IBT Journal of Business Studies (IBT-JBS)
E-ISSN: 2409-6520; P-ISSN: 2414-8393
Volume 17.1 67-90 (2021)
DOI: 10.46745/ilma.jbs.2021.17.01.04

STOCK MARKET VOLATILITY AND ITS DETERMINANTS IN PAKISTAN STOCK MARKET

Sumaira Tufail[1*] | Dr. Sayyid Salman Rizavi[2]

Abstract

Stock price volatility is considered as one of the most important areas of concern for the capital markets regulators, investors and academicians in recent years. Corporate dividend policy as a determinant of stock market volatility is a significant area of concern for the investors as well as the managers of the company due to political instability and the current economic crisis in Pakistan. This study aims at determining the effect of significant factors such as dividend yield, dividend payout ratio, foreign exchange rate and foreign direct investment on stock price fluctuation in Pakistan, which contributes to overall variation in stock price volatility. The study used a sample of 200 Pakistani listed companies by employing the regression analysis. The endogeneity issues were addressed through the generalized method of moments (GMM) estimation. The study concludes that stock price volatility has a negative association with dividend policy. The study also suggests that foreign direct investment and foreign exchange rates both negatively influence the stock price fluctuations in emerging markets. The findings of this study provide practical implications for the investors, policymakers and firm managers.

Keywords: *Stock Market Volatility, Dividend yield, Dividend payout ratio, Foreign Exchange Rate, Foreign Direct Investment*

Author's Affiliation:
Institution: Hailey College of Commerce, University of the Punjab, Lahore[1-2]
Country: Pakistan
Corresponding Author's Email: * Sumaira08sep@gmail.com

1) INTRODUCTION

The volatility of stock prices is referred as variation in prices of stock over a span of time. These price variations are caused by market instability and market unpredictability as well as by the risks associated with the market. These factors affect the interest of the investors which consequently creates the difference among the buying and selling prices. Therefore, risk management can be considered as an important factor for investment .

Dividend policy can be described as the percentage of earnings which is floated towards the shareholders (Fama and French, 1988). These policies are developed while considering for the risk factors. The payments of dividend are supported by the researchers by giving different reasons for it such asdividend payments play significant role for the resolution of organizational problems ,these help to eliminate the conflict of interest arising among the management of the company and company shareholders . These payments also help to mitigate the risk faced by shareholders with minor shares where the firms are controlled by major shareholders.The exchange rate of any country can be considered as a measure of its economic condition . The exchange rate being a macroeconomic variable, is also used a predictor of economic strengths and weaknesses of any country.

Therefore, it can be concluded that an economy with strong currency have a strong economy whereas a country with weak currency has a weak economy . In the developing countries or third world, there is a lack of resources which is required for the development purposes causing a slow-paced development. Therefore, most of these economies have to consider the option of foreign borrowings or foreign investments to improve the development in the country. Therefore, foreign direct investment either though public agencies or by private institutions, is an important sourceof growth of economy in a developing country. The characteristics of corporate management directly affect the corporate risk-taking as well as its decision-making processes ;.

The role of financial markets is of crucial value for any economy, as it is a source of active mobilization of domestic resources as well as of productive investment of these resources. Pakistan Stock Exchange was established after the merger of three different stock markets of Pakistan i.e. Islamabad, Karachi and Lahore Stock Exchange on January 11, 2016. The PSX is smaller in size when compared to emerging markets. Therefore the role of this market is not very significant in the capitalization of emerging markets. Nevertheless, the investors gain huge financial benefit from PSX. Pakistan economy has been witnessing many changes due to the political instability in the region. Therefore, this economy has a challenging economy for further investigation in this field of study. Moreover, very few studies have incorporated the impacts of micro and macro-economic variables simultaneously.

The study used a sample of 200 non-financial firms which are listed at PSX. To estimate the results, ordinary least square regression analysis is used. Further the study applied fixed effect and random effect models for testing the relationship

among the variables. The findings indicate that dividend policy is negatively linked with stock price volatility. Moreover, foreign direct investment and foreign exchange rates both have converse relation with stock price fluctuations.

The study will provide the implications for the managers of the firms listed at Pakistan stock market to manage the stocks while considering the effects of microeconomic variables i.e. dividend policy and macroeconomic variables which include foreign exchange rates and foreign direct investment, simultaneously. The simultaneous effect of micro and macro variables has not been addressed frequently by previous literature for Pakistan stock market.

The rest of the paper includes literature review, research objectives, research questions, research hypothesis, theoretical framework, research design and methodology, empirical results and discussion and conclusion.

2) LITERATURE REVIEW

Many variables contribute towards stock volatility as discussed in the literature as well. These variables are as under:

a) DIVIDEND POLICY AND STOCK PRICE VOLATILITY:

A large number of studies have been present around the globe including the developed as well as developing economies, regarding the association of dividend policy with stock price volatility but the mystery of this relationship is not solved. Gordon (1963) claims that high dividend payments lead to risk diminution and this phenomenon cause affects the stock prices as well as the cost of capital of the firms. Dividend policy has been defined as being the portion of company's wealth which may be distributed among the shareholders (Arnold, 2008). It is the decision of corporate managers either to keep the company wealth for the enhancement of the share prices or to distribute it among the shareholders as dividend while considering for interest and taxes (Bodie, 2009).

The relationship of price fluctuations of stock with dividend policies has been researched in various studies. Dividend policycan be investigated by the help of proxies of dividend yield and dividend payout ratio.It is argued by Gordon(1963) that if more dividend paid out, it reduces the risk and affects capital costs. Further he says that it causes reduction in stock prices. It is evident from many studies that in advanced markets, there is an inverse association amongst the stock volatility and dividend policies.

As explained by Baskin (1989) stock price fluctuations are negatively correlated with stock returns. Hence, the financial managers can utilize the dividend payments as a tool to regulate the price volatility of stocks i.e. increased dividend payments can be used to reduce stock fluctuations. Allen and Rachim (1996) performed an analysis by using the data of Australian Securities Exchange (ASX) to analyze the relation of stock price volatility with dividend policies. They indicated the

presence of a significant negative connection among dividend payout ratio and stock fluctuations. Hussainey et al. (2011) concluded the same results about the payout ratio and stock volatility. Similarly, Profilet and Bacon, (2013) found that there is a converse relationship of dividend policies with the fluctuations of stock. In contrast, there is some research based on developed countries that suggests a positive connection of price fluctuation with dividend policies. The study of Hussainey et al. (2011) while analyzing the stock market of UK shows that the policies regarding dividend and stock prices have positive relation to each other.

