FACTORS DETERMINING THE DIVIDEND PAYOUT IN THE CEMENT SECTOR OF PAKISTAN

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ABSTRACT

This study examines the factors determining the dividend payout in the cement sector of Pakistan and their impact on a dividend payout of cement firms listed in Pakistan Stock Exchange (PSX) in Pakistan. The total population of cement sector of Pakistan consisting of 21 cement firms have been included as a sample for the period of eight years from 2009-2016. The panel data was used retrieved from the financial statements of the firms. Dividend payout was the dependent variable and Liquidity, Leverage, Sales Growth, Firm Size, Profitability, Corporate Tax and Previous Dividends were the seven independent variables. Descriptive Statistics, Correlation Test, Unit Root Test, Hausman test, and Log-Linear Fixed Effect Model were used for analysis. Results showed that Sales Growth, Profitability, Corporate Tax and Previous Dividends were found positively significant to dividend payout while the Liquidity, Leverage and Firm Size were found insignificant to explain dividend payout.

INTRODUCTION

Background of the study

In corporate finance dividend policy is one of the burning and important issue both for the business and investors and the most extensively researched topic. The finance managers have a critical job to survive the firm with the long-run perspective in today complex corporate environment. The finance managers of firms generally facing two major decisions related to the operation of the firm, the first decision related to the investment(or investment appraisal) and the other is related to financing decision (how to finance). However, when after operations, the firm starts to generate profits, the need for a third decision(dividend) may arise.

Various theories and empirical explanations like M & M theory, Bird in hand theory, the clientele effect hypothesis, signaling explanation, agency cost hypothesis, pecking order theory and many more empirical evidence as to why and how firm pay dividend, but the problem still persists and having no adequate answer after a number of researches (Allen, 2003; Black, 1976; Brealey, 2008).

However, a little attention has been given to developing markets and relatively a little work had been done regarding dividend policy in an emerging market such as Pakistan. Therefore, the financial literature is not so well equipped in the developing markets as compared to the developed markets (Khan & Ashraf, 2014).

Problem Statement

After reviewing the literature in the current field, it was concluded that most of the researchers consider the very small number of explanatory variables in their studies to determine factors that influence the dividend payout. In Pakistan, especially in the cement sector, it is needed to determine

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the key factors that influence the dividend payout. This study included relatively a large number of variables and an attempt to determine and scrutinize all those factors that determine the dividend payout in the cement sector of Pakistan.

RESEARCH OBJECTIVES

- To investigate factors determining the dividend payout and their impact on dividend payout in the cement sector of Pakistan.

LITERATURE REVIEW

Dividends are basically the proportion of the net profit generated by a firm and distributed to the shareholders as a reward for their investment and undertaken risk.

According to Ross (2007), the distribution of Dividends to the shareholders can be done in four different patterns i.e. cash dividends, which will get by the shareholders in the form of cash. Stock dividends, which is paid to the existing shareholders in the form of shares. The stock split, the number of existing shares is broken into pieces to double the number of shares for the attraction of shareholders. Stock repurchases when the firms buying back the shares for excess cash. Dividends are very much important for the existing shareholders and for the potential investors as well as for the future prospects of the company (Sharma & Wadhwa, 2017).

The empirical evidence of studies shows that factors of dividend policy are mixed. There are a number of theories to enrich the literature that why and when the firms pay dividends. Two schools of thoughts are there so far:

  i. Dividend irrelevance
  ii. Dividend relevance

The) statement argue that dividends have no effect on the firm's value in the perfect capital market. According to them, dividend policy is irrelevant and have no such effect on the firm's value in a world where there is no existence of taxes and transaction cost.

The M & M proposition consists of the following several assumptions:

- Perfect capital market
- No asymmetric information
- No transaction cost
- No change in capital structure
- The managers of the firms explore to maximize the value of the shareholders

Dividend relevance theory is not only associated to the effect of dividends on organization but to independent investors' as well.

The main component of the dividend relevance theory is the basic guidance that investors prefer current dividends with minimum risk than future returns. According to the Gordon, (1959) and Lintner (1962) belief, the stockholders prefer current dividends rather than future returns and hence a positive relationship existed between dividend and market value. Bird-in-Hand Theory" describes that "dividend increases the firm's value" is an earlier and alternative perspective about the effect of dividend policy. The dividend payment shows a sure relation to share price recognition because a little risk involves in dividends as compared to capital gains. Therefore, it is suggested that firms should plan not only a high dividend payout ratio but also endeavour a high dividend yield in order to boost

boost the prices of stock. In an uncertain world with imperfect information, the dividend's value is different from the capital gains (Sharma & Wadhwa, 2017).

The M&M-theory of dividend irrelevancy was rejected due to the supposition that the firm's information is equally accessible to all the shareholders. The hypothesis is deficient because of the practice of financial market is because of the presence of asymmetric information between insiders (directors and managers) and outsiders (shareholders or investors).

