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RESEARCH PAPER

Dividend Policy and its Impact on Market Price: An Empirical Study of Chemical Sector

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ABSTRACT

This study investigates the dividend policy in the chemical industries and how it affects market prices. From 2013 to 2022, information was gathered from sixteen out of the twenty-six companies in Pakistan's chemical sectors. Panel data have been examined for fixed effect models (categories of panel model). Software called Eviews was used for analysis. On the dataset, the Levin li chu, Hauseman, Wald, VIF, Tolerance, Durban Watson, Normality and Homosedacity tests were run. 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. This research represents the natural tendency of stock purchasers to be price concerned. An empirical analysis of these industries in Pakistan demonstrates unequivocally that the idea of dividend relevance is widely accepted.

KEYWORDS Chemical Sectors, Dividend, Impact, Panel, Stock Price

Introduction

The selections of dividends are the majority of choices inside the area of business that compel to recommend computation quantity to shareholders in go back in their funds. The topic of Dividend policy is much discussed for lots a long time; however a few conditions and data have been knotted the above subject (Yasir, 2020). Black (1976) explained that "The harder we examine the dividend photograph the greater it seems like a puzzle, with portions that simply don't suit collectively". Myers (2003) stated that its (dividend policy) unsolved issues among top ten challenges in field of finance. Moreover, it was expressed that when companies raise earnings after income tax incomes they've options: first one is to be maintained reserve (retain earnings) for destiny want and second one is to be paid a dividend to the stockholder. The operated companies regularly give the impressions both how much to payout (Al Masum, 2015; Mubeen et al., 2014).

The choice of the dividend payout ratio has a direct impact on the capital structure of the firm as well as financing activities. When a firm pays a dividend that represents an outflow for the business, which eventually lowers the corporation's liquidity position. Choosing how much of the money should go to the shareholders and how much should be kept by the firm is a crucial component of dividend policy. This choice demonstrates why paying a dividend is more significant than keeping the money and reinvested (Putra, 2016).

Firms issue a dividend to the stockholder from their investment but in same time again generates funds from financial instituting for further meeting of short term obligations which rise in operational activities (Baker, 2001). Dividend policy has additionally impact on different choices like arranging funds and investing method so according to that method share holders make it best one dividend probably keener to get capital gain and dividend at same time.

The important issues stated by Linter in 1956 are still relevant today, and they are hotly debated and reinforced by contemporary studies. What aspects influence owners' decisions about the kind, amount, value, and distribution method of dividends? In this respect, Linter further investigated a few queries, such as: Should owners maintain dividend distribution at the existing level or adjust it? Do investors want a stable dividend distribution with future earnings or a modernized dividend payout? Whoever is worried about the dividend policy, whether they are older or younger?

The alliances of share prices and dividend policy have been tremendous among the riddles in finance and there is no tastes cease with appreciate to the affiliation between two these said elements. Researcher's group sustained the concept of dividend relevance with detail precedent that the most of the investor don't give priority to capital gain as compared to handy cash dividend (Dillon and Johnson, 1994). Its most clear from the concise work of Gordon (1959) explained that "today's dollar is best than dollar of tomorrow".

Any other institution of on the theory's significance, the researcher argued (opposition of dividend relevance) and explained that there is no any association between market price and dividend policy. However it's earn through selling and buying activities when feel something special from their stocks in futures. (Saim, 2013).

Remarkable work has been accomplished in this subject matter however failed to find a regular consequence. Attributable to this, there's a want to do greater workings in this matter. It opens the space for providence in research; particularly in Pakistan due to partial pictures on corporate dividend policies which move up a need for in addition works. The emergent economy like Pakistan is distinct in traits, nature and effectively compared to different developed international locations.

Literature Review

Mukherjee and Austin (1998) conducted a study on 200 banks and found that the length of banks and dividend payout did not affect the market price of their shares. However, variables such as dividend yield, earnings per share, and the tangibility of assets significantly impacted the market price of shares. Irfan and Nishat (2014) also found a significant and positive correlation between dividend policy and the market price of shares in their study. They also found that control variables such as leverage and the size of firms had a positive correlation with the share price.

