Presentation on

DIVIDEND DECISION

PART-I

For the students

of

Semester – VI

B.Com.(Hons. & General)

By

DR. ASIM KUMAR MANNA

Introduction

The term dividend refers to those profits of a company which is distributed by company among its shareholders. It is the reward of the shareholders for investments made by them in the shares of the company. It may also be termed as the part of the profit of a business concern, which is distributed among its shareholders.

According to the **Institute of Chartered Accountant of India**, dividend is defined as “a distribution to shareholders out of profits or reserves available for this purpose”.

TYPES OF DIVIDEND/FORM OF DIVIDEND

Dividend can be divided into the following types:

Based on Forms of Payment

(a) Cash dividend.

(b) Bonus (or, non-cash) dividend

Based on Timing of Payment

(c) Interim Dividend

(d) Final Dividend

Based on Variability

(e) Fixed Dividend

(f) Fluctuating dividend.

Dividend Decision – An Important Financial Management Decision

Dividend decision determines the division of earnings between payments to shareholders and retained earnings.

In dividend decision, a financial manager is concerned to decide one or more of the following:

- Should the profits be ploughed back to finance the investment decisions?

- Whether any dividend be paid? If yes, how much dividend be paid?

- When these dividend be paid? Interim or final.

- In what form the dividend be paid? Cash dividend or Bonus shares.

TYPES OF DIVIDEND POLICY

A few basic dividend policies which firms generally pursue are mentioned below:

Regular Dividend Policy: Dividend payable at the usual rate is called as regular dividend policy. This type of policy is suitable to the small investors, retired persons and others.

Irregular Dividend Policy When the companies are facing constraints of earnings and unsuccessful business operation, they may follow irregular dividend policy. It is one of the temporary arrangements to meet the financial problems.

No Dividend Policy Sometimes the company may follow no dividend policy because of its unfavorable working capital position of the amount required for future growth of the concerns.

TYPES OF DIVIDEND POLICY

Stable dividend policy: Stable Dividend Policy means payment of certain minimum amount of dividend regularly. This dividend policy consists of the following three important forms:

Constant Rate of Dividend: As per this policy, the firm pays a dividend at a fixed rate on the paid up share capital.

•The shareholders are more or less sure on the earnings on their investment.

•not create any problem in those years in which the company is making steady profit.

•may face the trouble in the year when the company fails to earn the steady profit. The rate of dividend should be maintained at a lower level if thus policy is followed.

Constant Percentage of Earnings: A firm may pay dividend at a constant rate on earnings.

Fluctuations in profits lead to fluctuations in dividends, the principle adversely affects the price of the shares. As a result, the firm will find it difficult to raise capital from the external source.

Stable Rupee Dividend plus Extra Dividend: Under this policy, a firm pays fixed dividend to the shareholders. In the year the firm is earning higher profits it pays extra dividend over and above the regular dividend. When the normal condition returns, the firm begins to pay normal dividend by cutting down the extra dividend.

FACTORS DETERMINING DIVIDEND POLICY

1. Profitable Position of the Firm

When the firm earns more profit, they can distribute more dividends to the shareholders.

2. Uncertainty of Future Income

Future income is a very important factor, which affects the dividend policy. When the shareholder needs regular income, the firm should maintain regular dividend policy.

3. Contractual constraints

constrained by restrictive provisions in a loan agreement.

constraints prohibit the payment of cash dividends until a certain level of earnings have been achieved, or they may limit dividends to a certain amount or a percentage of earnings.

FACTORS DETERMINING DIVIDEND POLICY

4. Internal constraints

Suppose that the firm has total liquid assets of Rs.50, 000 (Rs.20, 000 cash +marketable securities worth Rs.30, 000) and Rs.35, 000 of this is needed for operations, the maximum cash dividend the firm can pay is 15,000 (Rs.50, 000 – Rs.35, 000)

5**. Growth prospects**

If the firm is in a growth stage, it may need all its funds to finance capital expenditures. A growth firm is likely to have to depend heavily on internal financing through retained earnings instead of distributing current income as dividends.

6. ***Market Considerations***

The risk-return concept also applies to the firm's dividend policy. A firm where the dividends fluctuate from period to period will be viewed as risky, and investors will require a high rate of return, which will increase the firm's cost of capital. So, the firm's dividend policy also depends on the market's probable response to certain types of policies. Shareholders are believed to value a fixed or increasing level of dividends as opposed to a fluctuating pattern of dividends.

