

An Analysis of Dividend Policy and Stock Price Variations in Pakistan

Kashif Islam

PhD Scholar, The Superior College Lahore

Nabila Asghar

Assistant Professor, Department of Economics and Business Administration,
University of Education, Bank Road Campus, Lahore

Ahmad Raza Bilal

Assistant Professor, The Superior College Lahore

Abstract:

The main aim of this study is to examine the association between the stock price volatility (SPV) and dividend strategies of Pakistani firms listed at Pakistan Stock Exchange (PSE). The sample comprises of 200 non-financial firms for the period 2000 - 2017. Using Baskin's framework, the stock price volatility (SPV) of the firms has been linked with dividend payment policies along with size of the firms (SF), leverage (LEV), earnings volatility (EV) and the growth of assets (GRO). Furthermore, the sway of the worldwide financial crunch on the bond between SPV and dividend policy is examined. EV expressively describes SPV of Pakistani non-financial companies in the course of crisis period, whereas payout ratio of dividend influences volatility in pre-crisis and post-crisis sub-periods.

Keywords: Stock Price Volatility, Global Financial Crisis, Dividend Policy

I. Introduction

Nowadays, dividend policy is regarded as the most unsettled and a burning issue among the finance, business and economics researchers. It has become a complex dilemma and acts as a *mixed blessing* for the managers, investors and all other stakeholders. The literature highlights that wealth of shareholders and firm's value are directly affected by dividend policies as discussed by Asquith and Mullin, (1983), Miller and Rock, (1985), Baker and Powell, (1999) and Sarwar, (2013). The study conducted by Miller and Rock (1985) shows that dividend payouts have positive signals for future earnings of the firms. Baskin (1989) is of the view that dividends cover the two sides of the same coin i.e. it is not only a set of facts, stream into the marketplace, still a signal of marketplace buoyancy towards the company's performance. Using arbitrage realization impact, the study suggests that dividends have a tendency to draw in a stock of firms from its fair price level.

In recent decade the stock markets exhibit a distinct and particular reaction parallel to their well-established counterparts in developing countries like Pakistan. The literature reveal that capital markets in developing economies are relatively less efficient, smaller in size, more volatile and more risky ones (For details see, Kumar and Tsetsekos, 1999; Ozturk, 2006; Badarau et al. 2014; Laopodis and Papastamou, 2016; Bekaert and Harvey, 2017). Now, the world has become a global village due to rapid industrialization over the

last 20 years but still developing markets are not fully integrated with globalization (For details see, Harvey, 2012; Bekaert and Harvey, 2017). Over time significant contribution has been observed in generating liquidity in navigating economic development (For details see, Rousseau and Wachtel, 2000). There are very few studies on the operations of stock markets of developing economies which are of significant importance to the stakeholders.

Several studies on developing and developed markets have used the Baskin's theorem for analyzing the role of dividend policy in the share price volatility. It is thought-provoking that results are somehow inconclusive where some studies show positive and significant association (see for example, Zakaria et al 2012), while other studies reveal negative and significant association between the variables (see for example, Allen and Rachim, 1996; and Hussainey, et al 2011) and some of the studies bring up insignificant associations between the variables (see for example, Rashid and Rahman, 2009). With reference to developing markets the literature highlights the industry specific analysis to explore sector specific ups and downs of dividend payouts to better comprehend the impact on stock marketplace variations. Several studies have probed the relationship between stock price volatility (SPV) and dividend policy (DP) in developing economies. The present study has been directed in an economic specific context by focusing on non-financial companies listed at Pakistan Stock Exchange. The role of non-financial sectors is highly significant in transforming the commodity based sector into industrial one.

The present study has threefold objectives. Firstly, this study is conducted to check the sway of DP on SPV of non-financial firms listed at Pakistan Stock Exchange. Secondly, this study is an attempt to probe into the influence of international monetary crisis on the correlation between dividend strategy and its relation with that of SPV. Thirdly, the study intends to explore the effect of company-specific variables i.e. leverage (LEV), firm size (FS), earnings volatility (EV) and growth in assets (GRO) on the volatility of share prices of the firms.

The study uses the data of eighteen years (2000 - 2017) with the objective of unraveling few puzzles relating to the dividend policy by creating a practical constancy between dividend policies and SPV in non-financial sector. The significance of the study is that the profound understanding of stock market with reference to dividend payments gives benefits to all the stakeholders especially the investors and managers. The study is systematized as follows:- A bird's eye view of literature related to SPV and DP has been given in Section 2. Section 3 provides information related to data gathering procedures, selection of variables and estimation of models. Section 4 is mainly concerned with the results, analysis and interpretation of estimated models and the last section concludes the overall discussion.

II. Literature Review

A. Stock Price Volatility (SPV)

SPV is used to estimate the risk associated with equity (common stock) i.e. higher volatility means higher range of risk or higher range of variation. It is vital to note that stocks with heavy margins carry greater chances of loss as well as heavy profit margins. It is a common perception that investors choose less risky investments with higher certainty of returns on their investments (see for example, Kinder, 2002; and Badarau, et al, 2014).

