Examining Validity of Known Dividend Models in Indian Non Banking Finance Companies

*Sumninder Kaur Bawa
**Prabhjot Kaur

ABSTRACT

In India considerable growth has taken place in the Non-banking financial sector in last two decades. There is an extensive literature devoted to corporate dividend policy; very few dividend studies focus on Non Banking Financial Companies (NBFCs).This study examines the validity of known dividend policy models by examining Lintner (1956) and Britain (1966) and their extended versions to examine their relative significance in the Indian context. The sample consists of 131 listed companies in the overall NBFC sector covering the period of ten years i.e. 2001 to 2010. The analysis reveals that Britain Explicit Depreciation Model is better than other models examined in the study and profit after taxes and previous year dividends are important determinants of dividend policy in Indian NBFC sector. The interest has significant impact on the dividend policy when included in the Britain Explicit Depreciation Model while investments demand and debt, share prices, liquidity turn out to be insignificant. The results reveal that for dividend decisions, past dividends and profit matters, Lintners's extendent Britain Explicit Depreciation model fits well in case of Indian NBFC sector.

Keywords: *Dividend policy, NBFC, Lintner's model, Growth.*

I. Introduction

In the multi-tier financial system of India, NBFCs (Non Banking Finance Companies) have curved out to be engines of growth and are integral part of the Indian financial system, enhancing competition and diversification in the financial sector. Over a period of time they are successful in rendering a wide range of services. Initially planned to recommend to the needs of savers and investors, NBFCs later on developed into institutions that can provide services similar to banks. A non-banking financial company (NBFC) is a company registered under the Companies Act, 1956 of India and is engaged in the business of loans and advances, acquisition of shares/stock/bonds/ debentures/securities issued by government or local authority or other securities of like marketable nature, leasing, hire-purchase, insurance business, chit business, but does not include any institution whose principal business is that of agriculture activity, industrial activity, sale/purchase/construction of immovable property. Now a days, NBFCs are vital in a wide range of activities like hire purchase finance, equipment lease finance, consumer finance where there is a huge gap between the demand and supply of funds and established banking entities are not accessible to the borrowers. During the last years a number of studies concerning the dividend policy in the Indian market have been undertaken. The motivation for these studies is the international extensive researches about determinants that might be important in deciding firm's dividend policy. The financial economics literature proposes both theoretical and empirical models of firm dividend behavior, based on certain empirical regularities. Allen and Michaely (1995) present a survey on dividends, highlighting the significant information, and discussing the various available theoretical models of dividend behavior. By emphasizing on tactical dividend smoothing by managers, Lintner's (1956) influential work underlines the importance of a vigorous perspective on dividend policy. Lintner's (1956) partial-adjustment model makes an attempt to confine smoothing through partial adjustment of dividends toward some desirable payout ratio.

Although different models of dividend behaviour have been put forward by Darling (1957), Florence (1959), Higgin (1972) and others. But the Lintner model has fared well as compared to its competitors. Subsequent research by Britain (1966), Fama and Babiak (1968), Fama(2001) and Turnovsky (1967) have all confirmed the validity of Lintners's model. The present study contributes to existing literature by testing Lintner (1956) and Britain (1966) model and their extended version on non banking financial companies. The study aims to find out the relative significance of various determinants having a direct bearing on the dividend policy decision of the sample companies. The remainder of the paper is organized as follows: section II briefly reviews the existing literature and objectives of the study. While section III presents the description of the data and the empirical models used. Section IV contains the results. Finally, some concluding remarks are presented in Section V.

II. Review of Literature

With a view to recognize the basis for undertaking the present study, a concise appraisal has been carried

*Assistant Professor, Department of Commerce and Business Management, Guru Nanak Dev University, Amritsar, Punjab, India, E-Mail-skbawa_gndu@yahoo.com
**Senior Research Fellow, Department of Commerce and Business Management, Guru Nanak Dev University, Amritsar, Punjab, India, E-Mail- prabh_jot18@yahoo.co.in

out on the dividend policy. Following are the few well-known studies:

Lintner (1956) studied the dividend behaviour of 28 US firms covering a period of seven years (1947-53). Results suggested that the firms do follow a fixed target payout ratio. The rate of dividends was adjusted along with the increase in the level of earnings. Current year's earnings and previous year's dividend were found to be associated with current year's dividend.