FACTORS DETERMINING DIVIDEND POLICY

7. Owner considerations

The firm's primary concern normally would be to maximize shareholder's wealth.

Tax status of a firm's owners. Suppose that if a firm has a large percentage of wealthy shareholders who are in a high tax bracket, it may decide to pay out a lower percentage of its earnings to allow the owners to delay the payments of taxes until they sell the stock. Of course, when the equity share is sold, the proceeds are in excess of the original purchase price, the capital gain will be taxed, possible at a more favorable rate than the one applied to ordinary income. Lower-income shareholders, however who need dividend income will prefer a higher payout of earnings. As of now, the dividend income is not taxed in the hands of the share holders in India. Instead, for paying out such dividends to its share holders, the company bears the dividend distribution tax.

8. Legal Constrains

The Companies Act 1956 has put several restrictions regarding payments and declaration of dividends. Similarly, Income Tax Act, 1961 also lays down certain restrictions on payment of dividends.

FACTORS DETERMINING DIVIDEND POLICY

9. Liquidity Position

Liquidity position of the firms leads to easy payments of dividend. If the firms have high liquidity, the firms can provide cash dividend otherwise, they have to pay stock dividend.

10. Sources of Finance

If the firm has finance sources, it will be easy to mobilize large finance. The firm shall not go for retained earnings.

11. Growth Rate of the Firm

High growth rate implies that the firm can distribute more dividends to its shareholders.

12. Tax Policy

Tax policy of the government also affects the dividend policy of the firm. When the government gives tax incentives, the company pays more dividends.

13. Capital Market Conditions

Due to the capital market conditions, dividend policy may be affected. If the capital market is prefect, it leads to improve the higher dividend.

Dividend Ratios: Payout and Retention

Dividend payout ratio is the percentage of a company's earnings that it pays out to investors in the form of dividends. It is calculated by dividing dividends paid during a period by net earnings for that period.

Dividend payout ratio is an important indicator of a company's performance from an investor's point of view.

Formula

$$\text{Dividend Payout Ratio} = \frac{\text{Dividends Paid}}{\text{Net Income}} = \frac{\text{Dividend per Share(DPS)}}{\text{Earnings per Share(EPS)}}$$

Interpretation of Dividend Payout Ratio

The dividend payout ratio helps investors determine which companies align best with their investment goals. When shareholders invest in a company, return on their investment comes from two sources: dividends and capital gains. The two sources of return are related as follows:

A high DPR means that the company is reinvesting less money back into the company, while paying out relatively more of its earnings in the form of dividends. Such companies tend to attract income investors who prefer the assurance of a steady stream of income to high potential for growth in share price.

A low DPR means that the company is reinvesting more money back into expanding its business. By virtue of investing in business growth, the company will likely be able to generate higher levels of capital gains for investors in the future. Therefore, these types of companies tend to attract growth investors who are more interested in potential profits from a significant rise in share price, and less interested in dividend income.

Keep in mind that average DPRs may vary greatly from one industry to another. Investors may be willing to forego dividends if a firm has great growth prospects, which is typically the case with companies in sectors such as technology and biotechnology. The retention rate for technology companies in a relatively early stage of development is generally 100%, as they seldom pay dividends. But in mature sectors such as utilities and telecommunications, where investors expect a reasonable dividend, the retention ratio is typically quite low because of the high dividend payout ratio. Real estate investment trusts (REITs) are required by law to pay out a very high percentage of their earnings as dividends to investors.

Example

Based on the information given below, calculate and analyze dividend payout ratio for AAPL Co. and XOM. Corp. All amounts are Rs.(in million).

	2016	2017	2018	2019
AAPL				
Dividends	**-**	**2,488**	**10,564**	**11,126**
Net income	**25,922**	**41,733**	**37,037**	**39,510**
Cash and investments	**25,952**	**29,129**	**40,590**	**25,158**
XOM. Corp.				
Dividends	**9,020**	**10,092**	**10,875**	**11,568**
Net income	**41,060**	**44,880**	**32,580**	**32,520**
Cash and investments	**12,664**	**9,582**	**4,644**	**4,616**

Solution

Dividend Payout Ratio for AAPL for 2017 = $\frac{2{,}488}{41{,}733}$ = 5.96%

The table below shows dividend payout ratios for AAPL and XOM from 2016 till 2019.

