Factors Affecting Dividend Payout Ratio of Dividend Paying Firms Listed on KSE-100 Index

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ABSTRACT

The study purpose is to investigate the variables that significantly affect dividend payout ratio of dividend paying firms listed on KSE-100 index. This research uses a purposive sampling method where criteria is set to select a sample. Secondary data is collected from non-financial companies using annual financial reports from Pakistan Stock Exchange through the official KSE data portal for examining panel data models using pooled OLS regression. The results showed profitability, firm's debt and sales growth positively significantly and asset growth, retained earnings to total equity and liquidity negatively significantly affected dividend payout ratio. This research report adds to the existing literature on dividend policy by utilizing the life cycle measure by segregating it with financial performance measure that has not yet done in the Pakistan as a developing market. Results prefer companies to focus on high liquidity, growth in net assets and RETE (life cycle) and management to use profit in the proper way and utilize assets optimally to increase dividend payout. Investors consider ROA to expect high return on dividend. It is suggested that firms pay dividends when there is a chance of decreasing profits and growth rates in future in order to attract more investors and to illustrate better company's performance in the market for increasing growth opportunities and pay maximum dividends.

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1.   Introduction

In financial economies, dividend policy is the toughest and unsolved problem amongst top ten issues. It is considered as an extremely vital topic in terms of financial management and corporate business and the most debatable and unsolved issue in the literature. Globally, many researchers have conducted studies by building diverse models in order to discover a company's point of view for deciding dividend policies and to find out most common factors that put impact on decision of paying dividends but there is no general agreement that comes to the conclusion of finding common determinants and results vary across countries.

The main economic drive for firm is profit. The management duty is to make decision regarding the gained profit that, whether, it will be distributed to shareholders evenly within a certain time period or it will be distributed in different kind of retained

earnings, (Wau, 2021). And, it is the only available funds that company can use for business growth, (Nariswari & Nugraha, 2020).

Dividends are the amount of profit after deduction of taxes paid to shareholders, (Kilincarslan, 2021). In some cases, dividend policy can be dealt with as an option for the company in deciding to pay profits in dividend form to investors or to save it in retained earnings for raising capital for financing investment in the long-term, (Nugraha et al., 2021).

The core origin of financing for firms to have investments is through internal and external factors. When managers decide to distribute dividends to shareholders it decreases the company's net profit which alternatively reduces the source of internal funding resulting in increasing the company's capacity of developing itself, (Jovanović & Vašiček, 2021). Investors purchase a company's shares in the stock market which increases internal cash for the company which alternatively increases the capital of the company allowing it to have benefits by investing in additional investments or raise future cash flow by increasing company activities.

Under the company's policy, management analyzes the firm's performance for deciding the rate of dividend payment. Mostly, more profits are saved by firms for reinvestment purposes resulting in less dividend payments. (Jovanović & Vašiček, 2021) founded that profitability has a direct significant influence on dividend payout ratio which shows that dividend stability allows the management to minimize risk of cutting dividends when there is decline in the amount of profits. While, the study showed no significant relationship exists between profitability and dividend payout ratio, (Sitepu, 2022). Therefore, it becomes a critical topic for many reasons.

Mostly, decisions regarding dividend payment and investments depend on the type of the company. High portions of profit after tax are used by larger and reputable companies for paying dividends to investors while developing companies use portions of profit after tax for fulfilling their growth needs through focusing on investments, (Flavin & O'Connor, 2017).

However, (Miller & Modigliani, 1961) debated about the perfect market condition in their commentary presented the theory of dividend irrelevance that firms value is determined with its ability of generating income through assets under frictional assumptions concluding that cost of capital and share price have no connection with income in any form such as dividends or retained earnings making it irrelevant causing no effect on the firm value and wealth of shareholders.

Dividends affect investing and financing decisions of companies. Dividend payment to investors causes cash outflow which affects the liquidity of the company. Also, its payment reduced retained earnings for firms which cause need for external financing, (Berkeley & Myers, 2005).

Also, when managers decide to distribute dividends it decreases the company's net profit which alternatively reduces the source of internal funding. When investors purchase company shares in the stock market they increase internal cash of the company which alternatively increases the capital of the company. This rise in cash flows allows companies to take advantage by investing in additional investments or raise future cash flow by increasing company activities. Generally, corporations use capital from investors for operations, (Panggabean & Martin, 2020).

Shareholders' income is affected through dividend payments. Also, company growth has an effect through dividends because of having a link with usage of cash and liquidity making a strong connection with the company's policies of investment and financing. Due to this, they have to give-up on some investment opportunities. Also, it signals a company's progress in the market by attracting interest of shareholders allowing them to consider the company's present and future condition strongly by affecting future growth of the company, (Panggabean & Martin, 2020).

Overall, companies maintain strong dividend policies to attract investors. But, globally governments and authorities play a vital role in the financial markets due to its importance in raising development in the economy through gathering savings from individuals and institutions and transforming both in investment channels. Many researchers find that the pattern of dividend payment is different due to perceptions, regulations, market size, taxation and culture in the developing, developed, under-developed and emerging countries.

In Pakistan, companies do not follow specific formulas for maintaining target ratios to establish dividend policies. Also, they are free from any obligation of paying dividends because, there are no such standards, rules and regulations due to which they make decision of paying or not paying dividends by recognizing different circumstances, market conditions and on their current earnings which cause fluctuation in dividend payments (Khan et al., 2011), while exploring the managerial views about dividend in Pakistan.

In case of dividend, scenarios are different for private limited company and public limited company. Chief Executive Officers and directors are more concerned with holding profit instead of distributing it to investors in the dividend form in private limited companies. While, in public limited companies, they considered dividend policy as one of the managerial policy for finding out the portion of earnings that company save as retained earnings for improving its capital structure, increasing growth of company and for future investments as well as portion of profit that is distributed as dividends to shareholder for providing investors the huge prosperity.