Hussainey, Oscar Mgbame, and ChijokeMgbame (2011) researched UK firms and reported that the share price had a positive correlation with dividend yield, company size, debt ratio, and earnings per share, but a negative correlation with the payout ratio. Suleman, Shah, and Hamid (2016) conducted a study on five industries and found that the market price of shares and the size of companies had a positive and significant impact on dividend yield and payout.

Nazir and Ahmed (2014) examined on how dividend decision affected market pricing. The findings from this research demonstrated that market price of the stock is positively impacted by dividend payout, growth, and yield while market price is negatively impacted by leverage and size.

In Khan's research (2012), he analyzed data from 29 companies between 2001 and 2010 using panel models and found that earnings per share and earnings after tax have a positive and significant impact on share prices, while payout has a negative and insignificant effect on share prices. Jakata and Nyamugure's (2012) study on Zimbabwean firms found no significant effect on stock prices from dividend announcements, supporting the idea of dividend irrelevancy. Kundu, Kenyoru, and Kibiwott's (2013) research on Kenyan companies found a significant relationship between share price volatility and dividend policy. Nazir, Ali, and Sabir's (2014) study on Pakistani banks found a unique relationship between dividend policy and share price, with dividend payout having a positive relationship and property in growth having a negative relationship with the market price of stocks.

Pradhan (2016) looked into the impact of retain earnings as well as dividend distributions on the market prices for shares which were listed with Nepalese companies. The conclusion of this work is that the market price of a stock is exaggerated by retention earnings as well as dividend payments, but there is a significant correlation between investor interest and dividend payments and retained earnings in Nepal because shareholders of those companies prefer dividends to capital gains.

In a research study by Noreen and Shah (2016), it was found that share price volatility is negatively correlated with the dividend policy, but positively correlated with earnings per share and asset growth. Another study by Noor Ahmed (2017) analyzed data from 66 non-financial sector companies listed on the PSX using a fixed-effect panel model. The findings revealed that while dividend payments, investment growth, firm size, income growth, and sales growth have positive and substantial effects on share prices, dividend yield has a considerable negative influence on market share prices.

Raissaagle et al., (2018) study of 364 companies listed on the Latin American stock exchange found that share price has a negative correlation with dividend yield, firm size, debt ratio, and earnings per share, while it has a positive correlation with retention ratio. These findings are similar to those of a Dechow et al., (2012) study.

Hypotheses

H_1: The market price of a stock is significantly impacted by dividend yield

H_2: There is significant effect of retention ratio on market price of stock.

H_3: There is significant effect of PAT on market prices of stocks.

H_4: There is significant impact of EPS on market prices stock.

H_5: There is significant impact of ROE on market price stock.

Theoretical Framework:

Dividend Irrelevance Theory

The idea proposed by Miller and Modigliani in 1961 introduced a new argument in the context of dividend policy. It suggests that the market value of a firm does not affect its cash dividend announcement; rather it is dependent on the company's potential earnings from its future activities. Based on this assumption, shareholders have the power to make a final decision on dividend policy through their buying and selling of stocks. This theory is also supported by the research conducted by Chan, Powell, Shi, & Smith in 2016.

Bird in Hand Theory

In 1964, Gordon and Linter presented a concept that contradicts Miller and Modigliani's Dividend Irrelevance Principle. According to their study, shareholders place more importance on receiving cash dividends rather than capital gains. Compello and David (2010) suggested that the primary justification of the birds in hand concept for payout significance is entirely unclear because of the declining share value with rising payment ratios. So, it follows that excessive dividends not only lower an organization's value but also increase the risk associated with free cash flow.