In some emerging markets this relationship is not significant, as suggested by few studies. Rashid and Rahman (2008) used stock returns from stock market of Bangladesh for the study of stock price fluctuationsand dividend yield. They found no significant connection between these variables. Ilaboya and Omoye (2012) also studied these two variables by using the data of Nigerian Stock market. Their study also suggests the presence of no significant relation between stock volatility and dividend policies. Some evidence is also there of positive link among dividend yield and stock volatility in these countries. For instance, Jahfer and Mulafara (2016) after studing the price fluctations of Sri Lankan stocksconcluded that stock volatility is positively related with dividend yield.

Studies also prove that this relationship may varyregarding different dividend policies.Gunaratne, Priyadarshanie, and Samarakoon (2016) also studied Sri Lankan market and suggested that the linkof dividend yield with volatility of stocks was inverse in current year of study whereas the relationship of stock fluctuations with dividend payout ratio was positive in current and previous year.

Moreover, this relationship of dividend policies and stock volatility change with respect to time period as well. Irandoost, Hassanzadeh, and Salteh (2013) conducted a study on stock market of Tehran for both long run as well as short run. They confirmed the presence of a significant association between stock fluctuations and dividend policy in short run, however, this association was insignificant for the long run. Lashgari and Ahmadi (2014) found an opposite but significant association among stock price volatility and payout ratio. Ramadan (2013) studied the Jordanian market and concluded that the policies regarding dividend payment i.e. dividendyield and payout ratio have an inverse and significant association with the fluctuation of stock prices. The study explained this movement with the help of signaling theory and duration effect.

Al-Shawawreh (2014) also studied the Jordanian market and study revealed an inverse but significant relation among the volatility and payout ratio whereas a weak and positive association amongstock price fluctuations and dividend yield.
The Pakistan stock exchange was studied by Nawaz, Anwar, and Ahmed (2010) to investigate the price fluctuations of stocks in relation to dividend policies. They found that dividend policies have significant effect on stock volatility wheredividend yield has a positive but payout ratio is inversely related to volatility.Another study conducted by Shah and Noreen (2016) also used Pakistan stock market data and shows a significant but negative relation of market fluctuationswith dividend policies. The results of both the studies conducted by Nazir et al. (2010) and Shah and

Noreen (2016) confirmed a correlation between dividend policies and fluctuations of stock prices in Pakistani market which affirms the implication of duration effect, realization effect as well as information effect in PSX. Zakaria, Muhammad, and Zulkifli (2012) explored an association of dividend policies and volatility of stocks by analyzing the construction sector of Malaysian stock market. They found a positive and significant relation between dividend policies and fluctuations of stock prices. But on the other hand, few other researches based on Malaysian market showed a negative relation between these two variables (Hashemijoo, Ardekani, & Younesi, 2012); (Zainudin, Mahdzan, & Yet, 2018).

Suwanhirunkul and Masih (2018) performed a study while analyzing the data of Islamic firms listed on Dow Jones Islamic US Index as well as firms listed on Dow Jones US Index. The analysis was conducted for a period of 12 years i.e. from 2005 to 2017. They used quantile regression as well as GMM approach to examine the relation of market volatility and dividend policies. The study found that while using GMM approach, the stock fluctuations are not impacted by dividend policy for all shares listed on Dow Jones US Index. Though, quantile regression results for Islamic shares showed a significant positive relation of stock volatility with the dividend policies.

Camilleri, Grima, and Grima (2019) studied Mediterranean banks to estimate the relationship of dividend policy and fluctuations of stock. The period of analysis was starting from 2001 and ended to 2016. The study used a cluster approach and study results showed that dividend yield's impact is more

significant as compared to dividend payout ratio on stock price movements.
The above research evidences shows different results regarding the association of dividend policies and price movements of stocks which can be a consequence of dissimilar research methods or different study samples.

b) FOREIGN EXCHANGE RATE AND STOCK PRICE VOLATILITY

The exchange rates and stock variationsare studied by many researchers. Kutty, (2010) explored the impact of stock price movements on foreign exchange rates while studing the Mexican market. He used VECM model and the study concluded that in short run exchange rates are lead by stock price but the relationship is insignificant in the long run.

Gulathi & khakani, (2012) also studied the relationship of exchnage rates with the stock marketby using Granger Causality model. Theydo not found any significant relationship amongthe prices of stocks and exchange rates.

Some other resaerchers, such as Malarvizhi & Jaya, (2012), Poornima & Ganeshwari, (2013) andNajaf & Najaf, (2016) also studied the reationship of exchage rates and sock price fluctuations. They examined Indian rupee and US dollar excange rate in contrast to nifty returns. The results suggested that exchange rate effects the Nifty returns but returns have no effect on exchange rates.

c) FOREIGN DIRECT INVESTMENT AND STOCK PRICE VOLATILITY

The developing countries have been studied by many researchers in respect of the FDI and its effect on financial market. The impact of foreign direct investment on market returns and exchange rates has been studied by (Wang 2010). He states that FDI is a substantial determinant to be investigated regarding its effect on stock returns while studying the developing countries. The author applied three different methodologies to infer the results which includes ordinary least squares (OLS), Granger causality and GARCH model in Taiwan economy. The study concluded the existence of a positive relationship among stock market returns and foreign portfolio management. Moreover, the FDI is also found to have a positive linkage with exchange rate. (Al-Nasser and Gomez 2009) affirms the importance of FDI as being an essential component of globalization. The authors also suggest that many of the macroeconomic changes are also caused by foreign direct investment in the host country. The study used the pooled data of 15 Latin American countries from 1978 to 2003. The study concluded that the development of financial markets and the amount of private credit provided by the banks, both are positively linked with FDI.

In the same lines, Fritz, Mihir and James (2005) investigated the connection of FDI with the domestic capital formation. They, for the said purpose, used the database of comparatively bigger sample including many countries and study period was 1980s to 1990s. The results of regression analysis suggest that the natural assumption regarding FDI is that the country has to sacrifice its domestic investment for it. The long run connection of FDI with the growth of financial market was explored by Errunza (1983) as well. They indicated the presence of a positive link between the both variables. Boubakari and Jin (2010) studied macroeconomic indicators in relation to stock market for five Euronext countries. The study period started from 1994 till 2008. They used Granger-causality test and found that economic growth indicators are positively related to stock market growth.

