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Impact of Dividend Policy on Stockholders' Wealth: Empirical Evidences from KSE 100-Index

Muhammad Waseem Ur Rehman
MS-Finance Scholar, Mohammad Ali Jinnah University, Karachi.

Abstract
There are two different schools of thought one believes in relevancy of dividend policy with stockholders' wealth and second believes in irrelevancy of dividend policy. This work was done to study the impact of dividend policy in Pakistani context. For that purpose the financial data was collected from all listed firms in KSE-100 Index for the period of 15 years. The high variation studied within the data. Three methods were chosen for analysis correlation, multistage regression and Granger causality test. Dependent variable market price per share has strongly significant positive relationship with dividend per share and also has strongly significant causal relationship. There was no relationship found between market price per share and capital gain. So it can be concluded from this study that in Pakistani markets investors prefer dividend instead of capital gain because of uncertainty of future prices and it can also be concluded that the dividend policy is relevant to the stockholders' wealth. Therefore by improving payout policy a listed firm in Karachi Stock Exchange can improve its value but management must be very sound for making best strategic decisions for payout and retention.
Keywords: Dividend Policy, Firms' Value, Relevancy & Irrelevancy Framework, Discrete Returns, Linear Relationship, Causal Relationship, Investors Preferences.

1. Introduction

There are the two different schools of thought, one believes in the relevancy of dividend policy with firms value and second believes that the dividend policy is irrelevant with the firms value. According to the first proposition of Miller & Modigliani (1961) empirical work on dividend policy which clearly explained that the dividend policy is irrelevant to the stockholders wealth in perfect market. Dividend policy only impacts the shareholder's wealth in imperfect market or with tax situation. MM's work also argued that the announcement of dividend does not impact stock returns. Another study by Black & Scholes (1974) supports the irrelevancy hypothesis of MM. With the help capital asset pricing model they prepared 25 portfolios and support the MM's statement that the dividend policy does not matter. "We have demonstrated that dividends, whether informative or not, serve no useful role when investors have homogeneous beliefs and time-additive utility and markets exhibit full allocation efficiency" (Hakansson, 1982).

MM supports the irrelevancy of dividend policy but there is another school of thought which supports the relevancy. A survey to 603 CFOs of 562 companies in USA by Baker, Farrelly & Edelman (1985) conclude that the dividend policy may affect the stockholders' wealth. Gordon (1962) proposed a constant growth valuation model. He explained that the dividend policy is directly relevant to the stockholders' wealth (market price of share) under the condition of uncertainty of future dividends. In uncertainty condition investors prefer dividend instead of capital gains. This work is also known with the name of 'bird in hand theory'. Information also affects the dividend policy due to which the investors prefer high payout. Miller & Modigliani (1961) also proposed in their work that the dividend policy may be relevant in inefficient market where the flow of information is asymmetric. Moreover the study done in United States on the firms which were paying first dividend in history. Study reveals that after initiating dividend there was significant increase in stock return and shareholder's wealth (Asquith & Mullins, 1983). Dividend policy may be relevant due to the agency cost, means on the behalf of principal someone else, an agent or broker, acting in the market who charged the cost for his services. The organizations and managers sometime prefer to save that kind of costs due to which they prefer high dividend (see Jensen, Solberg, & Zorn, 1992; Holder, Langrehr & Hexter, 1998). MM proposed in their work that dividend policy may be relevant to stockholders' wealth in the presence of taxes. For this context 'Tax Preference Theory' was suggested by Litzenberger & Ramaswamy (1979), they proposed that the taxes on capital gains are less than the taxes on dividend, that's way some investors prefer capital gain to cut-off taxes. Finally the relevancy framework may be supported by the cliental affect theory which was also proposed by Litzenberger & Ramaswamy (1979). Another study investigated that the investors want dividend of their own choice therefore payout is directly related to the stock price. Moreover, aged investors prefer high dividends and investors who cannot diversify their investments may also prefer high dividends (Pettit, 1977).