B. Dividend Policy and Stock Price Volatility

As far as the studies conducted on the developed countries are concerned, a dominating inverse relationship between dividend yields (DY) and SPV has been revealed by Baskin (1989) in a holistic research using the data of 20 years of 2344 US firms. The study concludes that firms having higher yields are linked with lesser risk levels. Same results are noted in studies conducted for UK by Hussainey *et.al.*, (2011) and for US by Profilet and Bacon, (2013).

Parallel studies have also been conducted in developing economies like Pakistan. Naziret al, (2010) conduct a study for the period 2003-2008 using the data of 73 companies listed at Karachi Stock Exchange. The analysis discloses that both SPV and DY are positively and significantly related to each other, while payout is inversely linked with stock price volatility. The study conducted by Shah and Noreen, (2016) point out that an inverse association exists between SPV and two measures of DP (Dividend Payouts and Dividend Yields). Using the data of financials firms for the period 2006-2014 Hamid et al (2017) point out that there exists positive and significant relationship between SPV and dividend payout ratio (PR). However, there are variation in studies conducted by Nazir et al and Shah and Noreen (2016) who use the data of non-financial companies listed at Pakistan Stock Exchange. The present study is an attempt to explore the relationship between dividend payout policies and SPV of firms through a relatively new data set focusing on the non-financial companies listed at Pakistan Stock Exchange.

Ramadan (2013) conducts a study on Jordanian industrial companies to check the impact of dividend policy on the volatility of share prices using the data of 12 years (2000-2011) related to the public industrial firms listed at stock exchange. The study concludes that growth in dividend payouts and dividend yields are apt to minimize price volatility in shares. Lashgari and Ahmadi, (2014) describe a noteworthy negative correlation between DP behavior and SPV of firms listed at Tehran Stock Exchange. Zakaria *et al.* (2012) conduct a study based on 77 construction companies listed at Bursa Malaysia for the period 2005-2010. The results of the study reveal that Stock Price Volatility for the firms is positively co-related to payout ratios of dividends.

III. Variables, Data and Model

A. Data Collection

In order to collect data from the firms listed at Pakistani stock exchange, the sample is taken of 200 non-financial firms which fulfill the following two screening criteria:

- i. The firm must have complete economic information (financial statements) available for the period of study, and
- ii. The firm is constantly listed at Pakistan Stock Exchange from 2000-2017.

The data for analysis is obtained from the annual financial statements of all the companies for the period 2000-2017.

B. The Model

The present study is in line with the theoretical context of Baskin (1989) and most recent experimental studies conducted for developing economies (see for example Sharif et al, 2015; Sew *et al.*, 2015; Shah and Noreen, 2016; Hamid *et al.*, 2017). Baskin (1989)

validates that DP is an operative and areal conjecturer of SPV when a number of industrial and financial factors are well-ordered. The rudimentary regression theorem is directly related to SPV with two methods of dividend strategy i.e. PR and DY. The model is given below:

$$SPV = \alpha_0 + \alpha_1 DY + \alpha_2 PR + \varepsilon(1)$$

The study includes earnings volatility, firm size, leverage and growth in assets as control variables. The model becomes;

$$SPV = \beta_0 + \beta_1 DY + \beta_2 PR + \beta_3 FS + \beta_4 EV + \beta_5 LEV + \beta_6 GRO + \varepsilon(2)$$

Where,

FS= Firm Size

EV= Earnings volatility

LEV= Leverage

GRO= Growth in assets

First of all, the averages of all variables for 18 years (2000 to 2017) is computed then equation 1 is regressed to examine the relationship between the predictor and explanatory variables. Equation '1' is expanded by following this procedure through the inclusion of the prescribed control variables. The regression analysis is conducted again for finding out the correlational strength between DP and SPV after including the control variables. In order to assess the effect of worldwide financial calamity on the given variables, total financial data is classified into three sub-time periods beginning from pre-crisis (2000-2006), during the time span of crisis, i.e. (2007-2008) and post disaster time span (2009-2017). After that the regression analysis is executed for all periods to govern the variations.

C. Measurement of Variables

The dependent variable SPV is computed with yearly array of adjusted share prices. The range is divided for each year by the average value (mean value), and then upraised to the 2nd power. Following Baskin (1989) the average value methods of modification for all existing years have been changed to standard deviations method. SPV is dogged with the help of the following equation:-

$$SPV = \sqrt{\frac{\sum_{i=1}^n \left[\frac{(H_i - L_i)}{(H_i + L_i)} \right]^2}{n-1}} \quad (3)$$

Where, H_i and L_i being the highest and lowest stock price for any financial year 'i' for each non-financial firm and DY is an independent variable which is mainly calculated for any financial year using the declared dividends per share by dividing the respective market price of the stock that has been explained and illustrated in Equation (4) as supported by the previous studies (for details see, Hussaney *et al.*, 2011; Hashemijo *et al.*, 2012; Sew *et al.*, 2015). For analysis purpose the yearly average of DY for eighteen consecutive years has been utilized.

