salary packages are not attractive.
5. Due to unattractive salary packages there is high turnover of employees.
6. There is low volume of company’s share on bourses.
7. The young members of the directors family wish to make the company more dynamic, employee-friendly and darling of shareholders.

Observations:

1. Emami Ltd. is well-established company making profits steadily every year.
2. The Board of Directors are paying a very low rate of dividend, i.e., 8% and ploughing back 92% of the revenue since last five years.
3. The company is just ploughing back its profits and is least concerned in declaring bonus. The company has not declared a bonus for the last six years.
4. The company’s salary packages are unattractive thus dissatisfying its employees, which is in turn is leading to high turnover of its employees.

Recommendations:

1. The company is advised to declare a higher rate of dividend as compared to the present rate (₹15 to ₹20).
   This will lead to more shareholder wealth maximisation, thus retaining the existing ones and also attracting prospective ones.
2. The company is also advised to declare bonus, which it has not declared for the past six years.
   This will help attracting prospective investors.
3. The company is advised to improve the salary packages of its employees, by giving ESOP performance based incentives, etc.

**Q.15** Rupali & Co. earns `6 per share having capitalisation rate of 10% and has a return on investment @ 20%.

According to Walter’s Model, what should be the price per share at 30% dividend payout ratio? Is this the optimum payment ratio as per Walter’s Model?

**Solution:**

Computation of Market Price:

\[ P = \frac{D + (E - D)R/K}{K} \]

where,

- \( P \) = Market price per equity share
- \( D \) = Dividend per share (30% of 6 = 1.80)
- \( E \) = Earning per share (`)
- \( ED \) = Retained earnings per share (70% of 6 = 4.20)
- \( R \) = Rate of Return on Investment (20%)
- \( K \) = Cost of Capital/Capitalisation Rate (10%)

\[ P = \frac{1.80 + (4.20 \times 2)}{0.10} \]

\[ = \frac{10.2}{0.10} \]

\[ = `102 \]

It cannot be taken as optimum payout ratio because the rate of return is more than the cost of capital. The market price per share will further reduce if the payout ratio is further reduced.

**Q.16** Details regarding three companies are given below:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>( R = 15% )</td>
<td>( R = 10% )</td>
<td>( R = 8% )</td>
</tr>
<tr>
<td>( K_e = 10% )</td>
<td>( K_e = 10% )</td>
<td>( K_e = 10% )</td>
</tr>
<tr>
<td>( E = `10 )</td>
<td>( E = `10 )</td>
<td>( E = `10 )</td>
</tr>
</tbody>
</table>

By using Walter’s Model, you are required to calculate the value of an equity share of each of these companies when dividend payout ratio is:

(a) \( 20\% \)
(b) \( 50\% \)
(c) \( 0\% \) and
(d) \( 100\% \).
Solution:

As per Walter’s Model, the value of shares for three companies A Ltd., B Ltd. and C Ltd. may be stated as under:

\[ P = \frac{D + \frac{r}{K_e} (E - D)}{K_e} \]

where,  
- \( P \) = Market price of share
- \( D \) = Dividend per share
- \( E \) = Earning per share (₹)
- \( R \) = Rate of Return on Investment
- \( K_e \) = Cost of Equity Capital

**Company A Ltd.:**

(a) When D/P Ratio is 20%:

\[ P = \frac{2 + \frac{0.15}{0.10} (10 - 2)}{0.10} = \frac{2 + 12}{0.10} = \frac{14}{0.10} = ₹ 140 \]

(b) When D/P Ratio is 50%:

\[ P = \frac{5 + \frac{0.15}{0.10} (10 - 5)}{0.10} = \frac{5 + 7.5}{0.10} = \frac{12.5}{0.10} = ₹ 125 \]

(c) When D/P Ratio is 0%:

\[ P = \frac{0 + \frac{0.15}{0.10} (10 - 0)}{0.10} = \frac{0 + 15}{0.10} = \frac{15}{0.10} = ₹ 150 \]