We can understand the dividend policy framework by two dimensions; relevancy and irrelevancy approaches. Furthermore, irrelevancy may be studied in four dimensions; uncertainty of the future dividend, information content of the dividend, agency cost and tax preference theory and cliental affect theory (see Hashemijoo, Ardekani & Younesi, 2012; Ali, Ishtiaq & Naveed, 2011).

There was a lot of work done on dividend policy in international context in current era. Azhagaiah & Priya (2008) studied the relationship between dividend policy and stockholder's wealth in chemical industry of India. They collected data from 28 companies listed on BSE and studied significant difference between dividend payers and non-payers. They also studied the significant impact of dividend policy on stockholders' wealth in organic chemical companies but insignificant impact of dividend policy was studied in inorganic chemical companies. Dividend yield had a negative relationship with stock returns in Kuala Lumpur Stock Exchange. The little change in dividend policy would give a large change in stock returns as well as in stockholders' wealth (Foong, Zakaria & Tan, 2007). There was another study on non-financial firms in Dhaka Stock Exchange by Rashid & Rahman (2008). The findings were not exactly similar with Miller and Modigliani (1961) dividend irrelevance proposition. The dividend yield had little impact on stock price volatility therefore managers cannot employ dividend policy to reduce the stock's risk. In addition stock price volatility was negatively related with dividend payout and dividend yield (Hashemijoo, Ardekani & Younesi, 2012). Moreover, financial performance has significant positive relationship with dividend payout (Uwuigbe, Jafaru & Ajayi, 2012).

In a Pakistani context similar to this study a work was done by Gul et al. (2012), their work was also similar to the study of Azhagaiah & Priya (2008), they studied a significant difference between dividend payers and non-payers and they also studied that the dividend policy impacts the stockholders wealth but there was a drawback of sample selection criteria and they did not conclude their work properly. In this study the sample size is KSE-100 Index, the reason to select KSE-100 index will be described in detail in next section. Dividend irrelevancy theory is not applicable in chemical and pharmaceuticals sector of Karachi Stock Exchange (Khan, 2012). Dividend yield is negatively related with stock returns and has a significant correlation with stock price volatility (see Ali, Ishtiaq & Naveed, 2011; Asghar et al., 2011). This work is done to explain relevancy or irrelevancy of dividend policy with stockholders' wealth in Pakistani context. The main objectives of the study are:

1. To study the impact of dividend policy on stockholders' wealth.
2. To study the concept of relevancy or irrelevancy of dividend policy with stockholders' wealth in Pakistani market.
3. Overcome the drawbacks of previous studies.
4. Create new dimensions for the future researches.
5. Contribute a valid conclusion to the academia and professionals.

2. Econometrics

The study uses deductive approach to test the hypotheses related to dividend policy. The study develops three basic hypotheses for correlation, regression and causal relation between MPS (Market Price per Share) and DPS (Dividend per Share) those are as follow:

H_{A0}: $\rho = 0$ (Insignificant correlation studied between MPS and DPS)
H_{A1}: $\rho \neq 0$ (Significant correlation studied between MPS and DPS)
H_{B0}: $\beta_2 = 0$ (DPS insignificantly impact the MPS)
H_{B1}: $\beta_2 \neq 0$ (DPS significantly impact the MPS)
H_{C0}: There is no causal relationship studied between MPS and DPS.
H_{C1}: There is a causal relationship studied between MPS and DPS.

