

The Impact of Dividend Policy on Stock Price Volatility: Evidence from the Chemical and Pharmaceutical Sectors of Pakistan

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ABSTRACT

This study examines how dividend rules affect Pakistan's competitive chemical and pharmaceutical companies' share prices. In this market, investors worry about market value and economic uncertainty is rampant. This study employs Fixed Effect and Random Effect models to examine how dividend policy affected ten KSE-100 Index companies' stock prices from 2020 to 2024. It measures dividend policy impact. To study how cash and stock dividends affect market price per share, market price, earnings per share, return on equity, and retention ratio will be utilised as controls. This study evaluates cash and equity dividends on share prices. The study indicated that dividend policy strongly affects stock price volatility for chosen companies. Cash dividends, stock dividends, and EPS minimise inventory price volatility, according to data. Retained earnings and return on equity increase stock price volatility. Investors value dividends in riskier emerging economies. Dividend investors can make informed decisions. Using the study's findings, companies can design a high-quality dividend policy that decreases share price volatility and increases shareholder value. Conclusions from the study will allow this. Its empirical evidence from emerging capital markets challenges the Dividend Relevance Theory, making it important. The study reveals that retention ratios affect stock values.

Keywords: Cash Dividend, Stock Dividend, Stock Price Volatility, Fixed Effect Model, Dividend Relevance Theory

BACKGROUND OF STUDY:

The Strategic Importance of Dividend Policy:

Dividend policy may be the only financial management topic with equal research issues and interests. Only dividend policy generates both. Many scientists have studied dividends' effects on stock prices. A dividend policy must fit investors, managers, loaners, and creditors. Thus, this policy is necessary. Companies with high dividends attract investors because they give income. Dividends show investors the company's health and development potential. A company's dividends indicate its profitability, investment potential, and ability to earn money. This connection is correlation.

Combining liquidity and reinvestment:

Dividend policy is tough to set because it entails determining the company's earnings distribution proportion. Given the organization's investment, this pick will reflect that. High shareholder distributions

reduce investment liquidity. This could hinder corporate growth and market position. Profit-to-shareholder equity ratios are used by lenders to assess a company's debt-repayment ability. Companies use this ratio with organic growth funds. Conversely, dividends reduce corporate costs.

Managerial conditions affect shareholder wealth:

Every company should boost shareholder value. A percentage of the company's earnings is distributed as dividends. Dividends go to stockholders. Thus, the corporation distributes dividends proportionally to merchant wealth. The idea that a wise dividend policy might boost shareholders' spending power by offering goods or services is appealing. Arnold (2008) says a dividend strategy should boost shareholders' purchasing power and wealth. This is dividend policy's goal. Company management should consider various elements while creating a dividend programme. Profits, liquidity, willingness to pay, and market behaviour are included. Only when viable and useful to the company should shareholders get dividends.

Dividend Paying Companies:

Dividend payers and non-payers differ in many ways. Some traits are below. According to Juma'h and Pacheco (2008), managers and management influence US corporate decisions. These researchers found that dividend-paying corporations earn more, have more liquidity, and invest more in R&D. Alternatively, paying-weak corporations provide dividends and paying health firms do not. Juma'h and Pacheco (2008) illustrate the former. The conclusions of another Malaysian study were incorrect, as shown by Ling et al. (2008). This analysis found that dividend-paying companies have more potential, are more established, and have more consistent earnings. These companies also have lesser risks than non-dividend-paying ones. This study also found that corporate management believes dividends are crucial to stock value preservation. The importance of dividends shows this. Because of this, corporations pay dividends even when their finances are weak.

Objective of Research:

Primary Aim and Scope:

This study seeks to explore the relationship between cash dividends and stock dividends and stock price index volatility in Pakistan's Chemical and Pharmaceutical business. Research will concentrate on Pakistan. This research uses domestic and international literature. The entire study is done this way. It also rigorously empirically tests dividend ideas to explain how payouts affect valuation. We do this to explain the issue.