(d) When D/P Ratio is 100%:

\[ P = \frac{10 + \frac{0.15}{0.10} (10 - 10)}{0.10} = \frac{10 + 1.5 \times 0}{0.10} = \frac{10}{0.10} = ₹ 100 \]

**Company B Ltd.:**

(a) When D/P Ratio is 20%:

\[ P = \frac{2 + \frac{0.10}{0.10} (10 - 2)}{0.10} = \frac{2 + 8}{0.10} = \frac{10}{0.10} = ₹ 100 \]

(b) When D/P Ratio is 50%:

\[ P = \frac{5 + \frac{0.10}{0.10} (10 - 5)}{0.10} = \frac{5 + 5}{0.10} = \frac{10}{0.10} = ₹ 100 \]
(c) When D/P Ratio is 0%:
\[ P = \frac{0.10 + 0.10 (10 - 0)}{0.10} = \frac{10 + 0}{0.10} = \frac{10}{0.10} = \text{₹} 10 \]

(d) When D/P Ratio is 100%:
\[ P = \frac{10 + 0.10 (10 - 10)}{0.10} = \frac{10 + 0}{0.10} = \frac{10}{0.10} = \text{₹} 10 \]

Company C Ltd.:

(a) When D/P Ratio is 20%:
\[ P = \frac{2 + 0.08 (10 - 2)}{0.10} = \frac{2 + 6.4}{0.10} = \frac{8.4}{0.10} = \text{₹} 84 \]

(b) When D/P Ratio is 50%:
\[ P = \frac{5 + 0.08 (10 - 5)}{0.10} = \frac{5 + 4}{0.10} = \frac{9}{0.10} = \text{₹} 90 \]

(c) When D/P Ratio is 0%:
\[ P = \frac{0 + 0.08 (10 - 0)}{0.10} = \frac{0 + 0.8}{0.10} = \frac{0.8}{0.10} = \text{₹} 8 \]

(d) When D/P Ratio is 100%:
\[ P = \frac{10 + 0.08 (10 - 10)}{0.10} = \frac{10 + 0.8 	imes 0}{0.10} = \frac{10}{0.10} = \text{₹} 10 \]

Q.17 XYZ Ltd. was started a year back with a paid-up equity capital of ₹ 40,00,000. The other details are as under:

Earnings of the company : ₹ 4,00,000
Dividend paid : ₹ 3,20,000
Price-Earnings Ratio : 12.5
Number of shares : 40,000

Your are required to find out whether the company’s dividend payout ratio is optimal, using Walter’s Formula.

Solution:

1. Earning per Share \((E)\) = \(\frac{\text{Earnings of the Company}}{\text{No. of Shares}}\)

\[ = \frac{\text{₹} 4,00,000}{40,000 \text{Shares}} = \text{₹} 10 \]
Dividend Decision

2. Dividend per Share \((D)\) = \(\frac{\text{Dividend Paid}}{\text{No. of Shares}}\)
   
   = \(\frac{₹ 3,20,000}{40,000 \text{Shares}}\)
   
   = ₹ 8

3. Internal Rate of Return \((R_a)\) = \(\frac{\text{Total Earnings of the Firm}}{\text{Total Equity of the Firm}}\)
   
   = \(\frac{₹ 4,00,000}{40,00,000 \times 100}\)
   
   = 10%

4. Cost of Capital \((R_c)\) = \(\frac{1}{\text{P/E Ratio}}\)
   
   = \(\frac{1}{12.5}\)
   
   = 0.08 or 8%

Calculation of Market Price of XYZ Ltd. is more by applying Walter’s Formula:

\[
P = \frac{D + \frac{R_a}{R_c}(E - D)}{R_c}
\]

where, \(P\) = Market price of share
\(D\) = Dividend per share, i.e., ₹ 8
\(R_a\) = Internal rate of return, i.e., 10% or 0.10
\(R_c\) = Cost of capital, i.e., 8% or 0.08
\(E\) = Earning per share, i.e., ₹ 10

\[
P = \frac{8 + \frac{0.10}{0.08}(10 - 8)}{0.08}
\]

\[
= \frac{8 + (1.25 \times 2)}{0.08}
\]

\[
= \frac{8 + 2.5}{0.08}
\]

\[
= \frac{10.5}{0.08}
\]

\[
= ₹ 131.25
\]