Britain (1966) examined the dividend behaviour of all major industries for a period of 1919-1960. The results stated that the capacity of a firm to pay dividends has been better explained in terms of cash flow as a variable, i.e., profits net of taxes but inclusive of depreciation as against the Lintner's profits net of taxes, as it reflects true earnings.

Pettit (1977) focused on studying the clientele effect regarding dividends and made a conclusion that retired persons wanted dividend in cash at high percentage of firm's earnings while who has earning at high rate preferred the reinvestment of cash and demand low dividend payments.

Khurana (1985) studied dividend policy of 68 private companies belonging to five industries namely sugar, cotton textiles, general engineering, electrical goods and chemical industries for the period of 1962-63 to 1976-77. Lintners model of dividend behaviour was better than all other models i.e. Darling, Britain's and Dobrovolskys model. Dividend decision was primarily governed by net current earnings after tax and lagged dividend.

Gupta, Sharma (1991) emphasized on finding out the dividend behavior of firms in the tea industry for a period of 1982-1988. Out of 112 companies, this study includes five firms having collaboration with foreign companies and equal five such firms having no collaboration with foreign company by taking into consideration best statistical models i.e. Lintner, Britain, Darling and Dobrovolsky.The results of the study disclosed the application of Lintners model and Dobrovolskys model on both type of firms while Britains model was not fully applied on both type of firms.

Coates, Davis and Golder (1998) analyzed the dividend behavior of 46 large U.K and 44 large German quoted companies over the period of 1980-95. Results showed that positive difference has been found out between these two countries with regard to payment of dividend per share in current year as well as in the preceding year.

Ahmed, Javid (2009) studied the determinants of dividend payout policies of 320 non financial firms listed on Karachi Stock Exchange for the period of 2001-2006.The results of Lintner's and Fama and Babiak's Models showed that Pakistani firms relied more on current earnings for deciding the payment of dividend as compared to past dividends. The firms those have major inside shareholding paid higher amount as dividends to reduce the agency cost.

Pal and Goyal (2009) made an attempt to bring out the real face of dividend decision of Information Technology industry in competitive global economy to know about the cause and effect association between dividend decision and its determinants in Indian Information Technology industry. The sample consisted of 40 information technology companies listed on NSE for the period ranging between 1996-97 to 2005-2006. The results verified that all the determinants under study were important more or less while determining the dividend policy of an organization which ultimately effect the value of firm.

Bose and Hussain (2011) studied the dividend behaviour of five industrial sectors covering a period of 2005-06 to 2008-09. Dividend policy has showed a positive relationship between dividend payout and profit. This study suggested for modification of Lintner's model in order to cope up with asymmetric behaviour.

Objectives of the Study

The main motive of this study is to examine the factors involved in determination of dividend policies in India by using Lintner's and Britain's model. Other objective is to explore the role of various determinants such as depreciation, profitability, interest rate and share price behavior, liquidity, debt and investment demand on the firm's dividend paying behavior. There is an extensive literature devoted to corporate dividend policy, very few dividend studies focus on NBFC sector in India. So this study is an attempt to fill this gap.

III. Data Base and Research Methodology

In order to achieve the above stated objectives, sample consisting of all listed companies of Non Banking Finance Companies in India has been selected. The study has covered a period of ten years i.e. 2001 to 2010. The final sample consists of 131 dividend paying companies that are listed on Bombay Stock Exchange, Mumbai. The data has been obtained from Prowess database. This study examines the dividend policy behaviour by using Lintner (1956) and Britain (1966) and their extended versions to examine their relative significance in the Indian context.

THE LINTNER'S (1956) MODEL : This model describes about two main parameters for deciding the firm's dividend policy: (1) the target payout ratio and (2) the speed at which current dividends adjust to the target.

Dividend payout is a function of net current earnings after tax and dividend paid in the previous year (lagged dividend).

This can be expressed as: $D_t = a + b1P_t + b2\ D_{t-1} + u_t$ .... (1)

Where, D_t = total equity dividend in period't'

D_{t-1} = total equity dividend in period't-1'

P_t = net current earnings after tax in period't'

u_t = error term

The Britain's (1966) Model

Britain uses the cash flow version of Lintner's model in his study entitled 'Corporate Dividend Policy'.