RESEARCH OBJECTIVES

The current research focuses on following objectives:
To investigate the factors which contribute to Stock market volatility.
To discover the effect of Dividend policy on the volatility of financial market.
To investigate the influence of Dividend yield on financial market volatility.
To explore the effect of Foreign Exchange Rate on the volatility of financial market.
To investigate the impact of Foreign Direct Investment on Stock market volatility.

RESEARCH QUESTIONS

The research questions which are to be addressed to attain the above-mentioned objectives are as follows:
What are the possible determinants for Stock market volatility?
Does Dividend policy effect on Stock market volatility?
Does Dividend yield effect on Stock market volatility?

Does Foreign Exchange Rate effect on the volatility of Stock market?
What is the impact of Foreign Direct Investment on the Stock market fluctuations?

RESEARCH HYPOTHESIS

H1: Dividend Yield (DY) has a significant connection with financial market volatility.
H2: Dividend payout ratio (DPR) is significantly related with the volatility of Stock market.
H3: Foreign Exchange Rate (FExg) impacts on Stock market volatility significantly.
H4: Foreign Direct Investment (FDI) significantly effects the fluctuations of Stock market.

3) THEORETICAL FRAMEWORK

a) VARIABLES DEFINITION

i) Stock Price Volatility

Stock price fluctuations have been used as response variable in this study. Stock price volatility is a measure of price change movements and calculates the risk attributed to the stock prices. To calculate the stock price volatility, first the difference of lowest and highest stock prices is observed during a year. Then this difference is divided by the value obtained after taking an average of these highest and lowest values of stock prices with a square of the average. This computes the variance which is then further transformed to standard deviation with help of square root of whole value.

Many researchers used the described method for instance Baskin, (1989), Hashemijoo, Ardekani, & Younesi, (2012), Sew, Albaity, & Ibrahimy, (2015) and Shah & Noreen, (2016).Following calculation describes the stock price volatility:

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

Where, Hi= highest stock price, Li= lowest stock price during the fiscal year i (Zainudin, Mahdzan, & Yet, 2018)

ii) Dividend Yield

DY is used as an explanatory variable. To calculate the DY firstly total dividend per share has been observed then it is divided by the price of the stock. Further, the outcome is divided by years of the study. This method of computation has been used by Zainudin, Mahdzan, & Yet, (2018).

$$DY = \sum_{i=1}^{n} \frac{DPS_i / PRICE_i}{n}$$

Here,DPSi = Annual cash dividend distributed among the common shareholders during the year, PRICEi= Market value of shares at year end.

iii) Payout Ratio

Dividend payout ratio is used as a proxy for measuring dividend policies. It measures the effect of dividend policy on price fluctuations of stocks (Phan & Tran, 2019). PR is a measure of the residual profits which is distributed among the shareholders as dividend (Fama & French, 1988); (Bali, 2003).
To compute this ratio, dividend per share is divided by earnings per share. This method has been used by many researchers (Marshall, McManus, & Viele, 2011) (Wild, Subramanyam, & Robert, 2007) (Sew, Albaity, & Ibrahimy, 2015); (Shah & Noreen, 2016).
The calculation of payout ratio is illustrated as follows:'

$$PR = \sum_{i=1}^{n} \frac{DPS_i / EPS_i}{n}$$

Where, DPSi= dividend per share and EPSi= earnings per share.

iv) Foreign Exchange Rate

Rate of exchange of foreign currency can be explained as "the price of domestic currency terms of other currency". This currency change is caused by the supply and demand phenomenon in free market conditions (Onyeizugbe & Umeagugesi, 2014) & (Abdullahi & Oloyin-Abdulhakeem, 2019).

Pakistani Rupee-US Dollar Exchange Rates are used in this studybecause the US Dollar has been the most dominating among the foreign currencies usedall over the world (Shirodkar, 2017), (Gulathi & khakani, 2012), (Najaf & Najaf, 2016).

v) Foreign Direct Investment

FDI can be described like "A situation whereby the concern of the investing countries is to exercise control over the assets created in the capital importing countries by means of that investment".

Shenkar, (2007) defined FDI as direct investment in the production or other types of investment with an aim of acquiring effective control.

Control Variables:

To compute the right impact of dividend policies, foreign direct investment and foreign exchange rates on stock market volatility, the other variables which potentially effects the market volatility need to be controlled for (Baskin, 1989), (Allen & Rachim, 1996), (Hussainey, Oscar MGgbame, & Chijoke-Mgbame, 2011), (Shah & Noreen, 2016), (Zainudin, Mahdzan, & Yet, 2018), (Camilleri, Grima, & Grima, 2019).

vi) Earnings Volatility

Earnings effect stock prices as stable earnings cause stable stock prices which consequently provides higher dividends (Ball & Brown, 1968); (Beaver, Clarke, & Wright, 1979).LeRoy and Porter (1981) and Shiller (2007)also claims about the earnings that these are related to stock prices and dividends.

To estimate the EVol,EBIT is divided by total assets. Then its average is calculated over ten years and its square is computed. Further, by taking a square root the standard deviation is calculated(Allen and Rachim, 1996) (Zakaria, Muhammad andZulkifli, 2012).

$$\mathrm{EVol} = \sqrt[2]{\frac{\sum_{i=1}^{n}(\mathrm{R_i} - \overline{\mathrm{R}})}{\mathrm{n} - 1}}$$

Where, Ri= The ratio of Earnings before interest and taxes to total assets for year i whereas:

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

vii) Assets Growth

Assets growth is associated with the investment opportunities as well as the risk along with investment (Eskew, 1979); (Beaver, Kettler, & Scholes, 1970); (Chung & Charoenwong, 1991).

Assets growth is calculated by taking the difference in opening and closing amount of assets during a year and dividing the outcome by total assets of last year. This method has been used by many studies previously (Allen & Rachim, 1996),

(Hashemijoo, Ardekani, & Younesi, 2012), (Sew, Albaity, & Ibrahimy, 2015).

$$AG = \left(\sum_{i=1}^{n} \frac{\Delta \mathrm{ASSET_i}}{\mathrm{ASSET_i}}\right) \Big/ n$$

Where,ΔASSETi= Change in total assets during yeari,whereas ASSETi=total assets at the beginning of year i.

viii) Firm Size

The effect of firm size has been incorporated by many researchers such as Black F. , (1976a), Black F., (1976b) and Christie, (1982). Cheung and Ng, (1992) argued that economic shocks have more impact on the stock prices of smaller firms as compared to large firms which cause more stock volatility for smaller firms.

