DIVIDEND DECISION

LOS 1: INTRODUCTION

**Total Earnings**

- **Retained Earnings**
- **Dividends**

**Note:** Total Earnings mean Earnings available to equity share holders

**Income Statement**

- **Sales**
- **Less:** Variable cost
- **Contribution**
- **Less:** Fixed cost excluding Dep.
  - EBITDA
- **Less:** Depreciation and Amortization
  - EBIT
- **Less:** Interest
  - EBT
- **Less:** Tax
  - EAT
- **Less:** Preference Dividend
  - Earnings Available to Equity Shareholders
- **Less:** Equity Dividend
  - T/F to R&S

**Two types of decision are taken in Dividend Policy:**

1. Long-term financing decision
2. Wealth maximization decision

**Internal Financing & External Financing:**

- Internal source of financing means using own funds i.e. Retained Earnings.
- External source of financing means taking funds from outside i.e. Equity Share Capital, Preference Share Capital, Debentures, Bonds, etc.
- Internal financing is generally less expensive because firm doesn’t incur any floating cost to obtain it i.e. \( K_r < K_e \)

**Factors Effecting Dividend Policy:**

1. Financial needs of the company
2. Desire of Share Holders
3. Industry Trend
4. Legal Constraints
5. Cost of Equity (\( K_e \)) & Rate of Return (\( r \))
6. Ownership/Control
7. Discretion of Management
8. Liquidity needs of Company
# LOS 2: Some Basic Ratios

- **EPS**
  \[
  \text{EPS} = \frac{\text{Total earning available to equity shareholders}}{\text{Total number of equity shares}}
  \]

- **DPS**
  \[
  \text{DPS} = \frac{\text{Total dividend paid to equity shareholders}}{\text{Total number of equity shares}}
  \]

- **MPS**
  \[
  \text{MPS} = \frac{\text{Total Market Value/ Market Capitalization/ Market Cap}}{\text{Total number of equity shares}}
  \]

- **REPS**
  \[
  \text{REPS} = \frac{\text{Total Retained earnings}}{\text{Total number of equity shares}}
  \]

  OR

  \[
  \text{REPS} = \text{EPS} - \text{DPS}
  \]

- **Dividend Yield**
  \[
  \text{Dividend Yield} = \frac{\text{Dividend per share}}{\text{Market price per share}} \times 100
  \]

- **Dividend pay-out Ratio**
  \[
  \text{Dividend pay-out Ratio} = \frac{\text{Dividend per share}}{\text{Earning per share}} \times 100
  \]

- **Dividend Rate**
  \[
  \text{Dividend Rate} = \frac{\text{Dividend per share}}{\text{Face value per share}} \times 100
  \]

- **Earning Yield**
  \[
  \text{Earning Yield} = \frac{\text{Earning per share}}{\text{Market Price per share}} \times 100
  \]

- **P/E Ratio**
  \[
  \text{P/E Ratio} = \frac{\text{MPS}}{\text{EPS}}
  \]

- **Retention Ratio**
  \[
  \text{Retention Ratio} = \frac{\text{Retained Earning per share}}{\text{Earning per share}} \times 100
  \]
  \[
  = \frac{\text{EPS} - \text{DPS}}{\text{EPS}} \times 100
  \]

  OR

  \[
  \text{Retention Ratio} = 1 - \text{Dividend Payout Ratio}
  \]

### Note:

**Relationship Between DPR & RR:**

- \( \text{RR} + \text{DPR} = 100\% \text{ or } 1 \)

- Dividend yield and Earning Yield is always calculated on annual basis.

- Dividend is 1st paid to preference share holder before any declaration of dividend to equity shareholders.

- Dividend is always paid upon FV(Face Value) not on Market Value.
**LOS 3: Define Cash Dividends, Stock Dividend, Stock Split**

**Cash Dividends:** As the name implies, are payments made to shareholders in cash. They come in 3 forms:

(i) **Regular Dividends:** Occurs when a company pays out a portion of profits on a consistent basis. E.g. Quarterly, Yearly, etc.

(ii) **Special Dividends:** They are used when favourable circumstances allow the firm to make a one-time cash payment to shareholders, in addition to any regular dividends. E.g. Cyclical Firms

(iii) **Liquidating Dividends:** Occurs when company goes out of business and distributes the proceeds to shareholders.

