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STOCK PRICE BEHAVIOUR AND DIVIDEND POLICY-AN EMPIRICAL INVESTIGATION IN INFORMATION TECHNOLOGY SECTOR OF CORPORATE INDIA IN LIBERALIZED ERA

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ABSTRACT

Dividend policy affects stock price or not - an unsolved question of corporate finance. Some experts believe that dividend policy certainly affects stock price while others feel that stock price is totally independent of dividend policy. Consequently two schools of thought, viz. relevance theorem school (supporters of Walter and Gordon) and irrelevance theorem school (supporters of Modigliani and Miller), have emerged in the arena of corporate finance. Empirical studies have been conducted on both the theorems by the researchers by using different models. However, the results were at best mixed. In this paper we would like to analyze the relationship between dividend policy and stock price of information technology sector of corporate India in liberalized era as companies belonging to this sector are to be counted among the best dividend paying companies in the Indian Inc. The present study is based on all companies of this sector which are listed on any stock exchange of India over the decade from 2002-2003 to 2011-2012. In relation to the objective of our study, we have collected data for the companies on required variables from "CAPITALINE" database. In order to examine the relationship between dividend policy and stock price, regression method has been used by taking equity dividend percentage, lagged equity dividend percentage, retained earnings to total assets ratio and lagged retained earnings to total assets ratio as independent variables and Market price per share in the current period as dependent variable. To test the statistical significance of each parameter of the proposed model, its standard error has been calculated and 't' test has been applied for examining its statistical significance. The statistical criterion that has been used for selection of the model is adjusted R^2, which is a measure of goodness of fit. The F values have been reported to indicate the level of significance of the adjusted R^2. Finally, multicollinearity problem of the model has been checked with reference to condition index and variance inflating factor. Our study confirms that irrelevance theorem holds good in information technology sector of corporate India in liberalized era.

KEY WORDS: Current monthly adjusted market price, Dividend policy, equity dividend percentage, Retained earnings to total assets ratio, Stock price

INTRODUCTION

Dividend policy is the policy of splitting total profits into dividend and retained earnings. This is a very important decision area of corporate finance. Decision in this area has got significant bearing on investment and finance decisions. The basic aim of any finance manager i.e., maximization of the investors' wealth depends on combined effect on decisions taken in all these areas. In this context the finance managers face the most important question "How dividend policy affects investors' wealth?"

On this particular question the experts' opinion are not unanimous. Experts like Walter, Gordon believed that dividend policy of the company certainly affects the stock price of the company. On the other hand, experts like Modigliani and Miller proponents of 'irrelevance theorem' suggested that in a perfect market and in the absence of transaction costs and tax dividend has got no relation with investors wealth. Empirical studies have been conducted by the researchers in India and abroad and the results are at best mixed, Even in these days there is a wide spread debate in this regard among the experts from the arena of finance.

In our present endeavour we have tried to estimate how far dividend policy affects stock price in information technology sector of corporate India in liberalized era.

LITERATURE SURVEY

Immense volume of work on dividend policy and investors' wealth are available. Noteworthy contributions from abroad include relevance theorem that states dividend policy significantly affect common stock prices by Walter(1956), another model of relevance theorem by Gordon(1959), irrelevance theorem that states in a perfect market and in the absence of transaction costs and tax dividend has got no relation with investors wealth by Modigliani and Miller(1961), empirical study on US firms regarding the "impact of initiating dividend payments on shareholders' wealth which supports that dividend renders unique and valuable information to shareholders by Asquith and Mullins(1983), empirical study on Nigerian firms supporting irrelevance theorem by Adefila et al. (2000), studies on the relationship between dividend policy and stock price in Pakistan supporting significant impact of dividend policy on shareholders wealth by Khan, Aamir and Qayyum (2011) and by Gul et. al. (2012) etc.

However, in Indian context related studies are limited. Important contributions include: Empirical study conducted by Azhagaiah and Sabaripriya (2008) on chemical companies listed in BSE to measure the impact of dividend policy on investors' wealth through multiple regression method. They found that the wealth of shareholders was mainly influenced by growth in sales, improvement in profit margin, fixed and working capital investment decisions, capital structure decisions, cost of capital etc. They also found that there was a strong impact of dividend policy on shareholders wealth in organic chemical companies but the shareholders wealth was not influenced by dividend policy in case of inorganic chemical companies.