It will be more important to note that although it is true that changes in dividends are used by the management as a signal of information to the financial market, in rare cases that changes in dividend may convey a vague and irrelevant signal. In disparately to the studies, Watts, (1973) rejected the "information content of dividends".

He used US-based310 companies as a sample to conduct the study, regression analysis was used to forecast the future and found the insignificant relationship among the current dividend adjustments and future disparity of earnings (Alber & Alhabtour, 2017).

Miller and Modigliani (1961) hypothesized without, transaction cost and other obstacles the dividend is irrelevant. In fact, these impediments exist in the real world and hence affecting the firm's value. According to Litzenberger and Ramaswamy (1982), that taxes have an impact on the share's value. Brealey et al., (2008) argue that when the dividend's tax rates are higher than the capital gain, such a firm reduces their payout in order to benefit their shareholders from the tax advantage.

 noted that under certain conditions the dividend clientele effect hypothesis may play a vital role in dividend policy. It is pointed out that individual investor's preferences of the portfolio may lead to some market imperfections.e.differences in tax rates and transaction cost to give preference to different mixes of dividends and capital gains.

Small investors like retired people, income-oriented investors. for whom the dividend income is the only source of income they may be attracted to the firms which pay a high and stable dividend.

Empirical literature provides no such universally accepted instructions regarding the degree of the dividend that would maximize the value of a share of a firm. Black (1976) concluded in his study and inquired that what should do by the corporation about the dividend policy? It is argued that neither value of the firm and neither firm's cost of capital can affect the dividend policy. Dividend policy would be irrelevant if there is no significant effect on the value of a firm. According to Miller and Modigliani (1961) under the perfect capital market conditions,   the value of the firm is only established by the firm's earning power and risk and has no effect by the dividend policy.

Dividend in case of Pakistan

Different studies have been conducted to explore or to investigate the factors that determine the dividend payout in the world. In Pakistan Khan and Ashraf (2014), Shah, Yuan and Zafar (2010); Iqbal, Ahmad, Ullah and Abbas (2014) and some other factual and comparative studies have been accomplished to identify the factors determining the dividend payout. Rafique, (2012) conducted a study on 53 non-financial firms of Pakistan Stock Exchange(PSX) from 11 different industries/sectors for the year 2005-2010. Earnings, growth, profitability, firm size, financial leverage and corporate taxes were tested through the regression analysis to identify the relationship with dividend payout. The results showed that firm size and corporate tax have a significant and important relationship with dividend payout. Profitability, growth, earnings and financial leverage were found unimportant in his study.

Factors Determining Dividend Payout

Different studies have selected the different variable as factors that determine the dividend payout. Common factors are discussed as under:

Liquidity

Dividend payments mean the cash payment to the shareholders of a firm for their undertaken risk and investment in the business. The firm should have appropriate earnings and sufficient cash to pay dividends Rozeff (1982). The cash sufficiency is, therefore, an important element to pay dividends, thus the greater the firm liquidity and cash position; the greater will be the potential to pay dividends

Leverage

Financial Leverage means techniques to acquire and use of borrowed funds to purchase assets that will be beneficial for the business in the term that the income of the assets will increase from its borrowing cost(Allen, 2003).

Sales Growth

Sales growth refers to the average sales volume of a company's product or services within a year. D'souza & Saxena, (1999) found an insignificant relationship between sales growth and dividend payout. Lloyd et al., (1985) found in his study a negative significant relationship between dividend payout and sales growth. Rozeff, (1982) found a significant relationship between dividend payout and sales growth. Collins et al., (1996) also found a negative significant association between sales growth and dividend payout.

Firm Size

The firm size is the size for a firm in a given industry in a given time which results in the lowest per unit cost of production of output. Different studies included Firm size as a determinant of dividend payout and found different results Turki and Ahmed, (2013). These results are different from one another due to the differences in the market (developed and emerging market), industry and environment.

Profitability

Profitability is the competence of a firm to generate profit and the primary objective of all business and can be measured by income and expenses. Different researchers have different views about the significance of profitability as a determinant to influence the dividend policy of a firm. Directors of any firm announce dividend payment when they have sufficient payments to pledge these payments (Amidu & Abor, 2006).

Corporate Tax

A corporate tax is a direct tax imposed by the government on the income or capital of corporations or analogous legal entities. Different researchers have found different results about the significance of corporate tax as a determinant to influence the dividend policy of a firm.
Another study was done by) on IT sector of India and found Corporate Tax as an insignificant determinant of dividend payout.

Previous Dividends

The previous dividend is the dividends issued by the firm to the shareholders for their outstanding number of shares. In prior studies, the previous dividends measured by the last year dividend per share. Turki and Ahmed (2013) conducted a study with a title "Determination of dividend policy: The evidence from Saudi Arabia" to examine the factors that determine the dividend for 105 non-financial firms listed in Saudi Arabia Stock Exchanges (TASI) for the period 2004-2010. They found a positive significant relationship between previous dividends and dividend payout.