Tax Preference Theory

The Tax Preference Principle, introduced by Litzenberger and Ramaswamy in 1979, suggested that investors may not prefer to those companies who pay lower dividends as a means of tax avoidance. This principle is seen as a disadvantage for registered companies due to the issue of dual taxation, where taxes must be paid on both cash dividends and net earnings. Based on this assumption, shareholders may prioritize companies with a lower payout ratio to reduce their tax burden on dividends and potentially benefit from capital gains. Shareholders are not required to pay tax until they sell their shares.

Agency Theory

In 1984, Easterbrook introduced the concept of "Firm Value" as a criticism of the Dividend Irrelevance principle proposed by MM. According to Easterbrook, if managers want to avoid company issues and satisfy shareholders, they must increase the wealth of shareholders to prevent potential disputes. Shareholders may become concerned that their funds are being used on unnecessary projects or to compensate management. The notion of relevance was supported by Meckling and Jensen in 1976, and Easterbrook supported it in the context of agency cost in 1984. To resolve the agency burden on the economy, relevance theory was developed. Following extensive debate with management and stockholders, this notion was developed. The minimal payout ratios that would result in a poor rate of return but, on the contrary hand, would support rising stock prices have been emphasized by tax theory.

Clientele Effect Theory

The clientele's effect principle suggests that a company should create dividend policies catering to its investors' preferences. This is because the market value of a company's stocks can be influenced by the demand from its shareholders, which can be affected by its dividend, tax, and other policies **(**Mirza et al., 2012**)**. According to this theory, shareholders pay attention to a company's dividend policy when making investment decisions, and may adjust their investment strategy in response to any changes made by the company. As a result, there is a greater potential for fluctuations in the market price of the company's shares. Therefore, a company's ability to attract investors who are interested in its dividend policy is referred to as the clientele effect. This concept was proposed by Miller and Modigliani (1961) and has been further developed by Elton and Gruber in 1970, as well as Black and Scholes (1974).

Dividend Signaling Theory

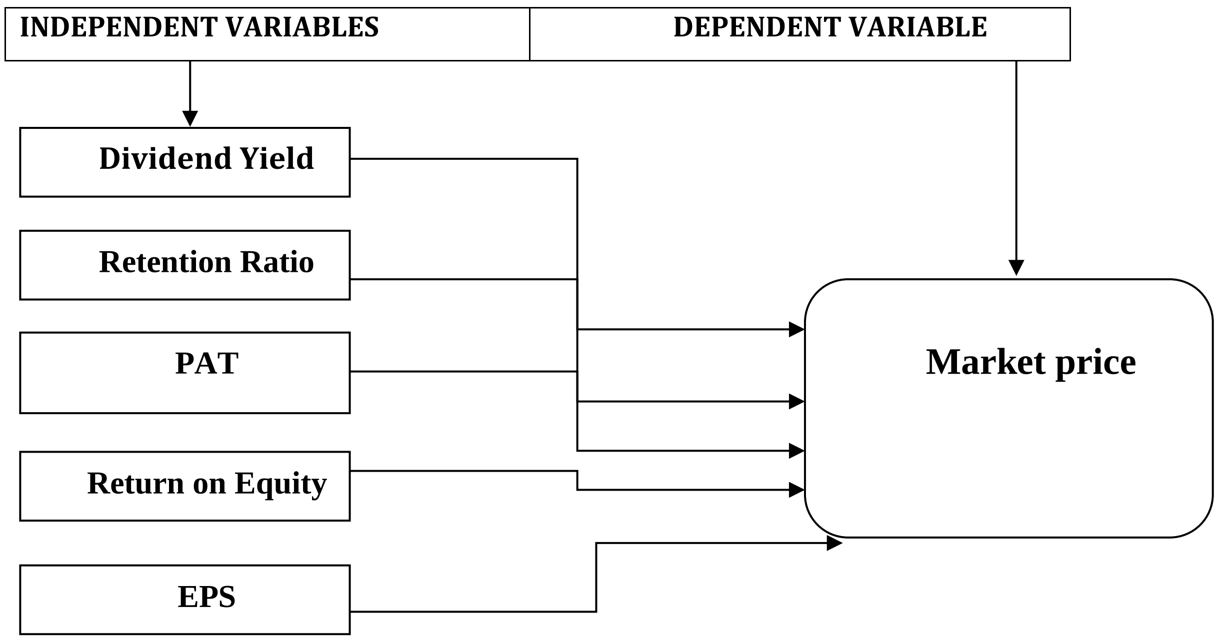
There is an information asymmetry problem between company management and other stakeholders, including investors, regarding the firm's dividend policy and future performance. However, an appropriate dividend payout ratio can provide positive signals to shareholders and the market, indicating that the company is performing well and can distribute its earnings. Therefore, a higher dividend payout ratio is seen as a strong and positive signal, while a lower payout ratio is perceived as a weak and negative signal (Bhattacharya, 1979;Marwan, 2014).