**Stock Dividends (Bonus Shares):**
- Stock Dividends are dividends paid out in new shares of stock rather than cash. In this case, there will be more shares outstanding, but each one will be worth less.
- Stock dividends are commonly expressed as a percentage. A 20% stock dividend means every shareholder gets 20% more stock.

**Stock Splits:**
- Stock Splits divide each existing share into multiple shares, thus creating more shares. There are now more shares, but the price of each share will drop correspondingly to the number of shares created, so there is no change in the owner’s wealth.
- Splits are expressed as a ratio. In a 3-for-1 stock split, each old share is split into three new shares.
- Stock splits are more common today than stock dividends.

**LOS 4: Theories of Dividends**

**Relevant Theory:** Dividend played an important role in determination of market price of share.

**Irrelevant Theory:** Dividend do not play any role in determination of market price of share/ Market value of the firm.

**Walter’s Model:**
Walter’s supports the view that the dividend policy plays an important role in determining the market price of the share. He emphasis two factors which influence the market price of a share:-

(i) Dividend Payout Ratio.

(ii) The relationship between Internal return on Retained earnings \( r \) and cost of equity capital \( K_e \)

**Walter classified all the firms into three categories:**

**a) Growth Firm:**
- If \( r > K_e \), In this case, the shareholder’s would like the company to retain maximum amount i.e. to keep payout ratio quite low.
- In this case, there is negative correlation between dividend and market price of share.
- If \( r > K_e \), Lower the Dividend Pay-out Ratio Higher the Market Price per Share & vice-versa.
b) **Declining Firm:**

- If \( r < K_e \). In this case, the shareholder’s won’t like the firm to retain the profits so that they can get higher return by investing the dividend received by them.
- In this case, there is positive correlation between dividend and market price of share.
- If \( r < K_e \), Higher the Dividend Pay-out Ratio, Higher the Market Price per Share & vice-versa.

<table>
<thead>
<tr>
<th>Category of the Firm</th>
<th>( r ) Vs. ( K_e )</th>
<th>Correlation between DPS &amp; MPS</th>
<th>Optimum Payout Ratio</th>
<th>Optimum Retention Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td>( r &gt; K_e )</td>
<td>Negative</td>
<td>0 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Constant</td>
<td>( r = K_e )</td>
<td>No Correlation</td>
<td>Every payout is Optimum</td>
<td>Every retention is Optimum</td>
</tr>
<tr>
<td>Decline</td>
<td>( r &lt; K_e )</td>
<td>Positive</td>
<td>100%</td>
<td>0 %</td>
</tr>
</tbody>
</table>

**Summary:** Optimum Dividend as per Walter’s

**Valuation of Equity as per Walter’s**

Current market price of a share is the present value of two cash flow streams:

a) Present Value of all dividend.

b) Present value of all return on retained earnings.

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

\[
P_0 = \frac{DPS}{K_e} + \frac{r}{K_e} \left( \frac{EPS - DPS}{K_e} \right)
\]

**Assumptions:**

- DPS & EPS are constant.
- \( K_e \) & \( r \) are constant.
- Going concern assumption, company has infinite life.
- No external Finance
LOS 5: Gordon’s Model/Growth Model/Dividend discount Model

- Gordon’s Model suggests that the dividend policy is relevant and can affect the value of the share.
- Dividend Policy is relevant as the investor’s prefer current dividend as against the future uncertain Capital Gain.
- Current Market price of share = PV of future Dividend, growing at a constant rate.

\[
P_0 = \frac{D_0 (1+g)}{K_e - g} \quad \text{OR} \quad P_0 = \frac{D_1 \text{ (next expected dividend)}}{K_e - g} \quad \text{OR} \quad P_0 = \frac{EPS_1 \ (1-b)}{K_e - br}
\]

- \(P_0\) = Current market price of share.
- \(K_e\) = Cost of equity capital/Discount rate/expected rate of return/Opportunity cost/Capitalization rate.
- \(g\) = Growth rate
- \(D_1\) = DPS at the end of year/Next expected dividend/Dividend to be paid
- \(D_0\) = Current year dividend/dividend as on today/last paid dividend
- \(EPS_1\) = EPS at the end of the year
- \(b\) = Retention Ratio
- \(1-b\) = Dividend payout Ratio

**Note:**
Watch for words like ‘Just paid’ or ‘recently paid’, these refers to the last dividend \(D_0\) and words like ‘will pay’ or ‘is expected to pay’ refers to \(D_1\).