$$DY = \sum_{i=1}^n \frac{DPS_i / PRICE_i}{n} \quad (4)$$

In equation (4), DPS_i is for dividend per share (DPS) for any financial period 'i', while 'PRICE_i' is the 'price per share' for any given financial year 'i'. It is important to note that the part of the total residual income distributed as 'dividends' to the residual owners is denoted by payout ratio (PR) as measured by Fama, and French, 1988; Bali, 2003; Ayodele and Maxwell, 2017. How generous and liberal a firm is in giving out its net profits to its investors has always been a great point of concern for the stakeholders, especially for the investors. PR is, normally expressed as a percentage of net inflows of the company and the proportion of earnings being distributed to shareholders and is calculated as the ratio of dividends per share (DPS) divided by earnings per share (EPS) as illustrated in equation (5) given below.

$$PR = \sum_{i=1}^n \frac{DPS_i / EPS_i}{n} \quad (5)$$

Where DPS_i is dividend per share for any given financial year 'i' and while 'EPS_i' is earning per share for any financial year 'i'. It is supported by Marshal and McManus, 2011 and Velankar et al, 2017. The average of the variables for 18 year time span has been utilized for statistical analysis and PR has been set at one when dividends paid exceed the total net profits for that year.

D. Control Variables

There are four control variables included in the model which are GRO, LEV, FS, and EV.

Growth in assets (GRO)

The previous studies indicate that there exists positive and direct bond between risk, investment opportunities and the growth levels (For details see, Demirgunes, 2015; Khan and Bradbury, 2016; Kouki, 2017; Zainudin, et al 2018). The gist of these studies indicates that higher stock instability and volatility lead to more chances of growth rate and growth opportunities.

Following Baskin (1989) the present study uses the same basis for estimating GRO. This technique is also used by Allen and Rachim (1996), Hashemijoo et al. (2012), Sew *et al.* (2015), Floyd, et al (2015) and Shahiduzzaman, et al (2018). First of all, the changes in the value of total assets at the close of accounting year is calculated and then this amount is divided by the value of total assets at the start of the same financial year to find out the total percentage of change. The growth in assets is calculated with the help of equation 6 given below:

$$GRO = \left(\sum_{i=1}^n \frac{\Delta ASSET_i}{ASSET_i} \right) / n \quad (6)$$

Leverage (LEV)

Previous studies over the past several years have provided authentic evidence about the relationship between stock market volatility and financial leverage (see for example, Riccetti et al 2016; Engle and Siriwardance 2017; Carr and Wu, 2017; Boguth and Simutin, 2018). Similar to Al-Malkawi, (2008) Pan and Liu, 2018), the present study has used leverage ratio (Total Debt to Total Equity) as proxy to calculate the volume of financial leverage as shown in the equation (7) below:-

$$LEV = \sum_{i=1}^n \frac{DEBT_i/EQUITY_i}{n} (7)$$

In equation (7), 'DEBT_i' shows total amount of bond/debt for any year 'i' and 'EQUITY' refers to Share holder's equity called 'Net Worth' or 'Internal equity' for any given year 'i'.

Firm Size (FS)

A number of studies are available in literature related to SPV and FS. Both of them are hand in glove as pointed out by many researchers like Berggrun, et al (2016) and Zhang, et al (2016). The financial expert like Black and Scholes, (1974) argue that smaller sized firms experience larger volatility and tend to give strong reaction to idiosyncratic shocks in the early history of industrial revolution. It has also been observed that economic shocks have robust effects on the prices of small business enterprises because small firms are less diversified in terms of capacity, location and operational capabilities.

Following Baskin (1989) and Sew et al (2015) this study uses natural logarithm of market worth as an indicator for FS. The average market value of the firms for the consecutive eighteen years is used to reflect the size magnitude. The natural logarithm transformation is calculated for the market value averages as shown in equation (8) below:-

$$FS = \ln \sum_{i=1}^n \frac{MV_i}{n} (8)$$

Where 'MV_i' represents the overall market value of the company for year 'i'

Earning Volatility (EV)

The previous studies like Beaver et al (1979) indicate that income of the company contains fruitful information in terms of its stock prices. Later on and Shiller, (1981) also reports identical research results which reveal that stock values are affected by the amounts of dividends and earnings. The present study measures EV same way as measured by several previous studies (see for example Allen & Rachim, (1996), Zakaria *et al.*, (2012), Lashgari and Ahmadi, (2014) and Ghosh, et al, (2018). The average value of eighteen years is computed and it has been raised to power two. The standard deviation (SD) is calculated as expressed in equation 9 given below:

$$EV = \sqrt{\frac{\sum_{i=1}^n [(R_i - \bar{R})]^2}{n-1}} (9)$$

where R_i is the ratio of 'PBIT to Assets' for the any given financial year i , and \bar{R} is calculated as:-

