Impact of dividend policy on shareholders' wealth A case of Karachi Stock Exchange

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Abstract

This current study is aimed at investigation of a relationship between two important segments of investor expectations relating to cash dividends' policy and wealth of shareholders. A number of research attempts have still to find an exact relationship. This study relies on a data that is gathered from sixty eight companies from Karachi Stock Exchange. For some companies the financial year concludes in December while for others in June. The analysis is spread in two categories; in one of the category 37 firms that close their accounts in June are taken for the period 2003 to 2007 whereas in the second category 31 firms are taken which close their accounts in December. The study period for the second category is from year 2004 to 2007. Ordinary least squares and fixed effect model are used to estimate regression equation by taking stock returns as explained variable and dividend payout ratio as explanatory variable. The results of the analysis show that returns have a negative correlation with dividend policy and firm size and have a positive correlation with return on assets, price-earning ratio and growth of the company for the companies with year ended June. For the companies with year ended December returns are negatively correlated with size of the firm, dividend payout ratio, and return on assets. The analysis reveals that OLS Model is not a good model for estimation of returns, but fixed effects model is a good model that can be used for estimation purposes.

Key words: *Dividends, dividend policy, Shareholder wealth.*

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1. Introduction

Business firms exist to do business, business that is profitable and is able to share the profits with its owners. Business firms need to generate excessive profits to be able to pay dividends to its shareholders. These dividends could be paid from earnings that are retained by firms over a period of time or from current financial year profits. There are many countries in the world that do not bind its listed business to distribute earnings as dividends. Firms have to have dividend policies which cover the distribution of profits and the ratio of profits to be retained for future business. Dividend policies are designed by firms to cater to the business needs of a firm. Dividends in the form of cash are conventionally paid after a quarter, two quarters or a year to current shareholders. The practice of paying annual dividends in cash or stock form is common in Pakistan. Dividends can take the form of stock dividends that lessens the value of a unit share for shareholders whereas in a stock split form the share is divided in pieces by management. Share repurchase is yet another form of dividend in which the shares can be repurchased by the share selling firm. A constant payout ratio can be employed as a tool by firms to pay a percent of earnings as dividends to existing shareholders whereas another tool used is a regular dividend payment policy-the one in which firms pay their shareholders some fixed amount in each consecutive period. There is another mechanism called the low-regular and extra–future dividend policy, in this arrangement firms pay small cash dividends and pay more dividends once money is sufficiently saved from further investment projects. Companies have competing ends to meet, should they offer dividends or should they retain every penny in the business or should it be an in between arrangement? The whole idea comes to the point that can dividend policies be used for adding value towards wealth of the shareholders. This is a heavily researched area and many authors have come up with a variety of conclusions. The study is carried out with the same motivation that for listed businesses in Pakistan what findings can be added to the existing body of knowledge. It could be an interesting study to investigate the impact of dividend policies on the wealth increment of shareholders. This current section termed Section.1 introduces the topic, Section.2 summarizes the literature review, Section. 3 gives the theoretical framework, Section. 4 presents the methodology, Section. 5 presents statistical findings, Section. 6 gives summary & conclusions.

2. Literature Review

Different researchers have shown mix evidences by using data from different stock markets of the world. Some authors believe dividends tend to

increase the shareholder wealth while others say that dividends tend to decrease the owner's wealth. There are research articles signifying no impact of dividends on shareholders wealth. (Lintner, 1956) is regarded as the leading researcher on dividends. He believes that "most managers believe stockholders prefer a stable rate of dividends, and will place a premium on companies that can deliver stable dividends". Research in portfolio and investment analysis showed new horizons with the pioneering work of Miller & Modigliani in the early sixty's. Dividend policy in terms of value-relevance remained in much focus of research after Linter. (Miller & Modigliani, 1961) demonstrate that "in a perfect market, dividend policy should not affect shareholders' wealth". The surplus funds have to be used by companies, they search for projects having positive NPVs and may not be interested in paying dividends. There are signaling models like the information signaling models of (Bhattacharya, 1979) and (Miller & Rock, Dividend Policy under Asymmetric Information, 1986) present that companies use the dividend announcements just to show that such companies are prosperous and are on the path of growth. Calling it the "Signaling effects of dividends" they were thought as good or bad news for shareholders. These announcements were thought as the having an incremental or decrementing effect on share prices. A handful of researchers namely (Travlos, Trigeorgis, & Vafeas, 2001) examined that with increasing cash and stock dividends there seems a positive impact on stock returns in the Cyprus Stock Market. This study in a way recorded that how market reacts to dividend announcements. (Moore & Braggion, 2010) examined the effects of dividend policies on shareholders wealth in London Stock Exchange. Their research revealed that if mature firms who usually have fewer investment opportunities lessen their dividends are expected to experience big negative stock returns. In comparison to firms who have more investment opportunities the stock returns are little affected by lessening dividends.