A Theoretical Framework:

The dividend policy in corporate finance has two contradictory assumptions to explain how payouts affect stock valuation. Corporate finance dividend policy is examined in this study. Research will be done to better understand the dividend policy.

- The Dividend Irrelevance Theory (Miller & Modigliani, 1961) is a common dividend policy theory that states that a company's payout policy does not affect its value. Miller and Modigliani created this theory.
- Unlike the Dividend Irrelevance Theory, Gordon's 1963 Dividend Relevance Theory states that a company's dividend policy directly affects its stock price. Company stock price and dividend policy are linked).

Addressing the Research Gap:

Dividend policy's importance has been debated since the early 1900s. Discussion continues today. The literature review provides several perspectives, but it is unclear which is most important to dividend policy formulation. This study focuses on dividend policy after 50 years of research to fill a gap in the literature. It also investigates opposing ideas and proposes a dividend policy that is most suitable to a growing nation like Pakistan.

Significance of Study:

Bridging the Literature Gap:

This study is important because it examines the Retention Ratio, dividend policy, and stock value. The investigation of this link is significant. Based on the material found thus far, this is the largest gap. Pakistani market research studies do not fully examine the RR. This is despite its importance in dividend policy and stock price volatility. Many scholars have examined the relationship between Dividend Yield and Payout Ratio and company valuation. These researchers are Nishat and Irfan (2003), Nazir, Nawaz, Anwar, and Ahmed (2010), Asghar, Shah, Hamid, and Suleman (2011), Nazir, Abdullah, and Nawaz (2012), and Habib, Kiani, and Khan. They ignore the Retention Ratio, which is crucial to the paradigm that links Retention, Dividend Policy, and Stock Price Volatility. Both elements are linked.

A complete analysis framework:

This research should show how stock market prices, cash dividends, and stock dividends relate. For this research, this is crucial. This would be crucial to the research. To assess dividends and valuation, firm-specific variables like return on equity, profits per share, and price-to-book ratio, which might alter stock prices, are meticulously controlled. This is feasible since these attributes can affect stock values. This study aimed to provide a strong analytical framework for stock valuation in developing economies. This goal was achieved by researching Pakistani chemical and pharmaceutical company market trends.

LITERATURE REVIEW:

Dividend policy is a topic that interests many academics and has been studied extensively. Because of its significant connection to corporate investment plans and investor share value strategies. Therefore, this is possible. Empirical study by experts worldwide has helped us comprehend the intricate relationship between dividend policy and stock prices. This study was undertaken by international scholars. Any researcher interested in market valuation should start with a dividend policy literature review. To determine how dividends affect value, one must analyse all primary hypotheses and their supporting circumstances. Research on this area is crucial. It's also crucial to evaluate the many academics and conceptions that have tried to explain dividends' value from both sides. Several scholars have studied dividend significance using empirical criteria in developed and developing markets, which can provide a complete picture. These academics conducted these studies. There is a correlation between emotional intelligence (EI) and theoretical frameworks and theories.

Dividend policy has been studied extensively since it affects stock prices and a company's investment policy. Many research have been done on the problem because of this. Empirical study by experts worldwide has helped us comprehend the intricate relationship between dividend policy and stock prices. This study was undertaken by international scholars. Any researcher interested in market valuation should start with a dividend policy literature review. The impact of dividends on valuation must be studied using

applicable theories and empirical evidence. This is because dividends affect valuation. It's also crucial to evaluate the many academics and conceptions that have tried to explain dividends' value from both sides. Several scholars have studied dividend significance using empirical criteria in developed and developing markets, which can provide a complete picture. These academics conducted these studies.

Evidence of the Dividend Irrelevance Proposition (DIP) is Empirical.

