



## Validity of Lintner's Model in Indian FMCG Sector: An Empirical Analysis

### KEYWORDS

Lintner, target payout, adjustment factor, lagged dividend

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**ABSTRACT** Formulation of dividend policy has always been an area of interest amongst the shareholders. The management of the companies also likes to maintain a stable dividend policy as because any change in dividend policy acts as an indicator towards change in the future earnings of the company. Lintner's (1956) empirical research attempted to explain the dividend policy of US companies. Lintner concluded that earnings of the current year and dividend of the past years had significant effect in determination of the dividend of current year. This study examines the validity of Lintner's model in the Indian FMCG sector. Panel data analysis has been applied to test the validity of the model. The result reveals that the Indian FMCG companies mainly rely on the past dividend in designing their dividend policy and are less stable in pursuing their dividend policy.

### Introduction

Formulation of dividend policy has always been an area of interest amongst the shareholders. The surplus profit of a business can either be distributed as dividend or can be ploughed back into the business. Shareholders generally prefer to receive regular dividends. Majority of the shareholders consider stable dividend as a regular source of income. The management of the companies also likes to maintain a stable dividend policy as because any change in dividend policy acts as an indicator towards change in the future earnings of the company. Therefore, the companies like to maintain a stable dividend policy as it creates a sense of certainty in the mind of the shareholders.

One of the effects of liberalisation in India has led the companies to operate in a complex environment. More and more foreign companies have entered the Indian market resulting in more investment opportunities to the investors. The companies, on the one hand, have to be defensive in payment of dividend for keeping their working capital intact so that they can combat the downtrend in the market situations. On the other hand, the companies have to follow aggressive dividend policy to attract investors who have a wide choice of making investment in the post liberalization period. So, it has become very difficult for a company to design its appropriate dividend policy, particularly of the present scenario.

There are number of factors which determine the dividend decision of a company. Among those factors both profitability and past dividend play the most significant role in designing the dividend policy of a company.

Lintner (1956) conducted an empirical research on dividend distribution pattern of US companies and concluded that earnings of the current year and dividend of the past years had significant effect in determination of the dividend of current year. Over time, several studies have been carried out in India and abroad which confirmed Lintner's finding. However, only a few studies have been carried out in India which confirmed the empirical validity of Lintner's findings particularly in the FMCG sector. The present study therefore, seeks to analyse the validity of Lintner's model particularly in the area of Indian FMCG sector.

### Lintner's Model

Lintner (1956) conducted a study on the dividend distribution pattern of 28 US companies covering a period of 7 years from 1947-53. The study revealed that firms maintain a target payout ratio and adjust their payment of dividend based on this target. In his opinion the firms determine their dividend payout on the basis of their current earning and past dividend (lagged dividend).

Lintner observed that the companies normally prefer to pursue stable dividend policy and would like to increase their dividend on the basis of the target payout ratio. Thus the firms set a speed of their own and on that basis try to adjust the payout. The rate of change towards the target payout ratio is known as adjustment factor.

On the basis of his study, he developed a mathematical model that may be indicative to the dividend policy which can be expressed as follows:

$$\text{Div}_t = \alpha + \beta_1 \text{EAT}_t + \beta_2 \text{Div}_{t-1} + u_t$$

Where,

$\text{Div}_t$  = Equity dividend during period t

$\text{EAT}_t$  = Current earnings after tax during period t

$\beta_1$  = regression coefficient of PAT Current earnings after tax

$\text{Div}_{t-1}$  = Equity dividend during period t-1

$\beta_2$  = regression coefficient of dividend paid during period t-1

$\alpha$  = Constant

$u_t$  = error term

Adjustment factor =  $(1 - \beta_2)$

Target payout ratio =  $\beta_1 / (1 - \beta_2)$

### Review of existing literature

A large number of studies have been carried out both in

India and abroad examining the validity of Lintner's model. In USA, Fama and Blahnik (1968) and Brittain (1966) used the modified version of the Lintner's model and found their results in conformity with Lintner, Baker, Farrelly, and Edelman (1985) Pruitt and Gitman (1991) in their study concluded that future earnings and past dividend were the major factors in determining the current year's dividend payment. Lintner's model was found to be applicable in other countries as well. Pandey (2003) analysed the corporate dividend behaviour of 248 companies listed in Kuala Lumpur Stock Exchange. The result showed that the payout ratio varied from one industry to another. The results also showed close relationship between dividends and earnings. He used the Lintner's model but found the Malaysian companies did not pursue a stable dividend policy. Benzinho (2004) in his study on corporations listed in Lisbon stock exchange revealed that corporations followed stable dividend policy while current earnings and lagged dividends were the major determinants of dividend policy. Omet (2004) made a study of 44 companies for a 15-year period from 1985-1999 in Jordan. He found empirical validity of the Lintner's model. The study revealed that the Jordanian companies followed stable dividend policy. Moreover amongst others, studies of Shevin (1982) in Australia, McDonald, Jacquilland and Nussenbaum (1975) in France, and Lasfer (1996) in UK found the validity of the Lintner's model.

