

Stock Price Volatility and Dividend Policy in Pakistan

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Abstract- The purpose of this study is to test impact of dividend policy on stock price volatility in Pakistan. The study had been carried out a stratified sampling containing companies in their respective sectors with respect to market capitalization, listed in KSE. Time series data was selected from year 2001-2014. Descriptive statistics, correlation and regression models were used to perform the data analysis. According to the findings of the regression all results were not significant. This means that dividend policy had no impact on stock price volatility in Pakistan.

Index Terms- Earnings per share, Stock exchanges, Dividends

I. INTRODUCTION

Corporate dividend policy is baffling and one of the puzzles in corporate finance. Issues concerning dividend decisions and stock price volatility have now engrossed the attention of financial analysts and economists from all over the world to establish relationship between these parameters. The degree to which the firm's dividend policy affects its share price is very important not only for corporate officials but also for new investors and for economists, who are seeking to figure out the operations of capital market.

The fore most question is that, why companies give dividends when these are taxed more heavily than capital gains has puzzled academics for several years?. Different researchers have diverse opinions about this query. The debate was first initiated by Modigliani and Miller (1958) who provided the basis of modern thinking on capital structure. According to MM, in the absence of taxes, bankruptcy costs, agency costs, and asymmetric information, and in efficient market, firm's stock price volatility only depends on its earning ability and firm's corporate structure is immaterial. However, MM's theory could only be legitimate if market would be efficient and share holders have all the information concerning firm's financial conditions. But companies only used to announce positive information and retained negative information to them until regulations or financial constraints forced them to unveil it because they wanted to satisfy their shareholders that company was performing very well and they have a secured investment (Bhattacharya, 1979).

Allen & Rachim (1996) conducted a study on the impact of payout ratios and dividend yield on stock price changes and found that dividend payout ratio was significantly positively correlated but dividend yield has not correlated with stock price volatility. However, a study contradicted the results of Allen & Rachim's study and evidence the significant relationship among dividend yield and payout ratio with stock price changes.

Moreover Nishat and Irfan (2006) "suggest to employ subsequent control variables in testing the significance of the relationship between dividend yield and price volatility: operating earnings, size of the firm, level of debt financing, payout ratio and level of growth. These variables have a clear impact on stock returns but also impact on dividend yield". All were identified and studied as independent variables. According to previous studies it has been proved that earning volatility has positive effect on price volatility. This means that if earning volatility of the firm increased price volatility also increased and vice versa (Nishat and Irfan, 2006).

Size of a firm and leverage can also affect volatility. A promising link between size of the firm and volatility had been observed. Institutions usually preferred to conduct their research activities and investment policies on larger listed companies as compared to small companies because small companies are less diversified than larger ones. The market in the stocks of small listed firms could be perhaps less informed, more illiquid, and as a consequence subject to greater price volatility (Nishat and Irfan, 2006). Furthermore, they showed that those firms which used high debts in their capital structures paid low dividends (Nishat and Irfan, 2006).

Nishat and Irfan (2006) stated that "dividend payout policy could be inversely linked to asset growth so its effect was also valuable to determine. It is also possible that systematic differences in market conditions, cost structures, regulatory restrictions etc., might lead to differences in dividend policy. These also have impact on price volatility".

Although Nishat & Irfan (Unpublished) and Asghar et al, (2011) have "pioneered investigations pertaining to dividend policy and stock price volatility in Pakistan, yet this is a start and a lot is still to be done". Hence it is very important to explore this area further.

II. SIGNIFICANCE & PURPOSE OF STUDY

The effect of a firm's dividend policy on the current price of its shares is a matter of considerable importance, not only to management, who must set the policy, but also to investors planning portfolios and to economists seeking to understand and appraise the functioning of the capital markets.

This poses the question, to what extent, if any, does dividend policy impact on firm value and therefore the price of a firm's shares?

Irfan and Nishat argued that "Karachi Stock Exchange (KSE) is a vital up-coming market of the region among the developing countries. KSE is termed as high-risk; high return market where investors seek high-risk premiums. Some studies

have attempted to investigate task of dividend yield and payout ratio in affecting the share prices. It is important to study the impact of dividend policy and stock price risk in the Pakistani context after the introduction of reforms during 1990s, which emphasized more towards openness to foreign investors and competition, led to increase volatility in the market and has reduced the responsiveness of share price volatility to fundamental factors. Reforms in Pakistan in general and specific to dividend policy are; tax sealing on cash dividend, exemption of right and bonus shares from tax, pattern shifting from cash to share dividend and government policy of easing restrictions on transfer of market profits etc”.

