

## Hypothesis

# Testing of Relevance Model (Walter's and Gordon's) of Dividend Policy

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### INTRODUCTION

**D**ividend means total divisible sum. It is that part of the profit which is distributed among the shareholders.

#### Types of Dividend

- (1) Cash Dividend
- (2) Scrip Dividend / Bond Dividend
- (3) Property Dividend
- (4) Stock Dividend ( Bonus share)

#### Dividend Policy

Dividend Policy is concerned with the quantum of profits which is distributed as dividend. It determines the division of earnings between shareholders and retained earnings.

#### Types of Dividend Policy

- (1) Conservative or Strict Dividend Policy (Minimum part of profit is distributed as dividend).
- (2) Liberal dividend Policy- (Maximum part of profit is distributed as dividend or Payout ratio exceeds 80%).
- (3) Irregular Dividend Policy
- (4) Sound or stable Dividend Policy-
  - (a) Constant Dividend per share
  - (b) Constant Pay -out Ratio
  - (c) Constant Dividend Per share Plus Extra Dividend

### LITERATURE REVIEW

Factors affecting /determining the dividend policy-

- (1) Magnitude & trends of earnings
- (2) Liquidity position
- (3) Financial needs of the company
- (4) Nature of the Industry
- (5) Age of the company
- (6) Cyclical variation
- (7) Structure of ownership
- (8) Types of shareholders & their expectations
- (9) Attitude of management
- (10) Investment opportunity
- (11) State of capital market
- (12) Legal restrictions
- (13) Restrictions by lending Institutions
- (14) Taxation policy
- (15) Requirement of institutional investors

### NEED & SCOPE OF THE STUDY

#### Model for Dividend Policy-

##### (1) Relevance Concept Of Dividend

According to Relevance Concept of Dividend the distribution of dividend among the shareholders affects the value per equity share.

##### (a) James E Walter's Model

##### (b) Gordon's Model

##### (2) Irrelevance Concept Of Dividend-

According to Irrelevance Concept of Dividend the distribution of dividend among the shareholders does not affect the value of



per equity share.

**(a) Modigliani & Miller Model (MM Model)**

**OBJECTIVES OF THE STUDY**

The objective of this study is to find whether the Walter's & Gordon's Models of Dividend Policy are relevant or not with respect to the value per share.

**ANALYSIS & DATA INTERPRETATION**

**Analysis of J E Walter's Model of Dividend Policy-**

A firm should retain its earning if rate of return (r) exceeds the opportunity cost of capital /required rate of return (K or C) but it is the opposite (if (r) is less than (K) the earnings should be distributed among the shareholders.

**Optimum Pay-out ratio can be summarized as follows-**

- 1. For Growth firms (r > K) –** The value per share can be maximized if dividend pay-out is 0% & 100% earnings are retained.
- 2. For Declining firms (r < K) –** The value per share can be maximized if dividend pay-out is 100% & 0% earnings are retained.
- 3. For Normal firms (r = K) –** The Dividend policy will not affect the value per share.

**Formula given by J E Walter for the valuation of equity per share-**

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$

Where-

- P = Market Value of Company's Equity Share
- DPS = Dividend per Share
- EPS = Earning per share
- r = Rate of return on Investment
- K or C = Cost of capital or market capitalization rate or 1/ PE ratio

**Assumptions of Walter's Model**

- (1) Internal Financing only
- (2) Constant rate of return (r) & opportunity cost of capital /required rate of return (K or C)
- (3) 100% Dividend pay-out ratio Or 100% Retention of earnings
- (4) Constant EPS Or DPS
- (5) Infinite Time

**Limitations of Walter's Model**

- (1) No External Financing
- (2) Constant rate of return (r)
- (3) Constant opportunity cost of capital (K or C)

**Testing of Walter's Model**

- (1) For Growth firms (r > K) –

The value per share can be maximized if dividend pay-out is 0% & 100% earnings are retained.