	Industry	2016	2017	2018	2019
AAPL	Technology	0	5.96%	28.52%	28.16%
XOM	Oil and Gas	21.97%	22.49%	33.38%	35.57%

AAPL Co. did not pay any dividends in 2016 because the management believed that higher return for investors can be achieved if the earnings generated are reinvested in projects that will generate future growth. This is supported by the company's exceptional revenue growth in 2017. However, during the period from 2017 till 2019 the company's cash pile was way above the level needed to avail the feasible new projects, so the management paid generous dividends in these years. However, in case of a technology company, high dividend payouts are an exception and not a rule.

XOM Corp. on the other hand is in a mature industry which it is expected to maintain a steady dividend payout and even increase it over periods. XOM payout ratio has hovered in the range of 23-36% in the four years which is pretty stable.

Retention Ratio

The retention ratio also referred as the plough-back ratio, is an important financial parameter that measures the number of profits or earnings that are added to retained earnings (reserves) at the end of the financial year. In simple words, the retention rate is the percentage of net profits that are retained by the company and not distributed as dividends to investors at the end of the financial year. It is the opposite of the payout ratio.

The retention rate is calculated by subtracting the dividends distributed (including dividend distribution tax) by a company during the period from the net profit/income and dividing the difference by the net profit/income for the period.

The formula for the retention ratio is:

Retention Ratio = (Net Income - Dividends) / Net Income

On a per-share basis, the retention ratio can be expressed as

1 – (Dividends per share / EPS).

Another formula is:

Retention Ratio = 1 - Payout Ratio

The retention ratio is typically higher for growth companies that are experiencing rapid increases in revenues and profits. A growth company would prefer to plough earnings back into its business if it believes that it can reward its shareholders by increasing revenues and profits at a faster pace than shareholders could achieve by investing their dividend receipts.

The retention ratio may change from one year to the next, depending on the company's earnings volatility and dividend payment policy. Many blue-chip companies have a policy of paying steadily increasing or, at least, stable dividends. Companies in defensive sectors such as pharmaceuticals and consumer staples are likely to have more stable payout and retention ratios than energy and commodity companies, whose earnings are more cyclical.

Examples of Retention Ratio Formula

ABC Company earned `200,000 of net profit during the financial year and decided to give dividends of `40,000 to its shareholders.

Following calculations show how to calculate retention ratio or plowback ratio.

- Retention Ratio = (Net Income – Dividend distributed) / (Net Income)
- Retention Ratio = (`200,000 – `40,000) / `200,000
- Retention Ratio = 80 %

Or,

- Dividend Pay-out Ratio = 40,000 / 200,000
- Dividend Pay-out Ratio = 20 %
- Retention Ratio = 1 – Dividend Pay-out Ratio
- Retention Ratio = 1 – 20 %
- Retention Ratio = 80 %

As you can see, ABC company's retention rate is 80 percent. In other words, ABC keeps 80 percent of its profits in the company and only 20 % of its net profits are distributed to shareholders as dividends. 80 % of the net profit is retained into the business shows business is in a growth phase and more capital is required for future growth. Though one ratio is not sufficient to jump to conclusion, analyst or investor need to look into other parameters to access the growth.

Explanation of Retention Ratio Formula

As companies need to keep part or full portion of their net profits in order to continue its operation and grow, investors take this ratio to help to forecast where companies will be in the near future. Mature companies will start giving a dividend, growing companies will try to keep as much profit they can to fuel the future growth of the company. Most of the tech companies rarely gave dividends because these companies wanted to reinvest in their business and continue to grow at a good rate. The exact opposite is true for established companies like General Electric. General Electric gives dividends every year to its shareholders.

Higher retention ratios are not always considered good from an investors point of view because this means the company doesn’t give many dividends. It might also mean that the stock price is continually appreciating because of company growth prospects. This ratio helps to understand the difference between an earnings stock and a growth stock.


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THEORIES OF DIVIDEND

Walter's Model: Prof. James E Walter formed a model for share valuation that states that the dividend policy of a company has an effect on its valuation. He categorized two factors that influence the price of the share viz. dividend payout ratio of the company and the relationship between the internal rate of return (r) of the company and the cost of capital (k).

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

In case of declining firms which do not have profitable investments i.e. where r<k, the shareholder would stand to gain if the firm distributes it earnings. For such firms, the optimum payout would be 100% and the firms should distribute the entire earnings as dividend.

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

Assumptions of Walter's model

(i) The firm has a very long life.

(ii)Earnings and dividends do not change while determining the value.

(iii)The Internal rate of return (r) and the cost of capital (k) of the firm are constant.