In previous studies in Pakistan on same topic the sample selection criteria was not defined but in this study KSE-100 Index was selected for analysis. KSE-100 Index is a best representation for economic development of Pakistan therefore; the 100 companies of KSE-100 Index were included in sample size. Data was collected from Bloomberg (a data source) than compute variables according to model. Multistage regression was run; first model was regressed with two explanatory variables and second model was regressed with three explanatory variables in which one is controlling variable. The detail of both models is as under:

Table 1

Dependent Variable		*Explanatory and Controlling Variables*	
	Symbol		***Symbols***
Market Price per Share	**MPS**	Dividend per Share	**DPS**
		Retained Earnings per Share	**REPS**
		Capital Gain	**CG**

Where;	MPS	=	Market Capitalization / Number Shares Outstanding
	DPS	=	Total Dividend Issued / Number Shares Outstanding
	REPS	=	Retained Earnings / Number Shares Outstanding
	CG	=	(Current Year MPS – Preceding Year MPS) / Preceding Year MPS

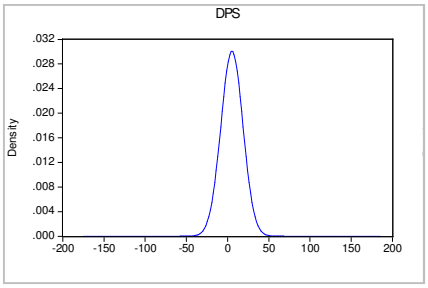
First Model: $MPS_{i,t} = \beta_1 + \beta_2 DPS_{i,t} + \beta_3 REPS_{i,t} + \mu_{i,t}$

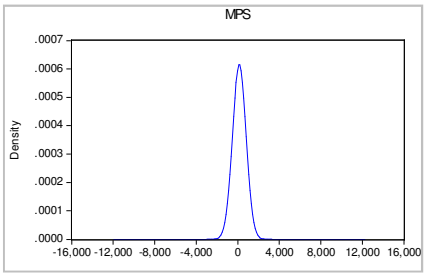
Second Model: $MPS_{i,t} = \beta_1 + \beta_2 DPS_{i,t} + \beta_3 REPS_{i,t} + \beta_4 CG_{i,t} + \mu_{i,t}$

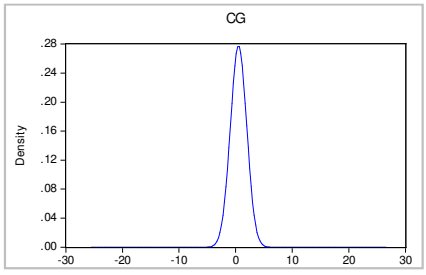
MPS was used as a proxy to measure stockholder's wealth, DPS was used as a proxy for dividend issued during the year or payout, REPS was used as a proxy for retention during the year, these variables were chosen from literature (see Azhagaiah & Priya, 2008; Gul et al., 2012) and CG represents the capital gain used as a controlling variable which was computed by discrete returns formula (Foong, Zakaria & Tan, 2007). Two main uses of earnings are payout to stockholders' and retention for upcoming projects. Therefore, first model is based on two variables DPS and REPS. In second model CG was included to study the preferences of stockholders' toward market returns except dividend. The study followed OLS method for estimating the parameters. Furthermore, correlation matrix was used to study relationship between dependent and independent variables and multicollinearity. Regression analysis was used to test the impact and Granger Causality Test was used to study the causal relationship between MPS and DPS.

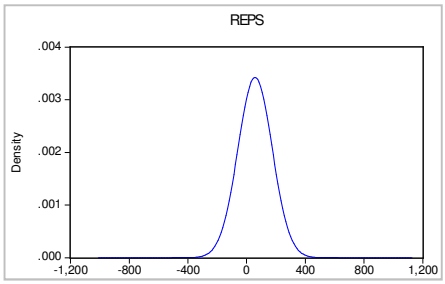
3. Data Characteristics

The study incorporates four variables MPS, DPS, REPS and CG. In KSE-100 Index there is a high variation found between all variables. The dependent variable market price per share has 1066 observations with the mean of 151.06 and standard deviation of 645.89. The distribution is positively skewed and leptokurtic because spread between the prices is low. Minimum value in observations is 0.33 and maximum value is 11230.8.