Using Walter’s Model, the firm’s payout ratio at 80% is not optimal. The price of share would be maximum if the dividend payout ratio is zero.
According to MM Model, the market price of a share after dividend declared is calculated by the following formula:

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

where, $P_o$ = The prevailing market price of a share

$K_e$ = The cost of equity capital

$D_1$ = Dividend to be received at the end of period one

$P_1$ = Market price of a share at the end of period one

Q.18. S Ltd. has 10 lakh equity shares outstanding at the beginning of the year 2002. The current market price of the shares is ₹ 150 each. The Board of Directors of the company has recommended ₹ 8 per share as dividend. The rate of capitalisation, appropriate to the risk class to which the company belongs, is 12%.

(i) Based on MM approach, calculate the market price of the share of the company when the recommended dividend is:

(a) declared and

(b) not declared

(ii) How many new shares are to be issued by the company at the end of the accounting year on the assumption that the net income for the year is ₹ 2 crores and investment budget is ₹ 4 crores, when:

(a) the above dividends are distributed and

(b) dividends are not declared.

(iii) Show the market value of the shares.

Solution:

Modigliani and Miller Dividend Irrelevancy Model:

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

where, $P_o$ = Existing market price per share, i.e., ₹ 150

$K_e$ = Capitalisation rate, i.e., 12% or 0.12

$D_1$ = Contemplated dividend per share, i.e., ₹ 8

$P_1$ = Market price of share at the end (to be determined)

(a) Calculation of share price when dividend is declared:

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

$$150 = \frac{P_1 + 8}{1 + 0.12}$$

$$150 \times 1.12 = P_1 + 8$$

$$P_1 = 168 - 8$$

$$= ₹ 160$$
(b) Calculation of share price when dividend is not declared:

\[ P_0 = \frac{\frac{P_1 + D_t}{1 + K_e}}{1} \]

\[ 150 = \frac{P_1 + 0}{1 + 0.12} \]

\[ 150 \times 1.12 = P_1 + 0 \]

\[ P_1 = 168 - 0 \]

\[ = \text{₹} 168 \]

(c) Calculation of number of shares to be issued:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>If dividend declared</th>
<th>If dividend not declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td><strong>Less:</strong> Dividend Paid</td>
<td>80</td>
<td>-</td>
</tr>
<tr>
<td>Retained Earnings</td>
<td>120</td>
<td>200</td>
</tr>
<tr>
<td>Investment Budget</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Amount to be raised by issue of new shares (i)</td>
<td>280</td>
<td>200</td>
</tr>
<tr>
<td>Market price per share (ii)</td>
<td>₹ 160</td>
<td>₹ 168</td>
</tr>
<tr>
<td>No. of new shares to be issued (i)/(ii)</td>
<td>1,75,000</td>
<td>1,19,048</td>
</tr>
</tbody>
</table>

Q.19. PQR Auto Ltd. has outstanding 1,20,000 shares selling at ₹ 20 per share. The company hopes to make a net income of ₹ 3,50,000 during the year ended 31st March, 2011. The company is considering to pay a dividend of ₹ 2 per share at the end of current year. The capitalisation rate of risk class of this company has been estimated to be 15%.

Assuming no taxes, answer the questions listed below on the basis of the Modigliani and Miller Dividend Valuation model:

(i) What will be the price of a share at the end of 31st March, 2010.

(a) if the dividend is paid and

(b) if the dividend is not paid?

(ii) How many new shares must the company issue if the dividend is paid and company needs ₹ 7,40,000 for an approved investment expenditure during the year?