Research Hypotheses

To determine the factors that determine the dividend payout and their impact on the dividend payout, the following research hypotheses have been formulated.

H1: There is a significant effect of liquidity on dividend payout.

H2: There is a significant effect of leverage on dividend payout.

H3: There is a significant impact of sales growth on dividend payout.

H4: There is a significant effect of firm size on dividend payout.

H5: There is a significant impact of Profitability on dividend payout.

H6: There is a significant impact of the corporate tax on dividend payout.

H7: There is a significant effect of previous dividends on dividend payout.

RESEARCH MODEL

$$DIV_{it} = \beta 0_{it} + \beta 1 LQ_{it} + \beta 2 LV_{it} + \beta 3 SG_{it} + \beta 4 LnFS_{it} + \beta 5 PROF_{it} + + \beta 6 TAX_{it} + + \beta 5 PD_{it} \grave{e}_{it}$$

Variables with abbreviation and nature with their expected sign

Name of Variable	Abbreviation	Nature of Variable
Dividend Payout	**DIV**	**Dependent Variable**
Liquidity	**LQ**	**Independent Variable**
Leverage	**LV**	**Independent Variable**
Sales Growth	**SG**	**Independent Variable**
Firm Size (Natural log of Firm Size)	**LnFS**	**Independent Variable**
Profitability	**PROF**	**Independent Variable**
Corporate Tax	**Tax**	**Independent Variable**
Previous Dividends	**PD**	**Independent Variable**

METHODOLOGY

Data

Secondary data used in this study has been collected from websites of Pakistan Stock Exchange (PSX), State Bank of Pakistan (SBP) and from the firms' individual websites for the period of eight years 2009-2016.

Population and Sample Size

The sample for the study consisted of 21 firms listed on Pakistan Stock Exchange, for the period 2009-2016.

The following tests have been used to analyze the data for better results:

- Descriptive Statistics
- Unit Root Test
- Multicollinearity Test
- Hausman Test
- Log-LinearFixed Effect Model (LLFEM)

For better results, the value of a dependent variable which is dividend payout has been taken in a thousand rupees and also transformed to log dividend in order to minimize the stationarity issue. The rest of the data for the explanatory variables has been taken as Linear. So, for the reason the term used as Log-Linear Random Effect Model.

Dividend Payout ratio calculated by the following formula:

Dividend Payout Ratio   :   Dividends / Net Income

INDEPENDENT VARIABLES

Liquidity

Liquidity means that how can a firm can easily liquidate its currents assets. Liquidity is used as an independent variable in this study and has been selected from the literature review as the most analyzed and important variable to the dividend payout. The variable Liquidity has been calculated by the mean value of the Current Ratio and Quick Ratio for eight years.

Current Ratio   :   Current Assets /Current Liabilities

The current ratio is a liquidity ratio which measures a firm's ability to pay their obligations. To measure the current ratio considers the current total assets of a firm relative to current total liabilities of that firm.

Leverage

Leverage is used in this study as the independent variable and has been selected from the literature as many of the studies used as an independent variable and hence found a prominent variable to dividend payout. The variable Leverage has been calculated on the mean ratios of Debt Equity Ratio and Interest Cover Ratio for six years.

Debt Equity Ratio   : Total Liabilities / Total Assets

Debt Equity Ratio or Leverage Ratio is a debt ratio which measures a firm's financial leverage. It measures that how much debt a firm is using to finance its assets relative to its shareholder's equity. It calculated by dividing a firm total liability by its shareholder's equity.

Sales Growth

Sales growth means the amount by which the sales volume of a company's products or services has grown, typically from year to year. Sale growth shows that how a company well improved their business over a given time. This rate reveals an increase or a decrease in business activity in

a given company. For business owners, it indicates whether the current sales team doing their job effectively or not. In this study, the sales growth calculated by the following formula and uses the ratio data for analysis.

Current Year Sale – Last Year Sale / Last Year Sale

The last year sales subtract from the current year sale and then divided by the last year sale.

Firm Size

The firm size is the size for a firm in a given industry in a given time which results in the lowest per unit cost of production of output.

In this study, the firm size has been calculated by taking the natural log of the total assets for analysis. In most of the research studies, the firm size has been calculated by taking the natural log of the total assets.

Profitability

The variable Profitability included in this study is one of the explanatory variables and have been selected on the basis that profitability is the goal of every business and prior studies also used this determinant and found as an important variable that affects dividend payout. The intention is to test this variable for the cement sector of Pakistan whether to confirm the results of other studies or not. Profitability calculated on the mean value of Return on Assets Ratio, Return on Equity Ratio and Return on Capital Employed Ratio for six years of the period.