This hypothesis can be algebraically expressed as:

$D_t = a + b1C_t + b2\ D_{t-1} + u_t$(Britain's cash flow Model)

Where, D_t = total equity dividend in period't'

C_t = cash flow in period't'

D_{t-1} = total equity dividend in period't-1'

Britain also uses depreciation, (A_t) as separate explanatory variable along with net current earnings after tax and lagged dividends. Thus, one of his regression equations is of the form:

$D_t = a + b1\ P_t + b2\ D_{t-1} + b3\ A_t + u_t$(Britain Explicit Depreciation model)

Where, D_t = total equity dividend in period't'

P_t = net current earnings after tax in period't'

D_{t-1} = total equity dividend in period't-1'

C_t = cash flow in period't'

A_t = depreciation charged in period't'

u_t = error term

After selecting one best model, some explanatory variables are added to see their influence on the dividend policies of the sample companies; these variables include investment, liquidity, debt, interest payment, share prices.

Also Panel data regression technique has been applied in order to draw the meaningful inferences from the study. In panel data regression, time-series and cross-sectional observations are combined and estimated. The main advantage of pooling is that it is possible to increase the number of observations, which is important when each individual cross-section sample is so small that sample size affects the degrees of freedom adversely. The panel data methodology is also important to eliminate heterogeneity, namely the unobservable characteristics of the contracting environment. In the research we use the three common techniques for estimating models with panel data, which are: pooled ordinary least squares, the fixed effects model and random effects model. Subsequently, we use proper test statistics, namely the F-statistic and the Hausman test to choose the most appropriate model for the particular sample. The F-statistic tests the null hypothesis that the efficient estimator is the pooled ordinary least squares compared to the fixed effects model.

IV. Data Analysis and Interpretation

The present study has used two models: Lintner (1956), Britain (1966) and their extended versions by incorporating the investment, debt, liquidity, interest rate to investigate which is more suitable choice to describe the dividend policy decisions in case ofNBFC sector. The results of Lintner model are reported in Table I. The net earnings after tax and dividend paid in previous year have positive and significant impact on dividend. The speed of adjustment (k) is 83.375 per cent. This suggests that there is some unobserved individual firm's effect on dividend behaviour which is not captured by this model. Target payout ratio is 17.384 per cent.

Table I
The Lintner's Model
Regression Results of Fixed Effect Firm one Way Model
(Dt = a + b1Pt + b2 Dt-1 + ut)

	Fixed effect firm one way model	
Regressors	**Regression Coefficient**	**P value**
Constant	9.294513	0.180
PAT (Rs. Crore)	.1449425	0.010*
$Div_{(t-1)}$	.166245	0.000*
Target Payout Ratio (r)	.1449425 /0.833755 = 0.17384 = 17.384%	
Speed of Adjustment (k)	(1-.166245) = 0.833755	
Adjusted R^2	0.7277	
F- Value	841.67	0.000*

Source: Calculated from Stata 11

Note: *Significant at 1per cent level, **Significant at 5per cent level. ***Significant at 10per cent level.

Adjusted for degree of freedom i.e. adjusted R^2 is 72.77 per cent. It means 72.77 per cent variation has been explained by independent variables. Overall model is significant as shown by F test. Therefore net profit and lagged dividend are important factors of dividend policy.

Table II
The Britain's Cash Flow Model
Regression Results of Fixed Effect Firm one Way Model
(Dt = a + b1Ct + b2 Dt-1 + ut)

	Fixed effect firm one way model	
Regressors	**Regression Coefficient**	**P value**
Constant	11.83184	0.302
Cash flow (Rs. Crore)	.0433567	0.043**
$Div_{(t-1)}$	.165159	0.000*
Target Payout Ratio (r)	.0433567/0.834841 = 0.0531934 = 5.32 %	
Speed of Adjustment (k)	1-.165159 = 0.834841	
Adjusted R^2	0.7271	
F- Value	3.17	0.0000*

Source: Calculated from Stata 11

Note: *Significant at 1 per cent level, **Significant at 5 per cent level.

Table II shows the results of Britain's cash flow model. The cash flow and dividend paid in the previous year have positive and statistically significant effect on dividend payout in the NBFC sector. It is evident that cash flow incorporate depreciation as a source of fund, with regular profits cash flow encourages the firms to change their dividend policy at a given point of time even though they are not highly motivated to change the payout policy often. The results indicate that the speed of adjustment is 83.48 per cent. The target payout ratio is 5.32 per cent. The coefficient of determination adjusted for degree of freedom (Adjusted R^2) is quite high i.e. 72.71 per cent. This model is appropriate in explaining dividend behavior of our sampled firms but its explanatory power is less than that of the Lintner model.