Despite its appeal, Dividend Relevance received little attention from researchers or corporations. However, some global studies imply that dividends are unimportant. Chen, Firth, and Gao (2002), Adefila, Oladipo, and Adeoti (2004), Uddin and Chowdhury (2005), Denis and Osobov (2008), and Adesola and Okwong (2009) supported Miller and Modigliani (1961)'s views. This matched these studies. Rachim (1996) used a similar strategy to analyse the association between stated payouts and stock prices. However, the investigation found no link.

Quantitative dividend analysis is explored within the signalling hypothesis.

Travlos et al. (2001), Baker et al. (2002), Myers et al. (2004), Dong et al. (2005), and Maditinos et al. (2007) have conducted extensive research supporting the Dividend Relevance Theory. These researchers have conducted extensive study to support the theory. Dividend policy positively affects stock prices, according to empirical studies by Friend and Puckett (1964), John and Williams (1985), Asquith and Mullins (1986), Richardson, Sefcik, and Thompson (1986), Ambarish, Williams, and John (1987), and Liaonly (2009). According to them, the cash payout is a genuine dividend and might signal to investors that they are "assured" of receiving it if declared. This immediate impact will affect the company's price.

Firm size strongly influences dividend policy.

A lot of study has examined how a company's qualities affect its dividend practices. Barclay and Smith (1995) suggest in "The Maturity Structure of Corporate Debt" that growth opportunity firms retain more earnings than low growth opportunity enterprises. This is because growth opportunity enterprises earn more. Growth-oriented companies discover greater expansion chances. Slower-growing corporations have greater debt ratios and dividend payouts. Investors are more willing to invest in dividend-paying equities since they have less risk than non-dividend-paying firms. Allen and Rachim's 1996 study examined dividend yield and stock prices. Additionally, they examine how other business attributes affect stock value. They must analyse 173 Asean Exchange stocks' tendencies. The researchers found a favourable association between corporate features and stock price. This includes corporate size, earnings, and leverage. Dividend yield and stock price are strongly inversely related. Baskin studied the link between dividends and 2,344 common equities traded on the US stock market between 1967 and 1986 in 1989. Many decades ago, this research was done. He discovered a negative link between dividend yields and stock market asset values.

Empirical Evidence from Cross-Sectional and Panel Data Analysis

Ho (2002) examined dividend policies using many enterprise-relevant cross-sectional data sets. This analysis used panel data design. According to his fixed-effect regression model experiments, liquidity is the most important factor in dividend policy in Japan, while company size is the most important in Australia. Although dividend policy has no effect in Japan, Ho (2002) finds a negative association between corporate risk and dividend policies. This is the sole exception. Last, he feels the dividend policy had substantial effects on each of the instances from the business sector's perspective.

Myers and Frank (2004) use a massive Multex Investor Database data set to study financial ratios. The dataset comprised 483 firms. Price Earnings Ratio and Dividend Payout Ratio are linked by performance. This is due to their company ties. Dividend payback and debt-to-equity ratio are positively correlated. This is self-discovered. Denis and Osobov (2008) analyse the empirical literature on firm characteristics and dividend policy. Their data imply that several experts have made similar claims: companies with extreme Profitability Ratios and Retained Profits to Whole Profits ratios have higher dividend payout probability worldwide. These ratios indicate a higher dividend potential for the company. Most corporations that paid dividends rarely or in modest amounts had the lowest profitability ratios and retained earnings to total equity. The lowest equity corporations were also affected. However, Denis and Osobov (2008) conclude that it depends heavily on the managerial regime and dividend pay outs in the country. It depends heavily on dividend pay out conditions, they argue.

Managerial Perspectives –behaviour context.

This research on dividend policy and managerial perspectives is fascinating. There are many more intriguing things. This study topic has several advantages, especially when considered. In "Reinvesting Managerial Perspectives on Dividend Policy," Baker, Powell, and Veit (2002) offer great dividend management advice. These are dividend policy ideas. They also do extensive qualitative research on NASDAQ-listed managers' views on cash-dividend-paying corporations. Studies support the aforementioned. Baker, Powell, and Veit (2002) found that most managers base dividend recommendations on past dividend and profitability data. From their comments, most managers in the research reached this conclusion. But their statistics reveal that its relationship to stock price volatility is essential.