The Karachi Stock Exchange (KSE-100 Index) helps investors to understand the performance of the equity market of Pakistan and covers 90 percent of market capitalization of companies that are listed on it based on the representation of sectors and maximum Free-Float Capitalization. And, it is the market where there is higher risk and higher return factor resulting for investors in higher risk premium. Therefore, there is a need to identify affecting dividends payouts. Investors have more concern on their return on investments and companies to increase its reputation in the market due to which many researchers are interested in identification of key elements. (Baker et al., 2011), concluded that there is presence of no single theory that plays a key role by becoming a dominant solution to the "Dividend Puzzle" by, (Black, 1976).

This research study shows importance for the management of Pakistan's companies while making decisions about dividend policy and for investors when they have to invest in companies. Further, it adds to the existing literature on dividend policy by adding life cycle measure which is retained earnings to total equity by segregating it with such combination that has not yet done including growth in net assets, firm's debt, return on asset, sales growth and liquidity as a measure of dividend payout ratio in Pakistan market as a developing market.

Companies set dividend payout ratios according to their policies due to which companies and stakeholders are affected. Therefore, it is important to identify factors that are important for investors as well as for companies to consider for the dividend policy to save them for normal or abnormal loss as well as for maximization of shareholder's wealth and company's growth.

Also, there has been very little research conducted in the context of Pakistan trying to find out the impact of firm's life cycle stages on dividend patterns. Therefore, this study has a little focus towards exploring its effect on dividend payout. Hence, this research is conducted to fill this gap in relation with various other factors.

1.1 Purpose of the study

The main purpose of this study is to identify the important elements that have an effect on dividend payout policy on the non-financial companies of Karachi Stock Exchange (KSE-100 index) in Pakistan. This research will also help in enhancing knowledge by covering the area of dividend payout policy because this research involves a combination of variables with different tests to predict the important determinants having relationship with dividend payout ratio.

2.   Literature Review and Hypotheses

Many researchers have conducted the study on dividends and its related factors. Many different factors have been found out as key determinants of the dividend policy in the earlier years including firm's maturity, profit, growth, agency cost and many more. Profitability is the most common factor amongst all in the literature. The research conducted reports that companies who pay dividends have high profits having less growth opportunities and have a nature of large in size (Fama & French, 2001). Many other studies in previous literature shows important determinants of dividend payout ratio is liquidity, profitability and leverage (Jiang et al., 2017; Khan et al., 2011), to identify company's ability of dividend payout ratio is also recognized by looking at its profitability (Nguyen & Nguyen, 2020; Tahir & Mushtaq, 2016), company's ability to meet its debt obligations (G. R. Jensen et al., 1992), solvency position that affects the amount of dividend paid to investors (Hadi, 2019), growth of company (Rehman & Takumi, 2012). Study conducted reached the decision that there exists no reason for believing that there is presence of a single goal in order to drive corporate dividend policy (Brook et al., 1998). Recently, after the end of economic crises, several things came to the perfection by providing numerous requirements to corporations globally. Currently, the world is full of competition and moving fast due to which companies who support their shareholders by retaining them for a certain time always have a return in the form of appreciation in a particular market (Fathony, 2021). This shows that companies who efficiently manage shareholders with them are those who are able to fulfil their needs existing in the market resulting in achieving a strong position.

Research conducted on 16 companies listed on ISX found that CR, DER and ROA have positive significant relationships with DPR by applying a random effect model (Salim & Aulia, 2021). The other study reported positive return on assets shows the capacity of the company in using assets in an appropriate manner for creating profits while negative ROA represents a company suffering from loss of already existing assets portfolio (Alkhyeli et al., 2021). Another study also reports the positive significant relationship between ROA and DPR in property and real estate sector companies listed on ISX by utilizing multiple linear regression from 2015 to 2019 (Sudrajat et al., 2021). Reported that companies who have high ROA then company's profit level is high which results in high dividend payments by company to investors (Ginting, 2018). The study found the negative significant relation between ROA and DPR (Hermawan et al., 2022). Various studies examined that ROA have an influence on DPR (Abdul Manaf et al., 2021; Basri, 2019; Le et al., 2019; Moradi et al., 2010).

Company use debt-equity ratio as a financial ratio which show proportion of two things: First, portion of debt company use for the purpose of financing assets of company and secondly, portion of equity used by company for financing assets of corporation. For investors, the financial ratio plays an important role because by this, they know insolvency information of the company which helps them to do protection of investments which they have done in share. Also, if the company does not have much cash for debt including both principal and interest payment, it shows that the company is in financial distress. The research conducted in previous literature shows that DER is the variable which influences DPR directly (Akhalumeh & Ogunkuade, 2021; Odawo & Ntoiti, 2015; Ranti, 2013). While, (Parera, 2016) found that when the company debt-equity ratio is at its peak then it minimizes the strength of the company to distribute dividends.

Sales growth is important for both companies and investors. It helps to analyze % increase in company's sales during the current year when compared with previous year. If the company produces those products which have demand in the market, then large quantities will be sold due to which sales volume will rise and alternatively company's profit will increase due to which investors profit become high. Also, with these conditions, stock prices of companies will increase due to increase in stock prices. Research conducted found that SG affects DPR differently in different sectors and concluded that, in manufacturing companies' sales growth is not significant with the standard dividend payout (Gill et al., 2010). Wasike & Ambrose (2015) found that SG and DPR have a negative relationship. Research conducted found that SG has an insignificant and negative relationship to DPR (Widyawati & Indriani, 2019).