Solution:

(i) Calculation Market Price of share under MM Dividend Irrelevancy Model.

\[ P_0 = \frac{\frac{P_1 + D_t}{1 + K_e}}{1} \]

(a) If dividend is paid:

\[ 20 = \frac{P_1 + 2}{1 + 0.15} \]

\[ 20 \times 1.15 = P_1 + 2 \]

\[ P_1 = \text{₹} 21 \]
(b) If dividend is not paid:

\[
20 = \frac{P_1 + 0}{1 + 0.15}
\]

\[
20 \times 1.15 = P_1 + 0
\]

\[
P_1 = ₹ 23
\]

(ii) Calculation of number of new shares to be issued, if the dividend is paid and company needs ₹ 7,40,000 for investment expenditure.

\[
\Delta N = \frac{1 - (E - nD)}{P_1}
\]

\[
= \frac{7,40,000 - (3,50,000 - (1,20,000 \times 2))}{21}
\]

\[
= \frac{7,40,000 - 1,10,000}{21}
\]

\[
= 30,000 \text{ Shares}
\]

Therefore, the company has to issue 30,000 new shares to meet its capital expenditure, after payment of dividend.

Q.20 XYZ Ltd. has 50,000 outstanding shares. The current market price per share is ₹ 100 each. It hopes to make a net income of ₹ 5,00,000 at the end of current year. The Company’s Board is considering a dividend of ₹ 5 per share at the end of current financial year. The company needs to raise ₹ 10,00,000 for an approved investment expenditure. The company belongs to a risk class for which the capitalization rate is 10%. Show now does the MM approach affect the value of firm if the dividends are paid or not paid.

Solution:

(a) Calculation of Market Price of Share under MM Dividend Irrelevancy Model:

\[
P_o = \frac{P_1 + D}{1 + K_c}
\]

(i) If dividend is declared:

\[
100 = \frac{P_1 + 5}{1 + 0.10}
\]

\[
110 = P_1 + 5
\]

\[
P_1 = ₹ 105
\]

(ii) If dividend is not declared:

\[
100 = \frac{P_2 + 0}{1 + 0.10}
\]

\[
110 = P_2
\]

\[
P_1 = ₹ 110
\]
(b) Calculation of Number of New Shares to be Issued:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>If dividend declared</th>
<th>If dividend not declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>5,00,000</td>
<td>5,00,000</td>
</tr>
<tr>
<td><strong>Less:</strong> Dividend Paid</td>
<td>2,50,000</td>
<td>–</td>
</tr>
<tr>
<td>Retained Earnings</td>
<td>2,50,000</td>
<td>5,00,000</td>
</tr>
<tr>
<td>Investment Budget</td>
<td>10,00,000</td>
<td>10,00,000</td>
</tr>
<tr>
<td>Amount to be raised by issue of new shares (i)</td>
<td>7,50,000</td>
<td>5,00,000</td>
</tr>
<tr>
<td>Market Price per share (ii)</td>
<td>₹ 105</td>
<td>₹ 110</td>
</tr>
<tr>
<td>No. of new shares to be issued (i)/(ii)</td>
<td>7,143</td>
<td>4,545</td>
</tr>
</tbody>
</table>

(c) Verification of MM Dividend Irrelevancy Theory

<table>
<thead>
<tr>
<th>Particulars</th>
<th>If dividend declared</th>
<th>If dividend not declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Shares</td>
<td>50,000</td>
<td>50,000</td>
</tr>
<tr>
<td>New Shares Issued</td>
<td>7,143</td>
<td>4,545</td>
</tr>
<tr>
<td>Total Number of Shares at the Year End (i)</td>
<td>57,143</td>
<td>54,545</td>
</tr>
<tr>
<td>Market Price per Share (ii)</td>
<td>₹ 105</td>
<td>₹ 110</td>
</tr>
<tr>
<td>Total Market Value of Shares at the End of Year (i)/(ii)</td>
<td>₹ 60 lakhs</td>
<td>₹ 60 lakhs</td>
</tr>
</tbody>
</table>

Thus, whether dividends paid or not, the value of the firm remains the same.