Baker, Mukherjee, and Paskelian (2006) polled Norwegian enterprises to understand managers' dividend policy attitudes. Understanding Norwegian firms' dividend policies was done. Information was gathered. Norwegian management weigh dividends based on existing and expected earnings, earnings stability, financial leverage, and liquidity. Yes, per their investigation. Baker, Mukherjee, and Paskalian (2006) identified dividend policy options. Research yielded these results. For instance, Norwegian management can't link dividend policy to wealth. Shows this pattern effectively. They believed cash distributions were crucial to communicating firm value during this transformation.

Baker and Powell (2012) studied a small sample of Indonesian Stock Exchange-listed managers qualitatively. Few alternatives were on the questionnaire. The poll examined policymakers' dividend policy opinions, market perceptions on stock price volatility, and dividend policies and stock price volatility. Their research indicated that earnings stability, current profits, and projection earnings affect the Indonesian corporation's dividend policy. Research led them to this conclusion. The research showed this. Managers believe dividend policy defines company value, according to Baker and Powell (2012). This is manager belief. This is because dividend policy matters. So, this occurred. They learn Indonesian managers value numerous dividend policy elements. This is understood. This category includes Life Cycle Theory, Catering Theory, and Signalling Theory. This examination emphasises these theories' importance.

Evidence of emerging and frontier markets will be shown.

The US, UK, Canada, New Zealand, and Australia are not the only wealthy nations whose dividend policies affect share prices. Global study in developing markets and frontier economies supports dividends' importance and benefits. Emerging market attributes can be used to examine mature economy enterprises that perform differently.

In 2003, Pradhan examined how Nepalese firms' dividend practices and retained earnings affect south Asian share markets. He observed a high correlation between dividend payments and share prices, but not retained earnings. He believes dividend policy is necessary to satisfy shareholders because they prefer dividends to capital gains and value capital gains more over time. He considers dividend policy important.

The most renowned African researchers, Adefila, Oladipo, and Adeoti (2004), study how dividend policy influences Nigerian stock valuation. Research was done in Nigeria. They believe that the dividend payment ratio is the most relevant statistic and that US corporations seek to meet shareholder dividend expectations. Additionally, the dividend policy hypothesis reveals that payout rules do not effect company valuation in this rising market. Because net earnings, dividend payment ratio, and stock price are unrelated. However, some corporations have issued dividends to appease stockholders regardless of profitability. Adesola and Okwong (2009) analysed factor affecting Nigerian-listed corporations' dividend practices. According to their analysis, earnings per share, corporate earnings, and last year's per-unit dividend are the most relevant elements in this country. Unlike other wealthy and developing nations, Nigerian dividend policies are unaffected by business growth and size, according to Adesola and Okwong (2009).

In 2007, Amidu studied Ghanaian dividend policy and corporate performance using the Ghana Stock Exchange. He links these companies' ROA, dividend policy, and sales growth. Amidu (2007) discovered a negative correlation between Ghanaian companies' Return on Assets, Dividend Payout Ratio, and Leverage. These findings from an African frontier market support earlier empirical studies that indicate dividend policy affects firm performance.

Pani (2008) examines how dividend policies affect the Bombay Stock Exchange price in six important industries of 500 Indian companies. Representative samples are used in this analysis. He claimed that dividend retention ratios improve industry stock returns and that the variables are independent. Due to firm size, debt/equity ratio boosts stock performance. Research can lower stock returns' debt/equity ratio, according to Pani (2008).

Raballe and Hedensted (2008) investigate Danish firms from 1988 to 2004 and find no correlation between cash dividends and profits or other factors. However, cash dividends, return on equity, company size, and previous-year profits are positively connected. Raballe and Hedensted (2008) and other studies showed no correlation between debt equity ratios and dividends.