Return on Assets Ratio: Net Income/Average Total Assets

Return on Assets Ratio (ROA) is a profitability ratio and measures the business efficiency to generate net income by using its assets. Return on Assets (ROA) is the indicator to assess that how a firm is profitable relative to its assets. It also helps investors to get an idea of the firm efficiency that how the management efficiently uses its assets to generate profit. The Return on assets can be calculated by dividing a firm's net earnings by total assets.

Corporate Tax

Corporate tax refers to the tax on the company's profits and on chargeable gains imposed by the government within a financial year.

This study includes the ratio of corporate tax calculated by the following formula as most of the researches use this formula to calculate the corporate tax.

Tax Expense / Earning before taxes   :   Tax / EBIT

Previous Dividends

The previous dividend refers to the dividends issued by the firm to the shareholders for their outstanding number of shares.

In prior studies, the previous dividends measured by the last year dividend per share. In this study, previous dividends are also included as per the prior researches.

Dividend per share: Net Income / Outstanding share x Payout ratio

First, a company's net income per share is derived as (net income / (outstanding shares) and then the calculated value multiply with the payout ratio.

In this study the Hausman Test results show that the "p" value is 0.0108 and found less than 0.05, hence the value is significant and we accept the alternative hypothesis. As results, the Hausman Test suggested using fixed Effect Model point out whether the explanatory variables have any impact on the dividend payout or not.

Dividend Payout

A sample size of N=168 is selected over a period of eight years. The minimum value for Dividend payout (DIV) is-1.19 whereas its maximum value is 2.23. The average value of dividend payout is 0.14 having a variance of 0.36. The skewness for dividend payout is 1.51 having positive skewness whereas its kurtosis value is 13.86.

Skewness measures the distribution of the data either normal distribution or not. The ideal value of skewness is zero but this may occur rarely so, the value of skewness (absolute value) near to zero is considered to be ideal. It may be positive or negative.

Like skewness, kurtosis is also a way to quantify and measure the peakedness or flatness of the curve of the distribution of the data. The ideal value of kurtosis is 3 but it may be found rarely, so the value (absolute value) near to3 be considered as better position. In this case, the value of skewness is 1.51 while the kurtosis is 13.86 which implies that the tail is more peaked, skewed to the right and the mass of the distribution is concentrated on the left of the curve. So, the distribution, in this case, shows very high variations. As some firms pay little or no dividends while some firm pays higher dividends to its shareholders, so the variations are very high.

Liquidity

A sample size of N=168 is selected over a period of eight years. The minimum value for Liquidity (LQ) is 0.00whereas its maximum value is 5.00. The average value of liquidity is 1.16 having a variance of 0.98. The positive skewness for liquidity is 1.54 while its kurtosis value is 5.42 showing higher variations. As some firms have higher liquidity compare to other having lower liquidity, so as a result, the variations for liquidity is high.

Leverage

A sample size of N=168 is selected over a period of eight years. The minimum value for Leverage (LV) is 0.15 while its maximum value is 1.82. The average value of leverage is 0.57 having a variance of 0.30. The skewness for leverage is 1.95 having positive skewness while its kurtosis value is 7.72 showing very higher variations. Some firms have a high level of leverage and some of the firms have a lower level of leverage, so the variation is very high.

Sales Growth

A sample size of N=168 is selected over a period of eight years. The minimum value for Sales Growth (SG) is -0.67 while its maximum value is 0.21The average value of sales growth is 0.04 having a variance of 0.18. The skewness for sales growth is -2.21 with a negative skewness while its kurtosis value is 7.73 and thus showing very higher variations. Liquidity and leverage, the variations are due to the fact that some firms sales grow at a very low level while some firms sales grow at a very high level.

Firm Size

A sample size of N=168 is selected over a period of eight years. The minimum value for Firm Size (LnFS) is12.57 while its maximum value is 18.62.The average value of firm size16.06 having a

variance of 1.24.The skewness for firm size is-0.52 with negative skewness while its kurtosis value is 3.47. The value of skewness is near to 0 while the value of kurtosis is near to 3 and thus showing very slight variations. The sampled firms in cement sector of Pakistan having similar results regarding the firm size and thus very low variations have been seen.

Profitability

A sample size of N=168 is selected over a period of eight years. The minimum value for Profitability (PROF) is -0.22 while its maximum value is 0.24. The average value of profitability is 0.04having a variance of 0.10. The skewness for profitability is -0.25 with negative skewness while its kurtosis value is 2.80 showing lower variations. The value of the skewness is near to 0 while the value of kurtosis is near to 3 so the results indicate near to the ideal position and thus there are very lower variations. Like firm size, the profitability has also the same results of firms of cement sector Pakistan and thus lower variation has been seen.