(iv)The investments of the firm are financed through retained earnings only and the firm does not use external sources of funds.

Walter's formula to calculate the market price per share (P) is:

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

$$\text{or,} \quad P = \frac{D + \frac{r}{k}\,(E - D)}{k}$$

where

P = market price per share

D = dividend per share

E = earnings per share

r = internal rate of return of the firm

k = cost of capital of the firm

Example: A company has an EPS of Rs. 15. The market rate of discount applicable to the company is 12.5%. Retained earnings can be reinvested at IRR of 10%. The company is paying out Rs.5 as a dividend.

Calculate the market price of the share using Walter's model.

Solution:

Here,

D = 5, E = 15, k = 12.5%, r = 10%

Market price of the share (P)

= 5/.125 + {.10 * (15-5)/.125} /.125

= Rs.104

Criticism of Walter's Model

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

(i) The basic assumption that investments are financed through retained earnings only is seldom true in real world. Firms do raise fund by external financing.

(ii) The internal rate of return i.e. r also does not remain constant. As a matter of fact, with increased investment the rate of return also changes.

(iii) The assumption that cost of capital (k) will remain constant also does not hold good. As a firm's risk pattern does not remain constant, it is not proper to assume that (k) will always remain constant.

Note: Here, the cost of capital (K) = Cost of equity (Ke), because no external source of financing is used.

Illustration 2:

The following information relates to XYZ Ltd.:

	₹
Paid-up equity capital	20,00,000
Earnings of the company	2,00,000
Dividend paid	1,60,000
Price-earning ratio	12.5
Number of shares outstanding	20,000

You are required to find out whether the company's dividend payout ratio is optimal, using Walter's Model.

Solution:

As per Walter's Model, the market price of the share is

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

Where,

P = Market price per share
D = Dividend per share
r = Internal rate of return
E = Earnings per share
K_e = Cost of equity capital

Earnings per share (E) $= \frac{\text{Total Earnings}}{\text{No. of Shares}} = \frac{2,00,000}{20,000} = ₹10$

Dividend per share (D) $= \frac{\text{Amount of Dividend Paid}}{\text{No. of Shares}} = \frac{1,60,000}{20,000} = ₹8$

Internal rate of return (r) $= \frac{\text{Total Earnings}}{\text{Total Equity}} \times 100 = \frac{2,00,000}{20,00,000} \times 100 = 10\%$

$$k_e = \frac{1}{\text{Price-Earning Ratio}} = \frac{1}{12.5\%} = 8\%$$

$$P = \frac{8}{.08} + \frac{0.10(10-8)/.08}{.08}$$

$$P = \frac{8}{.08} + \frac{\frac{.10}{.08}(2)}{.08}$$

$$P = \frac{8+2.5}{.08} = \frac{10.5}{.08} = ₹\ 131.25$$

At present, the dividend payout ratio is 80% $\left(\frac{1,60,000}{2,00,000} \times 100\right)$. Since this is a growth firm having internal rate of return (r) > cost of capital (k_e), *i.e.* r (10%) > k_e (8%). The firm's pay out ratio of 80% is not optiomal as per Walter's model. The market price of the company's share shall be maximum if it retains 100% of the profits and dividend payout ratio is zero. This can be proved as below :

$$P = \frac{D}{k_e} + \frac{r(E-D)/k_e}{k_e} = \frac{0}{.08} + \frac{.10(10-0)/.08}{.08} = \frac{0+12.5}{.08}$$

$$P = ₹156.25$$

Thus, the firm can increase the market price of the share up to Rs. 156.25 by increasing the retention ratio to 100%, the optimal payout ratio for the firm is zero.

Illustration 3:
Cost of Capital (k) = 10%
Earnings per share (E) = Rs. 10.
Assume Internal Rate of Return (r):
(i) 15%; (ii) 10%; and (iii) 8% respectively
Assuming that the D/P ratios are: 0; 40%; 75% and 100% i.e., dividend share is (a) Rs. 0, (b) Rs. 4, (c) Rs. 7.5 and (d) Rs. 10, the effect of different dividend policies for three alternatives of r may be shown as under:

(a) Rs. 0, (b) Rs. 4, (c) Rs. 7.5 and (d) Rs. 10, the effect of different dividend policies for three alternatives of r may be shown as under :

When $r>k$	When $r=k$	When $r<k$
$r = .15$	$r = .10$	$r = .08$
$k = .10$	$k = .10$	$k = .10$
E = Rs.10	E = Rs. 10	E = Rs. 10