Where, MVi=Market value at the end of year i. (Baskin, 1989) (Al-Malkawi, 2008) (Sew, Albaity, & Ibrahimy, 2015).

$$Sz = \ln \sum_{i=1}^{n} \frac{\mathrm{MV_i}}{\mathrm{n}}$$

ix) Leverage

The literature provides the evidence that greater financial leverage is a cause of higher volatility for financial markets (Black F. , 1976a); (Black F. , 1976b); (Christie, 1982); (Schwert, 1989). The issuance of new securities by the firm in a large number causes the stock price volatility to increase. Debt to equity ratio is taken as leverage proxy (Bowman, 1980); (Peterson, 1999) and (Al-Malkawi, 2008).

$$\mathrm{Lvg} = \sum_{i=1}^{n} \frac{\mathrm{DEBT_i}/\mathrm{EQUITY_i}}{\mathrm{n}}$$

Where, DEBTi= Total debt of the company for year i, whereas, EQUITYi= Shareholders' equity for the same year.

b) RESEARCH DESIGN AND METHODOLOGY

The sample size for the study is of 200 non-financial firms which are listed on PSX

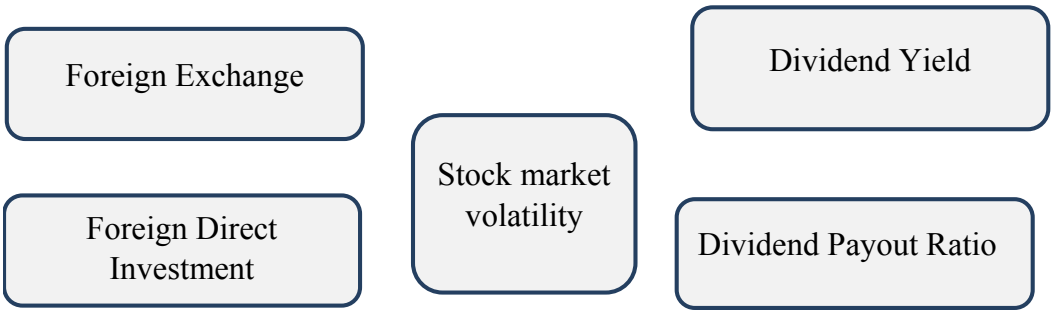
from 2010 to 2019.After removing missing values, the number of observations is 1574. Regression analysis is applied for testing the hypothesis. Fixed effect and random effect regression techniques are applied to deal with the panel data of the study andto infer the results about the existence of relationship between the explanatory and explained variables. To investigate the clear relationship among the variables, the study incorporated four control variables including assets growth, earnings volatility, firm size and financial leverage.

The model used in the study has the similarities with the literature i.e. Baskin (1989) and Allen and Rachim (1996). The response variable is stock price volatility whereas dividend yield, payout ratio, foreign exchange rate and foreign direct investment are introduced as explanatory variables. The equation for the study is given below:

$$PVol = \alpha + \beta 1DY + \beta 2DPR + \beta 3FExg + \beta 4FDI + \varepsilon$$

To overcome the issue of relatedness of DY and DPR, control variables are added in the model. So, the equation is as follows:

$$PVol = \alpha + \beta 1DY + \beta 2DPR + \beta 3FExg + \beta 4FDI + \beta 5AG + \beta 6Sz + \beta 7Lvg + \beta 8EVol + \varepsilon$$



4) EMPIRICAL RESULTS AND DISCUSSION

Descriptive statistics are presented in Table 1. For stock price volatility the observed value of mean is -0.09 having the value of standard deviation of 2.17. Dividend yield has the maximum value of 0.17 with minimum value of 0.00. The value of standard deviation for dividend yield is 0.03. The DPR has the mean value of 0.24 whereas maximum value of 3.14 and minimum value of -0.68. The sample mean value of foreign exchange rate is 5.67 and standard deviation of 0.07. Foreign direct investment has the mean value of 22.23 whereas its standard deviation is 0.35.

Table 2 contains the correlation coefficient matrix of the variables of current research. This matrix shows that the price fluctuation of the stocks is negatively associated with DPR. This indicates the presence of inverse relation among the stock price volatility and DPR. Therefore, the dividend payout ratio can be used as a tool to decrease the share price fluctuations. Foreign exchange rate and foreign direct investment both are also negatively associated with stock variations. This suggests that with an increase in foreign direct investment, the stock price volatility can be reduced. Further, rise in exchange rate is also a tool for increased stability

in stock prices.

Table 3 shows the results of System GMM for all the models. Firstly, the results of **Model (1)** are presented. Model (1) shows the relationship of firm specific factor i.e. dividend yield and dividend payout ratio. The results of GMM model shows that Dividend yield and Dividend payout ratio which are used as a proxy for dividend policy have a statistically insignificant association with price variations as the value of t-statistics is significant at 1% and 5% level of significance for DY and DPR respectively. Dividend yield has a negative relationship with the price variations with a coefficient value of 0.559 whereas, dividend payout ratio has a negative association with price variations having coefficient value of 0.253.These outcomes of insignificant relationship are in line with the previous studies of (Allen & Rachim, 1996); (Rashid & Rahman, 2008); (Lashgari & Ahmadi, 2014).

The GMM estimates for **Model (2)** incorporates the effect of control variables of assets growth, size of the firm, financial leverage and earnings volatility to control for the relatedness of dividend yield and dividend payout ratio. The results show that while introducing the control variables in the model, the negative association of dividend policies with stock price volatility remains intact. The coefficient value of DY is -0.581 that indicates one unit increase in DY will cause 0.581 units decrease in stock price volatility which is significant at 1% level of significance. The coefficient value of DPR is -0.117 but here, DPR becomes insignificant after the incorporation of control variables. The control variable of assets growth has a negative and significant relationship with stock price volatility at 15 level of significance. Its coefficient value is -0.516. The control variable of size of the firm also has a negative and significant relationship with dependent variable with coefficient value of -0.742. Leverage has a positive but insignificant relationship with stock price volatility. Earning volatility as a control variable has a positive and significant relationship with stock volatility at 1% level of significance having a coefficient value of 0.213. The value of constant is 9.746 which shows that if all the variables are zero in this model then the value of dependent variable is 9.746These results of negativerelationship of DY and Price variations are similar with the results of the previous studies such as (Baskin, 1989); (Hashemijoo, Ardekani, & Younesi, 2012); (Shah & Noreen, 2016) and (Zainudin, Mahdzan, & Yet, 2018).

