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# The Impact of Dividend Policy on Share Price Volatility: A case of Pharmaceutical Companies of Listed in Pakistan Stock Exchange Companies

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**Abstract**

*Dividend policy is unresolved issue with stock prices relationship since 1960 after the development of the theory of dividend irrelevance MM (1960). Study purpose is to evaluate the effect of dividend policy on stock price volatility in listed pharmaceutical corporations in Pakistan Stock exchange using the data from the period 2009-2022. The corporate sector in Pakistan is facing fierce competition as a result of global economic downturn. This research will contribute to improving company-sector dividend decisions to implement Dividend Policy in this competitive and unreliable economic environment. To analyze the relationship between payout policy of dividend, with prices of stocks volatility including dividend yield, dividend per share and payout ratio taken as independent variable whereas, EPS, ROE and PAT as control variable. This study utilized the panel data as data shows large entities as well long time period. Panel regression techniques such as random as well fixed effect model applied to the data set analyzing the effect of dividend dimensions on stock prices. Findings also show that fixed effect results are appropriates for the study as Hausmann test result support with sig value less than 0.05. Data findings showed that DPS as well as dividend payout ratio have positive significantly association among stock value volatility; dividend yield has insignificant relation with share price volatility as these results supported by Bird in hand theory share which supports higher payout of dividend to those shareholders as well as management of the firms which leads towards increase in the stock prices as a result. EPS or Profits on each stock as well as profit excluding tax (PAT) of corporate has inverse non significant association on stock return on PSX listed firms while return on equity has associated positive significant on stock price volatility. The f- statistics shows that model is good fit and also explains 65% overall variation by model in stock prices volatile. Implication of the study is that managers must focus on dividend policy as investor is more concerned about the stock price where they gain or loss from the capital invested.*

**Keywords:** *Dividend policy, share price volatility, fixed effect model, Pharmaceutical, Pakistan*
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# INTRODUCTION

Dividend policy it is a subject that is very extensively studied in the field of corporate finance soon after the joint stock firms started their businesses Wood Jr and Bob G (2014) the first dividend payments were made by joint stock trading companies from the 17th and 18th centuries. These distributions to shareholders were complete profit and capital disbursements and put an end to the existence of the undertaking. The first person to work on dividend policy was Linter (1956). He was curious in the factors that influence dividend payout amount, form, and timing. Later research by Miller and Modigliani (1961) revealed that there is no link between dividends and firm value, only the firm's worth can be affected by investment policy. Many hypothetical methods have been presented by Baskin (1989) that indicate an inverse link between dividend yield and payout ratios and common stock volatility. The length, rate of return, arbitrage pricing, and information effect are all influenced by dividend policy. Gordon (1963) demonstrated that dividend policies cause a change in firm value and predict when prospection will occur. According to Kaiser et al. (2008), a dividend is a part of revenue that is distributed to stockholders based on their stock ownership. The technique or plans utilized by the corporation to decide on dividends are referred to as dividend policy how many stock owners' shares shall be paid out and how much dividends the company shall retain as net revenue. As dividend policy plays a vital role for both investors and managers because one decides the dividend policies while the other one is to invest to get the best rewards. So in that case keeping the balance between both earning profits for a company or selecting a best dividend policy for investor to keep satisfy them and encourage them to invest more in company.

Managers, according to Jensen (1986), are hesitant to boost payments. Dividends can be expensive for executives because they limit their capacity to pursue empire-building plans and engage in other activities that benefit them at the expense of their stockholders. Porta et al., (2000) show that higher dividend payments are associated with stronger minority shareholder rights More importantly, when dividends are paid, Managers are more prone to think about their own benefits. To lower agency costs and improve corporate value, they could distribute dividends to shareholders. Managers would profit from a greater corporate valuation because it would reduce the possibility of shareholder interventions and disciplinary measures, as well as hostile takeovers.

The pharmaceutical industry of Pakistan is very vibrant; at the time of independence Pakistan hardly had pharmaceutical firm. In Pakistan, now there are 762 medicines producing businesses firm across the country, 30 among those being international corporations. Now a day's meet the supply of Pharma products in the Pakistani sector encounters roughly 70% of the annual growth rate of the pharmaceutical industry. Pakistan Pharmaceutical manufacturers association (2018) the value of Pharma in 2017 this transaction, which currently surpasses billion U.S. dollars 4.9, is predicted to grow by 2021. Firms use a variety of policies from the finance, marketing, and management disciplines to achieve this goal. The finance department is the heart of any company, and it is here that strategies are made to assure long-term success.

## Challenges faced by Pharmaceutical sector of Pakistan

Asad and Kabeer (2019) the largest difficulty facing the pharmaceutical sector is maintaining pricing stability. Since 2001, the government has set the price mechanism. Pharma companies are not entitled to determine their own rates, even if the products they buy are completely free. Because of the rising costs of power, gasoline, labor expenses, and raw materials, the industry's survival is extremely tough. Consumers are being harmed by counterfeit products, which is not a good omen for businesses. Drug pricing have been liberalized by neighboring nations such as India and China, benefiting both their exports and clients. It is critical for Pakistan to revise its drug pricing strategy in order to boost the country's exports. Pakistani pharmaceutical companies do not have FDA approval. The majority of multinational corporations (MNCs) are focusing on India and Bangladesh, while Pakistan's exports are declining. If Pakistan joins the PIC, its exports will grow in the following five years (pharmaceutical inspection convention).