Dividend Policy and the Value of Shares (under Walter's model)

When $r>k$	When $r=k$	When $r<k$
(At different levels of 'D' the value of 'P' will be as under :)	(At different levels of 'D' the value of 'P' will be as under :)	(At different levels of 'D' the values of 'P' will be as under :)
(a) D = Rs. 0 $P = \frac{0 + \frac{.15}{.10}(10 - 0)}{.10}$ = Rs. 150	(a) D = Rs. 0 $P = \frac{0 + \frac{.10}{.10}(10 - 0)}{.10}$ = Rs. 100	(a) D = Rs. 0. $P = \frac{0 + \frac{.08}{.10}(10 - 0)}{.10}$ = Rs. 80
(b) D = Rs. 4 $P = \frac{4 + \frac{.15}{.10}(10 - 4)}{.10}$ = Rs. 130	(b) D = Rs.4 $P = \frac{4 + \frac{.10}{.10}(10 - 4)}{.10}$ = Rs. 100	(b) D = Rs. 4. $P = \frac{4 + \frac{.08}{.10}(10 - 4)}{.10}$ = Rs. 88
(c) D = Rs. 7.5 $P = \frac{7.5 + \frac{.15}{.10}(10 - 7.5)}{.10}$ = Rs. 112.50	(c) D = Rs. 7.5 $P = \frac{7.5 + \frac{.10}{.10}(10 - 7.5)}{.10}$ = Rs. 100	(c) D= Rs. 7.5 $P = \frac{7.5 + \frac{.08}{.10}(10 - 7.5)}{.10}$ = Rs. 95
(d) D = Rs. 10 $P = \frac{10 + \frac{.15}{.10}(10 - 10)}{.10}$ = Rs. 100	(d) D = Rs. 10 $P = \frac{10 + \frac{.15}{.10}(10 - 10)}{.10}$ = Rs. 100	(d) D = Rs. 10 $P = \frac{10 + \frac{.08}{.10}(10 - 10)}{.10}$ = Rs. 100

Thus, according to the Walter's model, the optimum dividend policy depends on the relationship between the internal rate of return r and the cost of capital, k. The conclusion, which can be drawn up is that the firm should retain all earnings if r > k and it should distribute entire earnings if r < k and it will remain indifferent when r = k.

Gordon's Model

The **Gordon's Model**, given by Myron Gordon, also supports the doctrine that dividends are relevant to the share prices of a firm. Here the **Dividend Capitalization Model** is used to study the effects of dividend policy on a stock price of the firm.

Gordon's Model assumes that the investors are risk averse i.e. not willing to take risks and prefers certain returns to uncertain returns. Therefore, they put a premium on a certain return and a discount on the uncertain returns. The investors prefer current dividends to avoid risk; here the risk is the possibility of not getting the returns from the investments.

But in case, the company retains the earnings; then the investors can expect a dividend in future. But the future dividends are uncertain with respect to the amount as well as the time, i.e. how much and when the dividends will be received. Thus, an investor would discount the future dividends, i.e. puts less importance on it as compared to the current dividends.

According to the Gordon's Model, the market value of the share is equal to the present value of future dividends. It is represented as:

P = [E (1-b)] / Ke-br

Where, P = price of a share
E = Earnings per share
b = retention ratio
1-b = proportion of earnings distributed as dividends
Ke = capitalization rate
br = growth rate

Assumptions of Gordon's Model

- The firm is an all-equity firm; only the retained earnings are used to finance the investments, no external source of financing is used.
- The rate of return (r) and cost of capital (K) are constant.
- The life of a firm is indefinite.
- Retention ratio once decided remains constant.
- Growth rate is constant (g = br)
- Cost of Capital is greater than br

Criticism of Gordon's Model

It is assumed that firm's investment opportunities are financed only through the retained earnings and no external financing viz. Debt or equity is raised. Thus, the investment policy or the dividend policy or both can be sub-optimal.

The Gordon's Model is only applicable to all equity firms. It is assumed that the rate of returns is constant, but, however, it decreases with more and more investments.

It is assumed that the cost of capital (K) remains constant but, however, it is not realistic in the real life situations, as it ignores the business risk, which has a direct impact on the firm's value.

Thus, Gordon model posits that the dividend plays an important role in determining the share price of the firm.

Illustration:

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

Rate of return of Investment — (r) :

(i) 15% ; (ii) 10% and (iii) 8%.

Cost of Capital (k) = 10%.

Earning per Share (E) = Rs. 10.