Research conducted by Gumanti & Alkaf (2011) reported companies who required high liquidity are those having sources from internal funds in form of retained earnings and when they distribute dividends then disbursements in cash happen which decrease company's ability to meet current liability hence, liquidity diminished. The research conducted by Zhang et al., (2020) concluded that the main important measurement for dividend payout ratio is current ratio by focusing on calculation on current liabilities. The factors that affect DPR were investigated by (Widyawati & Indriani (2019) reports that DPR of listed manufacturing companies on ISE from 2011–2015 have an inverse significant relationship with LIQ if this increase then it causes dividend policy to decrease. Various studies examined that liquidity has an influence on dividend payout ratio in public companies (Angelia & Toni, 2020; Brahmaiah et al., 2018; Sirait et al., 2021). However, dividend signal theory supports that firms having more cash are those who pay high dividends while those with low cash pay less dividends (Kaźmierska-Jóźwiak, 2015).

(Husam-Aldin N. Al-Malkawi, Khadija Harery (2013), reveals that corporations pay less or no dividends to their shareholders because of the need for internal funds if they have growth rates and investment opportunities to finance them. The research is conducted to find factors that influence DPR. For this research they use data from Jakarta Islamic Index during 2009-2014 period. They concluded internal elements like ROA have direct influence on DPR while other determinants such as asset growth have indirect association with DPR. DER is the only variable that has not caused any influence on DPR in various countries. Corporation with high growth pays a low dividend to its shareholders due to having a need for funds for growing itself in coming years by making more investments and expanding business (Yulianto et al., 2021).

Retained earnings to total equity ratio shows the company life cycle. High RETE represents a company at an established stage so these firms are called at mature stage and due to having high profits pay high dividends while Low RETE shows that company is in an early stage of growing and it has a need of retaining its profit rather than distributing it to shareholders in form of dividends. The reason behind this is that the company drives its funds from retained earnings suggesting a significant effect of it on dividend policy (Rio Roring, 2014). Previous research showed that mature firms when compared with growing firms pay more dividends to investors due to having less investment opportunities (Al-Ajmi & Abo Hussain, 2011; Denis & Osobov, 2008). Furthermore, RETE has an influence on DPR negatively (Simbolon, 2017).

3. Theoretical Background
3.1 Life Cycle Theory

DeAngelo et al., (2006) proposed this theory. This theory categorizes the firms and its ability to pay dividends because decisions regarding dividends vary from company to company due to different life cycles and developing stages. In the established stage, the company's profit is at its peak and it is considered as a profitable and large company but less availability of investment. When comparing that established stage with the growth stage, then, the company is suffering from profits and falling under low profitability but seeking to have profits that's why having high level of investment opportunities. And, high-profitable firms with low-growth rates pay dividends to shareholders while low-profitable firms with high- growth rates instead of paying dividends prefer to put profit as a retained earnings (Fama & French, 2001).

3.2. Agency Theory

Agency theory established by (M. C. Jensen (2009) found that there is different interest between the shareholders and the management of the corporation due to which agency cost increases. Firms who are suffering from the transaction cost that are linked with external financing are those who have high ratios of financial leverage and pay less dividends. In addition, firms having more financial leverage are able to reduce agency problems because less funds are available to managers and more control is in the hands of debt-holders. Agency cost minimizes by reducing principal-agent problems and this can be possible by paying dividends to shareholders that are related to debt financing, investment opportunities and firm's growth (Utami & Inanga, 2011).

3.3. Signaling Theory

It is basically the signals from the financial statement of a company to investors. Signaling theory developed by Miller & Modigliani (1961) admits that the dividend announcements are linked with the firm performance. That's why whenever there is an announcement related to dividend then shareholders react to such announcement as it provides them useful information. This information is the signal for the investors, as it helps to know about the firm's management performance (Miller & Modigliani, 1961). Fairchild, (2010) comes with the signaling hypothesis that dividend is one of the factors that signals about the current earnings of the firm and it will alternatively put effect on the firm's ability when it will start investing in the new projects.

4.   Conceptual Framework

Smyth (2004) concluded that the conceptual framework itself involves a chain of ideas that help researchers in identifying problems, research goals and relatable research questions and supporting literature. It helps in illustrating the whole portrait of the study and lets interested people understand easily.
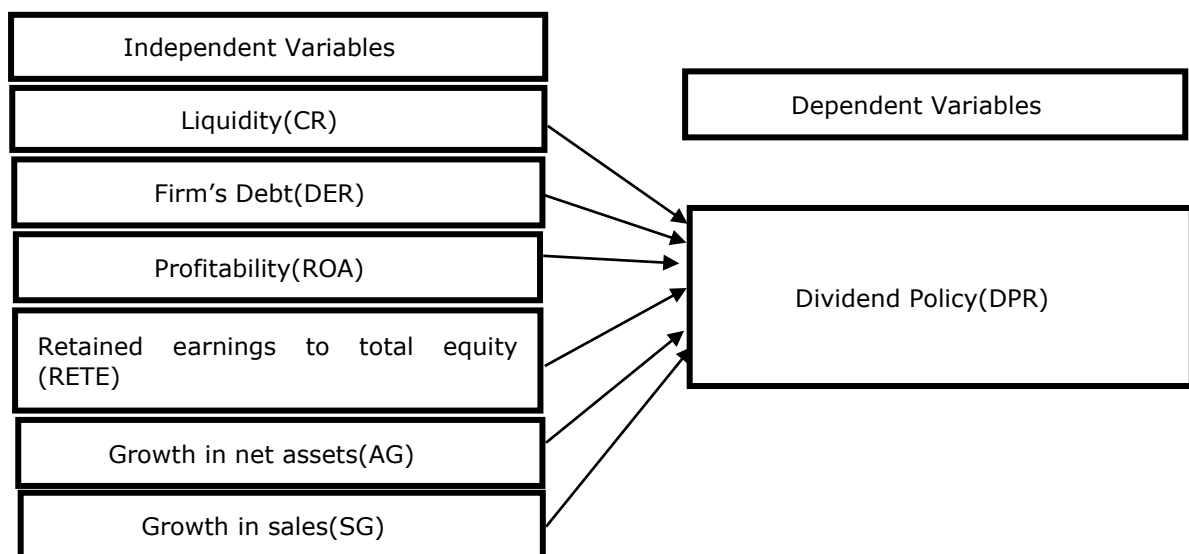