KSE is not performing well as its performance is bound to the performance of listed companies and number of investments in stocks of these companies. Currently both macro and micro economic conditions of Pakistan are not good and due to these conditions industries are not performing well and investors are less attractive towards investments in Pakistani companies. Through this research, the researcher is giving information not only to shareholders or investors but also to the business holders that what are the key factors that results in bringing volatility to share prices so that they try to control those factors and bring stability in prices.

Dividend policy measures are one of the most fundamental factors which can affect the entire makeup of the organization and also managers are very careful in dividend policy decisions. Previous research work is still unable to wrap up the connection between dividend policy measures and stock returns and stated that many other accounting variables also affect dividend policy as well as stock return (Ahmad, & Ullah, 2011). Earlier researches have made a lot of enhancements in understanding the behavior of developed and developing economies stock market returns to dividend policy because dividend policy and stock returns are one of readily available tools for the investors in making investment decision (Irfan and Nishat, 2006). This study is important because the aim of this study is to contribute in, somehow, filling the literature gap by controlling other variables as earning volatility, size of firm and growth in assets; to clarify the relationship of dividend yield and dividend payout ratio with stock price volatility. The main objective of the study is to provide knowledge base to the management, investors and financial institutions of developing economies to analyze the relationship between dividend policy measures and stock returns. And more specifically find out:

- The relationship between dividend yield and stock price volatility.
- The relationship between dividend payout ratio and price volatility.
- Dividend policy measures i.e. dividend yield and payout ratio on share price changes in the long run.

III. LITERATURE REVIEW

Asgar, Shah, Hamid, and Suleman (2011); Nishat and Irfan (2006); Rashid and Anisur Rahman (2008) conducted research on dividend policy and stock price volatility. Though their studies covered many aspects and showed significant results yet their studies’ results were not compatible with the markets of

developed economies. Their study variables were in accordance with developing economies but still it was not true in some parameters regarding to the case in Pakistani equity market. Those parameters might be volatility in prices even at same day etc. Moreover, it lacked in reflecting true firm performance because data selected from company’s annual reports might not reflect the true picture of the firm.

Akdeniz, Salih, & Tulung Ok (2006); Khan, Burton & Power (2010) studies were very comprehensive as for as data collection is concerned but results were weakened due to weak form of efficiency in Pakistani market as past dividends influenced current dividend levels and company’s officials in Pakistan always hesitated to announce dividend cuts. Furthermore assumptions about the market efficiency were not correct because stock prices under weak form of efficiency were affected by herd mentality and inexperience investors.

The strength of Hussainey, Mgbame & Mgbame (2011) study was they used different theories in their literature in support of variables but results showed no difference if earning volatility was considered or not which is not possible because in reality earning volatility has direct and positive impact dividend payout ratio and that ultimately impact price volatility as the higher will be the dividend payout ratio, the less will be the price volatility.

Stacescu, (2004) examined dividend policies of Switzerland very comprehensively but he focused on one aspect that company were paying dividends in increasing trends but did not focus on possibilities of dividend cuts at time when the managers' reputation would be suffering and if one assumed that managers cared enough about this damages even then explanation should be given for both earnings competency of dividends and the informational content of dividend variability.

Amidu & Abor, 2006; Renneboog & Trojanowski, 2007; Twaijry 2007 studied payout ratios with different variables. All studies lack facts that what determined the decisions to pay or not to pay dividends in listed firms? What factors determined dividend payout ratio in unquoted firms? And what determine the dividend policy decisions of unquoted companies? They also over looked the fact that growing companies retained a large portion of their income and paid lesser dividends to shareholders. These studies didn’t consider factors that might examine to what extent dividend strategy can be affected by culture, economic status, and commercial environment. On the other hand, investors’ views concerning their preferences about dividends should also be surveyed which might assist company’s corporate governance in establishing good dividend plans.