In earlier research papers there is no such work on dividend policy related to the pharmaceutical companies as it plays a major role in economy, Pakistani pharmaceutical companies have clocked annual sales (2020) Rs. 453.5 are generated from the pharmaceutical industry in fiscal year ended June 2020, grown about 4% to timepiece in at Rs.111.12 billion As we can see now in this crucial pandemic situation of COVID-19 the pharmaceutical sector was one of the few sectors running their business. As COVID-19 has put extraordinary pressure on every country's healthcare system, to help economy and for the survival of human life. On the other hand, companies need unusual degree of Because of differences in size, structure, and nature, there is heterogeneity. Even though every firm performs various practices with the policies that are dissimilar it's not really required that a majority of the companies in this study follow similar policies related to profit distribution. The objective within the investigation seeks for evaluating the influence of a policy of corporate dividend structure upon the volatile share price in the market performance from the industry of pharmaceuticals.

## Significance of the study

The relationship between short-term decisions and long-term goals, as well as their true impact on the benefit of companies, are examined in this study. This is a paper about will clarify the impact of the dividend policy factors on the stock prices volatility of market as well as help mangers for choosing right policy and speculators for putting resources into right way.

## Industrial significance

The study will provide higher industrial significance for the managers for choosing the best dividend policy for firm

### Investors significance

This will help investors to maximize their returns in stocks for putting resources into right way.
The outline of the study follow in this sense background of the dividend policy is discussed in the paper. Explanation of the problem statement, including why there is a need to study this topic and a discussion of the topic's justification and research gap. The literature review of previous empirical research and the theoretical framework are presented in the study's next chapter. Third part of the study is related to methodology and techniques used in this study. It covers the data collection, variable explanation, model specification and econometric techniques which are followed by fourth chapter describing results and findings of the study. Finally study presents recommendations conclusion, as well as scope of further research.

## LITERATURE REVIEW

Dividend policy is about the management's decision to pay out profits in the form of dividends. For a finance manager, this strategy is perhaps the most critical aspect of decision-making. Management has announced that decisions throughout this regard have an impact for the company's expansion percentage, debt standing, price of shares, as well as the company's entire worth. The marketplace for stocks is projected to react with this increase by sagging prices for stocks, which will cause a fall within the company's general worth. For consequently, policy makers have to give careful consideration and use utmost caution. Whenever such rigorous dividend strategy is implemented with the objective to keep a greater share of profits, the company would have more money available for growth and modernization. This will result in increased revenue for the firm. The worth of the firm's shares would grow, resulting in a capital gain, as a result of its strengthened earnings position and strong financial health.

### Types of dividend policy

A dividend is a return on shareholders' investment from the profits of a company. The money must be used by management to satisfy the various stakeholders of the company, with the first priority being given to shareholders, because they are most at risk. Here are some examples of the dividend:

### Regular Dividend Policy

The corporation distributes dividends to its investors annually in accordance with its normal dividend policy. If a company generates irregular profits (very high profits), the excess profits are held by the corporation as retained earnings and are not distributed to the shareholders. The policy guarantees that the shareholders will get a dividend even if the business experiences a loss. The regular dividend policy is used by businesses with steady cash flow and profitability. Investments in companies that provide regular dividends are regarded as low-risk.

## Irregular Dividend Policy:

A corporation is not compelled to pay its shareholders a dividend under an irregular dividend policy, and the board of directors has control over how the revenues are used. If they generate an exceptional profit in a particular year, they have the option of distributing it to shareholders or of keeping it for future initiatives and corporate development.

## No Dividend:

The business fails to provide rewards on behalf of stockholders under its absence of policy on dividends, irrespective of whether it makes or loses money, and the proportion of payouts is 0%. The entire profit will be retained by the corporation. The funds will engage within the enterprise's company structure to drive expansion whilst addressing problems like solvency.

The payment mode and frequency of dividend depends on firm policy cash, stock and bonus Shares with payment quarterly, monthly, semiannually and annually by any company during the business process.

## Dividend theories

## Model of Walter

The internal rate of return (r) and capital cost (k) of the firm are relevant factors to consider when choosing a dividend policy to maximise shareholders' wealth, according to Professor James E. Walter's (1963) model. Walter's share value model combines the company's investment strategy with its dividend policy. This model takes up that the Company's venture chances stand funded only from engaged incomes as well as no exterior liability or equity funding will be used if the investment or the dividend policy of the Company exists in a situation like this, or both are under optimal. Only if this optimal investment is made will the wealth of owners maximize.