Figure 1: Conceptual Framework

4.1.   Research Methodology
4.2.   Data Source and Collection

This study was carried out to discover the factors that have an effect on dividend policy of the corporations making it explanatory research. The research type is longitudinal and a quantitative approach is used due to which data is collected based on secondary financial data directly from the annual financial reports of the companies listed on the PSX through the official KSE data portal and companies' website. The study involves times series and cross sectional allowing the use of panel data analysis (Nugraha et al., 2020). Various tests have been conducted to find the best panel regression model for testing hypotheses and a descriptive approach is used for interpretation.

4.2.1. Sampling Design

Purposive method of sampling is used in this research for choosing companies which means that for picking samples, specific criteria was set, for the purpose of doing research. In this study, it is chosen on the following basis: Firstly, data has been collected on the basis of companies that pay dividends as well as operational in these years in addition to this they are not in the defaulter list by any government authority like SECP or PSX. Secondly, Financial sector companies are not included due to different accounting techniques and processes they followed when compared with non-financial firms such as banks, insurance companies, and investment trusts. They have different structure of

balance sheets and financial characteristics. The data is collected for 40 non-financial companies for 8 years. Therefore, the sample size is 320.

4.3. Method of Data Analysis

Pooled OLS regression is used for checking the existence of relationships between multiple independent variables and the dependent variable. For this purpose, one equation is constructed for testing hypotheses having relationships with firm-specific factors.

IBM SPSS Statistics 25 (statistical package for social science to analyze the data) used to analyze the descriptive and normality tests and to find outliers among the collected data. Furthermore, both SPSS25 and STATA13 software have been used for testing all the other assumptions of classical linear regression model for validity and Hausman and Wald tests are run for choosing the appropriate panel data regression analysis for this study.

Table 1
Reason of choosing methods and tests

Reason of choosing specific methods and tests			
Pooled OLS regression model	Firstly, the Hausman test is preferring a fixed effect model rather than random effect model. And, to choose between fixed effect model and pooled OLS model, it is rejecting fixed effect due to which the final model chosen is pooled OLS effect model.	There is presence of metric characteristics in the dividend amounts and in all explanatory variables and to verify linear relationship between maximum one dependent and two independent variables, we are applying multiple linear regression models to check its quality through regression diagnostics. Also, it is the most common method for statistical analysis techniques when you have to study the relationship between dependent and multiple independent variables (Backhaus et al., 2016).	Thirdly, previous research has used different types of estimation methods for identifying the determinants of dividend payout ratio, but most commonly used is pooled cross-sectional data analysis. Consequently, it showed great extent for investigating where the results have been collected are accurate towards modifications in the estimation method.
Ramsey test	These three are assumptions of a pooled OLS regression model, therefore, it needs to be tested.	This test is run for checking specification of model and for checking the correction of equations used in the study. This error arises when there is: - One or more omitting variables exist - One or more irrelevant explanatory variables are present. These errors cause problems for estimates related to OLS. Therefore, it is important to test it for estimating the regression model correctly.	
Autocorrelation test		It is run in order to identify first order autocorrelation having a null hypothesis of showing independent error terms against one another.	
Heteroscedasticity test.		For checking patterns of systematic errors when error variances are changeable. It is important to check for the validity of a hypothesis. As, when OLS estimators are inefficient due to biasedness of estimated variances and coefficient covariance then it makes them invalid.	

4.4. Model Specification

Many previous empirical studies on dividend policy use the techniques of linear regression by utilizing the key factors for explaining variation in dividend payout ratio. The following regression model is applied for testing the relationship between dividend payout ratio and various factors in the selected non-financial companies on KSE- 100 index.

4.4.1. Specific equation

$$DPR = \beta_0 + \beta_1 AG + \beta_2 DER + \beta_3 ROA + \beta_4 RETE + \beta_5 SG + \beta_6 CR + \varepsilon \qquad (1)$$

β_0 is the constant term; the dependent variable is DPR which is dividend payout ratio of the firms for that particular year; β_1, β_2, β_3, β_4, β_5, β_6 represent the regression coefficients AG, DER, ROA, RETE, SG and CR and ε is the error value for the firms.

4.5. Hypothesis Development
4.5.1. Independent variables and Dependent Variables

H1= Profitability has a positive significant association with dividend payout ratio.
H2= Retained earnings to total equity ratio has a negative significant association with dividend payout ratio.
H3=Asset growth has a negative significant association with dividend payout ratio.
H4= Firm's debt has a positive significant association with dividend payout.
H5= Sales growth has a positive significant association with dividend payout ratio.
H6= Liquidity has a negative significant association with dividend payout ratio.