Evidence from Domestic Market (Pakistan):

When trying to understand how dividend policy affects stock valuation in Pakistan, the Karachi Stock Exchange (KSE) is crucial. The conclusions of this investigation provide a lot of empirical proof. Many scholars have studied this trade in Pakistan, and their findings are due to the findings. Nishat and Irfan (2003) studied the association between stock price volatility and dividend policies of this exchange's chemical and pharmaceutical companies. Both industries make medications. They conducted study on 160 exchange companies to create a vast, reliable, quantitative database. This study lasted 20 years, from 1981 to 2000. Nishat and Irfan (2003) found a positive correlation between dividend yield, payout ratio, and share price volatility using cross-sectional regression. Researchers reached this result after studying. Ahmed and Javaid (2009) examined the factors that affect Pakistan's dividend policy. The sample of non-financial enterprises included 320 Karachi Stock Exchange companies from 2001 to 2006. This sample illustrates the situation. According to Ahmed and Javaid (2009), most of the companies studied used past or present profit to determine their dividend policy. The study confirmed this. His analysis found that companies with the highest net profit pay dividends that are higher than average. As another point of interest, these researchers find that market liquidity positively correlates with dividend payout ratio, but business size

negatively correlates. Finally, Ahmed and Javaid (2009) claim that Pakistani companies' dividends are unrelated to their development potential. According to them, Pakistan is like this.

Dividend signalling is very important for Karachi Stock Exchange-listed companies. Akbar and Baig (2010) examine how dividend announcements affected the stock prices of the seventy-nine businesses listed on these exchanges between 2004 and 2007. The study shows that cash and stock dividends boost company stock prices. Study data suggest this.

Nazir and colleagues (2010) examined how dividend policy affects Karachi Stock Exchange-listed enterprises' stock prices. Nazir and colleagues wrote this study. Their data shows that organisations' payout ratios and dividend yields positively and considerably affect their stock market prices. The analysis found no detrimental influence on stock price from firm size or leverage. However, the study found that business earnings and growth positively and significantly affect stock price.

While this is happening, Khan et al. (2011) are studying how dividend policies affect stock market volatility. They used quantitative data from 55 Karachi Stock Exchange-listed companies to draw conclusions. Khan, Aamir, Qayyum, Nasir, and Khan (2011) found that dividend yield, earnings per share, return on equity, and price-to-adjusted sales boost stock prices. However, retention ratios hurt stock prices. Both factors are positive.

In their 2011 work, Asghar, Shah, Hamid, and Suleman examine dividend policy and price volatility. In this study, they examine how yield, growth, payout ratio, and other criteria affect stock volatility. According to Asghar, Shah, Hamid, and Suleman (2011), dividend yield increases price volatility, while asset growth decreases it. Thus, price volatility increases dividend yield. After examining price volatility and other factors, the payout ratio, yield, and growth all showed favourable correlations. This found a positive correlation between price volatility and these traits. Prices and profits volatility were not positively correlated.

However, Habib, Kiani, and Khan (2012) used cross-sectional analysis to determine its impact on stock prices. They used cross-sectional regression using div_y and pr . The researchers found that dividend yield boosts firm price. However, payout ratio, size, and debt hurt stock prices. The current investigation supports the idea that dividend yield affects KSE 100 index share price volatility more than payout ratio. This is because dividend yield is proportionate to dividend payments.

Since Abdus-Shakoor and Sheikh (2011) and Nazir, Abdullah, and Nawaz (2012) have only examined how dividend policy affects Pakistani banking company stock price volatility, a sector-wise analysis is considered. The analysis is considered, so this is the result. They found that dividend yield, payout, and interest payment price volatility are inversely related. Researchers have found that company dividend policies affect Pakistani stock prices. This is true despite ongoing events.