(Chu, 1997) studied in Stock Market of Taiwan that how stock returns behave in relation to earnings, cash flows and dividends. A positive relationship of stock dividends with stock returns was found in this study whereas cash dividends were hardly having any impact on the stock returns in Taiwan Stock Exchange. While stock dividends are considered as more important by the investors. (Borde, Byrd, & Atkinson, 1999) from his study concludes that with increase in dividends there is a positive reaction in the stock market. The study takes into consideration hotel and tourism firms listed on New York stock exchange. They show that market reaction size across firms is having a positive relationship with the increase in dividends. (Capstaff, Klaeboe, & Marshall, 2004) examined the same questions on Oslo Stock Exchange. According to authors "corporate ownership structure in Norway is notably different from the U.S. and the U.K., and where the motivation to use divi-

Miller and Modigliani the most popular finance researchers give their view on firm's value as "With well-functioning markets (and neutral taxes) and rational investors, who can 'undo' the corporate financial structure by holding positive or negative amounts of debt, the market value of the firm – debt plus equity – depends only on the income stream generated by its assets. It follows, in particular, that the value of the firm should not be affected by the share of debt in its financial structure or by what will be done with the returns – paid out as dividends or reinvested (profitably)". From the above statement given by MM we can derive that dividend policy is irrelevant many cases; like taxes (personal or corporate), costs relating to transactions, indifference of investors towards capital gains and dividends, information availability, market efficiency etc. Four propositions are given M&M, their first three prepositions were related to composition of Firm's Capital structure. The fourth proposition of M&M was that dividend policy does not affect the value of the firm's shareholders. Although MM theory is regarding as a leading theoretical stance to explain the effects of dividend policy on wealth of owners, however it was based on assumptions that practically do not exist. (Gordon, 1962) and (Lintner J. , 1962) presented the "Bird-In-The-Hand" theory in 1962. According to this theory "the investors value current dividends more than capital gains that are expected". This is argued due to the risk that is associated with future inflows. According to the researchers shareholders prefer current dividends on the basis of the argument "Dividends received today are preferable to future dividends, which are subject to uncertainty". Higher uncertainty in the future causes investors to assign more risk premium to future receipts, this results in increasing cost of capital for firms. This theory is also known as *Dividend Relevancy Theory*. Myron J Gordan published his model of stock valuation in 1959 for the valuation of stock. His model of stock valuation is

$$P = d / k-g$$

Where P is the price (value) of the stock, K is the required rate of return for the investor and G is the growth of the firm. Gordon and Lintner argue that share holders will prefer dividend yield component, D/P_0, over the capital gain component "g" as Dividend yield component is less risky than "g" in Gordan stock valuation model. Therefore firm's value can be maximized only by high dividend payout ratio. This theory demonstrates that a firm should pay high amounts of dividends to increase the value of the stock. As compare with the M& M proposition, the Bird in the hand theory has been practically found better to explain the impact of dividend policy. It has been proved by researches that investors become more happy by receiving dividends and it also give them confidence over the management policies. Also the dividends are in control of

management but capital gains are not in control of firm's management. It can be seen through a practical example. In August 1994 when the continental corporation eliminated its annual dividend of $1 the price of its stock fell from $18 to $15. However if the firm pay more amount in dividends than it may reduce the free cash flow available to the firm which may result in leaving positive NPV projects or issuance of more equity or debt. Bringing more debt increases the risk of the firm while bringing more equity result in dilution of ownership.