## Gordon growth model

The Gordon growth model (1956) is a stock valuation method which calculates the stock value. This model is also known as the dividends discount model. This method does not therefore take account of current market conditions. This simplified model then enables investors to comparison companies with other industries.

## Miller's Model and Modigliani's

The company's dividend policy, according to Modigliani and Miller (M, M) 1958, is immaterial because it has no impact on the shareholders' wealth. They claim that the company's value is determined by its profit as a result of its investment policy. Within its core, the theory contends a component of under specific presumptions, it is irrelevant either a business supports its expansion via borrowing funds, share issue, or earnings reinvestment.

**Review of the studies**

In a moderately original approach, Baskin (1989) focuses on the impact of profit strategy on stock value unpredictability rather than profits. Setting up enough controls for various variables is the test in any precise inquiry analysing the relationship between profit strategy and stock volatility or returns. For instance, the accounting structure generates data on several linkages that are typically regarded as risk indicators. He suggests using the following control variables to examine the significance of the relationship between profit yield and value unpredictability: working income, business size, degree of obligation financing, payout proportion, and level of development. These elements have a noticeable impact on stock costs, but they also have an impact on profit yield.

In this study Nishat (1992) found that share price is associated with the estimated returns of the firm in past or present. These may have considered as in the form of capital gain. But some where some researchers are in the in contradiction of the dividend irrelevance theory. Because this theory explains that investors only think about the return against of dividend and investors always wanted to get the more of return on capital gain. However, when an investor is required to pay taxes on a capital gain or a dividend, his behaviors change.

Khilji (1993) he found in his study that in terms of economics, the stock market plays a significant role in providing a surplus in the shortfall for parties, investors and payers. Companies can use more of their investments in this manner, and investors, when they receive dividend payments, invest that money much more in the household, providing an opportunity for future perspectives. And some people invest for the purpose of accumulating reserves, so it helps the economy in both ways.

Study of Mehar (2002) found that in the case of larger companies, the majority of the shares are acquired by the families of the board of directors, and the directors all enjoy the benefits that the company provides. Dividend payments are just as important as interest payments, and the difference between the two is the rate of return and risk. Dividend payments are made on the basis of net capital or net income profit after tax. In general, pharmaceutical companies have a higher dividend payout ratio because they do not rely on the company's retained earnings; instead, they rely on the initial equity provided by their parent company. An efficient market is an important intention in finance icon because it specifies how the market/firm succeeds. In terms of stock, how competently they reveal the information at the time of announcement so that it can have any impact on the share prices is important.

Nishat and Irfan (2003) Tax fixing on cash profits, exclusion of right and extra offers from charge, design shift from money to share profit, and government strategy of facilitating limitations on move of market benefits are generally instances of profit strategy changes in Pakistan. The objective of this examination is to decide the drawn out effect of profit strategy measures, for example, profit yield and payout proportion on share value developments. It additionally endeavors to survey the example of connections pre change (1981-1990) and post-change (1991-2000). Adefila et al., (2004) the components that impact Nigerian organizations' profit approaches were researched. As per the discoveries of their exploration, Nigerian organizations favor customary profit payouts that are in accordance with their investors' assumptions. Their discoveries additionally show that Dividend Payments, Net Earnings, and Stock Prices have no relationship. For the fulfillment of their investors, Nigerian organizations offer profits to their investors paying little heed to their benefit level. Amidu and Abor (2006) Using panel data from 20 firms registered on the Ghana Stock Exchange, a study was done on the factors of dividend policy. As a dependent variable, the dividend payout ratio was used. They found that dividend distribution is mostly determined by a company's net earnings, and that companies with greater liquidity pay higher dividends. The link between dividend payout and risk is a negative relationship.

Chakraborty (2006) an efficient markets has an essential intention in finance icon, because it specifies the how the market/ firm is successful. In sense of stock while publicizing the dividends how competently they revealing the information while at time of announcement so it can bring the any impact on the share prices.

Ahmed et al., (2008) they found the consistently covered that firms set their dividend payments on the basis of the previous dividend per share or the company's existing earnings, dividend payments are more reliant on earnings rather than the previous dividend per share (DPS), and if the earnings are high, they pay higher dividends. The market capitalization and size of an organization also have an impact on dividend policy because it shows that firms prefer to invest more in their assets despite dividend payments to investors. The dividend policies are unaffected by investment opportunities or leverage.

Rashid and Rehman (2008) conducted a research project in Bangladesh. From 1999 to 2006, they studied 104 non-financial companies. The lack of a link among volatility of share prices on policies made by the corporation related to dividend due to imperfect stock market and also investors hold mostly shares to get chance on the board of directors.

Pani (2008) the connection between profit strategy and securities exchange costs was contemplated utilizing an example of 500 organizations from the six areas of the Bombay Stock Exchange. The aftereffects of his exploration show that, on account of specific areas, the profit maintenance proportion is well associated with stock returns, however that there is no genuinely critical connection between these factors. Besides, the obligation value proportion has a negative relationship with stock return, however the company's size has a positive relationship with stock return.