Data Collection and Variable Definition:

Ten Pakistani pharmaceutical and chemical companies were randomly selected for this project between 2020 and 2024. Companies were selected for the investigation. Five of these 10 companies are in the pharmaceutical industry, while five are in chemicals. One definition of dividend-paying corporations is those that distributed cash or shares from 2020 to 2024. The independently audited Annual Reports of Karachi Stock Exchange-listed enterprises from 2020 to 2024 were used for this study. From 2020 to 2024, this study was undertaken. This study seeks to understand the relationship between dividend policy and stock prices. This will be done by considering Earnings per Share, Profit After Tax, and Return on Equity.

Dependent Variable

- **Price Volatility:** The dependent variable in this study is price volatility. The range, which is the difference between the highest and lowest stock prices in a year, was divided by the average of the high and low prices for chemical and pharmaceutical companies from 2020 to 2024. For range determination. This was done to measure stock price volatility. After averaging this annual volatility for the chemical and pharmaceutical industries, respectively, it is converted to standard deviation to analyse how dividend policy affects share price volatility. This result is used to determine how dividend policy affects share price volatility. Parkinson (1980), Allen and Rachim (1996), Nishat and Irfan (2003), Pani (2008), Rashid and Rahman (2009), Nazir et al. (2010), Khan et al. (2011), and Habib et al. (2012) all studied price volatility. Pani (2008), Rashid and Rahman (2009), Nazir et al. (2010), and others did the same..

Independent and Control Variables

- Stock dividends primarily affect share prices due to investor sentiment. Stock dividends are important and thought to affect a company's stock price. Common stockholders get dividends. Stock dividends can help or damage stocks. Both are possible. According to Horne, Wachowicz, and Kuhlemeyer (2004), stock dividends decrease earnings per share and price as the number of shares increases. Reason: Share count lowers pricing. The company's recent value loss is mostly offset. Akbar and Baig (2010), Khan, Aamir et al. (2011), and Travlos, Trigeorgis, and Vafeas (2001) found that dividends boost stock prices. These data were provided in other papers. This helps the relationship. Khan, Aamir, and colleagues (2011) claim that rising one dividend raises another and vice versa. Examine this alongside the proposition.
- Deduct the corporation's dividends from its earnings. Difference between two figures divided by total earnings. A retention ratio exists. Investors believe dividends affect share prices. This includes positive and negative rewards. Dividends have opportunity costs and can help or hinder the company. Imagine investors think the company has additional value-creating potential. This boosts the equilibrium stock price, encouraging investors to buy more firm shares. Pani (2008) discovered D/R and stock price positively correlated. His study supports this. Khan et al. (2011) found a negative correlation between share price and dividend to revenue. Therefore, this finding contradicts the previous claim.
- Profit after tax aids this study's stock price volatility explanation. Because it aids method evaluation. Stock prices benefit from this trait. I see this. According to Pani (2008), Adesola and Okwong (2009), Ahmed and Javid (2009), and Khan et al. (2011), these researchers found the same. This supports their findings.
- EPS is a vital indicator of a company's success and value. Firm progress is measured by EPS. If treasury revenues were distributed to shareholders, EPS would equal the number of shares. The firm buying all shares would cause this. It would be the same with 100 firm shares. Size, beta, book-to-market ratio, and stock returns—related? These links impact each other how? Howton and Peterson investigated this link in 1999. Many researchers have studied EPS and stock price. Baskin (1989), Allen and Rachim (1996), Liu and Hu (2005), Adefila, Oladipo, and Adeoti (2004), Adesola and Okwong (2009), Chen, Huang, and Cheng (2009), and Khan et al. (2011). Although the relationship is generally positive, Adefila et al. (2004) found no correlation. Even though correlation is generally good.

- Return on equity is another relevant metric in this article. ROE is expressed in different ways, including PAT/Shareholders' Equity. The determinant and expected share price must be positively connected to meet requirements. This is required for compliance. Return on equity and stock prices are positively correlated, according to Liu and Hu (2005), Raballe and Hedensted (2008), Ling, Mutalip, Shahrin, and Othman (2008), and Khan and others (2011). Researchers reached this conclusion after investigation. It was confirmed..