Transaction Cost Theory

Transaction charges refer to the fees that companies incur when obtaining external financing through owner's equity. If a company heavily relies on external financing, it may face greater challenges in managing transaction costs (De Angelo, 2017). In a study conducted by Michaelli and Allen (2003) was found that when companies announce low or no dividends, shareholders have two options: to sell their stocks to obtain cash or to hold onto their shares until the next dividend period. However, selling shares in the market incurs transaction costs, which can increase the overall cost and reduce the desired capital gain. As a result, shareholders are incentivized to seek higher dividends, as this can help reduce transaction costs and maximize their overall gain.

Conceptual Framework

After the whole discussions of literature review following frame work has been developed for this research work which is explicated above research work as well as all variables.



This stochastic model indicates the way of explanation of each variable with detail information is to be utilized in best manners. The above research frame work has been used in the study of…..

$$\mathbf{MP} = \beta_0 + \beta_1 \mathbf{DY_1} + \beta_2 \mathbf{RR_2} + \beta_3 \mathbf{PAT_3} + \beta_4 \mathbf{EPS_4} + \beta_5 \mathbf{ROE_5} + \boldsymbol{\varepsilon}$$

These following variables are calculated with following formulas and also used for future predictions.

These variables are measured in the following method.

Variables	Formula
Market price (MP)	Middling value of low and high market price of stocks in the month of December
Dividend Yield (DY)	dividend per year/ Market price of stock

Profit After Tax (PAT)	PAT
Earnings per Share (EPS)	PAT/number of ordinary shareholders
Retention Ratio (RR)	(PAT – Total dividend)/ PAT
Return on equity (ROE)	PAT / Equity

Material and Methods

Research Design and Plane of Analysis

This study's methodology is quantitative. This study examines the dividend policy of chemical sector industries and how it affects with market prices. Regression analysis is used to determine how explanatory factors affect the regressive variable. The panel form of the data allows for classification into three models: the pooled OLS, the fixed-effect model, and the random effect model (REM). The Hausman and Wald test is used to determine which one of the three models is most appropriate given the available data. With the panel unit root approach (Levin li chu test), the reliability of the data must be substantiated. This study used to validate if the data is stationary since non-stationary data can create a lot of problems and lead to unintended results. To confirm multicollinearity among the variables, VIF and tolerance approaches are used, and E-views software executes all of these procedures. (Gujrati, 2002).

Data Collection Methods

This study used secondary data that was compiled from public financial reports of all active chemical sector companies from 2013 to 2022 by referring to Site http://www.scstrade.com/. Also, reports from the "SBP on Analysis of the Financial Statement of Non-Financial Sector" have been made public and used to verify the accuracy of the data via the URL http://www.sbp.org.pk/departments/stats/FSA (Non).pdf.

Sampling Design

The population of this study consisted of all active chemical industry companies listed on the PSX. There are twenty-seven firms in these sectors. Just 16 out of a total of 26 firms were included in the sampling frames for this study, with 160 observations of each variable, while 10 firms were left out owing to a lack of data.