4.6. Measurement

Both the independent and dependent variables in this study have quantitative nature and formulas used for calculating variables. The dependent variable dividend policy is measured using ratio i.e., dividend payout ratio of particular a company. It is calculated by dividing dividend per share with earning per share (Kilincarslan, 2021; Mahdzan et al., 2016). The independent variables are used to identify key elements that affect dividend payout ratio of firms listed on KSE-100 index. Profitability shows companies efficiency towards generating profits is measured by return on assets. It is an important factor for investors and companies as it gives signals about how efficiently company management is using its assets to generate maximum profit (Pranata & Pujiati, 2015). Growth in net assets represents companies' speed of growth in assets measured by subtracting current year total assets with previous year total assets and dividing it with previous year total assets (Issa, 2015; Wahjudi, 2020) shows the market firm's capacity of developing itself. Firm's debt denotes financial leverage of a firm measured by debt-equity ratio. It is measured by dividing total liabilities with total equity showing bankruptcy risk of companies (Mahdzan et al., 2016; Wahjudi, 2020). It helps investors to know about insolvency information of a company which helps them to protect their investments which they did in share. Liquidity is measured by current ratio calculated by dividing current assets with current liabilities (Baah et al., 2014; Pranata & Pujiati, 2015). Investors consider it one of the important factors while doing investment in a company as a strong ratio increase in demand of shares of the company and it also shows companies' ability to meet short-term debt obligations. Sales growth is measured subtracting current year total sales with previous year total sales dividing with previous year total sales representing rise in the company sales from year to year (Maladjian & El Khoury, 2014; Pranata & Pujiati, 2015). Retained earnings to total equity ratio is measured by dividing retained earnings with total equity of the firm Yusra et al., (2019) towards analyzing the retained earnings used for growth prospects or return to shareholders.

5. Findings and Discussions
5.1. Correlation Matrix

Table 2 represents pairwise correlation between different variables that are included in this study. It helps to find out the correlation percentage between the dependent and independent variable by using the pairwise correlation coefficient which helps in measuring the strength of linear correlation between variables. It helps to identify direction through values between variables to find out the linear pattern. The table shows that AG, RETE and CR is negatively correlated with the DPR as its value is less than 0 while DER, ROA and SG is positively related with DPR as its value is greater than 0. It shows that ROA has a moderate positive linear relationship with DPR values showing that linear strength is approximately 25.96% because its value is around 3. While DER and SG have a

very weak positive relationship with DPR as it lies between 0 to 0.3 and the strength of correlation is 11.46% and 4.65% respectively. AG, RETE and CR are negatively correlated with DPR because they all have values less than 0. They all have very weak negative linear relationships with DPR.

Table 2
Correlation

	lnNDPR	**CR**	**DER**	**ROA**	**RETE**	**SG**	**AG**
LnNDPR	1.0000						
CR	-0.0708	1.0000					
DER	0.1146	-0.2824	1.0000				
ROA	0.2596	0.0670	0.0189	1.0000			
RETE	-0.1285	-0.0341	0.1691	-0.0666	1.0000		
SG	0.0465	-0.0223	0.0511	0.0436	0.0881	1.0000	
AG	-0.1407	0.0670	0.0601	0.0386	0.0293	0.0925	1.0000

5.2. Descriptive test

Table 3 uses descriptive statistics to explain data including the dependent and independent variables.

Table 3
Descriptive Statistics

	DPR	**AG**	**DER**	**ROA**	**RETE**	**SG**	**CR**
Valid	320	320	320	320	320	320	320
Missing	0	0	0	0	0	0	0
Mean	.54894	.1289006	.9684982	.0783168	.4918754	.1285474	2.158047
Std.Dev	.33557	.202188	1.56140	.7882558	.281125887	.6315530459	1.8615193
Skew	.938	3.722	5.856	-17.666	-.019	15.025	4.123
Std. Error of Skew	.136	.136	.136	.136	.136	.136	.136
Kurtosis	2.726	33.962	44.535	314.687	-1.183	253.110	28..193
Std. Error of Kurtosis	.272	.272	.272	.272	.272	.272	.272
Minimum	.000000	.4541428	.0441497	-13.9202	-.002607	.8983967	.0064835
Maximum	2.44840	2.17786	16.33772	.4079675	1.164971	10.75513	19.42504091

No missing values are present in the dataset. Dividend Payout ratio(DPR) is a dependent variable. Its values range from a minimum of 0.0000 to a maximum of 2.448400000 with mean of 0.5489 showing that some firms registered in KSE-100 index do not pay dividends and some pay in a very large amount. But as our studies only focus on those companies which pay dividends regularly but there is an exception for some companies, if they are not paying dividend for one or two years in the period of 2013 to 2020 it includes in the data.

All independent variables have positive measure. Such as liquidity mean value is 2.1580 ranging from 0.0064 to 19.4250. The return on asset on profitability is 0.07831 but the highest range from -13.920 to 0.40796 shows it varies extensively from company to company. DER mean value is 0.9684 ranging from 0.044 to 16.33 while RETE mean is 0.4918 and its range is -0.0026 to 1.1649. However, AG mean is 0.1289 ranging from -0.4541 to 2.1778 and sales growth mean is 0.1285 with range of -0.8983 to 10.755. This shows that the company is growing its assets and sales growth is almost similar. Skewness value identifies a pattern to find distribution of data or absence of symmetry within it while kurtosis value represents the peak of distribution curve. However, if the skewness and kurtosis value is equal to zero, then the distribution curve is bell-shaped. Independent variables such as AG, DER, SG and CR have skewness value greater than zero which shows that the distributions of all these variables are positively skewed, while ROA and RETE have skewness value less than zero both having s negatively skewed distributions. However, the kurtosis value of all the independent variables except RETE is greater than zero showing the distribution curve is highly peaked with more values near to the center of the distribution. While, the RETE kurtosis value is less than zero representing flat distribution.

5.3. Normality

Best test to examine the existence of normality in data is checked through Kolmogorov Smirnov and Shapiro–Wilk tests suggested by (Hesamian & Akbari, 2020). SW test values are greater than $\alpha=0.05$ so we do not reject H_0 and conclude that the population from which the sample was taken does follow a normal distribution hence, now the results will not be biased. In order to achieve normality of the dependent variable, the variable DPR was then fractional ranked and a new normalized variable NDPR was generated by using the idf. normal function in SPSS.