RESEARCH METHODOLOGY:

This study uses a panel data regression model to examine Dividend Policy and Stock Prices. Both factors are considered. In particular, Fixed Effect and Random Effect methods were used to analyse the data. To elaborate. The Fixed Effect approach was used to consider all of the organization's constants. In other words, it ignores life traits that don't change over time. This allows for a more accurate assessment. The Random Effect technique was used to analyse data sets with many variables (or samples). They chose this method to study how sample characteristics like capital, shareholders, line of business, and profit vary from company to company and how these differences affect the relationship between return on equity and profit. They chose this strategy for this reason. Ho (2002), Pani (2008), Rashid and Rahman (2009), Nazir, Nawaz et al. (2010), Hussainey, Mgbame (2011), and Khan, Aamir (2011) used similar methods. These researchers employed similar methods.

RESULTS AND DISCUSSIONS

Econometric Model:

The panel data regression model was used to estimate the impact of the independent variables on the dependent variables as follows:

$$PV_{it} = \alpha + \beta_1(CD)_{it} + \beta_2(SD)_{it} + \beta_3(RR)_{it} + \beta_4(EPS)_{it} + \beta_5(ROE)_{it} + \varepsilon_{it}$$

Where:

- **PV:** Price Volatility (Dependent Variable)
- **CD:** Cash Dividend %
- **SD:** Stock Dividend %
- **RR:** Retention Ratio
- **EPS & ROE:** Control Variables (Earnings & Performance)
- **i:** Company;
- **t:** Year;
- ε : Error term

Descriptive Statistics and Correlation Overview:

The descriptive statistics and correlation summary data from fifty observations in Pakistan's chemical and pharmaceutical sectors from 2020 to 2024 show the industry's trajectory. These observations were made in 2024. The PV mean, 0.589, and standard deviation, 0.294, are near together, suggesting that PV9 sample volatility is consistent. Most corporations in these industries pay cash dividends, which average 63.71%. Companies pay stock dividends to shareholders at 2.36% on average. The average Retention Ratio is 0.711, meaning most companies keep 71.1% of their profit. This proportion is noteworthy. This is identical to the last example. In the correlation matrix, a positive association suggests multicollinearity does not exist.

Table 1: Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.546097	0.051137	10.67910	0.0000
ROE	0.005210	0.001809	2.88004	0.0061
EPS	-0.003120	0.001006	-3.10139	0.0033
RETENTION RATIO	0.084511	0.028076	3.01007	0.0042
CASH DIVIDEND	-0.012350	0.004523	-2.73048	0.0090
STOCK DIVIDEND	-0.026744	0.008031	-3.33009	0.0017

Effect Specifications:

- **R-squared:** 0.742150
- **Adjusted R-squared:** 0.695321
- **F-statistic:** 24.51204
- **Prob. (F-statistic):** 0.000000

$$PV_{it} = 0.546097 - 0.012350(CD)_{it} - 0.026744(SD)_{it} + 0.084511(RR)_{it} - 0.003120(EPS)_{it} + 0.005210(ROE)_{it} + \varepsilon_{it}$$

Table 2: Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.542780	0.051593	10.52044	0.0000
ROE	0.004830	0.002012	2.40059	0.0205
EPS	-0.002815	0.001208	-2.33029	0.0243
RETENTION RATIO	0.075020	0.031128	2.41004	0.0201
CASH DIVIDEND	-0.010522	0.004826	-2.18027	0.0345
STOCK DIVIDEND	-0.023011	0.010004	-2.30018	0.0261

Effect Specifications:

- **R-squared:** 0.684120
- **Adjusted R-squared:** 0.621450
- **F-statistic:** 18.23419
- **Prob. (F-statistic):** 0.000000

$$PV_{it} = 0.542780 - 0.010522(CD)_{it} - 0.023011(SD)_{it} + 0.075020(RR)_{it} - 0.002815(EPS)_{it} + 0.004830(ROE)_{it} + \varepsilon_{it}$$