Ahmed and Javaid's (2009) study uses 320 businesses listed on the Karachi Stock Exchange between 2001 and 2006 were used as the sample for which examined the factors influencing dividend policy in Pakistan's expanding economy. The majority of Pakistani firms base their dividend payouts on earnings, either current or past year profits, according to the results of their research. Therefore, companies with high net profits pay their shareholders higher dividends. In addition, their data showed that firm size was negatively correlated with dividend payouts, market liquidity was positively correlated with the dividend payout ratio, and there was no correlation between dividend payment and growth potential.

Arouri et al., (2010) in their study the found that a negative link between speculation openings and the dividend payout strategy has been found. Similarly, it has been discovered that the link between outside funding, the use of monetary influence and the growth of dividend returns is irrelevant. A positive impact on the dividend-payout proportion was found by dividends and securities exchange capitalization. Dividend-based companies generally help their investors with high dividend returns, while much established markets generally support low-dividend payout strategies.

Khan et al., (2011) they constructed the study on the impact of dividend policy on stock price by using 131 companies listed on the KSE from 2001 to 2010. To analyze the effect, various theories and researches were studied. The sample size was large, as they took nearly 14 of the companies listed on the KSE. Panel data were used to examine the impact, and the dividend stock piece, along with EPS, PAT, and ROE, were used as a control variable. His findings show that ROE, PAT, and EPS have a positive relationship with stock prices, while the retaining ratio has no effect on stock price; the overall model shows that dividend policy has a progressive effect on stock prices.

Hussainey et al., (2011) in this study they found that the effects of dividend policy on share prices in the US stock market the data were took from the companies listed in LSE. The multiple regression technique was used to calculate the movement of share prices in relation to the dividend payout ratio and dividend yield. The findings indicate that dividend yield has a direct effect on share prices, whereas share prices have a negative relationship with dividend payout ratio. Furthermore, the size, earnings, and debt value of an organization can all have an impact on the market's share price volatility. Investors are always aware of stock volatility in order to assess risk or changes over time.

Kanwal (2012) constructed a study on the impact of dividend announcements, whether cash or stock dividends, on the stock prices of Pakistan's pharmaceutical and chemical industries. A representative sample of 25 Karachi Stock Exchange-listed businesses was taken. Dividend policy is the dependent variable, share price is the independent variable, and EPS, PAT, and ROE are the controlling variables in a panel data analysis with a fixed and random effect. The results indicate that, in Pakistan's pharmaceutical and chemical industries, stock prices are significantly influenced by ROE and dividend announcements, but not by EPS or PAT.

Zakaria and others (2012) Utilizing the least square regression approach, the study investigates the effects of dividend policy on the share price volatility of listed construction businesses and materials businesses after controlling for obligations, big business-sized firms, growth in investments, and profit variability. The dividend payment ratio had a considerable influence on share price changes, according to the study. The volatility of share prices increases with the size of the firm. The company's share price movements have no impact on dividend yields, investment growth and earnings volatility. And leverage has a negative effect on stock price movement.

Saeed and Sadia (2012) they constructed the study on the how macroeconomic variables affect stock returns, macroeconomic variables such as (Money supply, exchange rate, industrial production, short term interest rate and oil price). Data from the Karachi stock exchange were collected from nine different sectors (oil, gas, textile, ceramics, pharmaceutical, automobile, jute cement, and electrical goods). Unit root test and ADF used to make data stationery. As a result of the findings, it is clear that not all macroeconomic factors affect all sectors, but that different sectors are influenced by different macroeconomic factors.

Khan et al., (2013) study and focused on how profitability and leverage can impact dividend policy decisions made at the Annual General Meeting (AGM). Because dividend declarations demonstrate the firm's profitability, if the company issues a high dividend payout ratio, it indicates that the company has earned a profit. In this paper profitability and dividend leverage is calculated Data was collected from thirty-four Pakistani listed pharmaceutical and chemical for the period of 8 years. The hypothesis was tested using the ordinary least squares method. The findings also show that firm productivity has a positive and significant impact on dividends, whereas leverage has no effect.

The most investigated theme in finance is stock value unpredictability. Hujra et al., (2013) tracked down that stock value vacillations can be brought about by various variables. They examined the effect of profit yield, profit payout proportion, return on value, income per offer, and benefit after charge on stock costs. The information was gathered from four non-monetary ventures (Sugar, Chemical, Food and Personal Care, and Energy), and 63 organizations from the Karachi stock trade for the time of 2006-2011. To quantify the outcomes, standard least square relapse was utilized. Discoveries show that profit yield and profit payout proportion both emphatically affect stock costs as a component of profit strategy, yet profit yield is adversely identified with stock costs while profit payout proportion is decidedly related, which negates the profit superfluity hypothesis.

