Lesson 14

Theories of Dividend Policy: Relevance Approach

Objectives of the lesson

After studying this lesson, students will be able to:

- Understand of the proposition of relevance of dividend,
- Describe Walter's theory of dividend, and
- Explain crux of the Gordon's theory of dividend.

1.0 Introduction

Dividend policy is basically concerned with deciding whether to pay dividend in cash now or to pay increased dividends at a later stage or distribution of profits in the form of bonus shares. The current dividend provides liquidity to the investors but the bonus share will bring capital gains to the shareholders. The investor's preferences between the current cash dividend and the future capital gain have been viewed differently. Some are of the opinion that the future capital gain are more risky than the current dividends while others argue that the investors are indifferent between the current dividend and the future capital gains. The basic question to be resolved while framing the dividend policy may be stated simply: What is sound rationale for dividend payments?

In the light of the objective of maximizing the value of the share, the question may be restated as follows: Given the firm's investments and financing decisions, what is the effect of the firm's dividend policies on the share price? Does a high dividend payment decrease, increase or does not affect at all the share price. In the first in stance, it may be argued that the dividend policy is important. The value of the share has been defined to be equal to the present value of expected future dividends. So, how can now be suggested that the dividend is not relevant? However, the dividend policy has been a controversial issue among the financial managers and is often referred to as a dividend puzzle.

Various models have been proposed to evaluate the dividend policy decision in relation to value of the firm. While agreement is not found among the models as to the precise relationship, it is still worthwhile to examine some of these models to gain insight into the effect which the dividend policy might have on the market price of the share and hence on the wealth of the shareholders. Two schools of thoughts have emerged on the relationship between the dividend policy and the value of the firm.

One school associated with Walter, Gordon etc. holds that the future capital gains (expected to result from lower current dividend payout) are more risky and the investors have preference for current dividends. The investors do have a tilt towards those firms which pay regular dividend. So, the dividend payment affects the market value of the share and as a result the dividend policy is relevant for the overall value of the firm. On the other hand, the

other school of thought associated with Modigliani and Miller holds that the investors are basically indifferent between current cash dividends and future capital gains.

2.0 Relevance of Dividend Policy

Generally, the firms pay dividends and view such dividend payments positively. The investors also expect and like to receive dividend income on their investments. The firms not paying dividends may be adversely rated by the investors affecting thereby the market value of the share. The basic argument of those supporting the dividend relevance is that because current cash dividends reduce investors' uncertainty, the investors will discount the firm's earnings at a lower rate, Ke thereby placing a higher value on the shares.

If dividends are not paid, the uncertainty of shareholders/ investors will increase, rais ing the required rate of return, Ke resulting in relatively lower market price of the share. So, it may be argued that the dividend policy has an effect on the market value of the share and the value of the firm. The market price of the share will increase if the firm pays dividends, otherwise it may decrease. A firm therefore, must pay a dividend to share holders to fulfill the expectations of the shareholders in order to maintain or increase the market price of the share. The models representing this argument may be discussed here.

3.0 Walter's Model

Walter JE supports the view that the dividend policy has a bearing on the market price of the share and has presented a model to explain the relevance of dividend policy for valuation of the firm based on the following assumptions:

- All investment proposals of the firm are to be financed through retained earnings only and no external finance is available to the firm.
- The business-risk complexion of the firm remains same even after fresh investment decisions are taken. In other words, the rate of return on investment i.e., 'r' and the cost of capital of the firm i.e., 'Ke' are constant.
- The firm has an infinite life.

This model considers that the investment decision and dividend decision of a firm are inter - related. A firm should or should not pay dividends depend upon whether it has got the suitable investment opportunities to invest the retained earnings or not. This model can now be presented as follows.

If a firm pays dividends to shareholders, they in turn, will invest this income to get further returns. This expected return to shareholders is the opportunity cost of the firm and hence the cost of capital, ke to the firm. On the other hand, if the firm does not pay dividends, and instead retains, then these retained earnings will be reinvested by the firm to get return on these investment. This rate of return on the investment, r, of the firm must be at least equal to the cost of capital, K. If r = Ke, the firm is earning a return just equal to what the shareholders could have earned had the dividends been paid to them.