Corporate Tax

A sample size of N=168 is selected over a period of eight years. The minimum value for Corporate Tax (TAX) is -5.50 while its maximum value is 5.88. The average value of corporate tax 0.18 having a variance of 0.81.The skewness for corporate tax -1.54 with negative skewness while its kurtosis value is 39-91 showing very higher variations. As some of the firms have higher profits and pay more taxes compare to the some which have lower profits and pay fewer taxes, so the variations are therefore very high.

Previous Dividends

A sample size of N=168 is selected over a period of eight years. The minimum value for Previous Dividends (PD) is 0.00 while its maximum value is 28.11. The average value of previous dividends is 2.22 having a variance of 4.86. The skewness value for previous dividends is 3.27 with positive skewness while its kurtosis value is 15.19 showing very higher variations. As some of the firms pay more dividends as compare to some firms which pay lower dividends, so the variations are therefore very high.

Unit Root Test

Unit root test is used to check either the time series variables are stationary or not. Eviews statistical tool has been used to check the stationarity of the variables. The null hypothesis is generally defining that variable has a unit root means not stationary while the alternative hypothesis is variable has no unit root. The results of the unit root test are appended below in table 4.2 with the discussion.

Table Unit Root Test

Test Methods	Variable	Value at Level	Remarks
Levin, Lin & Chu Test	DIV	0.0000	Stationary at level
ADF, Fisher Chi-Square Test		0.0013	Stationary at level
Levin, Lin & Chu Test	LQ	0.0000	Stationary at level
ADF, Fisher Chi-Square Test		0.0000	Stationary at level

Levin, Lin & Chu Test	PROF	0.0001	Stationary at level
ADF, Fisher Chi-Square Test		0.0320	Stationary at level
Levin, Lin & Chu Test	LV	0.0000	Stationary at level
ADF, Fisher Chi-Square Test		0.0009	Stationary at level
Levin, Lin & Chu Test	SG	0.0028	Stationary at level
ADF, Fisher Chi-Square Test		0.0478	Stationary at level
Levin, Lin & Chu Test	PD	0.0000	Stationary at level
ADF, Fisher Chi-Square Test		0.0130	Stationary at level
Levin, Lin & Chu Test	TAX	0.0000	Stationary at level
ADF, Fisher Chi-Square Test		0.0000	Stationary at level
Levin, Lin & Chu Test	LnFS	0.0000	Stationary at level
ADF, Fisher Chi-Square Test		0.0022	Stationary at level

Source: Author's computations

According to the results of the above table, the data of the dependent variable which is the Dividend Payout (DIV) is stationary at level. The data of independent variables Liquidity (LQ), Profitability (PROF), Leverage (LV), Sales Growth (SG), Firm Size (LnFS), Corporate Tax (TAX) and Previous Dividends (PD) are stationary at level.

Multicollinearity Test (Correlation Test)
Multicollinearity refers to a situation where two or more than two independent variables correlated to each other in a multiple regression model. The perfect multicollinearity between two independent variables is equal to 1 or -1, but this perfect multicollinearity rarely exists in a data set. So, the problem of multicollinearity arises when there is an approximately linear relationship exists between two or more than two independent variables. Eviews statistical tool has been used in this study to test the multicollinearity among the independent variables. The results of multicollinearity test are appended below in table 4.3 with the discussion.

Table: Multicollinearity Test

	LQ	PROF	LV	SG	PD	TAX	LnSF
LQ	1						
PROF	0.545976	1					
LV	-0.552831	-0.665449	1				
SG	-0.090182	0.389007	-0.250892	1			
PD	0.387383	0.399356	-0.305284	0.136121	1		
TAX	-0.011858	0.082806	-0.032953	0.09765	0.034718	1	
LnSF	0.205352	0.345189	-0.282241	0.380976	0.215226	0.181409	1

Source: Author's computations

In this study prior to the Hausman test and Fixed Effect Model, the multicollinearity test has been conducted to check the correlation among the independent variables. First, the eight independent variables Liquidity (LQ), Profitability (PROF), Leverage (LV), Cash Flows (CF), Sales Growth (SG), Firm Size (LnFS), Corporate Tax (TAX) and Previous Dividends (PD) were included to check the correlation among the independent variables. It comes up from the result that out of eight variables, four variables were found significant and four were found insignificant. According to the thumb rule, the two highly correlated variables have been identified on the basis of the correlated test value. The two highly correlated independent variables Cash Flow (CF) and Profitability (PROF) were then checked for the significance level in order to exclude one of the variables from the regression model. According to the guidelines, the highly insignificant variable Cash Flows (CF) was excluded and the test was reconducted.

The re-test of multicollinearity results in the above table shows that out of seven independent variables, four variables were found significant and three were found insignificant. Thus, the acceptance criteria of the significance of maximum variables have been achieved and that the variables have been used in further analysis.

Hausman Test

The Hausman Test is a statistical hypothesis test. The Hausman Test evaluates the consistency of an estimator when compare to an alternative less efficient estimator which is already known to be consistent.