Table 4
Normality of dependent variable

Tests of Normality						
H_0: the sample data follows a normal distribution						
H_1: the sample data does not follows a normal distribution						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
NDPR	.020	320	.200	.994	320	.275
This is a lower bound of the true significance						
Lilliefors Significance Corrections						

5.4. Linearity

Ramsey RESET test is used to find the presence of linearity among variables. Here the *p*-value>0.05 which is 0.5193 which is showing that we do not reject H_0 and conclude that there is no presence of omitted variables. Hence, the linear model is correctly specified.

Table 5
Linearity

Ramsey RESET test using powers of the fitted values of lnNDPR	
H_0: model has no omitted variables	
H_1: model has omitted variables	
F(3, 294)	0.76
Prob>F	0.5193

5.5. Multicollinearity

Best way to identify the problem of multicollinearity is by seeing the value of variance inflation factor(VIF) and tolerance value, (Kamboj & Gupta, 2020). VIF<5 indicates that the data is free from multicollinearity by (Rogerson, 2001) and maximum 4 (Pan & Jackson, 2008). Ideally there is no presence of multicollinearity in the dataset as all the independent variables above in table 5 have VIF values less than 4 so no multicollinearity is there.

Table 6
Multicollinearity independent variables

Variable	**VIF**	**1/VIF**
CR	1.20	0.833511
DER	1.13	0.885226
ROA	1.13	0.888289
RETE	1.06	0.944661
SG	1.02	0.978063
AG	1.02	0.981218
Mean VIF	1.09	

5.6. Heteroscedasticity

Since the Breusch-Pagan/ Cook-Weisberg test has a *p*-value less than $\alpha=0.10$ so we do reject H_0 and conclude that "there is presence of heteroscedasticity in data". In order to achieve homoscedasticity, the variable NDPR was converted to lnNDPR by generating a

natural log of the dependent variable in Stata15, but failed to achieve. Therefore, we used robust commands to make data free from heteroscedasticity problems for making the regression model fully unbiased.

Table 7
Heteroscedasticity

Breusch–Pagan/ Cook-Weisberg test for heteroscedasticity	
H_0: residuals in dataset follows constant variance	
H_1: residuals in dataset not follows constant variance	
$F_{(6, 297)}$	1.80
Prob>F	0.0989

5.7. Autocorrelation

Durbin Watson's d-test is conducted to check whether there is presence of autocorrelation or not, as CLRM states that there should be no presence of autocorrelation in the dataset. Research suggested that an effective way to identify the existence of autocorrelation in a dataset is by conducting the Durbin Watson test (Kamboj & Gupta, 2020). The value of d-statistic is 0.8065136 which lies between $0-d_L$ (d_L=1.603) given n=304, k=7, we reject the null hypothesis "there is positive autocorrelation". Also, the d-statistic is far from 2.0 showing the presence of a problem. To fix this problem, we used robust commands in the final regression analysis.

Figure 8
Autocorrelation

Durbin-Watson Test	
H_0: there is no presence of autocorrelation in dataset	
H_1: there is no presence of autocorrelation in dataset	
$F_{(6, 304)}$	0.8065136

5.8. Selection of Regression model
5.8.1. Hausman Test

A Hausman test is performed to check whether this study supports fixed effect regression model or random effect regression model. As, Prob>chi2= 0.0143 is less than 0.05 shows that we need to reject the null hypothesis and conclude that the fixed effects model is more appropriate for this study. As the fixed effect model is suggested by this test, further Wald test is conducted to have a final particular regression model for this study.

Table 9
Hausman Test

Hausman Test	
H_0: random effect model is appropriate	
H_1: fixed effect model is appropriate	
Prob>chi2	0.0143

5.8.2. Wald Test

Wald test is conducted to check whether this study supports fixed effect model or pooled OLS effect. The result showed that Prob>F= 0.0000, as this value is less than 0.05 which shows that we need to reject the null hypothesis and for this study Pooled OLS regression model is appropriate. As the pooled OLS regression model is ideal for this study so we will only report the results and add detailed interpretation of the findings of this particular regression model.

Table 10
Wald Test

Wald Test	
H_0: random effect model is appropriate	
H_1: pooled OLS regression model is appropriate	
Prob>F	0.0000

5.9. Regression Analysis

Vce (robust) command is used with the final regression model which accommodates the heteroscedasticity and autocorrelation problem. This will help in robustifying the standard errors (Hoechle, 2007). Multiple linear regression is used for answering all the research questions.

5.9.1. Results of Regression model

From the results of Table 7 presented above it can be observed that the coefficient of CR, RETE and AG is negative which shows that if there is one percent increase in all these variables then DPR will decrease by 4.85%, 50.80%, 56.58% respectively. While, DER, ROA and SG positively affect DPR meaning that if these variables have 1% increase then DPR increased by 6.24%, 3.51% and 4.90%.

This multiple linear regression model shows strong support for the acceptance of all the hypotheses The results supports dividend policy and past research (Nuriatullah, 2020; Trisanti, 2018) all of which concluded a significant negative impact of growth in net assets on dividend payout ratio. Moreover, the positive significant result of debt-equity ratio on dividend payout ratio is directly in align with the study (Ekawati & Banu siswoyo, 2015; Gill et al., 2010; PATTIRUHU & PAAIS, 2020; Rehman & Takumi, 2012). Furthermore, return on assets have a positive significant effect on dividend payout ratio, these results are consistent with previous research conducted by (Issa, 2015; Widyawati & Indriani, 2019; Zulkifli et al., 2017). Furthermore, the study found a negative significant effect of retained earnings to total equity on dividend payout ratio supported by (DeAngelo et al., 2006; Ihejirika & Nwakanma, 2012; saeid J. Kangarlouei et al., 2013; Kim & Kim, 2019). Also, sales growth has a positive significant effect on dividend payout ratio followed with the previous literature support of (Grace et al., 2019). Lastly, the results of the current ratio shows a negative significant effect on dividend payout ratio which is directly aligned with the previous research conducted by (Dewi, 2016; Labhane & Mahakud, 2016).