The theory suggests that capital gains are preferred by investors over dividends due to tax advantages. Dividends are taxed as they are announced. While capital gains are taxed only when they are realized. In this way investors can defer taxes. We can say that according to the theory of tax preference a firm should retain a portion of earnings and pay dividends as less as possible.

According to this theory changes in dividends are viewed as "signals". These so called signals work towards future earnings and act as forecasts for management performance. This mean that investors react to dividends as it informs about future prospects of a business. One can conclude from this theory that the increase in stock price of a firm along with a dividend increase does not necessarily show investor preference but shows expectations for better future performance and more earnings. A dividend reduction may give a signal that the management is anticipating poor performance and low earnings in the future. According to modern theory of firm managers and the owners of the business are not same. There is no direct relation between managers and investors. In this way managers can use dividends as a positive signal to reduce the information asymmetry and build the investors' confidence over management. Most researches have proved that using dividend is taking as a positive signal by investors.

Investors' reaction to dividend announcement is captured from different perspectives, one being the Clientale Effect Theory. This theory opines that a firm's stock price is actually related to tax advantages. Investors' goal is to save taxes and it is more prudent to demand dividends and rather to wait for stock returns to mature in future. The theory relates tax advantages, dividends and company policies with wealth of shareholders. The attraction of policy changes by firms make shareholders do adjustments in their stock holdings resulting in change of share price movements. There are many types of investors in the markets, also the stock markets are of the world have different characteristics with respect to taxes and business environment. Investors will buy those securities that offer dividends of their own choice. As a result of this a clientele of investors will be created having similar demands for dividends.

This policy asserts that dividends should be paid out only from residual earnings i.e. a firm first must finance the positive NPV projects from free cash flow available and after financing if there is any free cash flow left to the firm than the dividends should be paid. Theories work under assumptions and some assumptions could be quite far from reality. As far as first theory is concerned it is based on assumptions that are not practically possible in real world. Also latter researches have proved that there is some kind of relationship between dividends and firm's value. The second theory related to higher payments of dividends seems better as for as real world is concerned. But this theory has also has criticism regarding free cash flow available to the firm. In a country like America where dividends are tax exempted this theory may be helpful for managers who are choosing a tradeoff between capital gains and payments of dividends. The third theory related to the paying less amounts of dividends makes sense. In a country like Pakistan where dividends are taxed while capital gains are tax exempted, tax preference theory gives a better way to firms for paying dividends

4. Research Methodology

In finance it is a common parlance that a business exists to increase the wealth of its shareholders. Can we do this through a dividend policy is the question at hand? Research in finance should be able to answer this question and provide valid propositions. Dividend policies of firms are examined around the world to provide answers to rational investors. The present study is aimed at the same question from the local perspective. Pakistani stock markets are vibrant and uncertain for investors. It should be explored for markets in Pakistan that what impact dividend policies have on the wealth of shareholders? This research is capable of looking at the broader picture from the firm's perspective. Questions like how should firms in Pakistan handle their earnings? Should they invest in future projects? Should they share earnings with shareholders? The earning management policies have to be linked with dividend announcements. In the present research study a number of hypotheses are tested using a balanced panel set from the sampled firms.

4.1. Hypotheses

The following hypotheses are to be tested;

H_{01}: The dividend policy of a business firm has an effect on shareholders wealth.

H_{02}: The dividend payout increases the shareholders wealth in Pakistan

4.2. Sources of Data:

Various sources are utilized to conduct this study including annual reports, firms' websites, online sources of State Bank of Pakistan, Karachi Stock Exchange, Securities and Exchange Commission of Pakistan.

4.3. Sample:

There are 654 companies listed in Karachi stock exchange. Out of the listed companies the study uses 68 companies for the analysis. These companies are selected randomly. An effort is made to include those companies only that are being frequently traded in Karachi stock exchange. In the sample there are 10 banks, 4 insurance companies, 1 Synthetic and Rayon Company, 11 cement companies, 4 pharmaceuticals companies, 3 sugar companies, 1 Modaraba company, 6 Textile companies, 4 leasing companies, 5 Oil and Gas