**If in a company-**

EPS = Earning per share = Rs 10

r = Rate of return on Investment = 15%

K or C = Cost of capital or market capitalization rate or 1/ PE ratio = 10%

- (1) If Dividend Pay-out Ratio

(% of DPS on EPS) = 0%

DPS = Dividend per Share

= Rs 0

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$

$$P = \frac{0 + \{.15/.10 (10 - 0)\}}{.10}$$

.10

P = Rs 150

- (2) If Dividend Pay-out Ratio

(% of DPS on EPS) = 25%

DPS = Dividend per Share

= Rs 2.5

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$

$$P = \frac{2.5 + \{.15/.10 (10 - 2.5)\}}{.10}$$

$$P = \text{Rs } 137.50$$

(3) If Dividend Pay-out Ratio

$$(\% \text{ of DPS on EPS}) = 50\%$$

$$\begin{aligned} \text{DPS} &= \text{Dividend per Share} \\ &= \text{Rs } 5 \end{aligned}$$

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$

$$P = \frac{5 + \{.15/.10 (10 - 5)\}}{.10}$$

$$P = \text{Rs } 125$$

(4) If Dividend Pay-out Ratio

$$(\% \text{ of DPS on EPS}) = 75\%$$

$$\begin{aligned} \text{DPS} &= \text{Dividend per Share} \\ &= \text{Rs } 7.5 \end{aligned}$$

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$

$$P = \frac{7.5 + \{.15/.10 (10 - 7.5)\}}{.10}$$

$$P = \text{Rs } 112.5$$

(5) If Dividend Pay-out Ratio

$$(\% \text{ of DPS on EPS}) = 100\%$$

$$\begin{aligned} \text{DPS} &= \text{Dividend per Share} \\ &= \text{Rs } 10 \end{aligned}$$

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$

$$P = \frac{10 + \{.15/.10 (10 - 10)\}}{.10}$$

$$P = \text{Rs } 100$$

**(2) For Declining firms ( $r < K$ ) -**

The value of per share can be maximized if dividend pay-out is 100% & 0% earnings are retained.

If In a company-

$$\text{EPS} = \text{Earning per share}$$

$$= \text{Rs } 10$$

$$r = \text{Rate of return on}$$

$$\text{Investment} = 8\%$$

K or C= Cost of capital or market

capitalization rate or 1/ PE ratio = 10%

(1) If Dividend Pay-out Ratio

$$(\% \text{ of DPS on EPS}) = 0\%$$

$$\text{DPS} = \text{Dividend per Share}$$

$$= \text{Rs } 0$$

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$

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

$$P = \text{Rs } 80$$

(2) If Dividend Pay-out Ratio

$$(\% \text{ of DPS on EPS}) = 25\%$$

$$\text{DPS} = \text{Dividend per Share}$$

$$= \text{Rs } 2.5$$

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$

$$P = \frac{2.5 + \{.08/.10 (10 - 2.5)\}}{.10}$$

$$P = \text{Rs } 85$$

(3) If Dividend Pay-out Ratio

$$(\% \text{ of DPS on EPS}) = 50\%$$

$$\begin{aligned} \text{DPS} &= \text{Dividend per Share} \\ &= \text{Rs } 5 \end{aligned}$$

$$P = \frac{DPS + \{r/k (EPS - DPS)\}}{K}$$





$$P = \frac{5 + \{.08 / .10 (10 - 5)\}}{.10}$$

$$P = \text{Rs } 90$$

(4) If Dividend Pay-out Ratio  
(% of DPS on EPS) = 75%

DPS = Dividend per Share  
= Rs 7.5

$$P = \frac{\text{DPS} + \{r/k (EPS - \text{DPS})\}}{K}$$

$$P = \frac{7.5 + \{.08 / .10 (10 - 7.5)\}}{.10}$$

$$P = \text{Rs } 95$$

(5) If Dividend Pay-out Ratio  
(% of DPS on EPS) = 100%

DPS = Dividend per Share  
= Rs 10

$$P = \frac{\text{DPS} + \{r/k (EPS - \text{DPS})\}}{K}$$

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

$$P = \text{Rs } 100$$

**(3) For Normal firms (r = K) -**

The Dividend policy will not affect the value of per Share.