Model (3) incorporates the effect of external variables of foreign exchange rate and foreign direct investment in the above model while taking account for the control variables as well. Here, DY and DPR both again have a negative relationship with stock price volatility. However, DY is significant at 1% level of significance whereas DPR is not significant in this model. Coefficient value of DY is -0.591 and of DPR is -0.028. Foreign exchange rate exhibits an inverse association with stock variations having a value of -1.200 which is significant at 1% level of significance. The coefficient of foreign direct investment is also significant at 1% level of significance under GMM estimates of Model (3).These results are similar with the results of Phan & Tran, (2019). The GMM estimates shows that there is a negative and significant link between foreign direct investment and stock fluctuations. The coefficeint of foreign direct investment has the value of -0.796.Control variables of Assets Growth and Firm Size both are also negatively associated with the dependent

variable in the Model (3) as well. Whereas, leverage and earnings volatility both have a positive association with stock price volatility.

Table 1: Descriptive Statistics

	Mean	St.Dev	p1	Median	p99
P V o l _ (L srd)	-.09	2.17	-2.22	-.02	2.46
DY w	.03	.04	0	0	.17
DPR w	.24	.46	-.68	0	3.14
FExg w	5.67	.07	5.58	5.66	5.8
FDI w	22.23	.35	21.48	22.29	22.65
AG w	1	.79	0	.91	3.71
Sz w	15.88	2.05	9.22	15.98	20.45
Lvg w	2.37	5.14	-20.49	1.93	31.94
EVol w	12.72	2.18	6.54	12.89	17.5

PVol: Stock price volatility, DY: Dividend yield, DPR: Dividend payout ratio, FExg: Foreign exchange rate, FDI: Foreign Direct Investment, Sz: Firm size, AG: Assets growth, Lvg: Leverage, EVol: Earning volatility

Table 2: Correlation analysis Variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) PVol_srd	1.00								
(2) DY_w	0.03	1.00							
(3) DPR_w	-0.01	0.59*	1.00						
(4) Fxg_w	-0.06*	-0.06*	0.06*	1.00					
(5) FDI_w	-0.16*	0.00	0.00	0.44*	1.00				
(6) AG_w	-0.07*	0.22*	0.23*	-0.07*	-0.09*	1.00			
(7) Sz_w	-0.07*	0.29*	0.23*	0.03	0.06*	0.18*	1.00		
(8) Lvg_w	-0.01	-0.01	-0.03	0.04*	0.02	0.10*	0.11*	1.00	
(9) EVol_w	0.07	0.29*	0.21*	-0.09*	0.03	0.26*	0.81*	0.10*	1.00

Values are significant at *1%, **5%, ***10% level of significance.
PVol: Stock price volatility, DY: Dividend yield, DPR: Dividend payout ratio, Sz: Firm size, AG:Assets growth, Lvg: Leverage, EVol: Earning volatility

Table 3: OLS estimates

VARIABLES	(1)	(2)	(3)
PVol (L.srd)	-0.312***	-0.570***	-0.649***
	(0.025)	(0.043)	(0.046)
DY_w	-0.559***	-0.581***	-0.591***
	(0.145)	(0.148)	(0.148)
DPR_w	-0.253**	-0.117	-0.028
	(0.105)	(0.166)	(0.171)
FExg_w			-1.200***
			(0.368)
FDI_w			-0.796***
			(0.218)
AG_w		-0.516***	-0.467***
		(0.176)	(0.172)
Sz_w		-0.742***	-1.092***
		(0.222)	(0.241)
Lvg_w		0.013	0.014
		(0.013)	(0.012)
EVol_w		0.213***	0.200***
		(0.048)	(0.046)
Constant	-0.197***	9.746***	4.609
	(0.041)	(3.504)	(6.255)
Observations	1001	1001	1001
Sargan (%)	24.26	22.71	26.36
AR1	0.183	0.182	0.186
AR2	0.492	0.487	0.496

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Standard errors in parentheses

CONCLUSION

The stock price volatility is an important risk factor associated with the financial markets of emerging countries. Many of the factors cause an effect on the fluctuations in stock prices. Empirical evidence shows that dividend policy has been used by the corporate managers to control the volatility of stocks. Stock price fluctuations are also influenced by the imports and exports of any country. Further,

foreign investors also intervene the financial markets and become a reason for stock volatility. The impacts dividend policy on stock price fluctuations has been studied previously. However, the impact of foreign direct investment as well as foreign exchange rates on stock price fluctuations has been examined very rarely along with the dividend policy for emerging markets. The current study has incorporated the effects of dividend policy as well as foreign direct investment and foreign exchange rate simultaneously.

The study suggests that dividend payout ratio as a proxy of dividend policy affects the stock volatility negatively showing that the firms having higher dividend payout have more stable stocks. These results are different for developed markets as suggested by (Allen & Rachim, 1996). The study also concludes that dividend yield is not an effective factor for stock fluctuations while considering as a part of dividend policy. The study also suggests that foreign direct investment and foreign exchange rates both negatively influence the stock price fluctuations in emerging markets.

The findings from this study provides the implications for the policymakers, regulators, investors and managers of emerging countries and specifically to Pakistan for making investments related decisions in capital markets.

REFERENCES

Abdullahi, & Oloyin-Abdulhakeem. (2019). Foreign Exchange Rate Dynamics and the Nigerian Capital Market Performance. Fountain University Osogbo Journal of Management (FUOJM) , 4 (1), 45-56.

Adesola, W. A., & Okwong, A. E. (2009). An Empirical Study of Dividend Policy of Quoted Companies in Nigeria. Global Journal of Social Sciences , 8 (1), 85-101.

Aivazian, V., Booth, L., & Cleary, S. (2003). Do Emerging Market Firms Follow Different Dividend Policies from U.S. Firms? The Journal of Financial Research , 26, 371-387.

Akbar, M., & Baig H, H. (2010). Reaction of Stock Prices to Dividend Announcements and Market Efficiency in Pakistan. The Lahore Journal of Economics , 15 (1 (Summer)), 103-125.

Al-Kuwari, D. (2009). Determinants of the Dividend Policy in Emerging Stock Exchanges: The Case of GCC Countries. Global Economy & Finance Journal, , 2 (2), 38-63.

Allen, D., & Rachim, V. (1996). Dividend policy and stock price volatility: Australian evidence. Applied Financial Economics, , 3 (2), 175-188.

Al-Malkawi, H. (2008). Factors influencing corporate dividend decision: evidence from Jordanian panel data. International Journal of Business , 13 (2), 177.

Al-Nasser, O., & Gomez, X. (2009). Do Well-Functioning Financial Systems Affect the FDI Flows to Latin America. Int. Res. J. Financ. Econ. , 29, 60-75.