The independent variable dividend per share has 1066 observations with the mean of 5.24 and standard deviation of 13.25. The distribution follows right tail skewness and leptokurtic because the variation between values is very high. The minimum value in observations is zero Rupees and maximum value is Rupees 170.

The second explanatory variable is retained earnings per share which has 1113 observations having mean 58.08 with the standard deviation 116.55. Retained earnings per share also follow positive skewness and leptokurtic distribution. The spread in the data is also very small due to which the kurtosis is highly positive. Finally the study has one controlling variable capital gain which is used for explaining the preference of stockholders toward stock returns. Capital gain has 972 observations with mean 0.5168 and standard deviation 1.44. Capital gain also follows positive skewness and leptokurtic distribution. These all characteristics are applicable on raw data which is un-manipulated for normal distribution. The data is in bulk quantity so it is assumed to be normally distributed and study uses t-statistics for testing the significance of coefficients. Point to be noted, in KSE-100 Index the data is highly volatile because some firms has MPS approx. equal to 0.5 or in some firms it is up to 11000 because of which the results may be affected.

4. Empirical Results

According to theory this study used three methods for testing the relevancy or irrelevancy of dividend policy with stockholders' wealth. First with the help of correlation the relationship between market price per share and dividend per share was studied. Secondly with the help of regression the impact of market price per share on dividend per share was studied and finally the cause of both variables was tested with the help of Granger Causality Test. The results of correlation are as under in table 2:

Table 2

	MPS	DPS	REPS	CG
MPS	1.000000			
DPS	0.829918	1.000000		
REPS	0.487331	0.484193	1.000000	
CG	0.110482	0.098296	0.055487	1.000000

Study reveals the strong correlation between dependent variable (Market Price per Share) and independent variable (Dividend per Share). It means that there is a strong positive relationship exists between dividend policy and stockholders' wealth. So due to increase in payout the management can improve firms' value. Retained earnings per share are moderately related with market price per share and capital gain is weakly related with market price per share. According to all evidences studied by correlation the null hypothesis H_{A0} cannot be accepted. Furthermore, there is a linear relationship exists between dividend per share and retained earnings per share with moderate level of multicollinearity and there is no multicollinearity studied between other two explanatory variables. Correlation analysis may not explain the full picture therefore the study also uses regression and causality analysis. The results of both regression models are stated in table 3 and table 4.

Table 3

$MPS_{i,t} = - 88.10057 + 37.90440\ DPS_{i,t} + 0.618433\ REPS_{i,t} + \mu_{i,t}$			
t-statistic	38.54055	5.558321	
p-value	0.0000	0.0000	
F-statistic	1129.026	***p-value (F-statistic)***	0.000000
R-square	0.696489	***Adjusted R-square***	0.695872

The first regression model in which there are only two explanatory variables; one is dividend per share and second is retained earnings per share. Model is strongly significant and F-statistic is 1129.026 with very small *p*-value. Goodness of prediction from the model is acceptable because R-square is 0.696 ≈ 0.70 and Adjusted R-square 0.696 ≈ 0.70. The results reveal the highly significant impact of dividend per share on market price per share which is greater than retained earnings per share. Retained earnings per share also significantly impact the market price per share but beta coefficient of retained earnings per share is 0.62 which is very small value than the beta of dividend per share. Therefore, dividend policy directly impacts the shareholders' wealth in Pakistani context. To study more consistent results a controlling variable (capital gain) was included in the model. With controlling variable the results are given below in table 4.