Table III
The Britain Explicit Depreciation Model
Regression Results of Fixed Effect Firm one Way Model
(Dt = a + b1 Pt + b2 Dt-1 + b3 At + ut)

	Fixed effect firm one way model	
Regressors	**Regression Coefficient**	**P value**
Constant	5.873148	0.507
Pat (Rs. Crore)	.1999081	0.040**
$Div_{(t-1)}$	.165069	0.000*
A_t	.0362966	0.172
Target Payout Ratio (r)	.1999081/0.834931 = 0.23943 = 23.943 %	
Speed of Adjustment (k)	1-. 165069 = 0.834931	
Adjusted R^2	0.7314	
F- Value	3.14	0.0000*

Source: Calculated from Stata 11

Note: *Significant at 1 per cent level, **Significant at 5 per cent level.

Table III represents the extended version of Britain (1966) model by adding depreciation as an additional determinant in original Lintner model. The net profits, dividend paid in the previous year are positively and significantly determining the dividends for overall NBFC sector. Depreciation has not any significant impact on the current dividend policy. The speed of adjustment is 83.49 per cent. The target payout ratio is 23.943 per cent. Adjusted R^2 is 73.14 per cent. F-value shows that overall model is statistically significant in this sector.

Overall the results reveal that in all the three models the net profits, cash flows, lag dividends significantly explain the dividend behavior of firms in the NBFC sector. On the basis of adjusted R^2 criteria Britain Explicit Depreciation Model's explanatory power is very high as compared to other two models i.e. Lintner models and Britain's cash flow model. There are some individual firm's characteristics such as investment demand, interest payment, flow of net debt, share prices and liquidity that influence the dividend behavior of the NBFC sector {Glen et al. (1995); Naceur et al. (2007)}. This motivated to estimate the extended version of Britain Extended Depreciation Model.

Table IV
Regression Results of Fixed Effect Firm one Way Model In Case of Britain Explicit Depreciation Model with Interest Rate

	Fixed effect firm one way model	
Regressors	**Regression Coefficient**	**P value**
Constant	20.80481	0.139
Pat (Rs. Crore)	.1197603	0.562
Div $_{(t-1)}$	.180931	0.000*
A_t	.01149	0.606
Interest	.0037493	0.000*
Target Payout Ratio (r)	.1197603/0.819069 = .1462 = 14.62%	
Speed of Adjustment (k)	1-.180931 = 0.819069	
Adjusted R^2	0.6388	
F- Value	5.20	.0000*

Source: Calculated from Stata 11

Note: *Significant at 1 per cent level.

Table IV represents the results of fixed effect firm one way model in case of Britain Explicit Depreciation model with Interest Rate. Results show that interest rate has positive and also significant impact on dividend payment. The results suggest that interest rate is a significant determinant of dividend policy in NBFC sector during the period of study.

Table V
Regression Results of Fixed Effect Firm one Way Model in Case of Britain Explicit Depreciation Model with Investment Demand

	Fixed effect firm one way model	
Regressors	**Regression Coefficient**	**P value**
Constant	5.498916	0.614
Pat (Rs. Crore)	.2423355	.394
Div $_{(t-1)}$	.162112	0.000 *
A_t	.0400161	0.111
Investment Demand	-.0006661	0.195
Target Payout Ratio (r)	.2423355/0.837888 = 0.289812 = 28.98%	
Speed of Adjustment (k)	1-.162112 = 0.837888	
Adjusted R^2	0.7323	
F- Value	3.04	.0000*

Source: Calculated from Stata 11

Note: *Significant at 1 per cent level.

The results reported in Table V are the extended model including investment demand as determinant of dividend policy. The results indicate that investment has a negative but also insignificant relationship with dividend payment. It means that investment demand is not important determinant in case of this sector.

