

## **Impact of Changes in Dividend Policy on Firm's Value: A Case Study of Cement Sector of Pakistan**

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### **ABSTRACT**

The purpose of this study is to investigate the determinants of dividend policy and their impact on firm's value of construction materials (cement) sector of Pakistan listed at Karachi stock exchange. Related to manufacturing sector, variables of dividend policy i-e profitability, liquidity, earned equity and growth opportunity are explored and their impact on market capitalization is investigated. This paper examines the relationship of dividend policy with firm's value in manufacturing sector. Data is collected from 36 firms listed at Karachi stock exchange. In this framework an intervening variable is established and results are extracted in E-views. By applying different statistical techniques, fixed-effects model is considered as most appropriate technique for extracting results. Results show that profitability, liquidity, and earned equity have significant positive association while growth opportunity has insignificant negative relationship with dividend payout. Through mediator (dividend payout) profitability, earned equity and growth opportunity have positive insignificant association while liquidity has positive significant relationship with market capitalization. Moreover, managers or board of directors should critically consider these determinants while formulating dividend policy in an efficient manner. Current study aimed at identifying most significant factors of dividend policy in manufacturing sector of Pakistan. It is also intended to investigate the impact of dividend policy on firm's value through dividend payout as mediator. This study will serve manufacturing sector of Pakistan.

**KEYWORDS** Dividend policy, Dividend payout, Market capitalization.

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### **1. INTRODUCTION**

Dividends are related with firm's investments. It is strongly linked with firm's performance and an important decision for shareholders as well as for the firm itself. It is about firm's decision whether to distribute earnings as dividend or retain it as reserve. Dividend decisions are indicated by dividend payout in which magnitude and pattern of dividend amount is decided. This decision is made in Annual General meeting by Board of Directors. Their decision depends on unappropriated profits or losses as well as future expected earnings of that firm (Arnott and Asness, 2003). This retained and distributed portion of firm's profitability is dividend payout. For construction materials (cement) sector of Pakistan, dividend payout is not constant or mandatory and depends on certain factors that determine dividend payout.

It is important to investigate which factors determine dividend policy and how they are related with firm's value in manufacturing sector of Pakistan. Through past studies and existing theories we formulated a model and considered profitability, liquidity, earned equity and growth opportunity as independent variables, dividend payout as mediator and firm's value as dependent variable. Secondary data is collected from company's website, KSE, SBP and Business recorder. Data is analyzed in E-views by applying regression technique on panel data to extract results.

Regarding Pakistan, no previous study explored the impact of dividend policy on firm's value in manufacturing sector. Dividend payouts are investigated in engineering sector (Kashif Imran, 2011) and in financial sector (Saeed et al., 2014). Dividend policy is most debated issue in finance. Its determinants vary from sector to sector as well as by using different set of variables in model.

Present study aimed to investigate the impact of dividend policy on firm's value in construction materials (cement) sector of Pakistan. It is intended to explore the most significant factors that determine dividend policy of a firm and to investigate the mediating role of dividend payout in the relationship of profitability, liquidity, earned equity and growth opportunity with market capitalization in construction materials (cement) sector of Pakistan. It is also required to make some suggestions that can be helpful for firms of sample sector in developing their dividend policy in an effective way.

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## 2. A brief review of dividend theories

Dividend policy is most focused research area in finance. Although a lot of work has been done throughout the world about dividend policy, but still it is puzzle in finance (Ooi, 2001). Many researchers presented theories and factors that determine dividend policy but no single rule can govern dividend policy as various factors influence dividend decisions of a firm.

Starting from the work of Linter (1956), Miller and Modigliani (1961) investigated dividend policy but it remained a contentious topic. Regarding dividend policy and its impact on firm's value there are three main conflicting theories. First theory proposes that dividend payout has positive impact on firm's value (Bird in hand theory) while another theory supports that dividend payout has inverse relation with firm's value (Tax-preference theory). Third theory proposes that dividend decisions have no impact on firm's value (Dividend Irrelevance theory). Other theories signaling theory, clientele effect and agency cost make dividend decisions a puzzle.

Prior to the work of Miller and Modigliani (1961) it was believed that dividend payout is positively related with firm's value. Miller and Modigliani (1961) believed in dividend irrelevance theory. According to this theory investors lack interest for dividends and capital gains. According to them, dividends have no impact on firm's value either on stock price or on cost of capital. M&M presented that value of a firm is evaluated through its earning and its investments not through dividend decisions.

An older view Bird in hand theory, investors prefer high dividends as compared to capital gains. Bird in hand is referred as dividends while bush is capital gains. This theory refers that it is better to distribute dividends rather than keeping cash reserves. Increase in dividend payouts increases firm value. As firm declares high dividend, cost of capital reduces, and ultimately share value increases. Fairchild (2010) supported this theory. Miller and Modigliani (1961) criticized on bird in hand theory and presented that risk of firm is associated with its cash flows but not with its dividend as it is distribution of earnings and termed it as bird in hand fallacy.