$$\bar{R} = \sum_{i=1}^n \frac{R_i}{n}$$

IV. Interpretation of The Results

A. Descriptive Statistics

The descriptive statistics is presented in Table 1

Table 1: Descriptive Statistics

Variables of Study	Panel A				Panel B			
	complete Sample		Pre-Crisis 2000-2006		During Crisis 2007-2008		Post-Crisis 2009-2017	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
SPV	0.6899	0.2164	0.7366	0.2512	0.9995	0.3901	0.7304	0.2904
DY	0.0331	0.0243	0.0239	0.0331	0.0234	0.034	0.0255	0.035
PR	0.2681	0.2162	0.2611	0.2671	0.2455	0.2601	0.2507	0.2709
GRO	0.1749	0.7613	0.1629	0.6472	0.0511	0.2174	0.0401	0.1099
FS	10.1776	1.2931	12.107	1.1799	11.2981	1.5201	12.0117	1.5092
EV	0.0612	0.0778	0.0855	0.1109	0.1401	0.1661	0.1001	0.1199
LEV	0.5055	1.151	0.6358	1.1511	0.6309	0.9601	0.4601	2.5401

The Dividend payout ratio (PR) has been nearly same i.e. 26.11%, 24.55% and 25.07% before, during and post crisis respectively. This is also supported by the dividend yield ratio (DY). The non financial firms have recorded a mean score of 26.81 percent for PR. This result designates that non-financial companies do not pay higher part of their earnings as dividends to the investors because firms are not much generous regarding the payment of dividends to the shareholders. Generally, the PR for the Pakistani firms is less than those of the developed companies of the world like UK, France, USA, Germany, Australia other European countries (For detail see, Allen and Rachim 1996; Rashid and Rahman 2009; Hussainy et al, 2011; Asghar et al, 2011).

The present study segregates the time span in three sub periods. The results of the study show that SPV has high values of means and standard deviation i.e. 0.9995 and 0.3901 respectively during crisis. This indicates that during the financial crunch the value of SPV is higher which means several macro-economic indicators play negative role in developing countries like Pakistan where infra-structure, financial institutions, financial markets are not much developed and the quality of operations surely lacks. There is a corroboration of results with the previous studies conducted in this regard on the Pakistani firms. The findings indicate that the volatility of the Pakistani firms have increased resulting in uncertainty during the worldwide monetarist calamity (For detail see, Ali and Afzal 2012; Ahmed and Donoghue 2010). Furthermore, the results show that Pakistani firms face high volatility for only two years (2007 and 2008) and SPV has ultimately reverted to pre-crisis level in the year 2009. The higher values of volatility of stock returns during the financial crunch may be due to several reasons like shortage of liquidity, prevalence of systematic amount of risk, speculation, different macro-economic indicators, and instability of financial markets.

The global economic impact can also be understood through mean score of Earning Volatility (EV) which shows the values 0.0855, 0.1401 and 0.1001 of pre-crisis, during crisis and post crisis respectively. Furthermore, average DY and PR values remain unchanged during three sub-periods i.e. 0.0239, 0.0234 & 0.0255 for DY, and 0.2611, 0.2455 and 0.2507 for PR. These results are consistent with the Ling et al (2008), Habib

and Hassan (2015) and Lee et al (2016) indicating the stickiness, rigidity and constant dividend policy of Pakistani firms.

One of the biggest possible elucidations in this phenomenon is that it always tries to maintain the level of dividends whatever the probability of dividend cuts may occur in spite of deteriorating circumstances. Skinner, (2008) and DeAngelo et al (2009) describe that it is all due to the reluctance to cut dividends in the routine payments. It is observed that dividend smoothing behavior of the Pakistani firms is found to be inconsistent and unpredictable due to variations occurred in the business circumstances. The statistical analysis indicates that the firm's growth opportunities in the form of operation, financing and investing are affected significantly due to financial crisis. The 'Table 1' shows the growth values 0.1629, 0.0511 and 0.0401 in pre, during and post crisis respectively.

B. Determinants of SPV of non-financial firms

In the first stage, the analysis has been conducted to check the effect of dividend policy on SPV. While doing so, the SPV estimates with respect to DP and DY are obtained. The results presented in Table 2 show the existence of an inverse and significant relationship between SPV and DY as the value of coefficient is -1.989 and the coefficient value of PR is -0.451. As far as the model is concerned, 42.30% of the total changes in the dependent variable are explained by the independent variables. The general outcomes indicate that dividend per se definitely has impact on SPV.

Table 2: Regression Results based on Equation (1) for the period 2000-2017

	Co-efficient	SE	β	t-stat	Sig.
Constant	0.859	0.021		46.015	0.000
DY	-1.989**	0.808	-0.231	-2.561	0.013
PR	-0.451***	0.085	-0.481	-5.197	0.00
R = 0.659	$R^2 = 0.442$	Adj. $R^2 = 0.423$	$F\text{-stat.} = 60.09$	$F\text{-prob.} = 0.000$	

Notes: *, **, *** Significant at 10, 5 and 1 per cent levels, respectively

In second step the model is re-estimated after incorporating control variables as per equation (2). The results are presented in Table 3 which indicate the existence of an inverse and significant relationship between SPV and DY and same is the case with SPV and PR. These results are usual and expected and are in accordance with findings of Baskin's (1989). There exists positive and statistically significant relationship between SPV and EV which reveals that firms will be less risky and more stable if the earnings are less volatile and these types of firms pay high volume of dividends with relatively stable stock price movements.