Table 4.1: Percentage representation of sectors in the sample

Name of Sector.	Percentage Representation.
• Banks.	14.70%
• Insurance companies.	5.88%
• Synthetic and Rayon.	1.47%
• Cement.	16.18%
• Pharmaceuticals.	5.88%
• Sugar.	4.41%
• Modaraba.	1.47%
• Textile.	8.82%
• Leasing.	5.88%
• Oil and Gas Marketing.	7.35%
• Oil and Gas Exploration.	1.47%
• Power generation and distribution.	1.47%
• Investment Banks.	2.94%
• Chemical.	10.30%
• Food and personal care.	2.94%
• Paper and board.	1.47%

marketing companies, 1 oil and gas exploration company, 1 power generation and distribution company, 2 investment banks, 7 chemical companies, 2 food and personal care products companies, 5 Automobile assemblers, 1 paper and board company. The following table represents the percentage representation of each sector in the sample.

4.4. *Data and sample period:*

In Pakistan different sector companies finish their accounting years in different months, for example Banks and insurance companies finish their accounting years in December while other companies finish their accounting years in June.

Table 4.2: No. of companies with year ending months

No. of sample companies with year ended June	37
No. of sample companies with year ended December	31

The study will use data six year data from June 2002 to June2008 for the companies with year ended June and five year data from January 2003 to January 2008 for companies with year ended December.

4.5. *Variables to be used*

To measure the shareholder's wealth the annual stock returns are used as proxy. Dividend policy is measured by dividend payout ratio. Other covering variables include Log sales a proxy to the size of the firm, P/E Ratio, Growth in sales as a proxy to measure the growth of company, while return on assets will be taken as proxy to measure the profitability of the firm. The study will use average annual return as dependent variable and Dividend payout ratio, growth in sales, Size, Return on Assets and P/E Ratio as dependent variable.

To find the impact of dividend I will use only cash dividends.

Average annual return is calculated as = $\frac{P(x) - P(x-1) + \text{Dividend}}{P(x-1)}$

Where X represents the year for which return is to be calculated.

In this way average return on stock for all years has been calculated.

Dividend payout ratio for the year is calculated as = Earning per share for the year / Dividend per share for the year.

Growth in Sales = Sales in year X – Sales in year X-1 /Sales in year X-1

Where X is the year for which growth in sales has to be determined.

Size of the company is calculated as Log of Sales.

Return on assets = Total Assets / E.B.T.

While P/E Ratio is calculated as = Average market price / Earning per share

4.6. *Statistical Model:*

The following model is used to find the impact of dividend policy on shareholders wealth with log returns as independent variable and dividend policy as independent variable along with control variables.

LSR = f (DPR, ROA, LS, LPER)

Where LSR means log of stock returns

DPR means dividend payout ratio, ROA means return on assets, LS means log of sales, LPER means log of price earnings ratio

In case of no seasonal variations or time variations an OLS is used to model the regression relationship. To overcome the seasonal variation fixed effect model will also be used. OLS builds a linear relationship between stock returns and dividend policy, return on assets, P/E Ratio, firm size and growth in sales. The assumption of OLS is that B=0 if returns are 100% dependent on Dividend policy and control variables. The model is estimated as follows.

$Y = \alpha + \beta1(D.P.R.) + \beta2(R.O.A.) + \beta3(\log P/E\ Ratio) + \beta4\ (Log\ Sales) + \beta5\ (Log\ Growth\ in\ sales) + e.$

Now to capture the effect of time and seasonal variation dummies are inserted in the data to estimate the fixed effect model.

The assumptions are same for fixed affects model as for ordinary least square, except that fixed affect model uses dummy variables to overcome the seasonal variations. There are total 37 Companies under study with year ended June and 31 companies with year ended December. Thus I have to insert 36 dummies for companies with year ended June and 31 dummies for the companies with year ended December. The estimated equation now becomes.