Determine the value of its shares assuming the following :

	$\frac{D}{P}$ ratio	Retention Ratio
	i.e., $(1 - b)$	i.e., $b = \frac{R}{E}$
(a)	100	0
(b)	80	20
(c)	70	30
(d)	50	50
(e)	35	65

Solution:

According to the formula developed by Gordon, the value of share is given by the following —

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

Therefore, the value of shares of X Ltd. for different $\frac{D}{P}$ and retention ratios for the three alternatives of r, i. e., (i) $r>k$, (ii) $r = k$, and (iii) $r<k$, is presented in the table that follows.

When $r>k$	When $r = k$	When $r<k$
r = .15	r = .10	r = .08
k = .10	k = .10	k = .10
E = Rs. 10	E = Rs. 10	E = Rs. 10.

Dividend policy and the Value of Shares (Under Gordon's Model)

When $r > k$	When $r = k$	When $r < k$
At different levels of 'b', the value of 'P' will be as under) :	(At different levels of 'b', the value of 'P' will be as under) :	(At different levels of 'b', the value of 'P' will be as under) :
(a) b = 0 ∴ br = 0 $P = \frac{\text{Rs. } 10\,(1-0)}{.10-0}$ = Rs. 100	b = 0 ∴ br = 0 $P = \frac{\text{Rs. } 10\,(1-0)}{.10-0}$ = Rs. 100	b = 0 ∴ br = 0 $P = \frac{\text{Rs. } 10\,(1-0)}{.10-0}$ = Rs. 100
(b) b=.20 ∴ br =.20×.15=.030 $P = \frac{\text{Rs. } 10\,(1-.20)}{.10-.03}$ $= \frac{\text{Rs. } 8}{.070}$ = Rs. 114	b=.20 ∴ br=.20 ×.10=.02 $P = \frac{\text{Rs. } 10\,(1-.20)}{.10-.02}$ $= \frac{\text{Rs. } 8}{.08}$ = Rs. 100	b=.20 br=.20×.08=.016 $P = \frac{\text{Rs. } 10\,(1-.20)}{.10-.016}$ $= \frac{\text{Rs. } 8}{.084}$ = Rs. 95
(c) b=.30 ∴ br=.03×.15=.045 $P = \frac{\text{Rs. } 10\,(1-.30)}{.10-.045}$ $= \frac{\text{Rs. } 7}{.055}$ = Rs. 127	b=.30 ∴ br=.30×.10=.03 $P = \frac{\text{Rs. } 10\,(1-.30)}{.10-.03}$ $= \frac{\text{Rs. } 7}{.07}$ = Rs. 100	b=.30 ∴ br=.30×.08=.024 $P = \frac{\text{Rs. } 10\,(1-.30)}{.10-.024}$ $= \frac{\text{Rs. } 7}{.076}$ = Rs. 92
(d) b=.50 ∴ br=0.5×.15=0.75 $P = \frac{\text{Rs. } 10\,(1-.50)}{.10-.075}$ $= \frac{\text{Rs. } 5}{.025}$ = Rs. 200	b=.50 ∴ br=.50×.10=.05 $P = \frac{\text{Rs. } 10\,(1-.50)}{.10-.05}$ $= \frac{\text{Rs. } 5}{.05}$ = Rs. 100	b=.50 ∴ br=.50 ×.08=.04 $P = \frac{\text{Rs. } 10\,(1-.50)}{.10-.04}$ $= \frac{\text{Rs. } 5}{.06}$ = Rs. 83
(e) b=.65 ∴ br=.65×.15=.098 $P = \frac{\text{Rs. } 10\,(1-.65)}{.10-.098}$ $= \frac{\text{Rs. } 3.5}{.002}$ = Rs. 1,750	b=.65 ∴ br=.65×.10=.065 $P = \frac{\text{Rs. } 10\,(1-.65)}{.10-.065}$ $= \frac{\text{Rs. } 3.5}{.035}$ = Rs. 100	b=.65 ∴br=.65 =.08=.052 $P = \frac{\text{Rs. } 10\,(1-.65)}{.10-.052}$ $= \frac{\text{Rs. } 3.5}{.048}$ = Rs. 73

The above table clearly shows that —

(i) When $r>k$, the market value of shares, P, increases with the retention ratio b for growth firms;

(ii) when $r = k$, the market value of the share is not affected at all by dividend policy; and

(iii) when $r<k$, the market value of share, P, increases with the payout ratio for declining firms.


Thank
you