Table 3: Regression Results of Equation (2)

	Full Sample	Pre-Crisis	During Crisis	Post-Crisis
Constant	1.000 (0.121)	1.031 (0.170)	1.44 (0.241)	1.123 (0.166)
DY	-1.821** (0.760)	-0.567 (0.630)	-0.420 (0.712)	-1.092 (1.192)
PR	-0.347*** (0.086)	-0.401*** (0.082)	-0.368*** (0.123)	-0.426 *** (0.125)
FS	-0.022* (0.111)	-0.048*** (0.015)	-0.0141 (0.019)	-0.029 (0.018)
EV	0.650*** (0.156)	0.551 (0.159)	0.669*** (0.159)	0.609*** (0.189)
LEV	0.005 (0.014)	0.009 (0.019)	0.042 (0.028)	-0.009 (0.009)
GRO	0.029* (0.019)	0.011 (0.029)	-0.009 (0.129)	-0.169 (0.232)
R^2	0.505	0.381	0.208	0.399

Adj. R^2	0.494	0.340	0.187	0.378
F-Stat	27.451	15.687	6.999	17.01
F-Prob	0.000	0.000	0.000	0.000
Note: SE are in parentheses. *, **, *** significant at 10, 5 and 1 % level, respectively.				

The relationship between FS and SPV turns up negative. The value of coefficient is -0.022 which indicates an inverse relationship between the said variables. It means that large companies are relatively strong in their financial matters, which results in less risks and ultimately less volatility. The positive and significant link is observed between GRO and SPV as the value of coefficient is 0.029. The Adjusted R^2 has positively improved from 42.30 percent to 49.40 percent which shows the overall effectiveness of this model to predict the percentage of variations that correctly affect the model.

In the last stage of this study the investigation about global monetary crunch and its impact on SPV and dividend policies of the firm is conducted and for this purpose equation (2) is re-estimated for the three sub periods. In this study SPV and PR work in opposite directions in all the time spans which means that national investor always give weight to those firms which are more flexible and show higher profits, higher payouts, lower risks and lower price volatility. In all the three sub-periods, EV is significantly correlated with SPV. The researchers agree on this aspect that earnings is a strong financial indicator to gauge financial performance. The stable announcements of earnings and dividends may surely increase the chances of stability in stock prices (see for example Maditinos et al, 2007).

In this model EV as compared to other variables shows the strongest impact on the value of SPV during crisis as its coefficient value is 0.669. This indicates that when the whole economy goes into depression during a major economic turmoil, the investors take earning ability of firms to be the true representative of firm's potentials. The results also indicate that GRO and LEV do not significantly influence stock price volatility. Lastly, there is low value of Adjusted R^2 during the financial crisis (2007 and 2008). The lower value of Adjusted R^2 means that there are several other factors that directly or indirectly affect the value of SPV during monetary crunch.

V. Conclusion and implications

The study investigates the impact of dividend policy on SPV of non-financial companies listed at Pakistan Stock Exchange using data for the period 2000- 2017. The results of the study show the existence of negative relationship between SPV and DY. Moreover, the impact of GRO (especially the fixed assets, property plant and equipment), LEV, SF, EV on SPV has also been investigated with the sole intent of observing their influence on the overall results.

The results indicate two dimensions i.e. existence of negative relationship between payout ratio of dividends and SPV and negative relationship between SPV and DY. The results point out that as far as SPV is concerned, dividend policy is proved to be an important predictor in non-financial sector. SPV will be higher if both DY ratio and DP ratio decline. The relationship between SPV and EV has emerged as significant and positive which suggests that there may be lesser SPV due to higher stability of the earnings power of the firm. Furthermore, growth in assets is positively and significantly correlated with SPV which means more stock's riskiness with more growing speed and

growth opportunities. LEV is positively correlated with SPV, but this relationship turns up statistically insignificant. Furthermore, the relationship between SPV and FS appears to be negative and significant.

It is a common perception that more stability, soundness and profitability are always enjoyed by the large firms as these firms experience lower level of stock price variations. Dividend payout ratio has come up a significant factor in forecasting SPV (before crisis, during crisis and post crisis) of the non-financial firms. The negative relationship between SPV and DY is observed which is statistically insignificant. EV is seen to be positively and significantly correlated with SPV. Dividend payouts significantly influence the value of SPV before, during and after crisis sub periods while, EV has been one of the important determinant of stock price volatility during crisis. It means investors like other stakeholders are more fretful by the profitability streams of any business enterprise as compare to the dividend disbursement during the time of crisis because profits are more significant in elucidating the variation in stock prices during the time of financial bubbles. Investors, being the risk averse, hope that business enterprises may remain profitable and lucrative in difficult time spans and business operations may not be possible to finance without proper cash flows. Another interesting result is that PR and DY remain stable during the financial crunch and not materially lesser as linked to the pre and post financial periods. This shows that even in turbulent times, the non-financial companies listed at Pakistan Stock Exchange do not cut the amounts of dividends.