Hussain et al.., (2014) in this paper they constructed the study to explore the stock return and exchange rate disclosure on market return of pharmaceutical firms in Pakistan using the quarterly based data from 2003-2012. To measure this results in long run and in short run with the market return unit root test and co-integration test were applied. In unit root test the results show at 1st level intercept only, while in co-integration test results shows that there is a long run association between the exchange rate stock return and market return index. Because if your currency will have depreciated it will also effect on the equity market reappearance and it impact on the stock return of the firms.

Hujra et al., (2014) they have studied in their research that there are many factors which may be the cause of fluctuation in the stock prices. Instability in stock prices remain the most research topic for finance. In this paper they considered the impact of profit yield, profit payout proportion, return on value, acquiring per share, and benefit after charge on stock costs. Findings shows that profit yield and profit payout proportion both are as a feature of profit strategy decidedly affects the stock costs, yet profit yield adversely moderately related with stock costs while profit payout proportion is emphatically related which shows against the profit immateriality hypothesis, other variable benefit after charge and acquiring per share likewise has the positive effect yet the profit from value unimportantly sway on the stock costs.

Sharif et al., (2015) focus on dividend policy, which is based on two key factors. To begin with, companies are always concerned about the consistency of dividend policy. Leaders do not want to change the policy until it is no longer necessary because they believe people invest and place premiums on the basis of the firm's consistent dividend policy. Second, Lintner believed that the level of earnings was the most important thing; if the company's earnings unexpectedly increased, they slightly changed their dividends; similarly, the firm has the right to cut dividends. Lintner identified the effect of dividend policy on share prices and studied the various factors of company dividend policy as well as its significance on the value of the firm. He conducted interviews with the top management of twenty-eight companies. His research reveals that the payout of dividends affects the firm's market value or has an effect on share prices.

De Cesari et al., (2015) in this paper they found that how stock prices affect quarterly dividend changes. As a result, they discovered that there is a positive relationship between the dividend ex and changes in the current dividend when the return of ex dividend expresses more information. The study looked at the overall valuation of stock prices and discovered that managers look at all stock prices when deciding on dividend policies, highlighting that there is a positive relative bond between them and stock prices also have an effect on the real financial market.

Arshad et al., (2015) constructed the study on the factors that effect on the share prices both internal and external features were measured in the research. The data was collected from the commercial banks which are listed in the Karachi stock exchange for the period of seven years 2007-2013. Using Linear multiple regression technique, after concluding the test hypothesis the results shows that earning per share has more effect it is directly influence on the share prices other variables like dividend per share, leverage, and income after tax have no any association with the stock prices. Market value has impact on the share prices but there is a negative link between market value and share price.

Khan et al., (2016) constructed study on the effect of dividend policy on firm performance. Data was collected from firms listed on the PSE from 2010 to 2015. The impact was measured using the OLS regression technique. The results show that dividend policy has a positive impact on growth sales and ROA. In addition, they presented the theory of dividend irrelevance, and their research shows that dividends have no significant impact on stock prices, but rather are affected by investment policy and the firm's value or earnings per share (EPS).

Fornell et al., (2016) in this paper they constructed a study on that there are several cases in which resource arrival has been increased before the dividend return was declared and has been declined for some time after the declaration. This truth undermines the belief that positive profit from dividends is linked only with increased profit for the future. It has also been found that most organizations provide money with a dividend payout solely to launch excess money for investors, ignoring the critical benefit of the company.

Khan (2016) this paper is based on the dividend signaling theory. Because this theory represents, increase in the dividend payout at the time of dividend announcement. Basically this theory directly indicates the more positive future prospective. If we say in economics terms this represents the theory of game (game theory), it is still used by some of the investors, because it represents the company is going to pay the higher dividends. So it is clear that are the dominating on the share price.
In this study Mcinnis (2016) found that dividend policy may not only sign current implementation and future possibilities of the company, but also address organizational problems between the managers and the external managers. Both of these variables reinforce much of the fact that the increase in retained income is a kind of uplifting news of increasing stock costs.

Jiraporn et al. (2016) looked into payments of dividends data over the years 1989 to 2011 and came to the conclusion that a greater number of proficient directors are more inclined to distribute payouts, potentially considering they are more certain of their ability to continue generating profits.

Memon et al., (2017) they constructed a study on the significance or insignificance relationship among payout policy with return on market. In control variables ROA, ROE, growth in sales has significance impact while PAT, liquidity & leverage has no any effect on the share prices. Where all shows that there is significance influence of dividend policies on the share prices in Pakistan.

Khan et al., (2017) study results show that growth, liquidity, and profitability are the most important factors in dividend payout ratio, with other variables such as taxation, risk, and firm size accounting for 31.9 percent of the variance.

Ahmed et al., (2017) their study is based on the study of to analyze that the variable has more significant impact on dividend payout. The results indicate that growth, liquidity and profitability are the major factors in the dividend payout ratio, while 31.9% fluctuation in dividend payout ratio is due to the other variables which are taxation, risk and firm size of pharmaceutical industries.