Miller and Modigliani (1961) in their assumption had ignored tax effect. They found no difference in terms of taxes for dividends and capital gains. Tax preference theory suggests that investors prefer low dividend payout for the growth of firm. Considering double taxation factor, low dividend payout is preferred it will increase stock price and lowers cost of capital. Low dividend payout in other words maximizes firm's value. Tax preference theory opposes bird in hand theory and suggested that decrease in dividend payouts increase firm's value.

Life-cycle theory is also called free cash flow dividend theory. This theory propose that older firms are large in size and are in better position to pay regular dividends because they have less investment opportunities and have free cash flows. Firms at their initial stage of business cycle, require funds, have no free cash flows and have strong investment opportunities. Fama and French (2001) believed that firms pay dividends that are large in size, having high earnings and have few opportunities to grow. DeAngelo et al. (2006) and Denis and Osobov (2008) found similar results.

According to signaling theory, firms announce dividends to give a signal to investor about their cash flows or of firm's future profitability (Bhattacharya, 1979; John & Williams, 1985; Miller & Rock, 1985). High dividend amount give signal of better cash flows while less dividend amount indicates worse cash flows. Allen and Michaely (2003) found relationship between dividend changes and future earnings. Brav et al. (2005) survey supported this and resulted that 94% of respondents discouraged dividend reduction and 65% responded that firm should not cut dividends they must raise finance through external financing.

Catering theory states that firm's dividend policy is affected by desire of shareholders (Baker and Wurgler, 2004). Li and Lie (2006) opposed Baker and Wurgler (2004) and proposed that this theory is not sufficient to explain dividend policies.

Conflict of interest between shareholders and management originates agency problem. Free cash flow hypothesis address that dividend payouts help to resolve agency problems between managers and investors (Easterbrook, 1984; Jensen, 1986). Dividend decisions are made by aligning interest of both parties. Hughes (2008) presented that firm pay special dividends to mitigate agency problems. When agency problems resolve firm's value increases. Fairchild (2010) presented that free cash flow indicate agency problem between managers and investors while dividend distributions mitigate this issue with reduction in excess free cash flows. Zameer et al. (2013) found that investors prefer dividends instead of future returns. When firms pay high dividends, agency problems will be resolved.

## 3. Views about dividend policy

Whether dividend policy affect firm's value or not? Previous studies presented it in different perspective. A survey study conducted by Farrelly, Baker, and Edelman (1986) concluded that managers view dividend policy as it has positive relationship with firm's value. So, it is required to pay dividend most favorably. Meanwhile dividend payout is costly for that firm also. Some studies found positive relationship of dividend payout with share's price or

firm's value. Gordon and Shapiro (1956) Linter (1956), Walter (1963) and Fairchild (2010) supported this theory while some theories opposed this view and believed that dividend payout negatively influence firm's value.

Linter (1956) indicated that dividend amount is determined by firm's current year earnings and its previous year's earning. Linter's (1956) findings are confirmed by Matthias et al. (2008) by studying Nigerian banks and found that dividend amount is decided on the basis of current year's profit and past year's profit. Investigating dividend policy of saudia firms Al-Ajmi and Abo Hussain (2011) identified lagged dividend payments, profitability, cash flows and lifecycle as determinants of dividend payments and supported Linter's (1956) model. They found significant relationship between dividend amount and current as well as previous profitability.

Studying factors affecting dividend policy and payout ratio in Malaysia Al-Twajry (2007) indicated that most significant factors of dividend policy are smoothness of earnings, current and future earnings and past dividend routine. Cross-sectional analysis of 300 listed Malaysian companies indicated that old firms pay high dividend as compared to new firms. Payout ratio of a firm indicates its net income. Both dividend policy and payout ratio have impact on firm's future value. Firm's payout ratio has negative and insignificant relationship with future earnings growth. They also found weak relationship of firm's dividend and net earnings.

In investigating dividend policy of German firms Goergen et al. (2004) found that dividend payouts are based on expected earnings or firm's cash flows. German firms gave more importance to cash flows as compared to revenues. Meanwhile when profitability of these firm decreases they stop paying dividends. Fama and Babiak (1968) also confirmed that managers increase their dividend amount when they are confident that this increase will be permanent. Aivazian and Booth (2003) proposed that dividend decisions can be affected by financial conditions and firms having low debt ratio are financially sound and are in much better position to keep smooth their dividend payouts.