However, what happen if the rate of return, r, is more than the cost of capital, Ke? In such a case, the firm can earn more by retaining the profits, than the shareholders can earn by investing their dividend income. The Walter's model, thus, says that if r > Ke, the firm should refrain from dividends and should reinvest the retained earnings and thereby increase the wealth of the shareholders. However, if the investment opportunities before the firm to reinvest the retain earnings are expected to give a rate of return which is less than the opportunity cost of the shareholders of the firm, then the firm should better distribute the entire profits. This will give opportunity to the shareholders to reinvest this dividend income and get higher returns.

In nutshell, therefore, the dividend policy of a firm depends upon the relationship between r and K. If r > K. (i.e., a case of a growth firm), the firm should have zero payout and reinvest the entire profits to earn more than the investors. If however, r < K, then the firm should have 100% payout ratio and let the shareholders reinvest their dividend income to earn higher returns. If r happens to be just equal to K, the shareholders will be indifferent whether the firm pays dividends or retains the profits. In such a case, the returns to the firm from reinvesting the retained earnings will be just equal to the earnings available to the shareholders on their investment of dividend income.

Thus, a firm can maximize the market value of its share and the value of the firm by adopting a dividend policy as follows:

- If r > k., the payout ratio should be zero (i.e., retention of 100% profit).
- If r < k., the payout ratio should be 100% and the firm should not retain any profit, and
- If r = k., the dividend is irrelevant and the dividend policy is not expected to affect the market value of the share.

In order to testify the above, Walter has suggested a mathematical valuation model i.e.,

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

Here: P = Market Price of Equity Share; D = Dividend per Share; r = Rate of Return on Investment; k = Cost of Equity Share Capital; and E = Earnings per Share of the Firm.

As per the above formula, the market price of a share is the sum of two components, (i) present value of an infinite stream of dividend, and ii) the present value of an infinite stream of return from retained earnings. Thus, the Walter's formula shows that the market value of a share is the present value of the expected stream of dividends and capital gains. The effect of varying payout ratio on the market price of the share under different rates of return, r, have been shown in following example.

The Walter's model provides a theoretical and simple frame work to explain the relationship between dividend policy and value of the firm. As far as the assumptions underlying the model hold good, the behavior of the market price of the share in response to the dividend policy of the firm can be explained with the help of this model. However, the limitation of this model is that these underlying assumptions are unrealistic. The financing of investment proposals only by retained earnings and no external financing is seldom found in real life. The assumption of constant 'r' and constant 'k', is also unrealistic and does not hold good. As more and more investment is made, the risk complexion of the firm will change and consequently the ke may not remain constant.

4.0 Gordon's Model

Myron Gordon has also proposed a model suggesting that the dividend policy is relevant and can affect the value of the share and that of the firm. This model is also based on the assumptions similar to that made in Walter's model. However, two additional assumptions made by this model are as follows:

The growth rate of the firm 'g', is the product of its retention ratio, b, and its rate of return, r, i.e., g = br, and the cost of capital besides being constant is more than the growth rate, meaning that ke > g.

Gordon argues that the investors do have a preference for current dividends and there is a direct relationship between the dividend policy and the market value of the share. He has built the model on the basic premise that the investors are basically risk averse and they evaluate the future dividends/capital gains as a risky and uncertain proposition. Dividends are more predictable than capital gains; management can control dividends but it cannot dictate the market price of the share. Investors are certain of receiving incomes from dividends than from future capital gains. The incremental risk associated with capital gains implies a higher required rate of return for discounting the capital gains than for discounting the current dividends. In other words, an investor values, current dividends more highly than an expected future capital gain.

So, the "bird-in-hand" argument of this model suggests that the dividend policy is relevant as the investors prefer current dividends as against the future uncertain capital gains. When the investors are certain about their returns, they discount the firm's earnings at a lower rate and therefore, placing a higher value for the share and that of the firm. So, the investors require a higher rate of return as retention rate increases and this would adversely affect the share price.