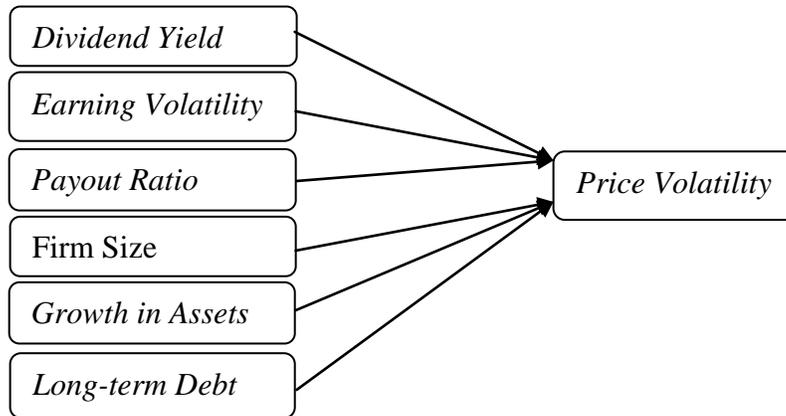
Adjasi, (2009); Nazir, Nawaz, Anwar & Ahmed, (2010); Asamoah, (2010); Akbar & Baig, (2010) would not incorporate the impact of industrial output volatility and its effect on stock-price volatility. Furthermore, they conducted research with respect to one frontier but other frontiers and emerging markets should also be considered during this research.

Khan, Burton & Power, (2011) took 600-plus firms listed on the KSE, were interviewed and only in a few cases were these taped. Nevertheless, the discussion purposely concentrated on those issues where an agreement emerged in order to provide generalizability. In terms of the lack of taping, in each case, the author made detailed notes during and immediately after these discussion but ultimately to remember 100% accurate knowledge

of these discussion might not possible. Finally, to acquire detailed and trustworthy evidence of the ownership structure of

the interviewed firms wasn't possible as firms were reluctant to give information about their organizational structure.

Theoretical/Conceptual Framework



IV. METHODOLOGY

Cross sectional data is used in the present study. Population frame consists of non-financial major sectors including Food, Textile, Oil and Gas, Construction and Materials, Fixed line Telecommunication and Tobacco listed on KSE-100 index. A stratified random sample of 11 non-financial, listed firms on KSE-100 index for the years 2001 and 2014 has been taken. The sample include lucky cement, Fuji fertilizers, Fuji cement, Karachi Electric Supply company, PTCL, Pakistan tobacco

company limited, Nishat mills, Al-Abbas sugars, Sui-Northern gas, D.G. Khan Cement and Attack petroleum. The study is based on secondary source of data: annual data of sample firms is collected through various sources i.e. "Balance Sheet Analysis" published by "State Bank of Pakistan" and, companies' annual reports and daily stock price data is collected from Business Recorder's and KSE's website and then converted it on annual basis. The unit of analysis is the major entity that is being analyzed in the study. This study's unit of analysis consists of non-financial, listed companies at Karachi stock exchange.

Table 1: Operational Definition of Variables

Variables	Operational Definitions
PV (Price Volatility)	= The annual range of stock prices will be divided by the average of the high and low stock prices and then raised to the second power.
DY (Dividend Yield)	= This variable will be calculated by summing up all the annual cash dividends paid to common stock holders divided by the average market value of the stock in a year.
EV (Earning Volatility)	= The standard deviation of the ratio of company's operating earnings before interest and tax (EBIT) to total assets will be taken.
POR (Payout Ratio)	= The ratio of company's total dividends to total earnings will be calculated. To do so total dividends and entire cumulative earnings are calculated for each year.
SZ (Size)	= Firm size will be calculated as the natural logarithm of market value of equity at the beginning of the year.
ASg (Growth in Assets)	= The yearly growth rate will be estimated by taking the ratio of the change in total assets in a year. Then the ratio was averaged over the years.
DA (Long-term Debt)	= The ratio of the sum of all the long-term debt (debt with maturity more than a year) to total assets is taken. An average is taken over all available years.

Model Specifications

The actual dependent variable price volatility was regressed resistant to the two main separate variables, dividend yield and payout ratio. This provides some sort of crude test in the relationship between share price volatility and dividend policy using the regression equation in Model 1.

$$P-Vol = \alpha_1 + \alpha_2 D\text{-}yield_i + \alpha_3 Payout_i + \mu_i$$

The close relationship between dividend yield and dividend payout percentage may pose a smaller problem as there are a number of factors that will influence both dividend coverage and price volatility. For you to limit these complications, the control variables mentioned above previously earlier were included in the analysis. The dependent adjustable was regressed against the

two independent variables as well as the control variables using the following regression equation. (Model 2).

$$P-Vol = \alpha_1 + \alpha_2 D\text{-}yield_i + \alpha_3 Payout_i + \alpha_4 Size_i + \alpha_5 Earnings_i + \alpha_6 Growth_i + \alpha_7 Dett_i + \mu_i$$