Amihud, Y., & Li, K. (2002). The Declining Information Content of Dividend Announcement and the Effect of Institutional Holding. Working Paper, Stern School of Business, New York University .

Anderson, R. C., Reeb, A., Upadhyay, & Zhao., W. (2011). The Economics of Director Heterogeneity. Financial Management , 40 (1), 5-38.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. Journal of Econometrics, , 68 (1), 29-51.

Asquith, P., & Mullins, J. D. (1983). The Impact of Initiating Dividend Payments on Shareholders' Wealth. The Journal of Business , 56 (1), 77-96.

Avramov, D., Chordia, T., & Goyal, A. (2006). "Liquidity and Autocorrelations in Individual Stock Returns. The Journal of Finance , 61 (5).

Baker, H. K., Farrelly, G. E., & Edelman, R. B. (1985). A survey of management views on dividend policy. Financial management , 78-84.

Baker, M., & Wurgler, J. (2004). A catering theory of dividends. Journal of Finance , 59 (3), 1125-1165.

Bali, R. (2003). An empirical analysis of stock returns around dividend changes. Applied Economics, , 35 (1), 51-61.

Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. Journal of Accounting Research , 159-178.

Banerjee, A. (1992). "A Simple Model of Herd Behavior. Quarterly Journal of Economics , 107, 797-818.

Baskin, J. (1989). Dividend policy and the volatility of common stocks. The Journal of Portfolio Management , 15 (3), 19-25.

Battacharya, S. (1979). Imperfect information & dividend policy and the 'bird in hand' fallacy. The Bell Journal of Economics , 10, 259-70.

Beaver, W., Clarke, R., & Wright, W. (1979). "The association between unsystematic security returns and the magnitude of earnings forecast errors. Journal of Accounting Research , 17 (2), 316-340.

Beaver, W., Kettler, P., & Scholes, M. (1970). "The association between market determined and accounting determined risk measures. The Accounting Review , 45 (4), 654-682.

Beg, A. R., & Anwar, S. (2012). Detecting volatility persistence in GARCH models in the presence presence of the leverage effect. Quantitative Finance , 12 (14), 2205-2213.

Bikhchandani, S., Hirshleifer, D., & Welch, I. (1992). "A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades. Journal of Political Economy , 100, 992-1026.

Black, F. (1976a). Studies of stock price volatility changes. Proceedings of the 1976 Meetings of the American Statistical Association, Business and Economics Section , 3 (1-2), 177-181.

Black, F. (1976b). The dividend puzzle. The Journal of Portfolio Management , 2 (2), 5-8.

Black, F., & Scholes, M. (1974). The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns. Journal of Financial Economics , 1 (1), 1-22.

Blasco, N., Corredor, P., & Ferreruela, S. (2012). DOES HERDING AFFECT VOLATILITY? IMPLICATIONS FOR THE SPANISH STOCK MARKET. Quantitative Finance , 12, 311-327.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics , 87 (1), 115-143.

Born, J. A., Moser, J. T., & Officer, D. T. (1988). Changes in Dividend Policy and Subsequent Earnings: How Reliable are the 'Signals' We Receive from Dividends? Journal of Portfolio Management , 14 (4), 56-62.

Boubakari, A., & Jin, D. (2010). The Role of Stock Market Development in Economic Growth: Evidence from Some Euronext Countries. Int. J. Financ. Res., , 1 (1), 14-20.

Bowman, E. (1980). A risk/return paradox for strategic management. Sloan Management Review , 21 (3), 1-46.

Brandt,M.,&Kang,Q.(2004). Ontherelationshipbetweentheconditionalmeanandvolatilityofstockreturns:alatentVARapproach. Journal of Financial Economics , 72, 217-257.

Camilleri, S. J., Grima, L., & Grima, S. (2019). The effect of dividend policy on share price volatility: An analysis of Mediterranean banks' stocks. Managerial Finance , 45 (2), 348-364.

Cheung, Y., & Ng, L. (1992). Stock price dynamics and firm size: an empirical

investigation. The Journal of Finance , 47 (5), 1985-1997.

Christie, A. (1982). Thestochastic behaviorofcommonstockvariances: value,leverage andinterest rate effects. Journal of Financial Economics , 97 (3), 407-432.

Chung, K., & Charoenwong, C. (1991). "Investment options, assets in place, and the risk of stocks",. Financial Management, , 20 (3), 21-33.

Easterbrook, F. H. (1984). Two Agency-Cost Explanations of Dividends. American Economic Review , 74, 650-659.

Eriotis, N. (2005). The effect of distributed earnings and size of the firm to its dividend policy: Some Greek data,. International Business and Economics Journal , 4 (1), 67-74.

Errunza, V. (1983). Emerging Markets – A New Opportunity for Improving Global Portfolio Performance. Financ. Anal. J., , 39 (5), 51-58.

Eskew, R. (1979). "The forecasting ability of accounting risk measures: some additional evidence". Accounting Review , 54 (1), 107-118.

Fama, E., & French, K. (1988). Dividend yields and expected stock returns. Journal of Financial Economics , 22 (1), 3-25.

Farag, H., & Mallin, C. (2016). The influence of CEO demographic characteristics on corporate risk-taking: evidence from Chinese IPO s. The European Journal of Finance .

Fluck, Z. (1998). Optimal Financial Contracting: Dept versus Outside Equity. Review of Financial Studies , 11 (2), 383-418.

Friedman, M. (1953). The Case for Flexible Exchange Rates. in Milton Friedman (ed.), Essays in Positive Economics, University of Chicago Press, Chicago, IL .

Friend, I., & Puckett, M. (1964). Dividends and Stock Prices. The American Economic Review , 54 (5), 656-682.

Fritz, F., Mihir, A., & James, R. (2005). Foreign Direct Investment and the Domestic Capital Stock. Am. Econ. Rev. Papers Proceed , 33-38.

Froot, K., Scharfstein, D., & Stein, J. (1992). Herd on the Street: Informational Inefficiencies in a Market with Short-Term Speculation. Journal of Finance , 47, 1461-1484.

Gaver, J., & Gaver, K. (1993). Additional evidence on the association between the investment opportunity set and corporate financing, dividend, and compensation policies. Journal of Accounting and Economics , 16 (1), 125-160.

Glen, J., Karmokolias, Y., Miller, R., & Shah, S. (1995). Dividend policy and be-

haviour in emerging markets. IFC Discussion Paper No. 26 .

Gompers, P., & Metrick, A. (2001). Institutional Investors and Equity Prices. Quarterly Journal of Economics , 116 (1), 229-259.