In panel data, the Hausman test can also be used to differentiate between a fixed effect model and random effect model. The null hypothesis for the Hausman test is "random Effect model" is appropriate while the alternative hypothesis is "Fixed Effect Model" is appropriate.

When the significance of "p" value is less than 0.05 then the null hypothesis will be rejected and the alternative hypothesis will be accepted. And if the significance "p" value is more than 0.05 then the null hypothesis will be accepted. In this study, Eviews statistical tool has been used to run the Hausman test. The results of the Hausman test are appended below in table with discussion and interpretation.

Results of Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		18.265146	7	0.0108
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
LQ	0.009939	0.041367	0.000646	0.2162
LV	-0.251856	-0.069035	0.026393	0.2604
SG	2.021486	0.390102	0.277121	0.0019
LNFS	-0.098226	-0.004933	0.007929	0.2948
PROF	1.035335	0.674141	0.046337	0.0934
TAX	0.063777	0.051965	0.000131	0.3024

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PD	0.029538	0.034555	0.000023	0.2935
Cross-section random effects test equation:				
Dependent Variable: DIV				
Method: Panel Least Squares				
Total panel (balanced) observations: 168				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.642294	1.458183	1.126260	0.2620
LQ	0.009939	0.038210	0.260104	0.7952
LV	-0.251856	0.189670	-1.327866	0.1864
SG	2.021486	0.546179	3.701142	0.0003
LNFS	-0.098226	0.091168	-1.077410	0.2832
PROF	1.035335	0.378795	2.733230	0.0071
TAX	0.063777	0.027034	2.359125	0.0197
PD	0.029538	0.006664	4.432343	0.0000
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.625582	Mean dependent var		0.141486
Adjusted R-squared	0.553373	S.D. dependent var		0.364959
S.E. of regression	0.243903	Akaike info criterion		0.166919
Sum squared resid	8.328408	Schwarz criterion		0.687579
Log-likelihood	13.97883	Hannan-Quinn criteria.		0.378228
F-statistic	8.663474	Durbin-Watson stat		2.073898
Prob(F-statistic)	0.000000			

Source: Author's computations

Above table indicates the results of the Hausman test. The null hypothesis for the Hausman test is "Random Effect Model" is appropriate while the alternative hypothesis is "Fixed Effect Model" is appropriate. The results show the probability "p" value is less than 0.05 (5%) and hence significant. So, on the basis of Hausman Test results, we reject the null hypothesis and accept the alternative hypothesis. So, in this study, for further analysis, we shall use the Fixed Effect Model.

Log-Linear Fixed Effect Model
As suggested by the Hausman test, Fixed Effect Model has been used to analyze whether the independent variables Liquidity (LQ), Leverage (LV), Sales Growth (SG), Firm Size (LnFS), Profitability (PROF), Corporate Tax (TAX) and Previous Dividends (PD) have any impact on the dependent variable Dividend Payout (DIV). The results and interpretation of Fixed Effect Model is appended below in table

Results of Log-Linear Fixed Effect Model Dependent
Variable: DIV
Method: Panel Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.642294	1.458183	1.126260	0.2620
LQ	0.009939	0.038210	0.260104	0.7952
LV	-0.251856	0.189670	-1.327866	0.1864
SG	2.021486	0.546179	3.701142	0.0003
LNFS	-0.098226	0.091168	-1.077410	0.2832
PROF	1.035335	0.378795	2.733230	0.0071
TAX	0.063777	0.027034	2.359125	0.0197
PD	0.029538	0.006664	4.432343	0.0000
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.625582	Mean dependent var		0.141486
Adjusted R-squared	0.553373	S.D. dependent var		0.364959
S.E. of regression	0.243903	Akaike info criterion		0.166919
Sum squared resid	8.328408	Schwarz criterion		0.687579
Log-likelihood	13.97883	Hannan-Quinn criteria.		0.378228
F-statistic	8.663474	Durbin-Watson stat		2.073898
Prob(F-statistic)	0.000000			

Source: Author's computation

The results of Log-Linear Fixed Effect Model for cement sector of Pakistan are described in the above table which explains the impact of the explanatory variables on the dependent variable.

Eviews statistical tool have been used to analyze the data to determine the relationship of dependent variable which is Dividend Payout and independent variables Liquidity (LQ), Leverage (LV), Sales Growth (SG), Firm Size (LnFS), Profitability (PROF), Corporate Tax (TAX) and Previous Dividends (PD).

The value of Firm Size has been converted to Log data and hence the model becomes Log-Linear Fixed Effect Model. To analyze the data, the panellist Squares method has been used. The results show the probability "p" value of the independent variables Sales Growth (SG), Profitability (PROF), Corporate Tax (TAX) and Previous Dividends (PD) are less than 0.05 (5%) and hence significant, thus these explanatory variables have a positive impact on the dependent variable which is the Dividend Payout in the context of Pakistani cement sector.