In India, several researches have carried out their research to test the empirical validity of Lintner's model. Rao and Sharma (1971), Mookerjee (1992), Sarma and Kuin (2004) found that Lintner's model to work in India. Also, the study conducted by Bhole (1980) and Bose & Husain (2011) revealed that Lintner's model did not perform well in India. Pandey and Bhat (2004) in their study on dividend behaviour of 571 manufacturing firms during 1989-1997 observed that the Indian companies had lower target ratios and higher adjustment factors.

### Objectives

The main objective of the present study is to evaluate the dividend payout trend in the Indian FMCG sector. Specifically, the study seeks to analyse the validity of the Lintner's model in selected FMCG companies in the Indian.

### Data and Methodology

The present study investigates the validity of Lintner's model in the Indian FMCG sector. For this purpose the companies listed under NIFTY FMCG index have been selected. Those firms that have not declared in dividend for more than two years have been kept outside the purview of the study. Accordingly, 15 companies have been included in this analysis which are shown in Appendix 1. The data used in the present study for the period 2003-04 to 2012-13 have been taken from secondary source i.e. Capitaline Corporate Database of Capital Market Publishers (I) Ltd. Mumbai. The equity dividend for the current year have been used as dependent variable while current earnings after tax and last years' equity dividend (lagged dividend) have been taken as independent variable in the study.

In the first stage of the analysis the data structure have been examined. It has been observed that the earnings variable is positively skewed. For this purpose natural logarithm of the earnings variable has been used. As a result of this log transformation, the positively earnings variable have become more normal which helped in fitting the variable in the model. The study adopts pooled and panel

data regression analysis. Moreover, when independent variable is log transformed without changing the dependent variable, a percentage change in independent variable is associated with 1/100 times the coefficient change in dependent variable ("Log Transformations." DSS). Therefore, the regression coefficient of log transformed earnings variable has been multiplied with 0.01 in the final results.

### Statistical Results

First, the pooled regression model is used to examine the validity of Lintner's model in the selected FMCG companies. The variance inflation factor (VIF) was used to assess the multi-collinearity. VIF scores of less than 10 suggest the data is free from multi-collinearity and stability of the parameter estimates (Neter et al., 1985; Dielman, 1991). Mean VIF of 2.03 as shown in Table 1 suggests that the data is free from multi-collinearity. In general the coefficients of the independent variable disclosed predicted signs and are statistically significant. The Breusch-Pagan Lagrange Multiplier test is 698.04 and statistically significant which suggests the suitability of panel model over the pooled model. The Hausman test is 19.78 and statistically significant indicates the suitability of 'fixed effect' model over the 'random effect model'. Table 2 reveals significant  $R^2$  of 0.6427 implying a high explanatory power of the regression results. The regression coefficient of  $PAT_t$  is positive. On the other hand the coefficient of  $Div_{t-1}$  is positive and statistically significant. This signifies that lagged dividend plays a vital role in designing the dividend policy of Indian FMCG companies and is in conformity with Lintner's view. It was further observed that the target payout ratio is low (0.109) and the adjustment factor is pretty high (0.577) indicating that the management of Indian FMCG companies fail to smooth dividends.

| Variable       | VIF  |
|----------------|------|
| $Div_{t-1}$    | 2.03 |
| $EAT_t$        | 2.03 |
| Mean VIF: 2.03 |      |

|  | Pooled Model        | Fixed Effect        | Random Effect       |
|--|---------------------|---------------------|---------------------|
| Dependent Variable: $Div_t$            |                     |                     |                     |
| Independent Variable                   |                     |                     |                     |
| Constant                               | -299.822<br>(0.055) | 120.8625<br>(0.605) | -299.822<br>(0.053) |
| $EAT_t$                                | 0.7306*<br>(0.021)  | 0.0633*<br>(0.888)  | 0.0706<br>(0.020)   |
| $Div_{t-1}$                            | 0.6848*<br>(0.000)  | 0.4230*<br>(0.000)  | 0.6848*<br>(0.000)  |
| No of Observation                      | 148                 | 148                 | 148                 |
| R-square                               | 0.6518*             | 0.6427*             | 0.6518*             |
| Breusch-Pagan Lagrange Multiplier test | 698.04<br>(0.000)   |                     |                     |
| Hausman Test                           | 19.78*<br>(0.0001)  |                     |                     |
| Target payout ratio                    |                     | 0.109               |                     |
| Adjustment factor                      |                     | 0.577               |                     |
| * indicate significance at 5% level    |                     |                     |                     |