The results show that adjusted R^2 is much lesser during financial bubble as compared to post and pre crisis sub periods which means some factors which are not included in the model may have strong impact on stock price volatility in financial crunch as compared to firm-specific variables including currency depreciation, volatile capital inflows, decreasing export revenues and many more other variables. For data collection the firms are taken from different sectors like manufacturing, textile, mining, sugar, construction, gas and oil companies and the selection of firms is based on the availability of data. The results of this study provide clear picture of the whole situation to the investors which help them to develop, revise and evaluate their portfolio. In all the circumstances, PR remains significant for the firms to predict SPV in non-financial firms.

The study concludes that generally nonfinancial firms do not cut dividends even at the time of crisis and dividend declarations convey vital indications to the markets, and it is a positive sign for the upward share prices for the non-financial companies. So, the top management of these companies need to put more efforts to manage dividend policies because their variations have direct influence on SPV of the firms. The major limitation of the study is that the sample size comprises of only 200 non-financial firms which makes the study sector based rather than inter-industry based. Resultantly, it does not represent the SPV behavior of all Pakistani companies listed at stock exchange. Therefore, it is suggested that a larger sample on different industries over a longer time span may be helpful in obtaining the full understanding on the behavior of dividend payments in Pakistan. The present study has used six company-specific variables to analyze their impact on SPV. However, for obtaining relatively better understanding and explanation of the behavior of the stock prices in Pakistan more new and relevant variables can be included in the model such as macro-economic variables like GDP, interest rates, inflation rates, and volatility in capital flows.

References

- Ahmed, V; O.Donoghue, C;. (2010). Global economic crisis and poverty in Pakistan. *International Journal of Microsimulation*, 3(1), 127-129.
- Ali, R., & Afzal, M. (2012). Impact of global financial crisis on stock markets: Evidence from Pakistan and India. , 275-282. *Journal of Business Management and Economics*, 3(7), 275-282.
- Allen, D., & Rachim, V. (1996). Dividend policy and stock Price volatility: Australian Evidence. *Applied Financial Economics*, 175-188.
- Al-Malkawi, H. (2008). Factors influencing corporate dividend decision: evidence from Jordanian PAnel Data. *International Journal of Business*, Vol. 13 No. 2, 177.
- Arnott, R. (2003). Dividends and the three dwarfs. *Financial Analysts Journal*, 59(2), Arnott, R. D. 4-6.
- Asghar, M., Shah, S., Hamid, K., & Suleman M.T. (2011). Impact of dividend policy on stock price risk: Empirical evidence from equity market of Pakistan. *Far East Journal of Psychology and Business*, 4(1), 45-52.
- Asquith, P., & David, W. (1983). The impact of initiating dividend payments on shareholder's wealth. *Journal of Business*, 77-96.
- Ayodele, A., & Maxwell, O. (2017). Test of the semi-strong efficiency theory in the Nigerian stock market: An empirical analysis. *Journal of Finance and Accounting*, 5(4), 139-140.
- Badarau, C; Huart, F; Sangare, I;. (2014). Sovereign risk premium and divergent fiscal policies in a monetary union. *Revue d'économie politique*, 124(6), 867-898.
- Baker , H., & Powell, G. (1999). How corporate managers view dividend policy. *Quarterly Journal of Business and Economics*, 17-35.
- Bali, R. (2003). An empiriacal analysis of stock returns around dividend changes. *Applied Economics Vol No. 35 No. 1*, 51-61.
- Ball, R; Brown, P;. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research Vol. 6 No. 2*, 159-178.
- Ball, R; Brown, P; Finn, F.J; Officer, R.R;. (1979). Dividends and the value of the firm: evidence from Australian Equity Market. *Australian Journal of Management Vol 4 No. 1*, 159-178 .
- Baskin, J. (1989). Dividend Policy & the Volatility of Common Stocks. *The Journal of Portfolio Management*, 19-25.
- Baskin, J;. (1989). Dividend policy and the volatility of common stocks. *The Journal of Portfolio Vol. 15 No. 3*, 19-25.
- Beaver, W., Clarke, R., & Wright, W. (1979). The association between unsystematic securityreturns and the magnitude of earnings forecast errors. *Journal of Accounting Research, Vol. 17 No. 2*, 316-340.
- Bekaert, G., & Harvey, C. (2017). Emerging Equity Markets in a globalizing world.
- Berggrun, L., Lizarazaburu, E., & Cardona, E. (2016). Idiosyncratic volatility and stock returns: Evidence from the MILA. *Research in International Business and Finance*, 37, 422-434.
- Bhattacharya, S;. (1979). Imperfect information, dividend policy, and “the bird in the hand” fallacy. *Bell journal of economics*, 10(1), Bhattacharya, S. (1979). . , 259-270.
- Black, F., & Scholes, M. (1974). Effects of dividend yield and dividend policy on Common Stock prices and returns Vol. 1 No. 1. *Journal of Financial Economics* , 1-22.