Table VI
Regression Results of Fixed Effect Firm one Way Model In Case of Britain Explicit Depreciation Model with Liquidity

	Fixed effect firm one way model	
Regressors	**Regression Coefficient**	**P value**
Constant	10.64098	0.328
Pat (Rs. Crore)	.1917023	0.423
Div $_{(t-1)}$	1.165042	0.000*

liquidity	-.6598672	0.119
Target Payout Ratio (r)	.1917023 /0.8082977 = 0.23716 = 23.716%	
Speed of Adjustment (k)	1-.1917023 = 0.8082977	
Adjusted R^2	0.7295	
F- Value	2.95	.0000*

Source: Calculated from Stata 11

Note: *Significant at 1 per cent level.

Table VI presents the results of modifying the model by including liquidity following Darling (1957) as determinant of dividend. The results indicate that liquidity has a negative and insignificant determinant in NBFC sector. However, the liquidity has no significant influence on dividend payout policy.

Table VII
Regression Results of Fixed Effect Firm One Way Model In Case Of Britain Explicit Depreciation Model with Debt

	Fixed effect firm one way model	
Regressors	**Regression Coefficient**	**P value**
Constant	8.472161	0.377
Pat (Rs. Crore)	.0369063	0.406
$Div_{(t-1)}$	.125849	0.000*
A_t	.0656705	0.406
Debt	6.47098	0.120
Target Payout Ratio (r)	.0369063/0.874151 = 0.0422195 = 4.2219%	
Speed of Adjustment (k)	1-.125849 = 0.874151	
Adjusted R^2	0.5358	
F- Value	43.72	.0000*

Source: Calculated from Stata 11

Note: *Significant at 1 per cent level, **Significant at 5 per cent level.

Flow of net debt as determinant of dividend policy has been incorporated in the extended model. The results reported in Table VII suggest that debt is not a significant factor contributing to dividend policy in case of NBFC sector. Due to the recessionary phase in the economy in general and corporate sector in particular either fund is not easily available as debt or their financial costs are very high.

Table VIII
Regression Results of Fixed Effect Firm One Way Model In Case Of Britain Explicit Depreciation Model with Share Price

	Fixed effect firm one way model	
Regressors	**Regression Coefficient**	**P value**
Constant	5.75927	0.530
Pat (Rs. Crore)	.2087024	0.418
$Div_{(t-1)}$	.163164	0.000*
A_t	.0437686	0.073***
Share price	-.0034811	0.319
Target Payout Ratio (r)	.2087024/0.836818 = 0.249399 = 24.94per cent	
Speed of Adjustment (k)	1 -.163164 = 0.836816	
Adjusted R^2	0.7281	
F- Value	2.90	.0000*

Source: Calculated from Stata 11

Note: *Significant at 1 per cent level, **Significant at 5 per cent level, ***Significant at 5 per cent level

By taking the share price as additional determinant to Britain's Explicit Depreciation Model, results shown in table VIII depict that share price is not an important and significant determinant in influencing the dividend policy decision of this sector. Results are opposite to the results of Harkavy (1957), Lee and Forbes (1980) while these are similar to the results of Black and Scholes (1974).

V. Conclusion

This study examines the various determinants of dividend policy by Lintner (1956) and Britain (1966) and their extended versions to examine their relative significance in the Indian context. The sample consists of 131 firms in the overall NBFC sector covering the period of 10 years i.e. from 2001 to 2010. The analysis reveals that Lintner's extended model of Britain's explicit depreciation model is better than other models examined in the study. The results of the current study indicate that dividend decision of firms is influenced by net profit, dividend paid by the firm in the previous year and cash flow. Among other determinants investigated include: investment demand, debt, share price and liquidity turn out to be insignificant in explaining the dividend policy. The impact of interest rate is only found positive and significant in case of this sector. The Implication that comes out from the study is that for dividend decision past dividends, profits and interest rate matters. Overall Lintner's extended model fits the data well in NBFC sector of India under the period of study.

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About the Authors

Sumninder Kaur Bawa, Ph.D. is presently working as an Assistant Professor (Management and Economics) in Commerce and Business Management Department, the main university campus of Guru Nanak Dev University, Amritsar (India). Her research interests are in the area of Insurance and Finance. She teaches Managerial Economics, Banking & Insurance and Human Resource Management. She has published papers in national and international journals of repute and has won the best paper awards for her doctoral work at many conferences. She has research experience of more than 10 years.

Prabhjot Kaur is currently working as research scholar in the Department of Commerce and Business Management, Guru Nanak Dev University, Amritsar. She is doing Ph.D. on the topic of Earnings Management. She has published papers in national and international journals.

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