V. RESULTS AND DISCUSSION

The mean value of price volatility (PV) is 0.36 with a 0.75 standard deviation stated in table 1, which means that it remained high volatile during this session. Among the independent variables the mean of earning volatility remained 0.24 with 0.07 standard deviation which indicates very little volatility

Table 2: Descriptive Statistics

Variable	Mean	Std. Deviation
Price volatility	0.36	0.75
Earning volatility	0.24	0.07
Size	.22	.56
Dividend yield	91.97	42.67
Leverage	0.08	0.01
Growth	0.26	0.14
Payout ratio	0.54	0.08

Dividend yield has the highest mean and standard deviation among all the variables ($M=91.97$ & $SD= 42.67$). While mean and standard deviation of dividend payout remained is 0.54 and 0.08 respectively. On the other hand the mean and standard

deviation of growth in assets is 0.26 and 0.14 respectively. Last variable in the proposed regression model is firm Size having mean value of 0.22 and standard deviation of 0.56. The correlation results are presented in table 2.

Table 3: Correlation Matrix

Variables	Price volatility	Dividend yield	Payout ratio	Earning volatility	Size	Leverage
Dividend yield	-0.31					
Payout ratio	0.71	0.07				
Earning volatility	0.53	-0.78	0.49			
Size	-0.24	-0.20	-0.02	0.05		
Leverage	0.62	-0.84	0.30	.90*	-0.24	
Growth	-0.10	-0.48	-0.75	-0.13	-0.01	0.18

Correlation is significant at 0.05 level (two tailed)

Table 2 shows the correlation between all variables. The strongest correlation exist between earning volatility and leverage ($r=.90^*$) which is also significant at .05, and it indicates both multi-collinearity exists between EV and L as both variables are independent. Dividend yield and leverage are also shows strong but negative correlation ($r=-.84$) which means that with the increase of one variable, other variable will decrease. Moreover, dividend yield and earning volatility are also strongly negatively correlated ($r=-.78$) Earning Volatility and dividend yield shows that companies with volatile earnings pay low

dividends as during analysis many companies in the years of loss usually don't pay dividends which contradicts with the results of Nazir et al' (2010) . Price volatility and payout ratios also shows strong correlation ($r=-.71$) which means that with the increase in payout ratio cause decrease in price volatility. All the remaining variables are indicating weak or medium correlation with each other. As all these results are insignificant so Ho has been accepted. Correlation results of the study are different from results of Nishat and Irfan (unpublished); Nazir et al, (2010). This may be because economic conditions during their study

period are much better as compared to today's situation. Moreover Nishat and Irfan, (2006) took 20 years time period and Nazir et al, (2010) took 73 companies so this may be the reason

behind variability of results as present study takes only 5 year time period from 2006-2010 and 11 companies due to time constraint.

Table 4: Econometric Analysis of Model 1.

Variable	β	T- Value
Constant	0.843	-1.24*
DY	-0.352	-0.83*
DP	0.731	1.73*
<i>R Square = 0.63</i>		
<i>Adjusted R Square = 0.27</i>		

The value of R^2 shows that the independent variable causes 63% variability in dependent variable which means that independent variables have strong impact on dependent variable (See also; Asghar, et al.: 2011). The value of adjusted R^2 shows that these results cannot be generalized because both R^2 and adjusted R^2 values are not same or near to same. The β tells more than this, it indicated that if one standard deviation predictor variable changes, it effects the dependent variable also in standard deviations. In this particular table, if the DY would

increase by one unit then the PV would increase by $(-0.35 \times 0.75 = -0.26)$ which shows that with the increase in DY, PV will decrease. Furthermore, if the DP would increase by one unit then the PY would increase by $(0.73 \times 0.75 = .55)$ which shows that with the increase in DY, PV will also increase. The value of t test indicates that the predictor is making a significant contribution to the model or not. This particular table shows that t value is non-significant with means that independent variables are not significantly predicting the dependent variable.

Table 5: Hierarchical Multiple regression analysis of Model 2.