Thus, Gordon's model is a share valuation model (like that of Walter's). Under this model, the market price of a share can be calculated as follows:

$$P = \frac{E(1-b)}{K - b_r}$$

Where: P = Market price of equity share; E = Earnings per share; b = Retention Ratio i.e. (1-Dividend Payout Ratio), r = Rate of return on investment of the Firm; K = Cost of equity share capital; and b_r = Growth rate of the firm. This model shows the relationship between dividend payout ratio i.e., (1 - b), cost of capital 'K', rate of return 'r' and the market value of the share. This can be explained with the help of following example.

If r = k, the dividend policy is irrelevant and the market price remains constant at Rs. 100 only. However, in his revised model, Gordon has argued that even if r = k, the dividend payout ratio matters and the investors being risk averse prefer current dividends which are certain to future capital gains which are uncertain. The investors will apply a higher capitalization rate i.e., k to discount the future capital gains. This will compensate them for the future uncertain capital gain and thus, the market price of the share of a firm which retains profit will be adversely affected. Thus, Gordon's conclusion about the relationship between the dividend policy and the value of the firm are similar to that of Walter's model. The similarity is due to the reason that the underlying assumptions of both the models are same.

5.0 Bird-in-Hand Argument: According to relevance approach dividend policy becomes irrelevant when r = k but this holds good only under their assumptions that r, k, dividends, earnings are predictable and constant. Under the conditions of uncertainty investors' value present cash inflows to future cash inflows. Bird in hand argument simply states that "a bird in hand is worth two in the bush."

Investors are risk averse, not many people like taking heavy risk to make good profits. Investors do prefer profits but on the condition that the risk is at its minimum. So investors prefer present/current dividend to future dividends. Future earnings always contain the element of uncertainty, hence the risk of not receiving it. Thus instead of waiting for future growth (g = br) one may prefer present income which can be immediately utilized productively/profitably. The basic rule of finance states the fundamental to this proposition; "Money today is worth more than money tomorrow". Money today is safer than money receipt of tomorrow and safer money is worth more than risky money.

Summary

Ratio of dividends paid out of earnings to total earnings is termed as payout ratio. High payout ratio implies more dividend and less retained earnings (which is utilized by firm for investment purpose and profitable investment opportunities lead to expansion and growth). Low payout ratio leads to a higher growth as retained earnings are large. The net resultant earnings distributed to shareholders are called dividends the important issue in dividend payments is whether the dividend payouts affect the value of the firm or not. If dividends affect the value of the firm, than dividends are relevant, but if they do not affect the value of the firm they are irrelevant.

Gordon's and Walter's model propose that dividend decisions and investment decisions are dependent functions. In other words dividend decisions do affect the value of the firm. We have seen that relevant theories (Walter's and Gordon's model) suggest that under condition of r > k, the company should go for low payout and invest money in profitable investment opportunities available to it. However, if r < k, the company should go for high payout to the shareholders. Dividends are of many types namely (a) Cash dividends where dividends are paid as cash from operating earnings; and (b) In kind where bonus issue is given to the existing shareholders. Many factors affect dividend payout like legal framework, fund requirement of the firm, nature of business, size of firm, business risk, liquidity position, availability of funds, etc.

Review Questions

1. Discuss the Walter's dividend model giving appropriate examples. What are the demerits of this model?
2. How does dividend policy affect the market value of the firm's securities?
3. What are the basic assumptions and crux of relevance theories of dividend policy?
4. Discuss Gordon's Model of divided policy. How do the two relevance models of dividend policy differ?
5. Discuss with suitable example: (a) Bird-in-Hand Argument; and (b) Relevance of dividend.

Practical Problems on Dividend Policy Decisions

Illustration # 1: If earnings per share (E) of ABC Ltd are Rs. 10; and the cost of Capital (K) is 10%, find the market price of the share under different rates of return (r), of 8%, 10% and 15% for different payout ratios of 0%, 25%, 50%, 75%, and 100%.