Gordon, M. J. (1963). Optimal investment and financing policy. Journal of Finance , 18, 264-272.

Gordon, M. J., & Shapiro, E. (1956). Capital equipment analysis: The required rate of profit. Management Science, , 3, 102-110.

Grossman, S. J., & Hart., O. D. (1980). Disclosure Laws and Takeover Bids. The Journal of Finance , 35 (2), 323-334.

Gulathi, D., & khakani, M. (2012). Relationship Between Stock Market and Foreign Exchange Market in India: An Empirical Study. Pacific Business Review International , 66-71.

Gunaratne, D., Priyadarshanie, W. A., & Samarakoon, S. (2016). .Impact of dividend policy on stock price volatility and market value of the firm: Evidence from Sri Lankan manufacturing companies. Corporate Ownership and Control , 13 (3), 219-225.

Guo, H. (2002). Stock market returns, volatility and future output. ST. Louis: Federal Bank of St Louis .

Hamilton, J., & Lin, G. (1996). Stock market volatility and the business cycle. Journal of Applied Econometrics , 573-593.

Hashemijoo, M., Ardekani, A. M., & Younesi, N. (2012). The Impact of Dividend Policy on Share Price Volatility in the Malaysian Stock Market. Journal of Business Studies Quarterly , 4 (1), 111-129.

Hashemijoo, M., Ardekani, A., & Younesi, N. (2012). The impact of dividend policy on share price volatility in the Malaysian stock market. Journal of Business Studies Quarterly , 4 (1), 111-129.

Hashemijoo, M., Ardekani, A., & Younesi, N. (2012). The impact of dividend policy on share price volatility in the Malaysian stock market. Journal of Business Studies Quarterly , 4 (1), 111-129.

Hellwig, M. (1980). “On the Aggregation of Information in Competitive Markets. Journal of Economic Theory , 22, 477-498.

Heston, S. (1993). A closed-formsolution for options with stochastic volatility with applications to bond and currency options. Review of Financial , 6, 327-334.

Hirshleifer, D., Subrahmanyam, A., & Titman, S. (1994). "Security Analysis and Trading Patterns When Some Investors Receive Information before Others. Journal of Finance , 49 (5), 1665-1698.

Hsiao, C. (2007). Panel data analysis—Advantages and challenges. Test , 16 (1), 1-22.

Hussainey, K., Oscar MGgbame, C., & Chijoke-Mgbame, A. M. (2011). Dividend policy and share price volatility: UK evidence. The Journal of Risk Finance , 12 (1), 57-68.

ILABOYA, O. J., & AGGREH, M. (2013). Dividend Policy and Share Price Volatility. J. Asian Dev. Stud , 2 (2), 109-122.

Ilaboya, O. J., & Omoye, A. S. (2012). Earnings, dividend and share price volatility in Nigeria. The Pakistan Journal of Social Issues, , 3, 149.

Jahfer, A., & Mulafara, A. H. (2016). Dividend policy and share price volatility: Evidence from Colombo stock market. International Journal of Managerial and Financial Accounting, , 8 (2), 97-108.

Jensen, M., & H., M. W. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. Journal of Financial Economics , 3 (4), 305-360.

Kal, S., Arslaner, F., & Arslaner, N. (2015). The Dynamic Relationship between Stock, Bond and Foreign Exchange Markets. Central Bank of the Republic of Turkey .

Kashif, I. (2011). Determinants of Dividend Payout Policy: A case of Pakistan Engineering Sector. The Romanian Economic Journal. , 41, 47-50.

Khalid, W., & Khan, S. (2017). Effects of Macroeconomic Variables on the Stock Market Volatility: The Pakistan Experience. Global Journal of Management and Business Research , 17 (4), 69-91.

Khan, K. I., Aamir, M., Qayyum, A., Nasir, A., & Khan, M. I. (2011). Can Dividend Decisions Affect the Stock Prices: A Case of Dividend Paying Companies of KSE. International Research Journal of Finance and Economics (76), 67-74.

Kutty, G. (2010). The Relationship between Exchange Rates and Stock Prices: The Case of Mexico. North American Journal of Finance and Banking Research , 4 (4), 1-12.

Lashgari, Z., & Ahmadi, M. (2014). The impact of dividend policy on stock price volatility in the Tehran stock exchange. Kuwait Chapter of Arabian Journal of Business and Management Review , 33 (2541), 1-11.

LeRoy, S., & Porter, R. (1981). The present-value relation: tests based on implied

variance bounds. Econometrica: Journal of the Econometric Society , 49 (3), 555-574.

Li, J., & Tang, Y. I. (2010). CEO Hubris and Firm Risk-taking in China: The Moderating Role of Managerial Discretion. Academy of Management Journal , 53 (1), 45-68.

Lintner, J. (1956). Distribution of incomes of corporations among dividends, retained earnings, and taxes. The American Economic Review, , 46 (2), 97-113.

Litzenberger, R. H., & Ramaswamy, K. (1982). The Effects of Dividends on Common Stock Prices: Tax Effects of Information Effects. The Journal of Finance , 37 (2), 429-443.

Malarvizhi, K., & Jaya, D. M. (2012). AN ANALYTICAL STUDY ON THE MOVEMENT OF NIFTY INDEX AND EXCHANGE RATE. . International Journal of Marketing and Technology , 274-282.

Marshall, D., McManus, W., & Viele, D. (2011). Accounting: What the Numbers Mean, . McGraw-Hill, New York, NY. .

Maug, E., & Naik, N. (1996). Herding and delegated portfolio management. London Business School .

Mbulawa, M. (2015). Stock Market Performance, Interest Rate and Exchange Rate Interactions in Zimbabwe: A Cointegration Approach. International Journal of Economics, Finance and Management , 4 (2), 77-88.

Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth and the valuation of shares. The Journal of Business , 34, 411-433.

Miller, M. H., & Rock., K. (1985). Dividend policy under asymmetric information. Journal of Finance , 40, 1031-1051.

Miller, M., & Scholes, M. (1978). 'Dividends and taxes'. Journal of Financial Economics , 6 (4), 333-64.

Muhammed, L., & Victor, U. I. (2015). Empirical Analysis of Exchange Rate Volatility and Nigeria Stock Market Performance. International Journal of Science and Research , 4 (4), 1592-1600.

Myers, S., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics , 13, 187-221.

Najaf, R., & Najaf, K. (2016). A study of exchange rates movement and the stock market volatility. International journal of research Granthaalayah , 4 (1), 70-79.