The results also show the probability "p" value of the independent variables Liquidity (LQ), Leverage (LV) and Firm Size (LnFS) are greater than 0.05 (5%) and hence insignificant, thus these explanatory variables have no such effect on dependent variable which is dividend payout in the cement sector of Pakistan.

The result of this study shows the R-squared value is 0.6255, means that 62.55% of variation explain independent variable due to the linear association of independent variables and remaining variation is unexplained due to the error term which is 37.45%. Adjusted R-squared is similar to R-squared but the difference between these two is, R-squared increased with adding of a new variable in the model while Adjusted R-squared increased only when important variables included in the model. In this

case,0.6255 mean that 62.55 % of the variation independent variable due to the linear association of independent variables. It means that 62.55 % fluctuation independent variable can be explained by the seven independent variables jointly and the rest 37.45 % of the variation independent variable can be explained by other variables which were not included in this study. One thing which is more important that R-square is the joint significance of the sample within the population, not the population. For the significance of the population, we then consider the F-statistics. F-statistics shows the joint significance of variables in the population. It shows the significance of the overall model. If the value of F-Statistic is > 4, then the overall model will be significant. In this study, the result shows the value of F-statistics is 8.66 and hence greater than 4, and the corresponding probability "p" value of F-Statistics is 0.0000 and hence less than 0.05 (5%), so the model is significant. We know that if the "p" value is < 0.05, then the model will be considered significant.

Durbin-Watson statistics is used to check serial correlation in the regression model. If the results show the Durbin-Watson statistics value is 2.07 and very close to 2, so the probability that there is no serial correlation in the model and we can use the model for prediction.

The Hypotheses have been tested on the basis of Log-Linear Fixed Effect Model. The findings show the following results:

Hypotheses	Status
H0: There is no significant effect of Liquidity on dividend payout.	Accepted
H0: There is no significant impact of Leverage on the dividend payout.	Accepted
H0: There is no significant impact of Sales Growth on the dividend payout.	Rejected
H0: There is no significant impact of Firm Size on dividend payout.	Accepted
H0: There is no significant impact of Profitability on dividend payout.	Rejected
H0: There is no significant impact of Corporate Tax on dividend payout.	Rejected
H0: There is no significant effect of Previous Dividends on dividend payout.	Rejected

CONCLUSION

The results of this study show that some of the variables like profitability, sales growth, previous dividends, leverage, included in this study and has used in prior studies valid and confirm the results when looking at cement sector firms of Pakistan. The results also show that some the variables like liquidity, firm size and corporate tax have the contradictory results with other prior researches. The results may fluctuate because of the differences in the nature of the market, the nature of the industry and maybe on geographical differences. So, it can be concluded on the basis of results of this study that in the cement sector of Pakistan, the profitability, sales growth, corporate tax and previous dividends (previous dividend per share), are the most influential factors to the dividend payout. The investors should consider these variables to predict dividend payout. The firms which have consistency in their dividend payout and highly taxpaying firms can also please their investors. The study is consistent with the second school of thought of dividend relevancy.

REFERENCES:

Adaoglu, C. (2000). Instability in the dividend policy of the Istanbul Stock Exchange (ISE) corporations: evidence from an emerging market. *Emerging Markets Review, 1*(3), 252-270.

Adesola, W., & Okwong, A. (2009). An empirical study of dividend policy of quoted companies in Nigeria. *Global Journal of Social Sciences, 8*(1), 85.

Adu-Boanyah, E., ayentimi, D., & Osei-Yaw, R. (2013). Determinants of dividend payout policy of some selected manufacturing firms listed on the Ghana Stock Exchange.

Al-Shubiri, F. N. (2011). Determinants of changes dividend behaviour policy: Evidence from the Amman Stock Exchange. *Far East Journal of psychology and business, 4(1)*, 1-15.

Alber, N., & Alhabtour, A. (2017). Determinants of Dividend Policy in Saudi Listed Companies. *SSRN Electronic Journal, 4*(11), 20–23. https://doi.org/10.2139/ssrn.2909270

Allen, F., Bernardo, A. E., & Welch, I. (2000). A theory of dividends based on tax clienteles. *The Journal of Finance, 55*(6), 2499-2536.

Al-malkawi, H. N., & Rafferty, M. (2010). Dividend Policy : A Review of Theories and Empirical Evidence. *Euro Journals, 9*(9), 171–200.

Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. *Journal of financial economics, 77*(3), 483-527.

Brealey, R. A., Myers, S. C., & Allen, F. (2008). Brealey, Myers, and Allen on real options. *Journal of Applied Corporate Finance, 20*(4), 58-71.

DeAngelo, H., DeAngelo, L., & Skinner, D. J. (2004). Are dividends disappearing? Dividend Concentration and the consolidation of earnings. *Journal of financial economics, 72*(3), 425-456.