Table 4

$MPS_{i,t} = - 101.1256 + 38.01116\ DPS_{i,t} + 0.623857\ REPS_{i,t} + 16.03880\ CG_{i,t} + \mu_{i,t}$			
t-statistic	36.79371	5.317654	1.536686
p-value	0.0000	0.0000	0.1247
F-statistic	693.9224	***p-value (F-statistic)***	0.000000
R-square	0.699103	***Adjusted R-square***	0.698096

After including the controlling variable in the model, the model is still highly significant with F-statistic 693.92 and R-square is 0.699 ≈ 0.70. So the model is good-fit for the future policy making. The study reveals that the dividend per share is highly significant with market price per share. The beta coefficient of the dividend per share is 38.01 which explain the strong positive impact no market price. Retained earnings per share also significantly impact the market price per share and there is no impact studied by capital gain. Beta coefficients of all independent variables are positive therefore complete model impacts the market price per share positively. According to evidences the H_{B1} cannot be rejected because both regression models explained the impact of dividend policy on stockholders' wealth. Therefore, it can be explained with the help of regression analysis that in Pakistani context the dividend policy is important for maximizing the stockholders' wealth. The both correlation and regression analysis give same results but there is another method by which causal relationship can be tested. In this study Granger Causality Test was used for finding causal relationship between market price per share and dividend per share.

Table 5

	F-statistic	***p-value (F-statistic)***
MPS Granger cause DPS	115.799	0.0000
DPS Granger cause MPS	3.69294	0.0254

The results given in table 5 explain the market price per share cause dividend per share and dividend per share cause market price per share but both with different strategic views. Market price per share granger cause dividend per share with F-statistics 115.8 which is highly significant with very small *p*-value and dividend per share also cause market price share with F-statistic 3.69 which is weakly significant with *p*-value of 0.0254. So, there is no evidence studied to accept H_{C0}. Therefore, both variables cause each other because in previous analysis the significant impact of dividend per share on market price per share was studied. It means that the firms increase dividend to stable the market price and market price also depends on dividend per share. So according to the results of all three methods (correlation, regression and causality) it has been studied that the dividend policy is very important to increase stockholders' wealth in KSE-100 Index.

5. Conclusion

This research paper is a contribution toward dividend policy by which the management of listed Pakistani firms can make better policies and strategies for the future. The basic objective of this research paper is to explain the relationship between dividend policy and stockholders' wealth. For that purpose three hypotheses were developed one for correlation, second for regression and last for causation. All null hypotheses were rejected and the relationship between dividend policy and stockholders' wealth was studied in Pakistani security markets. Dividend per share highly correlate market price per share in positive way therefore in Pakistani context announcement of dividend has a positive impact on stock price. With the help of regression analysis highly significant impact of dividend announcement on market price per share was studied in both models and finally the causal relationship between dividend and market price was studied.

Therefore in KSE-100 Index dividend policy impacts the stockholders' wealth and Miller & Modigliani (1961) irrelevancy hypothesis is rejected. But MM explained in their work that the dividend policy may be relevant if markets are not efficient or any uncertainty related to future exists. In Pakistan there are lot of uncertainties exists related to political condition, law and order situation and economic development due to which the Pakistani peoples prefer dividend instead of capital gain. In this study there was no significant relationship studied between dividend policy and capital gain. According to the work done by Rehman & Arif (2015); there was no impact found for the preference of capital gain in Karachi Stock Exchange. The investors prefer dividend and gambling therefore dividend policy play vital role in Pakistani context.

The study concludes that for Pakistani firms the dividend policy making is a challenging task because the value of firm depends on it. Therefore a finance manger should be very sound for making strategies for payout and retention because both matters are highly important for intrinsic value of firm. Pakistani markets are uncertain for the future therefore dividend policy impacts the stockholders' wealth. The results of this research paper approximately relevant to the dividend relevancy work of Gordon (1962). So in Pakistani context investors prefer more dividend than capital gain due to which the dividend policy is relevant to stockholders' wealth.

6. Suggestions for the Future Research

There is still lot of work required in Pakistan to explore more issues related to dividend policy decision. Model specification and variables selection can be improved in future researches because in this work the very high variation studied in financial data. The effect of Skewness and Kurtosis can be included as a variable in the model to study more consistent results because data volatility play measure role in testing hypothesis. In Pakistani context investors prefer dividend instead of capital gain therefore a work can be done to explore the factors influencing the preference of dividend in Pakistan.

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