Ajayi (2018) claims that several businesses listed on the Nigerian Stock Exchange are increasing their dividend distributions while many others are maintaining their payout levels. This demonstrates the corporation’s rising willingness to distribute a portion of its income to its shareholders in the form of dividends. The importance of diverse dividend strategy must thus be understood by the company’s decision-makers. The argument over dividends is one prominent dispute in corporate finance. According to a research by Raissaagle et al. (2018) of 364 businesses listed on the

Latin American stock exchange, share price shows a positive link with retention ratio but an adverse relationship with the yield on dividends, business size, debt-to-equity ratio, and profits per share.

According to Singh & Tandon (2019), in addition to shareholders, rate growth in GDP wins through payout of dividend as well and capital gains. However, sustained positive growth in capital investment international share markets has shown that return from shares have higher susceptible either low or high shows more deviation in the stock. Investor losses have occurred as a result of the exchange market of Nigerian, which has eroded investor trust and led stock values to vary. Often acts as an immature the marketplace and possesses restrictive laws. Stock fluctuation in prices and pattern shifts are always important to capital market participants because of shares prices constant and shareholders related policies. In this type of market, shareholders place a lot of emphasis on their dividend yields due to the high risk in the stock as well as unstable prices of portfolio that might be higher impact as period to period towards the total market capitalization of corporations.

The influence of company managers, or shareholders' agents, on stock price and dividend policy is the subject of a 2019 research by Araoye, Aruwaji, and Ajya. Shareholders have a lot of control over firm-specific decisions that will boost shareholder wealth, but they have minimal influence over outside factors that raise the share price. This value-maximizing technique is extremely dependent on the use of a dividend policy. Any time a company distributes profits as a dividend to its shareholders (owners), tax is due. It might take the shape of dividend payments in cash or a capital gain. The choice to pay out dividends is influenced by the company's ability to produce future revenues as well as its ability to make a profit. To decide how much of the company do revenues should go to shareholders and how much should go to other stakeholders, the management uses a set of guidelines known as the dividend policy.

(Koleosho et al., 2022; Alajekwu & Ezeabasili, 2020) research employing listed stock data from Nigeria reveal a negative correlation between dividend policy and share price of the firm. The study's findings also indicated that the government and business executives are interested in the share price of an investor's stock. For shareholders, the returns on their investments, which take the shape of dividends (cash or bonus shares) and capital gains, are a constant source of concern. Capital gains finally become observable when asset prices rise over time.

Every publicly listed firm is obligated to issue its shares and fix a price for each one, according to Koleosho, Akintoye, and Ajibade (2022). Such issued shares are priced in accordance with the value of the firm. The volatility of a corporation may be defined as the amount of variation in its share value, which is observed as the share price fluctuation. A rise in the share price is a good thing since it amplifies capital gains and boosts investors' wealth. Investors often hate drops in value, which are also known as value degradation. Share prices can change sometimes depending on firm-specific conditions, general economic conditions, and a number of other variables including social, political, and environmental events.

The relationship between dividend policy and stock market volatility, however, is still up for debate because of the ongoing debate among academics (Koleosho et al., 2022). Due to the inconsistencies in the research findings, more research is necessary to evaluate how dividend policy efforts affect share price volatility.
The link between dividend policy and share price fluctuations will be examined in the study by Kayode, Gbenga, and Ayobami (2022) using data from companies registered on the Nigerian Stock Exchange. Panel regression analysis and Generalised Methods of Moments (GMM) were two systematic approaches to data analysis. It was shown that dividend yield and share price movement are negatively correlated. It was shown that the share price and dividend yield had a negative and substantial association.

Bhatti, Patoli, & Kumar (2023) study to investigate the dividend policy in the chemical industries and how it affects market prices using data during 2013 to 2022 of 26 listed firm in PSX. Panel data have been examined for fixed effect models. Except for Profit after Tax, all explanatory factors are shown to be significant. Because dividend policy has an impact on share prices, it means that dividend policy proxies are significant in all financial decision - making. Firms must thus develop a dividend policy based on the current market price.

Based on the above literature the following hypothesis developed.
Hypothesis of the study
**H1:** The dividend policy has a substantial impact on share price volatility.
**H2:** The dividend payout ratio has a considerable impact on share price volatility.
**H3:** Dividend yield has a major impact on share price volatility.
**H4:** Share price volatility is heavily influenced by dividend per share.
**H5:** Earnings per share has a considerable impact on share price volatility.
**H6:** After-tax profit has a significant impact on share price volatility.
**H7:** Return on equity has a major impact on share price volatility.

## RESEARCH METHOD

In this study secondary data was utilized to test the study hypothesis. This study uses data of pharma sector from the period 2009-2022 of listed firms in Pakistan stock exchange. This study used panel data with convenience sampling method used to select sample size of the study data from the target population of Pakistani listed firm of pharmaceutical. Study test hypothesis using panel least square approaches fixed or random based on hausmann test values.