5.10. Discussion

The purpose of this paper was to find out the important influencing factors which have an impact on dividend policy of non-financial public companies listed on KSE-100 index in Pakistan. In consideration of the prior studies and by conducting various tests multiple linear regression analysis are used for analyzing six potential elements.

The results gathered from the pooled OLS regression model. Researchers in previous studies suggested that to fulfil the assumption of a regression model, the dependent variable falls under the category of continuous level. DPR is the continuous variable (Tabachnick & Fidell, 2013). Such regression can be used if the data have a presence of at least two or more independent variables that have the ability to measure at the nominal or continuous level. The researcher debated about the use of a regression method that applied in quantitative study to meet all the assumptions of the regression model in order to utilize such regression technique (Bryman, 2016). Another study suggested that multiple linear regression models have assumption of existence of linear association between the study variables and they are normally distributed and reliable (Steyerberg, 2019). The researcher recommended that testing the assumptions of the regression model helps to avoid type I and type II errors. Therefore, to apply multiple linear regression models, testing all the regression model assumptions and check if the data allowed to run the regression method (Osborne & Waters, 2003).

The results showed ROA is identified having a strong positive relationship with the DPR of a firm so they must be inculcated as important factors by company when making a decision of dividend payment and for investors it shows firms capacity to distribute dividends and therefore higher profits declared signals about higher dividend payouts. These results are in accordance with the signaling theory which represents such firms as mature firms who are able to distribute large dividends to shareholders. Higher profitability will benefit the company to increase their investment by allowing them to maintain the existing shareholders

Table 11
Multiple Linear Regression model

Linear regression

Number of obs = 304
F (6,297) = 16.68
Prob>F = 0.0000
R-squared = 0.1612
Root MSE = .67829

LnNDPR	Coef.	Robust Std. Err.	T	P>[t]	[95% Conf. Interval]	
CR	-.048583	.0183038	-2.65	0.008	-.0846046	-.0125615
DER	.0624016	.0182743	3.41	0.001	.0264381	.0983651
ROA	3.514291	.5340868	6.58	0.000	2.463217	4.565365
RETE	-.5080856	.1251128	-4.06	0.000	-.7543054	-.2618657
SG	.0490666	.0171766	2.86	0.005	.0152633	.08289
AG	-.5658676	.1685038	-3.36	0.001	-.8974804	-.2342549
cons	-.8084014	.0866366	-9.33	0.000	-.9789009	-.637902

And by attracting new potential investors. Furthermore, shareholders started expecting high returns from profitable firms as it shows reputation and image of a company having a chance of improvement in earnings by the management in the future. These results show acceptance of first hypotheses. Also, it is supporting the hypotheses of dividend smoothing by (Eliasu et al., 2014). The direct significant influence of profitability on dividend payout ratio is consistent with the previous studies of (Aigbovo & Evbayiro-Osagie, 2022; Benyadi et al., 2022; Bertuah et al., 2020; Bramaputra et al., 2022; Lestari et al., 2021; Septiana & Mulyana, 2021). The findings support the argument by Budiarso (2014) who found the more profitable a company is, the more dividends a company will distribute to its shareholders. This will not only represent a company with a good prospect in the present but also in the coming future. By this, the company can have more funds from the capital market and allow the supervisory team of the capital market to monitor the firm performance. This supports managers to increase performance of companies by reducing agency conflicts (Arilaha, 2009).

While, RETE has a strong negative relationship with DPR showing the acceptance of second hypotheses. Low RE/TE increase the need of external capital due to falling under growing stage and in results pay low dividend payout so more cash by building reserves from profit is available to finance expansion following more growth opportunities and to increase their investments according to the life cycle theory. This argument is supported by (S. J. Kangarlouei et al., 2014).

Moreover, asset growth represents a strong negative relationship with DPR by accepting the third hypothesis representing companies prefer to distribute profit as dividends. They transfer funds to the company's assets to do internal financing and make the company grow more by making performance strong by investing profits to make more profits. Fama & French, (2001) emphasize that the decision of dividend payout is highly affected by investment opportunities. They found that companies having more investment opportunities and better growth are those who have less dividends. The results are consistent with the previous studies (Nugraha et al., 2021; Trisnadewi et al., 2019). However, (Harrison & Muiru (2021) in their paper argued that if a company has reached the stage of establishment and is able to fulfill its needs of funds through capital market or other sources then they use to pay large amounts of dividends to shareholders.

However, DER has a positive significant relationship with DPR accepting the fourth hypothesis which shows that growing companies have less retained earnings due to which they have need of high financing from debt to fulfil its competitive advantage and considered such debt as excess in internal funds to distribute dividend and therefore pay high dividends. Additionally, high debt also benefits companies in increasing sales alternatively increasing profits by utilizing the amount for increasing productivity capacity by adding up productivity things such as machines or factories which help companies to distribute high dividends payment to shareholders. The results support the argument by previous researchers that DER and DPR have a positive significant relationship with each other (Nehe et al., 2021; Riyanti & Hanifah, 2021; Septiana & Mulyana, 2021).