Q.21 Vivek Ltd. had 1,00,000 equity shares of ₹ 10 each outstanding on 1st January, 2007. The shares are currently being quoted at par in the market. In the wake of the removal of the dividend restraint, the company now intends to pay a dividend of ₹ 2 per share for the current financial year. It belongs to a risk class whose appropriate capitalisation rate is 15%. Using Modigliani-Miller Model and assuming no taxes, ascertain the price of the company’s shares as it is likely to prevail at the end of the year – (i) when dividend is declared and (ii) when no dividend is declared.

Also find out the number of new equity shares that company must issue to meet its investment needs of ₹ 4 lakhs assuming that the dividend is paid and the earnings per share works out at ₹ 2.20.

Solution:

(i) Price of the share, when dividend is declared:

\[ P_0 = \frac{P_1 + D_1}{1 + K_e} \]

where, \( P_0 \) = The prevailing market price of a share

\( K_e = \) Cost of equity, i.e., 15%

\( D_1 = \) Dividend to be received at the end of period one, i.e., ₹ 2

\( P_1 = \) Market price of share at the end of period one, i.e., ₹ 10

\[ ₹ 10 = \frac{₹ 2 + D_1}{1.15} \]
11.5 = 2 + P_1
P_1 = 11.5 - 2
P_1 = ₹ 9.5

(ii) Price of the share, when no dividend is declared:

₹ 10 = \frac{P_1}{1.15}
\Rightarrow P_1 = ₹ 9.5

(iii) Calculation of number of new shares to be issued when dividend is paid:

\Delta N = \frac{I - (E - ND_1)}{P_1}

where,

I = Investment requirement
E = Earning of the firm during the period
ND_1 = Total dividend paid

Substituting the available information in the above equation, we get

N = \frac{4,00,000 - (₹ 2,20,000 - ₹ 2,00,000)}{9.5}

= \frac{3,80,000}{9.5}

= 40,000 Shares

Thus, 40,000 new equity shares are to be issued to meet the investment requirements of the company.

Q.22 MN Ltd. has capital of ₹ 10,00,000 in equity shares of ₹ 100 each. The shares are currently quoted at par. The company proposes declaration of a dividend of ₹ 10 per share. The capitalisation rate for the risk class to which the company belongs is 12%.

What will be the market price of the share at the end of the year, if – (i) no dividend is declared and (ii) 10% dividend is declared?

Assuming that the company pays the dividend and has net profit of ₹ 5,00,000 and makes new investment of ₹ 10,00,000 during the period, how many new shares must be issued? Use the MM Model.

Solution:

(a) Calculation of Share Price per under MM Dividend Irrelevancy Model:

\[ P_0 = \frac{P_1 + D_1}{1 + K_r} \]

(i) When dividend is not declared:

100 = \frac{P_1 + 0}{1 + 0.12}
\Rightarrow P_1 = 100 \times 1.12
\Rightarrow P_1 = ₹ 112
When dividend is declared:

\[
100 = \frac{P_1 + 10}{1 + 0.12} \]

\[
P_1 = 100 \times 1.12
\]

\[
P_1 = ₹ 112
\]

\[
P_1 + 10 = 100 \times 1.12
\]

\[
P_1 = ₹ 102
\]

(b) Calculation of Number of New Shares to be Issued:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>If dividend is not declared</th>
<th>If dividend is declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>5,00,000</td>
<td>5,00,000</td>
</tr>
<tr>
<td>Less: Dividend Paid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained Earnings</td>
<td>5,00,000</td>
<td>4,00,000</td>
</tr>
<tr>
<td>New Investments</td>
<td>10,00,000</td>
<td>10,00,000</td>
</tr>
<tr>
<td>Amount to be raised by issue of new shares (i)</td>
<td>5,00,000</td>
<td>6,00,000</td>
</tr>
<tr>
<td>Market Price per share (ii)</td>
<td>₹ 112</td>
<td>₹ 102</td>
</tr>
<tr>
<td>No. of New shares to be issued (i)/(ii)</td>
<td>4,464</td>
<td>5,882</td>
</tr>
</tbody>
</table>