Aravanan and Mannarakkal (2011) have conducted a study to analyze the relationship between dividend policy and investors' wealth with reference to Ferro Alloy and Alloy steel companies in India. They also used multiple regression methodology for the purpose of their study. The results of their study showed that there is a significant impact of dividend payout on market price of share for Alloy steel companies in India. Contradictorily, the results revealed not that much dependence of market price of share on dividend policy of the firm for Ferro Alloy steel companies in India.

Das and Samanta (2012) in their article titled "Dividend policy and its effect on shareholders' wealth: a study on Indian banking sector in liberalized era" conducted a study on Indian banking companies in post liberalization era and they found that for public sector banks in India dividend policy is an important determinant of shareholders' wealth etc.

OBJECTIVE OF THE STUDY

In this article we want to analyze the relationship between dividend policy and stock price in information technology sector of corporate India in liberalized era.

HYPOTHESIS

There is no relationship between dividend policy and market price of equity shares in Information technology sector in liberalized era.

DATABASE AND METHODOLOGY

According to the objective of our study, information technology sector in India has been selected. There are four hundred twenty seven companies in information technology sector listed in any stock exchange of India on 31.03.2012 and this sector comprises of seven subsectors viz. computer education, computer hardware (large), computer hardware (medium and small), computer peripherals and accessories, computers software (converts), computer software (large) and computer software (medium/small). The sample includes all the listed companies belonging to computer education, computer hardware (large), computer hardware (medium and small), computer peripherals and accessories and computer software (large) over the time period 2002-03 to 2011-2012. These subsectors have been selected because companies belonging to these subsectors are having high pay out percentage. However, we have excluded such companies that either do not have financial data for the entire period of study i.e., from the year 2002-03 to 2011-12 or do not declare cash dividend in any of the years under reference of this study. Here, we have also excluded those companies which suffered some abnormalities for other than financial reasons. Finally the sample reduced to sixty nine companies. Data have been collected for these sample companies on equity dividend percentage (EDP), Retained earnings to total assets ratio (RETA), Monthly closing market prices for any year from "CAPITALINE", a corporate database.

In consonance with the objective of our study we have examined the impact of equity dividend payout percentage and retained earnings to total assets ratio on the current market price of equity shares by two approaches. Some experts believe that market is a quick acceptor of information and therefore current dividend decisions affect current market price of stock. So, in the first approach we have regressed equity dividend percentage (EDP) and retained earnings to total assets ratio (RETA) on current monthly adjusted market price per share (MPS) and the following regression equation has been used:

$MPS_{it} = \beta_0 + \beta_1 EDP_{it} + \beta_2 RETA_{it} + \mu_{it}$

On the other hand some experts feel that market needs some time to adjust and therefore lagged dividend decisions affect current market price. Accordingly in the other approach we have estimated dependence of current monthly adjusted market price per share (MPS) on lagged equity dividend percentage(LEDP) and lagged retained earnings to total assets ratio (LRETA) with the following regression equation:

$MPS_{it} = \beta_0 + \beta_1 LEDP_{it} + \beta_2 LRETA_{it} + \mu_{it}$

The current monthly adjusted market price per share (MPS) has been calculated by taking simple average of all months closing market price of a year.

The present study employs a cross sectional analysis as it takes into account a large sample which will increase the precision of the slope and reduce year by year volatility. [Fama and French,(1977)]. Accordingly, values of percentage of lagged equity dividend percentage and lagged retained earnings to total assets ratio are used as explanatory variables for the purpose of present study. So far as the measurement of variables is concerned, most of the researchers used aggregate data in their empirical works for explaining corporate dividend policy. Accordingly, aggregate values of dividend percentage, retained earnings to total assets ratio