Solution: The market price of the share as per Walter's model may be calculated for different combinations of rate of return and dividend payout ratios (the earnings per share and the cost of capital taken as constant) as follows:

By Formula, $P = \dfrac{D + \frac{r}{k}(E - D)}{K}$

D/P Ratio	Rate of Return		
	8%	10%	15%
0%	$P = \dfrac{0 + \frac{0.08}{0.10}(10 - 0)}{0.10} = 80$	$P = \dfrac{0 + \frac{0.10}{0.10}(10 - 0)}{0.10} = 100$	$P = \dfrac{0 + \frac{0.15}{0.10}(10 - 0)}{0.10} = 150$
25%	$P = \dfrac{2.5 + \frac{0.08}{0.10}(10 - 2.5)}{0.10} = 85$	$P = \dfrac{2.5 + \frac{0.10}{0.10}(10 - 2.5)}{0.10} = 100$	$P = \dfrac{2.5 + \frac{0.15}{0.10}(10 - 2.5)}{0.10} = 137.50$
50%	$P = \dfrac{5 + \frac{0.08}{0.10}(10 - 5)}{0.10} = 90$	$P = \dfrac{5 + \frac{0.10}{0.10}(10 - 5)}{0.10} = 100$	$P = \dfrac{5 + \frac{0.15}{0.10}(10 - 5)}{0.10} = 125$
75%	$P = \dfrac{7.5 + \frac{0.08}{0.10}(10 - 7.5)}{0.10} = 95$	$P = \dfrac{7.5 + \frac{0.10}{0.10}(10 - 7.5)}{0.10} = 100$	$P = \dfrac{7.5 + \frac{0.15}{0.10}(10 - 7.5)}{0.10} = 112.50$
100%	$P = \dfrac{10 + \frac{0.08}{0.10}(10 - 10)}{0.10} = 100$	$P = \dfrac{10 + \frac{0.10}{0.10}(10 - 10)}{0.10} = 100$	$P = \dfrac{10 + \frac{0.15}{0.10}(10 - 10)}{0.10} = 100$

It may be seen from the above calculations that for a growth firm (r = 15% and r > k), the market price is highest at Rs. 150 when the firm adopts a zero payout and retains the entire earnings. As the payout increases gradually from 0% to 100%, the market price tends to decrease from Rs. 150 to Rs. 100. For a firm having r < ke (i.e., r = 8%), the market price is highest when the payout ratio is 100% and the firm retains no profit. However, if r = ke = 10%, the price is constant at Rs. 100 for different payout ratios. Such a firm does not have any optimum payout ratio and every payout ratio is as good as any other.

Illustration # 2: Following information is available in respect of XYZ Limited.

Earnings per share (E): Rs. 20; Cost of Capital (K): 11%.

Find the market price of the share if: Rates of return (r) of the firm are 10%, 11% and 12%; and the dividend payout ratios are 20%, 40%, and 60%.

Solution: The market price of share in different situations as per Gordon's model will be:

By formula; $P = \frac{E(1-b)}{K - b_r}$

D/P Ratio	Rate of Return		
	10%	11%	12%
20%	$P = \frac{20(1-0.8)}{0.11-0.08} = 133.33$	$P = \frac{20(1-0.8)}{0.11-0.088} = 181.82$	$P = \frac{20(1-0.8)}{0.11-0.096} = 285.71$
40%	$P = \frac{20(1-0.6)}{0.11-0.06} = 160.00$	$P = \frac{20(1-0.6)}{0.11-0.066} = 181.82$	$P = \frac{20(1-0.6)}{0.11-0.072} = 210.52$
60%	$P = \frac{20(1-0.4)}{0.11-0.04} = 171.48$	$P = \frac{20(1-0.4)}{0.11-0.044} = 181.82$	$P = \frac{20(1-0.4)}{0.11-0.048} = 193.55$

On the basis of above calculations, it can be seen that if the firm adopts a zero payout then the investor may not be willing to offer any price. For a growth firm (i.e., r > k), the market price decreases when the payout ratio is increased. For a firm having r < k, the market price increases when the payout ratio is increased.