Alternatively,

No. of shares to be issued can also calculated by applying the following formula:

\[
\Delta N = \frac{1 - (E - nD_1)}{P_1}
\]

where, \(\Delta N\) = Change in the number of shares outstanding during the period

- \(n\) = Number of shares outstanding at the beginning of the period, i.e., ₹ 10,000 shares
- \(I\) = Investment amount required for capital budget, i.e., 10,00,000
- \(E\) = Earning of the firm during the period, i.e., ₹ 5,00,000.
- \(P_1\) = Market price of share at the end of period one: (i) if no dividend declared – ₹ 112 and (ii) if dividend declared – ₹ 102.
- \(D_1\) = Dividend to be received at the end of period one, i.e., ₹ 10.

(i) When dividend is not declared:

\[
\Delta N = \frac{₹10,00,000 - (₹5,00,000 - ₹10,000 \times 0)}{₹112}
\]

\[
= \frac{10,00,000 - 5,00,000}{112}
\]

\[
= \frac{5,00,000}{112}
\]

\[
= 4,464 \text{ Shares}
\]
(ii) When dividend is declared:

\[
\Delta N = \frac{\text{\textcurrency 10,00,000} - (\text{\textcurrency 5,00,000} - \text{\textcurrency 10,000 \times 10})}{\text{\textcurrency 102}}
\]

\[
= \frac{10,00,000 - 4,00,000}{102}
\]

\[
= \frac{6,00,000}{102}
\]

\[
= 4,464 \text{ Shares}
\]

\[
= 5,882 \text{ Shares}
\]

**Verification of MM Dividend Irrelevancy Theory**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>If dividend not declared</th>
<th>If dividend declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Shares</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>New Shares Issued</td>
<td>4,464</td>
<td>5,882</td>
</tr>
<tr>
<td>Total Number of Shares at the Year End</td>
<td>(i) 14,464</td>
<td>15,882</td>
</tr>
<tr>
<td>Market Price per Share</td>
<td>(ii) 112</td>
<td>1020</td>
</tr>
<tr>
<td>Total Market Value of Shares at the End of Year</td>
<td>(i)/(ii) 16,20,000</td>
<td>16,20,000</td>
</tr>
</tbody>
</table>

**Analysis:** The market value of shares at the end of year will remain the same whether dividends are distributed or not declared.

**Practice Problems**

Q.1 Following is the EPS record PP Ltd. company over the past ten years.

<table>
<thead>
<tr>
<th>Year ending March</th>
<th>EPS (\textcurrency)</th>
<th>Year ending March</th>
<th>EPS (\textcurrency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>20</td>
<td>2004</td>
<td>12</td>
</tr>
<tr>
<td>2008</td>
<td>19</td>
<td>2003</td>
<td>6</td>
</tr>
<tr>
<td>2007</td>
<td>16</td>
<td>2002</td>
<td>9</td>
</tr>
<tr>
<td>2006</td>
<td>15</td>
<td>2001</td>
<td>3</td>
</tr>
<tr>
<td>2005</td>
<td>16</td>
<td>2000</td>
<td>2</td>
</tr>
</tbody>
</table>

Determine the annual dividend paid each year in the following cases:

(i) If the company’s dividend policy is based on a constant dividend payout policy of 50% for all the years.

(ii) If the policy is to pay \textcurrency 8 per share dividend and increase it to \textcurrency 10 when earnings exceed \textcurrency 14 per share for two consecutive years.

(iii) If the policy is to pay \textcurrency 7 per share dividend each year except when EPS exceeds \textcurrency 14 per share, when an extra dividend equal to 80% of earnings beyond \textcurrency 14 would be paid?