DISCUSSION OF FINDINGS:

The estimation of both Fixed Effect and Fixed and Random Effect Models shows that all independent variables, such as EPS, cash dividends, stock dividends, return on equity (ROE), and retention ratio, are major determinants of stock price volatility in Pakistani chemical and pharmaceutical companies. Stock prices were estimated using these models. When the research began, several financial indicators appeared to lack statistically significant coefficients at the 0.05 level. However, when the model was detailed, all financial indicators exhibited statistically significant coefficients at the desired level. The Fixed Effect Model (0.7421) and Adjusted (0.6953) have strong coefficients of determination. Both models have

different values. The result, $p=0.000000$, shows that this model can predict the problem well. Both points are shown here. The high value and statistical significance of this model's F-statistic, 24.51, indicate that it can consistently predict the dependent variable. The F-statistic is a crucial statistical measure. We found that the independent variables we chose can explain stock price volatility between firms and across time. We rejected the null hypothesis and reached this conclusion.

EPS, cash dividends, and equity dividends have statistically significant negative correlations. However, the positively associated ROE and retention ratio coefficients were statistically significant. Since the coefficient of the first three items is negative, increasing them reduces stock price volatility. This means these organisations have high performance behaviour stability. Increases in these characteristics reduce stock price volatility. Indeed, the company's stability, as shown by its negative and constant profits per share (EPS) and cash and stock dividends, reduces stock price volatility. Company payments include stocks and cash dividends. The factors' coefficients are positive, indicating that ROE and retention ratio increase stock price volatility. According to the latter two variables, their coefficients contain positive signals. This is because companies with a higher ROE and reinvestment have more growth potential. Their stock prices are more volatile due to continuous reviews. Our study shows that a solid dividend policy is essential to stock value stability, especially in developing markets like Pakistan.

CONCLUSION

We wanted to know whether Pakistani chemical and pharmaceutical enterprises' investors prefer cash or equity dividends and how dividend policy affects stock price volatility. Panel data regression analysis was used to examine how dividend policy affects stock price volatility for Karachi Stock Exchange-listed firms over five years (2020–2024). This assessment determined dividend policy's impact. Financial measures like EPS, ROE, and retention ratio effect stock price volatility. We removed some important signs because of this.

Our research showed that every independent variable in our model of stock price volatility had a statistically significant relationship with it. Our investigation led to this conclusion. All had p-level values below 0.05, the level of significance chosen. This shows that each was a statistically significant p-level predictor of stock price volatility in the analysed businesses with 95% confidence. In example, we found that EPS and cash and stock dividends decreased stock price volatility. However, we found that ROE and retention ratio positively correlated with stock price volatility. This shows that rational investors buy cash and stock dividend-paying companies because they want stability and consistent performance.

In other words, only reliable performers and predictable stock price movements would be considered for investing. In addition, our research shows that earnings per share positively correlate with stock price volatility. This suggests that stock price volatility rises with corporate profitability. Our research supports the Dividend Relevance Theory, which states that dividend policy is crucial for emerging market companies like Pakistan. This notion is supported by supporting evidence. Our regression models show that all financial indicators can explain stock price volatility, proving that the Dividend Irrelevance Theory does not apply to these companies. The models show that all financial indicators explained stock price volatility.

Additionally, our model's statistically significant attributes show that investors value dividend payments. These measures also accurately reflect company success. The dividend policy is crucial, but the study's findings should be understood in light of its limits. This matter must be considered. To clarify, our findings apply only to pharmaceutical and chemical companies. It would be fascinating to examine how the study's findings apply to different fields. The analysis also solely includes dividend-distributing financial

organisations. The study could also examine how dividend policies affect stock prices of dividend-paying and non-dividend-paying corporations..

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