The model of the study adopts the previous studies research work of Nazir et al., (2012) and Sharif et al., (2015).
Model equation is $SPVit = \beta o + \beta 1SDit + \beta 2DPR\ it + \beta\ 3DYit + \beta 4EPSit + \beta 5ROE\ it + \beta 6PATit + \mu it$
Where;
PVit = Market price Volatility = Dependent variable
SD it = Share per dividend
DPR it = Dividend payout ratio
DY it = Dividend Yield

EPSit = Earnings per share
ROE it = Return on earning
PATit = Profit after tax
μit = error term
βo = Constant or intercept
β1 = Regression coefficient

PVit = Market price Volatility = Price volatility is the dependent variable that measures the movement in price changes and consequently the stock's risk using Parkinson's (1980) procedure difference in upper and lower price during the period, dividing by the average of the highest and lowest prices, and then taking the square of that number than a square root transformation can be used to convert these average estimates of variation for all available years to a standard deviation.
SD = Dividend per share (DPS) is the sum of a company's declared dividends for each ordinary share outstanding. Akbar and Baig (2010) also used dividend per share as independent variable.

Dividend yield = DY= Dividend yield also used as independent variable by Nazir et al., (2011) calculated by dividing the share price annual dividend and multiplying it by 100.

Dividend yield = Annual dividend per share ÷ Market price per share * 100
DPR = Dividend payout ratio = The dividend payout ratio is the amount paid to shareholders as a percentage of the company's current earnings Nazir et al., (2012).
Dividend payout ratio = Dividend per share (DPS) ÷ Earning per share (EPS)

Profit per share (EPS) is calculated as the benefit of a company partitioned by its common stock's outstanding offers. Kanwal Iqbal khan (2012) and Haung and Cheng (2009) used EPS as control variable, EPS = Net Income ÷ No. Of shares

ROE (Return on Equity) = Ling et al. (2008) used this variable as well, and their findings revealed that return on equity and stock prices have a direct link. ROE = Net income ÷ Shareholder equity

Profit after Tax = Taxes are a necessary part of any running business. Al Kuwari (2010) employed profit after tax as an independent variable and discovered that stock prices and profit after tax had a direct relationship. PAT=Gross Profit – Operating expenses – Interest – Taxes

## RESULTS AND DISCUSSION

Study findings and discussion given below as follows, first present descriptive statistics of the study, correlation test, brush pagan test, Hausmann test, and fixed effect model test result using Eviews software. Table 1 provides a summary of the fundamental statistics for all variables, both dependent and independent variables. The average return on equity is the best, while the average market share price is 306.5 and the average dividend yield is the lowest. The greatest value is the dividend per share. The large volatility in the share market price of Pakistani pharmaceutical businesses is attributed to the dividend per share, as shown by the Standard Deviation figure of 47.67. The dividend yield has a minimum standard variance of 2.31, indicating that dividend yield causes minimal movement in share market values, resulting in a slight change in pharmaceutical

**Table: 1 Descriptive statistics**

| | SP | DPS | DY | DPR | EPS | PAT | ROE |
|---|---|---|---|---|---|---|---|
| Mean | 306.5037 | 11.84048 | 2.940419 | 3.844431 | 13.32431 | 14.38317 | 14.59467 |
| Median | 81.10000 | 4.500000 | 2.500000 | 0.510000 | 7.600000 | 12.36000 | 12.30000 |
| Maximum | 4160.750 | 600.0000 | 12.09000 | 47.20000 | 134.9000 | 53.58000 | 57.25000 |
| Minimum | 2.420000 | 1.000000 | 0.230000 | 0.020000 | -59.48 | -13.23 | -16.6 |
| Std. Dev. | 624.6250 | 47.67101 | 2.313041 | 9.464415 | 21.62269 | 9.887750 | 9.877633 |

Note: Estimated on EViews by the author

**Table: 2 Correlation Matrix**

| | SPV | DPS | DY | DPR | EPS | ROE | PAT |
|---|---|---|---|---|---|---|---|
| DPS | 0.3885906 | 1 | | | | | |
| DY | -0.1792608 | -0.07987429 | 1 | | | | |
| DPR | 0.19880444 | 0.026739941 | 0.1629442 | 1 | | | |
| EPS | 0.32178799 | 0.340363025 | 0.1118738 | 0.3767546 | 1 | | |
| ROE | -0.1573801 | 0.290449159 | 0.0199646 | 0.0601118 | 0.2425572 | 1 | |
| PAT | -0.1925264 | 0.245481832 | 0.0597577 | 0.0290426 | 0.0838261 | 0.7080515 | 1 |

The finding of correlation analysis shows that share prices has positive relationship with dividend per share, earnings per share, and dividend payout ratio while dividend yield, return on equity and profit after tax shows negative association.

The Breusch-Pagan LM test (1980) assumes that there isn’t any transverse dependency in the residuals among the research’s cross section. Table 3 shows the results of Breusch test for cross section P-value 0.000 shows that the value is significant whereas for time p-value 0.147 shows that the value is insignificant. The significant value show that POLS is not appropriate where P-value is less than .05 which means that null hypothesis is rejected.