If In a company-

EPS = Earning per share  
= Rs 10

r = Rate of return on

Investment = 10%

K or C = Cost of capital or market  
capitalization rate or 1/ PE ratio = 10%

(1) If Dividend Pay-out Ratio  
(% of DPS on EPS) = 0%

DPS = Dividend per Share

$$P = \frac{\text{DPS} + \{r/k (EPS - \text{DPS})\}}{K}$$

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

$$P = \text{Rs } 100$$

(2) If Dividend Pay-out Ratio  
(% of DPS on EPS) = 25%

DPS = Dividend per Share  
= Rs 2.5

$$P = \frac{\text{DPS} + \{r/k (EPS - \text{DPS})\}}{K}$$

$$P = \frac{2.5 + \{.10 / .10 (10 - 2.5)\}}{.10}$$

$$P = \text{Rs } 100$$

(3) If Dividend Pay-out Ratio  
(% of DPS on EPS) = 50%

DPS = Dividend per Share  
= Rs 5

$$P = \frac{\text{DPS} + \{r/k (EPS - \text{DPS})\}}{K}$$

$$P = \frac{5 + \{.10 / .10 (10 - 5)\}}{.10}$$

$$P = \text{Rs } 100$$

(4) If Dividend Pay-out Ratio  
(% of DPS on EPS) = 75%

DPS = Dividend per Share  
= Rs 7.5

$$P = \frac{\text{DPS} + \{r/k (EPS - \text{DPS})\}}{K}$$

$$P = \frac{7.5 + \{.10 / .10 (10 - 7.5)\}}{.10}$$

$$P = \text{Rs } 100$$

(5) If Dividend Pay-out Ratio

$$(\% \text{ of DPS on EPS}) = 100\%$$

$$\text{DPS} = \text{Dividend per Share}$$

$$= \text{Rs } 10$$

$$P = \frac{\text{DPS} + \{r/k (\text{EPS} - \text{DPS})\}}{K}$$

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

$$P = \text{Rs } 100$$

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

Where-

P = Market Value of Company's Equity Share

E = Earning per share

(1-b) = Dividend pay-out ratio (% of DPS on EPS)

b = Retention ratio (% of earnings retained)

r = Rate of return on Investment

K or C = Cost of capital or market capitalization rate or 1/ PE ratio

br = (g) Growth rate of earnings & dividends

### Findings of Analysis & Interpretation-

Test	Dividend Pay -out Ratio	Value of per equity share in	Value of per equity share in	Value of per equity share In
		case of Growth	case of Declining firm	case of Normal firm
		firm (r > K) (15% > 10%)	(r < K) (8% > 10%)	(r = K) (10% = 10%)
1	0%	Rs 150	Rs 80	Rs 100
2	25%	Rs 137.5	Rs 85	Rs 100
3	50%	Rs 125	Rs 90	Rs 100
4	75%	Rs 112.5	Rs 95	Rs 100
5	100%	Rs 100	Rs 100	Rs 100

### ANALYSIS & DATA INTERPRETATION

#### Analysis Gordon's Model of Dividend Policy

Optimum Pay-out ratio can be summarized as follows-

#### 1. For Growth firms (r > K) –

The value per share increases as dividend pay-out decreases.

#### 2. For Declining firms (r < K) –

The value per share decreases as dividend pay-out increases.

#### 3. For Normal firms (r = K) –

The Dividend policy will not affect the value per share and it remains unchanged.

#### Assumptions of Gordon's Model-

- (1) The firm is an all equity firm
- (2) No external financing is available or used. Only retained earnings are used to finance the Investment programmes.
- (3) Constant rate of return (r) & opportunity cost of capital /required rate of return (K or C)
- (4) Cost of capital (K or C) is greater than Growth rate (br)
- (6) The retention ratio (b) once decided upon remains constant. So the Growth rate (g or br) is also constant.
- (7) Corporate tax does not exist.
- (8) The firm has perpetual or long life.

### ANALYSIS & DATA INTERPRETATION

#### Testing of Gordon's Model of Dividend Policy-

#### 1. For Growth firms (r > K) –

The value per share increases as dividend pay-out decreases (retention ratio increase).

If In a company-

$$\text{EPS} = \text{Earning per share}$$

$$= \text{Rs } 5$$