Results and Discussion

Table1
Panel unit root test

Test of data stationery	Levin, lin and Chu test	
Variables	**t-statistics**	**Probability**
Market price	-3.21251	0.0124
Dividend Yield	-2.58779	0.0075
Retention Ratio	-3.82181	0.0006
Profit After Tax	-9.18446	0.0017
Earnings Per Share	-3.59312	0.0048
Return On Equity	-2.89908	0.0035

Unit root test especially in panel model, Levin, lin, and Chu technique is utilized to make sure that the data is stationery or not prior to doing panel regression which are analyzed in Table1. In step with the guideline of rule of thumb in panel unit root check said that variable is good sized at stationery and probability suggests its value less than five in keeping with cent. So, despite all the data analysis many factors are considerable inside the stage of level.

Table 2
Correlated Random Effect –Hauseman Test

Test summary	Chi Square Statistics	Chi Square d.f.	Probability
Cross Section Random	118.214136	8	0.0000

Table3
Wald Test

Test statistics	Value	DF	Probability
F- statistics	29.09108	(38, 362)	0.0000

When stationery data have been verified, the Hausman test is functionalized to look at which model between REM and FEM fits the data for best one. The statistical guideline states that REM is preferable if P> 0.05 and FEM is appropriate if P< 0.05. Table 2's results make it evident that FEM is appropriate, hence in this situation another test—the Wald test—is needed to look into which model fits the data between Pooled OLS and FEM the best. According to the statistical rule, if this condition's probability is more than 0.05, pooled OLS is preferable, and the best option is verified FEM if the probability is less than 0.05. Table 3's findings demonstrate that the fixed effect model is suitable for this research.

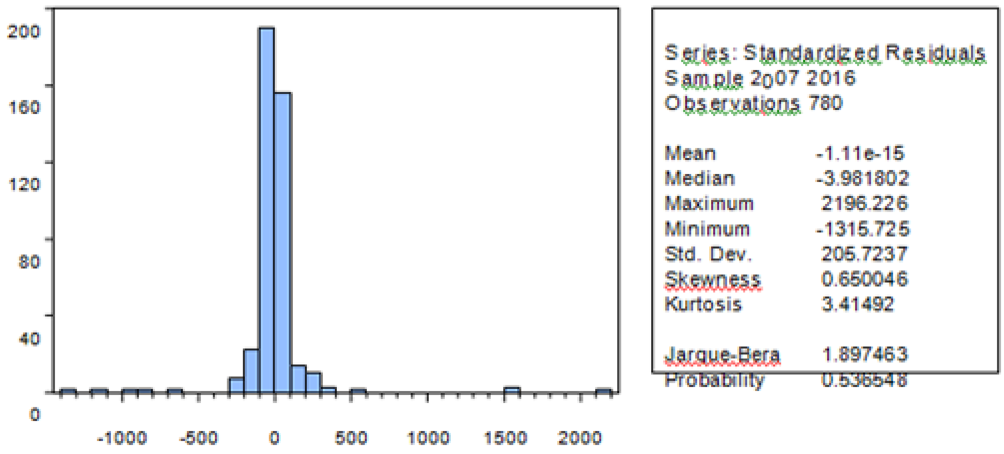
Table 4
Model Results and Hypotheses Testing

Dependent variable-: Market Price:			**Method: Panel Least Square**			
Variable	**Coefficient**	**Std. Error**	**t-statistics**	**Probability**	**Tolerance**	**VIF**
DY	-138.8898	61.43594	-2.260726	0.0253	.915	1.093
ROE	3.760277	1.713288	2.194771	0.0298	.953	1.050
PAT	-15.40872	113.1628	-0.136164	0.8919	.823	1.215
EPS	2.282437	0.354598	6.436691	0.0000	.770	1.298
RR	-6.201589	4.939651	-2.255471	0.0211	.952	1.051
C	4.135248	152.7387	4.027074	0.0097		

Effect Specification			
F statistics	= 20.09	R-squared	= 0.85
Prob> F	= 0.0000	Adjusted R-squared = 0.82	
Durbin Watson state = 1.**8**			