Nazir, M. S., Nawaz, M. M., 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 and Economics (55), 100-107.

Nishat, M., & Irfan. CM. (2001). Dividend Policy and Stock Price Volatility in Pakistan. PaperPresented at 19th Annual General Meeting of PIDE,. Pakistan Institute of Development Economics.

Okafor, C. A., Mgbame, C., & Chijoke-Mgbame, A. M. (2011). Dividend policy and share price volatility in Nigeria. Journal of Research in National Development , 9 (1), 202-210.

Olugbenga, A. A. (2012). Exchange Rate Volatility and Stock Market Behaviour: TheNigerian Experience. Research Journal of Finance and Accounting , 3 (3).

Onyeizugbe, C. U., & Umeagugesi, U. E. (2014). Exchange Rate Management and the Survival of the Industrial Subsector of Nigeria. Global Journal of Management and Business Research , 14 (10), 12-18.

Owolabi, A. U., & Adegbite, T. A. (2013). Inflation and Capital Market Performance: The Nigerian outlook. Journal of Emerging Trends in Economics and Management Sciences , 5 (1), 93-99.

Pan, Y., Wang, T. Y., & Weisbach, M. S. (2013). Learning about CEO Ability and Stock Return Volatility. NBER working paper.

Pani, U. (2008). Dividend policy and stock price behavior in Indian corporate sector: a panel data approach. . Indian institute of technology .

Peterson, P. (1999). Analysis of Financial Statements. Wiley, New York , 9.

Pettit, R. R. (1972). Dividend announcements, security performance, and capital market efficiency. The Journal of Finance , 27 (5), 993-1007.

Phan, T. K., & Tran, N. H. (2019). Dividend policy and stock price volatility in an emerging market: Does ownership structure matter? Cogent Economics & Finance , 7, 1-29.

Poornima, D. S., & Ganeshwari, M. (2013). Relationship between Exchange Rates and Stock Market Index: Evidence from the Indian Stock Market. International Journal of Science and Research (IJSR) .

Profilet, K., & Bacon, F. (2013). Dividend policy and stock price volatility in the US equity capital market. ASBBS Annual Conference: Las Vegas , 20 (1), 219-231.

Puckett, A., & Yan, X. (2007). The Determinants and Impact of Short-Term Institu-

tional Herding. Working Paper. Available at SSRN .

Rajan, R. (1994). Why credit policies fluctuate: A theory and some evidence. Quarterly Journal of conomics , 436, 399-442.

Rashid, A., & Rahman, A. A. (2008). Dividend policy and stock price volatility: Evidence from Bangladesh. The Journal of Applied Business and Economics , 8 (4), 71-81.

Rashid, A., & Rehman, A. (2009). Dividend Policy and Stock Price Volatility: Evidence from Bangladesh. Journal of Applied Business and Economics , 8 (4), 71-80.

Roll, R. (1992). A mean/variance analysis of tracking error. Journal of Portfolio Management (summer), 13-22.

Rozeff, M. (1982). Growth, beta and agency costs as determinants of dividend payout ratios. Journal of Financial Research, , 5 (3), 249-259.

Sanders, W. G., & Hambrick., D. (2007). "Swinging for the Effects: The Effects of CEO Stock Options on Company Risk-taking and Performance. Academy of Management Journal , 50 (5), 1055-1078.

Scharfstein, D., & Stein, J. (1990). Herd behavior and investment. American Economic Review , 80, 465-479.

Schwert, G. (1989). Why does stock market volatility change over time? The Journal of Finance , 44 (5), 1115-1153.

Sew, E., Albaity, M., & Ibrahimy, A. (2015). Dividend policy and share price volatility. Investment Management and Financial Innovations , 12 (1), 226-234.

Sew, E., Albaity, M., & Ibrahimy, A. (2015). Dividend policy and share price volatility. Investment Management and Financial Innovations , 12 (1), 226-234.

Sew, E., Albaity, M., & Ibrahimy, A. (2015). Dividend policy and share price volatility. Investment Management and Financial Innovations , 12 (1), 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 , 6 (2), 461-472.

Shefrin, H. (2000). "Beyond greed and fear; Understanding behavioral finance and the psychology of investing. Cambridge: HBS Press .

Shenkar, O. (2007). Foreign Direct Investment: Theory and Application. Retrieved on 31 May 2018 from www.sagepub.com.upmdata/18594_chapter3.pdf .

Shiller, R. (2007). Do stock prices move too much to be justified by subsequent changes in dividends? The American Economic Review , 71 (3), 421-436.

Shirodkar, M. S. (2017). Co Integration And Causal Relationship Among Crude Oil Prices, Exchange Rate And Stock Market Performance: An Evidence From India. Journal Of Arts, Science & Commerce .

Shleifer, A., & Vishny, R. W. (1986). Large Shareholders and Corporate Control. The Journal of Political Economy , 461-488.

Suwanhirunkul, P., & Masih, M. (2018). Effect of dividend policy on stock price volatility in the Dow Jones US index and the Dow Jones Islamic US index: Evidences from GMM and quantile regression. MPRA Paper 93543, University Library of Munich, Germany. .

Thaler, R. (1991). Quasi-rational economics. New York: Russell Sage Foundation .

Trueman, B. (1994). Analyst Forecasts and herding behaviour. Review of Financial Studies , 7, 97-124.

Usman, O. A., & Adejare, A. T. (2014). Analysis of the Impacts of Interest Rate and Exchange Rate on Capital Market Performance in Nigeria. International Journal of Economics, Commerce and Management, , 2 (6).

Wang, J. (1993). A Model of intertemporal asset prices under asymmetric information. Review of Economic Studies , 60, 249-282.

Wang, X. (2010). The Relationship between Stock Market Volatility and Macroeconomic Volatility: Evidence from China. Int. Res. J. Financ .

Wild, J., Subramanyam, K., & Robert, F. (2007). Financial Statement Analysis, . McGraw-Hill International, Boston.

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. Journal of Financial Economics , 105 (3), 581-606.

Zainudin, R., Mahdzan, N. S., & Yet, C. H. (2018). Dividend policy and stock price volatility of industrial products firms in Malaysia. International Journal of Emerging Markets , 203-217.

Zainudin, R., Mahdzan, N. S., & Yet, C. H. (2018). Dividend policy and stock price volatility of industrial products firms in Malaysia. International Journal of Emerging Markets, , 13 (1), 203-217.

Zakaria, Z., Muhammad, J., & Zulkifli, A. (2012). The impact of dividend policy on the share price volatility: Malaysian construction and material companies. Management , 2 (5), 1-8.