Step	Variables	β	Std. Error	β	t-value	Sig.	95% Confidence Interval for β	
							Lower Bound	Upper Bound
1	(Constant)	-0.26	2.20		-0.12	0.92	-9.72	9.20
	Earning volatility	5.84	6.07	0.55	0.96	0.44	-20.29	31.97
	Size	0.00	0.00	0.27	-0.48	0.68	0.00	0.00
2	(Constant)	-1.03	6.27		-0.16	0.90	-80.68	78.61
	Earning volatility	7.39	13.88	0.69	0.53	0.69	-168.97	183.75
	Size	0.00	0.00	0.24	-0.29	0.82	0.00	0.00
	Dividend yield	0.00	0.02	0.19	0.14	0.91	-0.30	0.30
1	(Constant)	-2.70	2.77		-0.98	0.43	-14.62	9.22
	Leverage	40.27	33.08	0.66	1.22	0.35	-102.07	182.62
	Growth	-1.15	2.91	0.21	-0.40	0.73	-13.66	11.36
2	(Constant)	-7.54	10.28		-0.73	0.60	-138.16	123.08
	Leverage	77.79	85.85	1.27	0.91	0.53	-1013.00	1168.57
	Growth	0.32	4.71	0.06	0.07	0.96	-59.48	60.11
	Dividend yield	0.01	0.03	0.79	0.50	0.70	-0.34	0.37
1	(Constant)	-0.26	2.20		-0.12	0.92	-9.72	9.20
	Earning volatility	5.84	6.07	0.55	0.96	0.44	-20.29	31.97
	Size	0.00	0.00	0.27	-0.48	0.68	0.00	0.00
2	(Constant)	-2.52	3.69		-0.68	0.62	-49.47	44.42
	Earning volatility	2.78	7.67	0.26	0.36	0.78	-94.64	100.19

		0.00	0.00	0.24	-0.39	0.76	0.00	0.00
	Size	0.00	0.00	0.24	-0.39	0.76	0.00	0.00
	Payout ratio	5.33	6.58	0.58	0.81	0.57	-78.23	88.89
1	(Constant)	-2.70	2.77		-0.98	0.43	-14.62	9.22
	leverage	40.27	33.08	0.66	1.22	0.35	-102.07	182.62
	growth	-1.15	2.91	0.21	-0.40	0.73	-13.66	11.36
2	(Constant)	-8.58	1.92		-4.48	0.14	-32.93	15.77
	leverage	-0.03	16.59	0.00	0.00	1.00	-210.84	210.79
	growth	5.48	2.12	1.02	2.59	0.23	-21.44	32.39
	payout ratio	13.62	3.74	1.48	3.65	0.17	-33.84	61.08

The values in the above table show that dividend yield is not contributing a significant change in outcome variable. This can be interpreted with the value of t which is ($t=-.14$). Also the p values of model 1 and model 2 are insignificant which is also explaining that the addition of third predictor i.e. Dividend yield is not significantly contributing in predicting the outcome i.e. price volatility. The values of standardized β of dividend yield shows that increase in one standard deviation (SD = 42.67) increases the outcome variable by (.19x.75=.14) standard deviations. The values in the above table show that payout ratio is contributing significant change in outcome variable. This can be interpreted with the value of t which is ($t=-.81$). The p values of model 1 and model 2 are insignificant which is explaining that the addition of third predictor i.e. payout ratio is not significantly contributing in predicting the outcome i.e. price volatility. The values of standardized β of payout ratio shows that increase in one standard deviation (SD = .08) increases the outcome variable by (.58x.75=.44) standard deviations. The confidence intervals in the above tables showed that none of the results can be generalized to the population as values of lower and upper bound is significantly different from each other.

VI. CONCLUSION

The present study is conducted to investigate the affect of corporate dividend policy on stock price volatility. A sample of 11 firms from KSE is inspected for the period of five years from 2001-2014. The experiential estimation is based upon a regression analysis between the dividend policy and stock price volatility along with controlled variables of size, leverage, growth and earning. The results of present study consider the previous studies of Allen and Rakhim (1996); Nishat and Irfan (2006); Asghar et al, (2011) and Nazir et al (2010) and figured dependency of price volatility on various other variables is site specific but additionally depends on the actual structure of current market. The stable along with efficient markets are easy to predict but the actual markets, where high discuss price fluctuations exists then it can be difficult to layout a model which could forecast the price ranges and returns in the more accurate method. In present study results showed that dividend yield, earning volatility, leverage, payout ratio, size and growth in asset have no relationship with price volatility because the data taken was very small as compared to previous studies, i.e. Nazir et al. (2010); Nishat and Irfan (2006) . Moreover some data was also

missing and it was not present in KSE and specific company's site which may also affect results. Time constraint is also one of the limitations of this study. This work can further be extended by analyzing the large firms, with large sample size and by including diverse aspects or dimensions.

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