and market price per share are used for the purpose of the present study. To test the statistical significance of each parameter in the model, its standard error has been calculated and "t" test has been applied for examining its statistical significance. The statistical criterion that has been used for selection of the model is adjusted R^2, which is a measure of goodness of fit. The F values have been reported to indicate the level of significance of the adjusted R^2. To check the multicollinearity in our model we have computed variance inflating factor (VIF) and condition index (CI). The VIF shows how the variance of an estimator is inflated by the presence of multicollinearity and it has been calculated as: VIF =1/ $(1-r_{ij}^2)$ where r_{ij} is the coefficient of correlation between x_i and x_j (Gujrati, 2007). If the VIF of a variable exceeds 10, that variable is said to be highly collinear (David et al. 1988, Bowerman & O'Connell, 1990). Besides, the CI is computed as: CI= √(Maximum Eigen Value/ Minimum Eigen Value). As a rule of thumb, if the CI is between 10 and 30, there is moderate to strong collinearity and if it exceeds 30 there is severe multicollinearity (Gujrati, 2007)

DATA ANALYSIS AND FINDINGS

As per our proposed methodology to test the relationship between stock price and dividend policy by first approach we have regressed current monthly adjusted market price per share (MPS_{it}) on the equity dividend percentage (EDP) and retained earnings to total assets ratio (RETA). The estimated results of this regression equation for information technology sector are presented in Table 1. It can be said from Table 1 that the values of adjusted R^2 during the entire period of study are statistically insignificant (except in the year 2002-2003). The estimated multiple regression equations show that current monthly adjusted market price per share (MPS) for the whole period does not significantly depend on EDP and RETA as the estimated values of the coefficients of these variables are statistically insignificant. So, it is not possible to conclude anything on the relationship between current year's stock price and dividend policy.

TABLE 1: ESTIMATED REGRESSION PARAMETERS OF THE FIRST MODEL: $MPS_{it} = \beta_0 + \beta_1 EDP_{it} + \beta_2 RETA_{it} + \mu_{it}$

Year	ADJUSTED R^2	β_0	β_1	β_2
2002-03	.506* [11.741]	55.405 (1.983)	.104*** (.102)	1068.734* (4.845)
2003-04	.019 [1.233]	57.842 (1.417)	1.500 (1.357)	146.140 (.443)
2004-05	.017 [1.227]	88.520 (1.608)	.300 (.311)	1263.808 (1.541)
2005-06	-.010 [.870]	109.040 (1.376)	1.816 (1.147)	485.089 (.657)
2006-07	-.062 [.186]	281.944** (1.376)	-1.321 (-.262)	833.503 (.607)
2007-08	-.030 [.583]	287.619** (2.411)	-.336 (-.089)	2370.595 (1.047)
2008-09	-.062 [.178]	237.899* (3.194)	-1.104 (-.584)	-2.693 (-.043)
2009-10	-.056 [.229]	292.604** (2.464)	.317 (.137)	2023.471 (.643)
2010-11	-.023 [.653]	264.953*** (1.708)	1.143 (.410)	5907.819 (1.083)
2011-12	-.046 [.411]	261.759 (1.561)	5.423 (.902)	154.356 (.043)

NOTE: Terms within square bracket denote F values and terms within parentheses denote t-values. * implies significant at 1% level, ** implies significant at 5% level and *** implies significant at 10% level.

Similarly to test the relationship between stock price and dividend policy from second approach we have regressed current monthly adjusted market price per share (MPS_{it}) on the lagged equity dividend percentage (LEDP) and lagged retained earnings to total assets ratio (LRETA). The estimated results of this regression equation for information technology sector are presented in Table 2. Table 2 also exhibits that the values of adjusted R^2 for most of the years in the study period are statistically insignificant (except in the years 2002-2003 and 2003-04). The estimated multiple regression equations show that current monthly adjusted market price per share (MPS) for the whole period does not significantly depend on LEDP and LRETA as the estimated values of the coefficients of these variables are statistically insignificant. So, again irrelevance theorem of dividend policy holds good .