Sales growth presents a positive significant relationship with the concept that increasing sales represent a company in a good prospect having high inflow of cash and high profits from sales due to which distribution of dividend is affected by having availability of funds. The results show strong support for acceptance of fifth hypotheses. Also, a positive significant relationship is in line with the research conducted by (Warganegara et al., 2020). The research by (Nyere & Wesson (2019) argued that high sales results in high profits benefiting companies in meeting the requirements of working capital resulting in improving payouts for shareholders in the future. High profits allow companies to distribute high dividend payout to investors. This also supports the positive relationship between SG and DPR.

Lastly, the current ratio shows an indirect significant relationship with dividend payout ratio. These results accept the sixth hypothesis. Indayani & Yahya (2013) argued that company liquidity position is the important part while making decisions regarding dividend payment. As, dividend is an outflow of cash, the stronger liquidity position of a company, the more chances of dividend distribution to shareholders. The other arguments by (Bertuah et al., 2020; Bramaputra et al., 2022) shows when a company pays a dividend then there is cash outflow which affects the liquidity position of the company. This happens when growing companies have unstable earnings and their financial performance is not so good then they are unable to maintain a good liquidity position due to which they spend a lot of money to expand activities and on permanent working capital which results in less dividend payout. They found an indirect association between liquidity and dividend payout ratio.

6.   Theoretical Implications

The results that come from this study have linked with the signaling theory while finding the effect of profitability, sales growth and liquidity on the dependent variable i.e., dividend policy of companies listed in KSE-100 index. Firm's Debt results have a link with agency theory because it shows how management is making policy while analyzing debt-equity ratio for paying dividends to investors. It also has a link with life cycle theory as low RETE shows that these are growing firms and prefer to pay less dividend.

6.1. Practical Implications

The findings recommend companies while making dividend payout decision they should focus on maintaining a good liquidity position, high retained earnings to total equity ratio and to grow their assets in a certain manner to have high dividend payouts resulting in facilitating investors by maximizing shareholder's wealth. It also helps management by suggesting while making appropriate dividend policy they should focus on the growth prospect. As, when ROA is high, companies hold more profits to increase growth which in turn decreases dividend payout. They try to increase profits which can be only possible if they utilize assets optimally to provide signals in the market about better company performance in future. The results further advised investors that those who expect high return from their investments should focus on firm's ROA.

6.2. Conclusion

The study conducted to find that whether growth in net assets, firms debt, profitability, retained earnings to total equity, sales growth and liquidity effect the dividend payout ratio of the companies listed in the developing country like Pakistan by using a sample of 40 companies for the period 2013 to 2020 and therefore adds to the existing literature through the contribution of Pakistani firms listed on the KSE-100 index. The data in this research consist of 8 years with 320 observations. The data is collected from the annual reports by using the financial statements.

The model applied to capture the impact is "pooled OLS regression model" which provide sufficient evidence that DPR of companies positively and significantly affected by the companies' efficiency towards generating profits, sales towards performance and financial leverage towards representing bankruptcy risk of companies while negatively and significantly affected by companies growth in net assets towards its speed of growing its

assets, RETE towards analyzing the retained earnings are used for growth prospect or return to shareholders and liquidity towards company ability to meet its short-term liabilities listed on the PSX. However, research in the developing country is very limited related to factors that affect dividend policy. Additionally, it is important for companies while deciding dividends to consider important determinants to provide signals that will show the market the better company performance in future by understanding market behaviour.

The study from the data collected, analyzed and the results drawn from them showed that companies listed on KSE-100 have higher profits which increase company ability to distribute larger dividend payout but when such profit is used for growth purpose then dividend payout decreases. This illustrated that most companies listed on the KSE-100 index are growing firms, confirmed by life cycle theory as firms have low RE/TE and high investment opportunities. These firms are growing and have less dividend payouts. Further, these companies have positive sales which indicate green signal that operations are working well having high cash inflow, DER is also positive representing these companies are more eager towards investments and by having external funds they use maybe in productivity which results in high profits and ultimately increase dividends payout. This represents such companies having main focus towards expanding activities and business and they don't focus on maintaining a good liquidity position and unable to meet short-term debt obligations and eventually pay low dividend payout.

6.3. Research Limitations & Future Directions

This study consists of few limitations which results in giving directions to various future research. Firstly, if the chosen sample categorizes different business sectors because different sectors have different considerations that they used to develop or maintain a dividend policy then this study might have significant results for managers, investors and corporations. For future studies, the research should contribute other elements of DPR which results in more beneficial for future research by including determinants that are linked with external factors related to micro economic elements. It is suggested to conduct a study by comparing the company's situation before and after the pandemic many suffered losses resulting in negative earnings per share. As only dividend paying companies from the KSE-100 index were selected, it can be conducted by including overall companies. The research was conducted by choosing a portion of companies from the KSE-100 index that pay dividends consecutively from different sectors excluding financial sectors due to having have different techniques for financing operations when compared with other sectors. For generalizability, the research can be conducted by focusing on only financial sectors, non-financial sectors, particular business sectors by utilizing the same model for obtaining different results in the context of developing countries, developed or under-developed countries or emerging countries.

The research findings help companies, investors and management in building a dividend payout policy. It helps investors in investigating company's internal and external factors which have an effect on a firm's dividend policy which can be used by them as a consideration while doing investment of funds in the firms. And, companies by analyzing its profitability and growth rate can establish the dividend policy to stay stable by attracting more potential investors.

Authors Contribution
Nida Arshad: Introduction, Literature Review and hypothesis, Hypothesis Development, Discussion, Panel data Regression, Diagnostics tests and Research Limitation & Future Direction
Fareeha Waseem: Purpose of study, Theoretical Background, Research Methodology, Practical Implication, Model specification Panel data Regression, Diagnostics tests and Research Limitation& Future Direction
Syeda Fizza Abbas: Conceptual Framework, Measurement, Conclusion and Panel data Regression, Diagnostics tests and Research Limitation& Future Direction

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