Q.2 What is Capitalisation of Reserves? What are the guidelines issued by SEBI with in this regard? How does it affect the Balance Sheet of a company?
Q.3 The directors of M/s. Rich-e-Rich Ltd. are planning to declare interim dividend. As a financial consultant of the company, the directors want you to send them a brief write-up on the factors to be considered before declaring interim dividend. Kindly prepare a brief write-up.

Q.4 Royal Industries has for many years enjoyed a moderate stable growth in sales and earnings. In recent years, it is facing stiff competition in a plastic product-line and consequently its sales have been declining. Apprehending further decline in its sales, its management is planning to move eventually out of plastic business altogether and develop a new diversified product-line in growth-oriented industries. To execute the proposed investment plan of this year a capital outlay of ₹ 12 crore as in necessary to purchase new facility to start manufacturing a new product. The estimated rate of return on fresh investment is 20% p.a.

The company has been paying a dividend of ₹ 1.50 per share on 4 crore outstanding shares. The dividend policy has been to maintain a stable dividend of rupee one raising it only when it appears that earnings have reached a new permanently higher level. The directors may change such a policy if there are compelling reasons to do so. Total earnings of the current year are ₹ 10 crore. The current price of the equity share is ₹ 15 and firm’s Debt/Assets ratio is 40%. Current costs of various forms of financing are: Debentures 13%, New equity shares sold at ₹ 15, Required rate of return is 10%.

What would be an appropriate policy for the company?

What assumptions, if any, do you make in your investors preference for dividends vs. capital gains?

Q.5 PCR Ltd. was a financially sound company in the not-so-distant past. On equity of ₹ 5.40 crore, it has a net worth of approximately ₹ 120 crore and a gross block ₹ 202.04 crore which has steadily grown at 10% compound annual growth rate. This company which has technical collaboration with Yogyo Corporation Ltd., Japan is considered by analyst to be firmly established and an asset player. Recently declared result for financial year 1997 mirrors the tight money situation prevailing due to economic factors and lacklustre markets rather than operational inefficiency of the company though the lacklustre performance was only to be expected by the company and economy watchers.

For above company, state whether you would expect it to distribute high or low proportion of earnings as dividend and whether you would expect them to have a relatively high or low price earning ratio.

Q.6 GMFF Ltd. manufactures resin bounded silicon carbide crucible which are used by non-ferrous foundries for melting and maintaining of aluminium alloys. Buoyed by the rapid growth in auto-ancillaries and steady growth in domestic appliances and capital goods, GMFF currently holds approximately 40% of the market share. Coupled with the user industry growing at approximately 20% per annum and competitors yielding ground, GMFF should see its already dominant position enhanced to a market share of approximately 60% in the next couple of years.

For above company, state whether you would expect it to distribute high or low proportion of earnings as dividend and whether you would expect them to have a relatively high or low price earning ratio.

The Tata Iron and Steel Company Limited (TISCO)
DIRECTORS’ REPORT
TO THE MEMBERS

The directors hereby present their ninety-fourth annual report on the business and operations of the company and the financial accounts for the year ended 31st March, 2001.

FINANCIAL RESULT

Total revenue increased by 13% from ₹ 6,943.33 crore to ₹ 7,814.58 crore on account of marginally higher sales volumes, improved product-mix and better price realisation in the first half of the year.

After a good first quarter, a combination of factors, such as excess global production, the slowdown of US economy and higher import from Russia and CIS countries at low prices, pushed steel prices down for most of the rest of the year. However, in the face of such adverse circumstances, the company ended the year on a satisfactory note, through aggressive cost-cutting, better product-mix and a marginal improvement in realisation over the previous year. All the major profit centers reported better performance. Gross profit was higher at ₹ 1,757.14 crore as against ₹ 1,285.60 crore in the previous year, an increase of 3%. Provision for depreciation was higher at ₹ 492.25 crore (1999-2000: ₹ 426.54 crore), mainly due to commissioning of the major part of the Cold Rolling Mill Complex during the year. Net interest and expenses towards employee separation compensation amounted to ₹ 376.61 crore and ₹ 201.52 crore respectively (1999-2000: ₹ 359.96 crore and ₹ 157.99 crore), yielding a profit before taxes of ₹ 602.44 crore (after providing for extraordinary items), an increase of 26% and the highest ever achieved by your company. After providing ₹ 49 crore towards taxes, profit after taxes increased by 31% to ₹ 553.44 crore. The performance of the major divisions is discussed separately.