- Boguth, O; Simutin, M;. (2018). Journal of Financial Economics, 127(2). *Journal of Financial Economics*, 127(2), 325-341.
- Brav, A; Graham, J.R; Michaely, R;. (2005). Payout Policy in the 21st Century. *Journal of Financial Economics Vol. 77 No. 3*, 483-527.
- Brennan, M. (1970). Taxes, market valuation and corporate financial policy Vol. 23 No.4. *National Tax Journal* , 417-427.
- Carr, P; Wu, L;. (2017). Leverage effect, volatility feedback, and self-exciting market disruptions. *Journal of Financial and Quantitative Analysis*, 52(5), 2119-2156.
- DeAngelo, H., DeAngelo, L., & Skinner, D. (2009). Corporate payout policy. *Foundations and Trends in Finance Vol. 3 No. 2-3*, 95-287.
- Demirgunes, K. (2015). Determinants of Target Dividend Payout Ratio: A Panel ARDL Analysis. *International Journal of Economics and Financial Issues*, 5(2), 418-426.
- Engle, R.F; Siriwardance, E.N;. (2017). Structural GARCH: the volatility-leverage connection.). *The Review of Financial Studies*, 31(2), 449-492.
- Fama, E; French , K;. (1988). Dividend yields and expected stock returns. *Journal of Financial Economics Vol No. 22 No. 1*, 3-25.
- Floyd, E., Li, N., & Skinner, D. (2015). Payout policy through the financial crisis: The growth of repurchases and the resilience of dividends. *Journal of Financial Economics*, 118(2), 299-316.
- Gartenberg, C;. (2017). Subprime governance: Agency costs in vertically integrated banks and the 2008 mortgage crisis. *Strategic Management Journal*, 38(2), 300-321.
- Ghosh, PK; Khatun, M; Tarafdar, P;. (2018). Bankruptcy Via Earning Volatility: Does it Integrate in Financial Institutions? *Asian Economic and Financial Review*, 8(1), 52-62.
- Habib, A; Hassan, M.M;. (2015). Corporate social responsibility and cost stickiness. *Business & Society*, 0007650316677936.
- Hamid, K; Khurram, M.U; Ghaffar, W. (2012). Juxtaposition of micro and macro dynamics of dividend policy on stock price volatility in financial sector of Pakistan. *Journal of Accounting, Finance and Auditing Studies Vol. 3 No. 1*, 64-79.
- Hamid, Z., Hanif, C., & Saif-UlMalook, S. (2012). The effect of taxes on dividend policy of banking sector in Pakistan. *African Journal of Business Management*, 6(8), 2951-2954.
- Harkavy, O. (1953). Relationship between retained earnings and common stock prices for large listed corporations in Malaysian stock market. *Journal of Business Studies Quarterly Vol. 4 No. 1*, 283-297.
- Harvery, C. (2012). Allocation to Emerging Markets in a Globally Diversified Portfolio. *Duke University, Durham, NC*, 27708.
- Hashemijoo, M., Ardekani, A., & Younesi, N. (2012). Impact of dividend policy on share price volatility in the Malaysian Stock Market. *Journal of Business Studies Quarterly Vol. 4 No. 01*, 111-129.
- Hussainey, K; Oscar Mgbame, C; Chijoke-Mgbame, A.M. (2011). Dividend policy and share price volatility: UK evidence. *The Journal of risk finance*, 12(1), Hussainey, K., Oscar Mgbame, C., & Chijoke-Mgbame, A. M. (2011). , 57-68.
- Jensen, M.C;. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review*, 76(2), 323-329.
- Khan , K. (2012). Effect of dividends on stock prices—A case of chemical and pharmaceutical industry of Pakistan. *Management Accountant*, 2(5) , 141-148.