TABLE 2: ESTIMATED REGRESSION PARAMETERS OF THE SECOND MODEL $MPS_{it} = \beta_0 + \beta_1 LEDP_{it} + \beta_2 LRETA_{it} + \mu_{it}$

Year	ADJUSTED R^2	β_0	β_1	β_2
2002-03	.528* [9.492]	73.601*** (1.803)	.373 (-.257)	1383.241* (4.343)
2003-04	.462* [10.008]	71.144*** (1.898)	-.044 (-.032)	1322.194* (4.468)
2004-05	.093 [2.227]	66.949 (1.290)	2.783*** (1.982)	97.579 (.233)
2005-06	.064 [1.851]	117.923 (1.478)	.376 (.272)	2245.479*** (1.909)
2006-07	-.025 [.667]	153.067 (1.260)	1.980 (.817)	928.626 (.820)
2007-08	-.068 [.107]	332.056** (2.461)	-.656 (-.123)	647.033 (.446)
2008-09	-.047 [.365]	174.944 (2.041)	.501 (.188)	1157.888 (.734)
2009-10	-.057 [.249]	382.374* (3.189)	-1.571 (-.516)	55.681 (.547)
2010-11	-.048 [.338]	332.001** (2.170)	.687 (.231)	3076.067 (.758)
2011-12	-.033 [.575]	230.923 (1.380)	1.910 (.594)	5210.322 (.910)

NOTE: Terms within square bracket denote F values and terms within parentheses denote t-values. * implies significant at 1% level, ** implies significant at 5% level and *** implies significant at 10% level.

TABLE 3: COLLINEARITY DIAGNOSTICS OF THE FIRST MODEL

year	Explanatory Variables	Variance Inflating factor (VIF)	Condition Index (CI)
2002-03	EDP	1.002	1.460
	RETA	1.056	2.496
2003-04	EDP	1.060	1.561
	RETA	1.856	2.271
2004-05	EDP	1.000	1.677
	RETA	2.364	2.447
2005-06	EDP	1.562	1.719
	RETA	1.000	2.497
2006-07	EDP	1.256	1.677
	RETA	1.086	3.120
2007-08	EDP	1.117	2.072
	RETA	1.412	2.555
2008-09	EDP	1.013	1.244
	RETA	1.019	1.902
2009-10	EDP	1.002	1.654
	RETA	1.524	2.012
2010-11	EDP	1.203	1.578
	RETA	1.356	2.269
2011-12	EDP	1.206	1.612
	RETA	1.316	2.181

TABLE 4: COLLINEARITY DIAGNOSTICS OF THE SECOND MODEL

Year	Explanatory Variables	Variance Inflating factor (VIF)	Condition Index (CI)
2002-03	LEDP	1.012	1.280
	LRETA	1.506	1.254
2003-04	LEDP	1.360	2.541
	LRETA	1.004	1.978
2004-05	LEDP	1.120	1.324
	LRETA	1.964	1.584
2005-06	LEDP	1.548	1.475
	LRETA	2.936	1.254
2006-07	LEDP	1.256	1.548
	LRETA	1.456	1.748
2007-08	LEDP	1.214	1.072
	LRETA	1.568	1.241
2008-09	LEDP	2.345	1.654
	LRETA	1.024	1.145
2009-10	LEDP	1.240	1.128
	LRETA	1.728	1.487
2010-11	LEDP	1.254	1.492
	LRETA	1.145	1.279
2011-12	LEDP	1.602	1.015
	LRETA	1.825	1.864

From Table 3 and Table 4 it is observed that for both the models Variance Inflating Factor (VIF) data for all the explanatory variables in all the years under study period are below 10 and the value of the Condition Index (CI) for each variable in all the years under study are also below 10. Accordingly, we can say that our proposed models are free from the multicollinearity problem.

CONCLUSION

From the major findings of the study it can be said that dividend policy i.e., splitting of total profits into dividend and retained earnings is not at all a decisive factor for stock price behaviour in information technology sector under the present study. So, irrelevance theorem holds good even with market imperfections in our study. The probable reason, as we think, behind such outcome is that in Indian market young India's investors prefer growth of the firm, which largely depends on profitability and other factors, than cash dividend.

LIMITATIONS OF THE STUDY

Firstly, the study is based on secondary data collected from CAPITALINE, a corporate database. Therefore, the quality of the entire analysis depends on the reliability and precision of the data provided by the source. Secondly, only ten years data have been collected and analyzed. We think in order to get more accurate results a longer study period should be selected. Comparative analysis of other existing models along with our proposed models with a longer time horizon is left for future research works.

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