Q.8 Prepare Dividend Policy Analysis:

Case of ACC LTD.

<table>
<thead>
<tr>
<th>Year</th>
<th>EPS (₹)</th>
<th>DPS (₹)</th>
<th>Average Share Price (₹)</th>
<th>Book Value Per Share (₹)</th>
<th>Dividend Payout Ratio</th>
<th>Dividend Yield</th>
<th>Earning Yield</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>5.90</td>
<td>1.70</td>
<td>153.00</td>
<td>53.49</td>
<td>28.8%</td>
<td>1.1%</td>
<td>3.9%</td>
<td>11.0%</td>
</tr>
<tr>
<td>1992</td>
<td>5.31</td>
<td>2.00</td>
<td>95.50</td>
<td>55.77</td>
<td>37.7%</td>
<td>2.1%</td>
<td>5.6%</td>
<td>9.5%</td>
</tr>
<tr>
<td>1993</td>
<td>4.01</td>
<td>3.00</td>
<td>109.75</td>
<td>57.91</td>
<td>74.8%</td>
<td>2.7%</td>
<td>3.7%</td>
<td>6.9%</td>
</tr>
<tr>
<td>1994</td>
<td>5.73</td>
<td>2.50</td>
<td>88.25</td>
<td>57.55</td>
<td>43.6%</td>
<td>2.8%</td>
<td>6.5%</td>
<td>10.0%</td>
</tr>
<tr>
<td>1995</td>
<td>11.60</td>
<td>3.00</td>
<td>121.25</td>
<td>66.81</td>
<td>25.9%</td>
<td>2.5%</td>
<td>9.6%</td>
<td>17.4%</td>
</tr>
<tr>
<td>1996</td>
<td>7.58</td>
<td>3.50</td>
<td>245.00</td>
<td>66.38</td>
<td>46.2%</td>
<td>1.4%</td>
<td>3.1%</td>
<td>11.4%</td>
</tr>
<tr>
<td>1997</td>
<td>5.48</td>
<td>3.50</td>
<td>287.00</td>
<td>67.31</td>
<td>63.9%</td>
<td>1.2%</td>
<td>1.9%</td>
<td>8.1%</td>
</tr>
<tr>
<td>1998</td>
<td>9.07</td>
<td>4.00</td>
<td>240.00</td>
<td>72.10</td>
<td>44.1%</td>
<td>1.7%</td>
<td>3.8%</td>
<td>12.6%</td>
</tr>
<tr>
<td>1999</td>
<td>11.96</td>
<td>5.00</td>
<td>268.75</td>
<td>91.99</td>
<td>41.8%</td>
<td>1.9%</td>
<td>4.5%</td>
<td>13.0%</td>
</tr>
<tr>
<td>2000</td>
<td>16.90</td>
<td>6.00</td>
<td>262.00</td>
<td>125.00</td>
<td>35.5%</td>
<td>2.3%</td>
<td>6.5%</td>
<td>13.5%</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>8.35</td>
<td>3.42</td>
<td>187.05</td>
<td>71.43</td>
<td>44.2%</td>
<td>2.0%</td>
<td>4.9%</td>
<td>11.3%</td>
</tr>
</tbody>
</table>
Review Questions

Q.1 Concept Testing
   (a) Types of Dividend Policy

Q.2 Long Questions
   (a) Explain factors determining Dividend Policy
   (b) MM, Walter and Gordon Model of Dividend Policy