- Khan, S., & Bradbury, M. (2016). The volatility of comprehensive income and its association with market risk. *Accounting & Finance*, 56(3), 727-748.
- Kinder, C. (2002). Estimating Stock volatility. *available at: www.bryongaskin.net*.
- Kouki, M. (2017). Earnings and Dividend Announcements: Are They Interactive? Evidence from French context. *International Journal of Economics and Financial Issues* 7(1), 387-393.
- Kumar, P., & Tsetsekos, G. (1999). The Differentiation of emerging equity markets. *Applied Financial Economics*, 443-453.
- Laopodis, N., & Papastamou, A. (2016). The Impact of Dividend policy on stocks price volatility in the Tehran Stock Exchange. *Kuwait Chapter of Arabian Journal of Business & Management Review*, 715-746.
- Lashgari, Z., & Ahmadi, M. (2014). The impact of dividend policy on stock price volatility in Tehran Stock Exchange. *Kuwait Chapter of Arabian Journal of business & Management Review Vol. 3 N*, 273-283.
- Lee, W., Pittman, J., & Saffar, W. (2016). Political uncertainty and cost stickiness: Evidence from national elections around the world.
- LeRoy, S.F; Porter, R.D;. (1981). The present-value relation: tests based on implied variance bounds. *Econometrica: Journal of the Econometric Society*, Vol. 49 No. 3, 555-574.
- Ling, F., Abdul Mutalip, Shahrin, A., & Othman, M. (2008). "Dividend policy: evidence from public listed companies in Malaysia. *International Review of Business Research Papers*, Vol. 4 No. 2, 208-222.
- Maditinos, DS; SEvic, Z; Theriou, N;. (2007). A review of the empirical literature on earnings and. *Annual Conference of the Hellenic* (pp. 15-16). Chicago: Finance and Accounting Association Thessaloniki.
- Marshall, D.H; McManus, W.W;. (2011). *Accounting: What the Numbers Mean*. New York: McGraw-Hill Publisher.
- Miller, M.H.; Rock, K. (1985). Dividend policy under Asymmetric information. *The Journal of Finance* 40(4), 1031-1051.
- Nazir, M.S; Nawaz, M.N; Anwar, W; Ahmed, F;. (2010). Determinants of stock price volatility in Karachi Stock Exchange: the mediating role of corporate dividend policy. *International Research journal of Finance & Economics Vol.55 No. 55*, 100-107.
- Ozturk, R.C;. (2006). Analysis of Foreign Exchange Rate Forecasting Techniques in Emerging Markets. *Mergers & Acquisitions in Emerging Markets. Beispiel Türkei*, hrsg. von Pernsteiner, H./Sumer, H., Linz, 95-113.
- Pan, Z., & Liu, L. (2018). Forecasting stock return volatility: A comparison between the roles of short-term and long-term leverage effects. *Statistical Mechanics and its Applications*, 492, 168-180.
- Proffitt, K., & Bacon, F. (2013). Dividend policy & Stock Price Volatility in US equity Capital market. *Bahavioural Sciences Vol. 63 No. 01*, 219-231.
- Ramadan, I. (2013). Dividend policy and price volatility: Empirical evidences from Jordan. *International Journal of Academic Research in Accounting, Finance and Management Sciences Vol. 3 No. 2*, 15-22.
- Rashid, A.Z.M; Rahman, A;. (2009). Dividend policy and stock price volatility. *North American Business Press Journal of Applied Business and Economics Vol. 08 No. 4*, 71-81.

- Riccetti, L; Russo , A; Gallegati, M;. (2016). Stock market dynamics, leveraged network-based financial accelerator and monetary policy. *International Review of Economics & Finance*, 43,, 509-524.
- Rousseau, P., & Wachtel, P. (2000). Equity markets and growth:Cross-country evidence on timing and outcomes. *Journal of Banking & Finance*, 1933-1957.
- Sarwar, M.S. (2013). Effect of Dividend Policy on Share Holders Wealth: A study of Sugar Industry in Pakistan. *Global Journal of Management & Business Research*, 101-112.
- Sew, E.H.; Albaity, M.; Ibrahimy, A.I.:. (2015). Dividend policy and share price volatility. *Investment Management & Financial Innovations*, 226-234.
- Shah, S., & Noreen, U. (2016). Stock price volatility and role of dividend policy: Empirical evidence from Pakistan. *International Journal of Economics and Financial Issues*, 461-472.
- Shahiduzzaman, M; Kowalkiewicz, M; Barrett, R;. (2018). Digital dividends in the phase of falling productivity growth and implications for policy making. *International Journal of Productivity and Performance Management*, 67(6), Shahiduzzaman, M., Kowalkiewicz, M., & Barrett, R. (2018). . , 1016-1032.
- Sharif, I; Ali, A; Jan F.A;. (2015). Effect of dividend policy on stock prices. *Journal of Management Info Vol. 6 No. 1*, 55-85.
- Shiller, R. (1981). Do stock prices move too much to be justified by subsequent changes in. *The American Economic Review Vol. 71 No. 3*, 421-436.
- Skinner, D. (2008). The evolving relation between earnings, dividends, and stock repurchases. *Journal of financial economics*, 87(3), 582-609.
- Tong, G; Green, C.J;. (2005). Pecking order or trade-off hypothesis? Evidence on the capital structure of Chinese companies. *Applied economics*, 37(19), 2179-2189.
- Velankar, N; Chandani, A; Ahuja, A.K;. (2017). IMPACT OF EPS AND DPS ON STOCK PRICE: A STUDY OF SELECTED PUBLIC SECTOR BANKS OF INDIA. . *Prestige International Journal of Management & IT-Sanchayan*, 6(1), 111-121.
- Zakaria, Z.; Muhammad, J.; Zulkifli, A.H. (2012). The impact of dividend policy on the share price volatility: Malaysian Construction & Material Companies. *The Management Sciences*, 1-8.
- Zhang, D., Myrland, & Xie, J. (2016). Firm size, commodity price, and interdependence between firm-level stock prices: The case of Norwegian salmon industry.