Table 4 demonstrates the outcomes of multiple regression analysis of FEM. The market price of its shares (the dependent variable) is explained by proxies for dividend policy to the extent that the adjusted R square is 0.83. Due to the close value of 2, the Durbin Watson value of 1.84 indicates that there is no autocorrelation. DY and RR are negatively significant with market price of its share which is shown in value of above portion of T-statistics and Probability; these same values are found in the study of (Nawaz, 2010 and Noor, 2017). ROE and EPS are positively significant with market price of its share which are shown in value of above portion of T-statistics and Probability, these same values are found in the study of (Khan et al, 2011;Adesola &Okwong, 2009; Raballe & Hedensted, 2008). But the variable PAT has got insignificant results with correlation of market price of its share and same results revealed in the study of (Baskin, 2017). According to the VIF and Tolerance, no multicollinearity exists if the VIF value is greater than 1 but close to 1 and the tolerance value is less than 1 thus, its existence no multicollinearity here.

Normality Test



It is preferable for residuals to be normal. Figure 4.3 displays the residuals' normality. Using Jarque-Bera and the related probability value, it is put to the test. There are four requirements for a regression model: conditional variances must also be homosedastic, residuals must be normally distributed, and autocorrelation must be absent. The two qualities were put to the test in earlier sections, and they were judged to be desirable. In this part, the final two attributes are evaluated. It is desired for residuals to be regularly represented if the significance level of the Jarque-Bera test is > 0.05; otherwise, residuals are not normally distributed. According to that research, Jarque Bera's probability value, which is > 5% and equals 0.536548, indicates that the residuals have a normal distribution. A positive development for our multivariate regression

Homosedacity Test

Table 5
Bruech Pagan Godfrey Test

Obs*R-squared	6.171745	Prob. Chi-Square(8)	0.7250

It is desired for conditional variances to be homosedastic. The Conditional Variances are checked using The Bruech Pagan Godfrey Test. Conditional Variances are homosedastic and acceptable if the test statistic is more than five percent otherwise vice versa and belong to heterosedastic.The Bruech Pagan Godfrey Test's Probability Value Of 0.725—which is higher than 5%—confirms that conditionally variations are homosedastic. It's encouraging.

Conclusion

The goal of this study is to determine whether there is any correlation between the market price of shares and factors that affect dividends, such as dividend yield, retention ratio, earnings per share, return on equity, and profit after tax. From 2007 to 2016, data were collected from sixteen functioning companies out of the twenty-six companies in the chemical sectors listed on the Pakistan Stock Exchange. Fixed effect models are used for experiential assessment to establish that PAT is not significantly correlated with share market price, whereas DY, RR, ROE, and EPS are highly correlated with share market price. Also, the fact that there is a regrettable between RR and MP indicates that investors want dividends if businesses save aside money for emergencies. The PAT result above demonstrates that shareholders are solely interested in the payout of a company and are unconcerned with its revenue.When management is using the fund most skillfully to generate higher potential earnings, the share price is positively correlated with return on equity. The operational enterprises' requirement to choose their dividend policy based on the market price is the key argument in favor of the recommendation made to shareholders of the energy sectors. This research represents the natural tendency of stock purchasers to be price concerned. An empirical analysis of these industries in Pakistan demonstrates unequivocally that the idea of dividend relevance is widely accepted.

Recommendations

1. Chemical sector has to provide information about its activities and operations so that investors may assess the situation and invest their funds in the most suitable organization.

2. Financial supporters must be familiar with the legal requirements in order to put profit practices into effect and protect investors' rights.

3. It is indicated that the management of the chemical sector should priorities generating profit as well as meeting internal demand for new investment.

4. The administration of the chemical industry is advised to work harder on generating more revenue in order to foster favorable interest with other industries.

5. Financial supporters should exercise caution while investing in the field of supply of progress that depends on a cash dividend.

6. Factors for why profit after tax is not consistently high in the selected sectors of Pakistan should be understood since they will be the focus of future study.

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