**Table 3 BREUSCH-PAGAN** Test

| | Hypothesis | | |
|---|---|---|---|
| | **Cross-section** | **Time** | **Both** |
| Breusch-Pagan | 62.96973 | 2.096811 | 65.06654 |
| | (0.0000) | 0.1476 | (0.0000) |

So, now we use and interpret the fixed or random effect model based on the findings of Hausman test value. The findings of table 4 shows that P-value is 0.000 which less than .05, means that we reject Null hypothesis and accept alternative hypothesis and go for fixed effect model.

**Table: 4 Hausman Test**

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|
| Cross section random effects | 170.9461 | 6 | 0.0000 |

So now we use fixed effect test result to accept or reject the hypothesis of the study.

**Table: 5 Fixed Effect Model Result**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 181.7179 | 83.00923 | 2.189129 | 0.0000 |
| DPS | 0.197973 | 0.810123 | 0.244374 | 0.0807* |
| DY | -21.93034 | 16.27758 | -1.347273 | 0.1799 |
| DPR | 19.26299 | 6.301996 | 3.056649 | 0.0027*** |
| EPS | -2.472193 | 1.76757 | -1.39864 | 0.164 |
| PAT | -4.892268 | 7.172145 | -0.682121 | 0.4962 |
| ROE | 15.10183 | 8.205684 | 1.84041 | 0.0677* |
| Effects Specification | | | | |
| R-squared | 0.687664 | Adjusted R-squared | 0.652028 | |
| F-statistic | 19.29707 | Prob (F-statistic) | 0.0000 | |

Table 5 illustrates the result of fixed effect model and reveals that the F value (19.29) with prob. Value 0.000 indicate that model is statistically significant as p value is less than 0.05. The value of adjusted R2 0.652 indicates that changes in the independent variables account for nearly 65 percent of the change in the dependent variable. The model result also shows that dividend per share, dividend payout ratio and return on asset has positive association while dividend yield, earning per share and profit after tax has negative relationship with stock price volatility in the pharmaceutical sector. The finding also shows that dividend per share, dividend payout ratio and return on asset has significant impact on share price volatility while dividend yield, earnings per share and profit after tax has non-significant impact on volatility on listed stock of pharma sector in Pakistan. The finding of the study also similar with the studies such as Dong et al (2004) and Akbar & Baig (2010) Khan & khan (2011). Dividend yield has insignificant negative relationship with stock market price. Allen & Rachim (1996) has also found the insignificant relationship between the dividend yield and stock price volatility. The finding is similar to the results of Allen & Rachim (1996) and Nazir et al., (2010) and Hussainey et al., (2011) they also find the positive relationship between payout ratio and stock price volatility in their researches. Despite the fact that earnings per share has insignificant relationship with Stock Market Prices, but it is still important to consider. According to Ohlson model (1995) states that "The stock value is based on two variables in the financial statements (book value and earnings). The negative connection between share earnings and stock price volatility is found by Nishat and Irfan (2003). Profit after tax has negative statistically insignificant relationship with stock price volatility, Autherand Kanwal (2011) use PAT in his research as control variable and found positive relationship between both. In studies of Adesola and Okwong (2009) and Al-Kuwari (2010) and Ahmed and Javed (2009) they use profit after tax as independent variable and where they found the positive relationship between profit after tax and stock market price volatility. Kanwal Iqbal (2011) and Waseem Ahmed (2016) have also used ROE in their research and found positive relationship between return on equity and stock market volatility. Study hypothesis 1, 3 and 7 accepted at level 0.10 while hypothesis 2, 4, 5 and 6 rejected as p value is more than 0.10

## CONCLUSION

The purpose of this study was to look at the effect of dividend policy on pharmaceutical company share price volatility. Secondary data was gathered for this project from a variety of reliable sources, including company financial statements and Pakistan stock exchange data. The data covered 12 pharmaceutical companies over a 14-year span, from 2009 to 2022. The results of the fixed effect model revealed a substantial positive association between dividend per share and dividend payout ratio and share price volatility. As evidenced by the findings of Nazir et al., dividend yield shows no meaningful relationship with share price volatility (2010) Return on equity has a large positive link with share price volatility, whereas earnings per share and profit after tax have a negative negligible relationship. The model as a whole is significant. The Fixed and Random Effect Models' results support these findings even more. The study's findings show that dividend policy has a strong positive impact on share price volatility.

## RECOMMENDATIONS

Following measures are recommended after analyzing this study:

Companies should pay attention to their earnings and profitability as this is a major determinant of their ability to pay out dividends to shareholders. Investors also use them to assess the performance and value of the shares.

As owners and managers are interested to change bond prices, this study can give them guidance on factors which cause changes in the bond price and the factors which investors have at the time of investment to take decisions.

In addition, researchers are recommended to think about different research designs to ensure that all dividend theories in the Pakistani context are relevant.

The future studies may focus on generalized moment method, cointegration techniques, using corporate governance variables and with higher time span may leads better estimation of stock price crunch and dividend policy.

## DECLARATION OF INTEREST:

It is declared that the authors of this research work have no competing interests

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