Enyan, E. K. (2009). The determinant of dividend payout ratio of firms listed on Ghana stock exchange.

Faccio, M., Lang, L. H., & Young, L. (2001). Dividends and expropriation. *American Economic Review*, 54-78.

Fama, E. F., & Babiak, H. (1968). Dividend policy: An empirical analysis. *Journal of the American Statistical Association, 63*(324), 1132-1161.

Fama, E. F., & French, K. R. (2000). Forecasting profitability and earnings. *The Journal of Business, 73*(2), 161-175.

Farsio, F., Geary, A., & Moser, J. (2004). The relationship between dividends and earnings. *Journal for Economic Educators, 4*(4), 1-5.

Frankfurter, G. M., & McGoun, E. G. (2000). Thought contagion and financial economics: the dividend puzzle as a case study. *The Journal of Psychology and Financial Markets, 1*(2), 145-153.

Frankfurter, G. M., & Wood, B. G. (2002). Dividend policy theories and their empirical tests. *International Review of Financial Analysis, 11*(2), 111-138.

Gill, A., Biger, N., & Tibrewala, R. (2010). Determinants of dividend payout ratios: evidence from the United States. *The Open Business Journal, 3*(1).

Gordon, M. J. (1959). Dividends, earnings, and stock prices. *The review of economics and statistics*, 99-105.

Han, K. C., Lee, S. H., & Suk, D. Y. (1999). Institutional shareholders and dividends. *Journal of Financial and Strategic Decisions, 12*(1), 53-62.

Higgins, R. C. (1972). The corporate dividend-saving decision. *Journal of Financial and Quantitative analysis, 7*(02), 1527-1541.

Ho, H. (2003). Dividend policies in Australia and Japan. *International Advances in Economic Research, 9*(2), 91-100.

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

Iqbal, N., Ahmad, N., Ullah, H., & Abbas, A. (2014). Effect of dividend announcement on stock prices in the banking industry of Pakistan. *International Letters of Social and Humanistic Sciences, 35*, 15-25

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review, 76*(2), 323-329.

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

Lasfer, M. A. (1995). Agency costs, taxes and debt: the UK evidence. *European Financial Management, 1*(3), 265-285.

Lease, R. C., John, K., Kalay, A., Loewenstein, U., & Sarig, O. H. (2000). Dividend Policy: Its Impact on Firm Value (Harvard Business School Press, Boston, Massachusetts).

Lee, C.-F., Lee, John. (2010). *Handbook of quantitative finance and risk management:* Springer Science & Business Media.

Leon, F. M. (2014). The determinant factor of dividend policy at non finance listed companies. *International Journal of Engineering, Business and Enterprise Applications, 7(1)*, 22-26.

Miller, M. H., & Rock, K. (1985). Dividend policy under asymmetric information. *The Journal of Finance, 40*(4), 1031-1051.

Mizuno, M. (2007). Payout policy of Japanese firms: analysis on the survey of four industries listed on the Tokyo Stock Exchange. *Pacific Economic Review, 12*(5), 631-650.

Nash, R. C., Netter, J. M., & Poulsen, A. B. (2003). Determinants of contractual relations between shareholders and bondholders: investment opportunities and restrictive covenants. *Journal of Corporate Finance, 9*(2), 201-232.

Nissim, D., & Ziv, A. (2001). Dividend changes and future profitability. *The Journal of Finance, 56*(6), 2111-2133.

Nizar Al-Malkawi, H.-A. (2007). Determinants of corporate dividend policy in Jordan: an application of the Tobit model. *Journal of Economic and Administrative Sciences, 23*(2), 44-70.

Omet, G. S. (2004). Dividend Policy Behaviour in the Jordanian Capital Market. *International Journal of Business, 9(3), 287-299.*

Pettit, R. R. (1977). Taxes, transactions costs and the clientele effect of dividends. *Journal of Financial Economics*, 5(3), 419-436.

Poterba, J. M., & Summers, L. H. (1984). The persistence of volatility and stock market fluctuations: National Bureau of Economic Research Cambridge, Mass., USA.

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

Sarig, O. (2004). A time-series analysis of corporate payout policies. *Review of Finance, 8*(4), 515-536.

Sharma, D. K., & Wadhwa, R. (2017). Determinants of Dividend Policy Decision : An Analysis of Banks in India, 617–623.

Turki, S., & Ahmed, A. (2013). Determination of dividend policy: The evidence from Saudi Arabia. *International Journal of Business and Social Science, 4*(1).

Zeng, T. (2003). What determines dividend policy: a comprehensive test. *Journal of American Academy of Business, 2*(2), 304-309.

Zhou, P., & Ruland, W. (2006). Dividend payout and future earnings growth. *Financial Analysts Journal,* 58-69.