$Y = \alpha_1 + \alpha_2 D_2 + \alpha_3 D_3 + \alpha_4 D_4 \ldots\ldots\ldots\ldots\ldots\ldots \alpha_{37} D_{36} + \beta_2\ (D.P.R.) + \beta_3\ (R.O.A.) + \beta_4\ (Log\ Sales) + \beta_5\ (\log P/E\ Ratio) + \beta_6\ (\log Growth\ in\ Sales).$

5. Statistical Findings

5.1. *Data Analysis:*

The total set comprises of 68 companies, in this set there are 37 firms that finish their accounting year in June while 31 companies are those who finish their accounting years in December. The data of share prices, dividend, dividend payout ratio, return on assets, P/E Ratio, sales, sales growth has been collected from the year 2003 to 2007 for companies year ended June and data of 2004 to 2007 for companies with year ended December The data collected was not normal, so for bringing the data into normality log of above values has been calculated. After calculation of log the data become log as it is clear from the table 1 and 3. After analysis there was 84 observations for the companies with year ended December and 134 observations for the companies with year ended June. Some observations were deleted from the analysis due to abnormality in the data. Both the OLS and Fixed Effects analysis portray a picture of negative relationship between stock returns and dividend payout ratio. The former is a proxy for shareholder wealth whereas the later is a proxy for dividend policy of a firm.

After analysis there was 124 observations of return on assets of companies with year ended December and 185 observations for the companies with year ended June. For the companies with year ended June there was some abnormalities in Return on Assets figures and has been removed from the data set. The analysis showed that Return on assets is positively related with related with returns for the companies with year ended June and negatively related for the companies with year ended December.

After analysis there was 124 observations of size of companies with year ended December and 185 observations for the companies with year ended June. For the companies with year ended December there was some abnormalities in size of company figures and has been removed from the data set. The analysis showed that size is negatively related with returns for the companies with year ended June and negatively related for the companies with year ended December.

After analysis there was 91 observations of growth in sales of companies with year ended December and 139 observations for the companies with year ended June. In the data there was some abnormalities in growth in sales of company figures and has been removed from the data set. The analysis showed that growth of the company is positively related with returns for the companies with year ended June and positively related for the companies with year ended December.

After analysis there was 114 observations of growth in sales of companies with year ended December and 170 observations for the companies with year ended June. In the data there was some abnormalities in growth in sales of company figures and has been removed from the data set. The analysis showed that P/E Ratio (risk) of the company is positively related with returns for the companies with year ended June and positively related for the companies with year ended December. However fixed affect model for companies with year ended December shows that P/E Ratio is negatively related with returns.

5.2. Findings of Regression models:

Ordinary Least Squares Regression is worked out by taking stock returns as the explained variable, the model takes dividend payout ratio and other control variables like return on assets, growth in sales, P/E ratio and log sales as explanatory variables. The results of regression are summarized in table 1.

The models derived by application of OLS are

For Companies with year ended June

Log Return = -0.1350 – 0.130 (Log D.P.R.) + 0.251 (R.O.A.) + 0.325 (LOG P/E) -0.097(Log Sales) + 0.012 (Log Growth in sales)

For Companies with year ended December

Log return = 0.275 - 0.104 (D.P.R.) - 0.141(R.O.A.) + 0.038(Log P/E) + 0.269 (Log Growth in sales) – 0.068 (log Sales)

The results show that returns on stock are positively correlated with returns on assets, P/E Ratio and growth in sales, while returns are negatively correlated with dividend payout ratio and firm size for the companies with year ended June. While the results for the company with year ended December show that returns on stock are positively correlated with Dividend payout ratio, P/E Ratio and growth in sales, while returns are negatively correlated with return on assets and size of the firm. These findings show conformity and consistence with of hypotheses of Fama and French. They propose in their famous Fama and French model that smaller companies and companies with lower book to market value bear high returns. However the model estimated is not significant because of very small value of R-square. The model is also insignificant according to F-Test. There is also problem of autocorrelation which can be seen from value of Durbin-Watson value which in both the cases is not equal to two.

5.3. *Fixed effect model findings:*

The study inserts 36 dummies for the first set and 30 dummies for the second set by avoiding the dummy trap in Fixed Effect Model. Taking stock returns as the dependent variable and dividend payout ratio along with control variables like return on assets, growth in sales, P/E ratio and log sales as the independent variables. There were 37 companies with year ended June and 31 companies with year ended December. The results of regression are summarized in table 3.