**Assumptions:**
(i) No external finance is available.
(ii) \(K_e \& r\) are constant.
(iii) ‘\(g\)’ is the product of its Retention Ratio ‘\(b\)’ and its rate of return ‘\(r\)’

\[g = b \times r \quad \text{OR} \quad g = RR \times ROE.\]

(iv) \(K_e > g\)
(v) \(g \& RR\) are constant.
(vi) Firm has an infinite life

**Applications**

1. \(EPS_1 (1-b) = DPS_1\)

**Proof:**
\[
EPS_1 \ (1-b) = EPS_1 \times \text{Dividend payout Rate} \\
= EPS_1 \times \frac{DPS1}{EPS1} \\
= DPS_1
\]
We know that DPR + RR = 1 or 100%

2. **If \(EPS = DPS, RR = 0\) then \(g = 0\)**

\[P_0 = \frac{D_0 (1+g)}{K_e - g}\]
4.6 DIVIDEND DECISIONS

\[ P_0 = \frac{D_0}{K_e} \text{ as } g = 0 \]

\[ P_0 = \frac{\text{EPS}}{K_e} \left(\therefore \text{EPS} = \text{DPS}\right) \]

3. Calculation of \( P_1 \) (Price at the end of year 1)

Price at the beginning = PV of Dividend at end + PV of market price at end

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

4. \( K_e = \frac{1}{\text{P.E Ratio}} \)

LOS 6: Calculate P/E Ratio at which Dividend payout will have no effect on the value of the share.

When \( r = K_e \), dividend payout ratio will not affect value of share.

**Example:**

If \( r = 10\% \) then \( K_e = 10\% \) and \( K_e = \frac{1}{\text{P/E Ratio}} \Rightarrow 0.10 = \frac{1}{\text{P/E Ratio}} \)

\( \Rightarrow \) P/E Ratio = 10 times

LOS 7: MM Approach (Irrelevance Theory)

Dividends do not play any role in determination of market value. Market value is rather affected by earnings and investment.

**Formulae:**

\[ nP_0 = \frac{(n+m) \times P_1 + E_1 - I_1}{(1 + K_e)^1} \]

\( n \) = Existing number of equity shares at the beginning of the year
\( m \) = New number of equity shares, issued at year end market price
\( P_0 \) = Current market price as on today
\( P_1 \) = Market price per share at the end of year one
\( E_1 \) = Total earning at the end of year one
\( I_1 \) = Total investment at the end of year one
\( K_e \) = Cost of equity
\( nP_0 \) = Market value of the company as on today
\( n+m \) = Total no of equity share at the end (old + new share)
\( (n+m)P_1 \) = Total market value of the company at the end.

Amount raised by issue of new equity shares = Investment – [Earning – Dividend]

**Assumption:**

Funds can raise only by equity & retained earnings.

**Note:**

- The Market Price of a share = PV of dividend paid at end + PV of market price at the end at the beginning of a period
\[ P_0 = \frac{P_1 + D_1}{(1 + K_e)^1} \]

Calculate \( P_1 \) from this formulae.

**NEW number of equity share**

\[ m = \frac{I_1 - (E_1 - nD_1)}{P_1} \text{ or } m = \frac{\text{Investment}_1 - (\text{Earnings}_1 - n \times \text{DPS}_1)}{\text{Market Price at the End}(P_1)} \]

**LOS 8: GRAHAM & DODD MODEL (TRADITIONAL APPROACH)**

\[ P_0 = m \times \left[ \frac{\text{DPS} + \frac{\text{EPS}}{3}}{3} \right] \]

\[ \text{OR} \]

\[ P_0 = m \times \left[ \frac{4 \times \text{DPS}}{3} \right] + m \times \left[ \frac{\text{REPS}}{3} \right] \]

Where \( m = \text{multiplier} \)

**LOS 9: LINTER’S MODEL**

We will calculate dividend to be paid by any Company.

**Assumption:**
Dividend should not fall. It may remain constant or may increase but can’t fall.

**Formula:**

\[ D_1 = D_0 + [\text{EPS} \times \text{Target Dividend Payout} - D_0] \times \text{AF} \]

Where

- \( \text{AF} = \text{Adjustment factor} \)
- \( D_0 = \text{Dividend in Previous Year or Dividend Paid} \)
- \( D_1 = \text{Dividend to be paid/ declared} \)