### Concluding Remarks

The current study has been considered with the objective of testing the validity of the Lintner's model in the Indian FMCG sector. Panel data analysis has been applied to test the validity of the model. The finding of the study has been in line with other Indian studies that have undertaken in the past. The result reveals that the Indian FMCG companies mainly rely on the past dividend in designing their dividend policy. Further the result discloses low target payout ratio and high adjustment factor. This implies low dividend smoothing and less stability on the part of the Indian FMCG companies in pursuing their dividend policy.

| Appendix 1: List of Companies |  |
|-------------------------------|--|
| 1                             | Britannia Industries Limited                     |
| 2                             | Colgate Palmolive (India) Limited                |
| 3                             | Dabur India Limited                              |
| 4                             | Emami Limited                                    |
| 5                             | GlaxoSmithkline Consumer Healthcare Limited      |
| 6                             | Godrej Consumer Products Limited                 |
| 7                             | Godrej Industries Limited                        |
| 8                             | Hindustan Unilever Limited                       |
| 9                             | Hindustan Construction Company Limited           |
| 10                            | ITC Limited                                      |
| 11                            | Marico Limited                                   |
| 12                            | Procter & Gamble Hygiene and Health Care Limited |
| 13                            | Tata Global Beverages Limited                    |
| 14                            | United Spirits Limited                           |
| 15                            | United Breweries Limited                         |

### Reference

- Baker, H., Kent, G., Farrelly, E., and Richard, B. (1985). A Survey of Management Views on Dividend Policy, *Financial Management*, 78-87
- Benzinho, J. M., ISCA, I.P. (2004). The Dividend Policy of the Portuguese corporations: Evidence from Euronext Lisbon. Munich Personal RePEc Archive, MPRA Paper No. 1137
- Bhole, L. M. (1980). Retained Earnings, Dividends and Share Prices of Indian Joint-Stock Companies. *Economic and Political Weekly*, 15(35): 93-100
- Bose, S. and Husain, Z. (2011), Asymmetric Dividend Policy of Indian Firms: An Econometric Analysis, *The International Journal of Applied Economics and Finance*, Vol.5, No.3.
- Brittain, J. A. (1966). *Corporate Dividend Policy*, Washington, D.C.: The Brookings Institution.
- Fama, E. F. and Blahnik, H. (1968). Dividend Policy: An Empirical Analysis, *Journal of American Statistical Association*, 1132-1161.
- Lasfer, M. (1996). Taxes and dividends: the UK Evidence. *Journal of Banking Finance* 20: 455-472.
- Log Transformations." DSS. N.p., n.d. Web. 17 May 2016
- McDonald, J., Jacquillant, B. & Nussenbaum, M. (1975). Dividend, Investment and Financing Decisions: Empirical Evidence on French Firms. *Journal of Financial and Quantitative Analysis* 10: 741-755.
- Mookerjee, R., 1992, "An Empirical Investigation of Corporate Dividend Pay-Out Behaviour in an Emerging Market", *Applied Financial Economics*, Vol. 2, 243-246
- Omet, G. (2004). Dividend policy behaviour in the Jordanian capital market, *International Journal of Business*, 9(3):287-299.
- Pandey, I. M. (2003). Corporate dividend policy and behaviour: The Malaysian Evidence, *Asian Academy of Management Journal*, Vol. 8, No. 1, 17-32.
- Pandey, I. M. and R. Bhat, (2004), "Dividend Behaviour of Indian Com-

panies under Monetary Policy Restrictions", Indian Institute of Management Ahmedabad Working Paper.

- Pruitt, S. W. and Gitman, L. J. (1991), The Interactions between the Investment, Financing, and Dividend Decisions of Major U.S. Firms. *Financial Review*, 26: 409-430.
- Rao, G.N. and Y.S.R. Sharma [1971], 'Dividends and Retained Earnings of Public and Private Limited Companies in India 1955-56 to 1965-66 -An Econometric Analysis', RBI Bulletin, June.
- Sarma, L.V.L.N. and Kuin, K. L. (2004). Corporate Dividend Behavior in the Emerging Markets: A Study of the Malaysian Corporate Sector. *The Icfai Journal of Applied Finance*, 10, 56-70
- Shevin, T. (1982). Australian Corporate Dividend Policy: Empirical Analysis. *Accounting and Finance*: 1-22.