For companies with year ended June

Log Returns = 2.476 - 0.002 (Log D.P.R.) + 0.540 (R.O.A.) + 0.478 (Log P/E) - 2.546 (Log Sales) - 0.002 (Log D.P.R.) + 0.145 (Log Growth in Sales)

For companies with year ended December

Log Returns = 0.954 + 0.066 Log (D.P.R.) -0.466 (R.O.A.) - 0.067 (Log P/E) - 0.182 (Log Sales) + 0.066 Log (D.P.R.) + 0.694 (Log Growth in Sales)

The results show that returns on stock are positively correlated with returns on assets, P/E Ratio and growth in sales, while returns are negatively correlated with dividend payout ratio firm size for the companies with year ended June. While the results for the company with year ended December show that returns on stock are positively correlated with P/E Ratio and growth in sales, while returns are negatively correlated with dividend payout ratio, size of the company and return on assets. The result for size of the firm is also significant according to t-test.

The fixed effect model is also significant according to χ^2 test with R square values of 61% for he companies with year ended June and 70% for the companies with year ended December. The problem of autocorrelation is somehow addressed in this model as shown by Durbin-Watson figures.

6. Summary and Conclusions

Earlier studies related to dividend policy and shareholder's wealth failed to identify any obvious relationship between the shareholders' wealth and dividend policy. In some cases dividend policy increases the shareholder's value; in some cases it decreases the shareholder's wealth. This study makes an attempt to investigate any relation between dividend policy and shareholder's wealth. For this purpose 68 companies listed on Karachi Stock Exchange are

Table 1: For companies of June (Summary of statistical results)

	Log returns	R.O.A.	Log (PE)	Log Sales	Log (DPR)	Log (Growth in sales)
Mean	0.154	0.105	2.410	8.127	-0.899	-1.446
Median	0.115	0.066	2.323	8.003	-0.845	-1.30
Standard Deviation	0.328	0.112	0.821	1.941	0.767	1.316
Kurtosis	0.061	0.825	4.186	0.317	1.584	5.129
Skewness	0.389	1.110	1.274	-0.134	-0.409	0.327
Minimum	-0.621	-0.090	-0.336	2.752	-3.239	-6.736
Maximum	1.252	0.544	5.719	12.764	1.9204	4.899
Count	185	185	170	185	134	139

Table 2: Regression results for the companies with year ended June. Dependent Variable Log Returns

	O.L.S.		Fixed affects model	
	Coefficients	T-value	Coefficients	T-value
R.O.A.	0.251	2.442 (0.016)	0.540	2.003 (0.049)
Log(PE)	0.325	2.629 (0.010)	0.478	2.302 (0.025)
Log Sales	-0.097	0.974 (0.333)	-2.546	-5.810 (0.000)
Log(DPR)	-0.130	1.094 (0.277)	-0.002	-0.008 (0.994)
Log (Growth in sales)	0.012	0.118 (0.906)	0.145	1.108 (0.272)
R Square	0.105		0.609	
Durban-Watson	1.862		2.296	
Significance (F-Test)	2.300 (0.051)		2.667 (000)	

Table 3: Regression results for the companies with year ended December. Dependent Variable Log Returns

	O.L.S.		Fixed affects model	
	Coefficients	T-value	Coefficients	T-value
R.O.A.	-.141	-1.042 (0.302)	-0.466	-1.093 (0.282)
Log(PE)	0.038	0.289	-0.067	-0.153 (0.880)
Log Sales	-0.068	-0.421 (0.676)	-0.182	-0.712 (0.482)
Log(DPR)	-0.104	-0.673 (0.504)	0.066	0.267 (0.791)
Log (Growth in sales)	0.269	1.996 (0.051)	0.694	3.635 (0.001)
R Square	0.131		0.704	
Durban-Watson	1.918		2.656	
Significance (F-Test)	1.694 (0.151)		2.628 (0.004)	

taken as a sample for the required data. Ordinary Least Squares and Fixed Effect Model are used to estimate the regression equations. Other variables include Return on assets, P/E Ratio, growth in sales and size of the company. Findings show that returns in stocks are negatively correlated with dividend policy and firm size while returns are positively correlated with return on assets, P/E Ratio and growth of the company for the companies with year ended June. For the companies with year ended December returns are negatively correlated with dividend payout ratio, size of the firm and return on assets whereas returns are positively correlated with growth of the company and P/E Ratio. The analysis also reveals that OLS Model is not a good model for estimation of returns, but fixed effects model is a good model that can be used for estimation purposes.

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