In Chinese corporations Shulian and Yanhong (2005) observed that dividend payouts is positively related with dividend yield, operating cash flows and total assets but inversely related with debt ratio. Firms that have high dividend yield and having more cash flows are more likely to pay dividends.

To explore indicators of dividend paying firms Fama and French (2001) used logit regression and summary statistics. They found three indicators of dividend decision i-e profitability, investment opportunities and size and concluded that firms that never paid dividends have high earnings and high growth opportunities as compared to former payers. They have never paid dividends; invest more in research and development, having high value of their assets as compared to dividend paying firms. More profitable and larger firms are in better position to pay dividends as compared to less profitable and small firms. Firms pay high dividends when they have high growth opportunities and pay fewer dividends when they have less opportunity to invest.

Grullon (2002) presented a model which showed that dividend change is due to change in profitability in terms of earning growth rate and return on assets. They suggested that changes in dividend show life cycle of that firm. Using sample of 7,642 companies from 1967 to 1993, they observed that dividend payout increases as firm become mature because at that level their investment opportunities declined. So, dividend payout increases even with decline in profitability at the time of maturity. Their results also showed that increase in dividend payout ratio is permanent as firms keep smooth their dividends and they maintain it (Linter's survey, 1956). In another study Al-Malkawi (2007) found that profitability, size, and age determine dividend policy. Raabllle and Hedensted (2008) indicated that firms that pay dividends have high return on owner's equity, accumulated dividends, low market to book value ratio, large firm size and last year's dividend distribution.

Studying six countries US, Germany, Japan, Canada, UK, and France; Denis and Osobov (2008) observed decline in tendency to pay dividends and concluded that ability to pay dividends is higher for the firms that are large in size; earn more profits and their retained earnings contain large portion of total equity. Before this study DeAngelo et al. (2006) indicated that mix of earned/contributed capital is most important predictor of propensity to pay dividend as compared to profitability and growth opportunities. According to them, mature firms have less investment opportunities and are in better position to pay dividend as compared to young firms. Similarly, mature firms are more profitable as compared to new-listed firms. Taken sample from 1973 to 2002, U.S incorporated listed industrial firms, they found that ability to pay dividend is significantly greater due to firm size while earnings and growth opportunities have less influence.

Talat Afza (2011) indicated that firms at their first few years increase dividends and after that they start reducing dividend amount. Reasons can be of increased competition, more investment in R & D, product promotion or distribution. After this stage firm's growth opportunities reduced and they start paying dividends. By analyzing 17,000 companies of 33 different countries Ali Fatemi and Recep Bildik (2012) observed that propensity to pay dividend is shrinking throughout the world. They found that firms that are large in size, highly profitable and having low growth opportunities pay more dividends. They observed that dividends are disappearing gradually over time and indicated that dividend policies differ from industry to industry. In case of certain industries, size of firm does

not affect dividend policy. Patra et al. (2012) conducted research in 945 firms of Greece and concluded that as firm size increases its propensity to pay dividend also increases.

Perretti (2013) examined the propensity of change in dividend amount in ARD firms of USA by using multivariate logit regressions. Their results showed that size of firm, growth opportunities and earned/contributed capital mix are determinants of change in dividend policy. They examined that if firm's total capital comprises high proportion of earned capital, probability of paying dividends will increase. ADR firms that have high opportunities to grow, have low probability of paying regular dividends while firms that are more profitable, keep their dividend amount smooth. Size, profitability, and earned/contributed capital mix have positive association while of growth opportunity has negative association.

By exploring determinants of dividend payouts of financial sector of firms listed at Karachi Stock Exchange of Pakistan Saeed et al. (2014) established negative relationship of dividend payouts with firm's size. As firm size increases, its payout declines. They found positive but insignificant relationship of firm's liquidity and its payout ratio. As firm's earning increases its propensity to pay dividend will also increase. They found positive association of firm's cash flow and dividend payouts.

Ahmed and Javed (2009) also identified negative relationship of firm size and its dividend. They explained that as firm size increases, investment in their assets increases thus dividend declines. They found no relationship between growth and dividend payout of a firm. They also indicated that liquidity problem arises when firm cut their dividend amounts. Ahmed and Javaid (2008) found negative relationship of firm's liquidity with its dividend payouts. Zulfikar et al. (2010) make comparison of Pakistan and Chinese firms and found that Pakistani firms that are large in size pay dividends while in china firms that are small in size pay dividend.

Determining dividend policy in banking sector of Pakistan Zameer et al. (2013) found that an important determinant of dividend policy of a firm is its last year's dividend. They found positive association between current year dividends and last year's dividend parallel to Linter's (1956) survey that firms try to keep their dividend amount 'smooth'. Similarly they found positive association between firm's profitability and dividend payouts. Profits and last year dividends of firm also indicate strong growth opportunities. They found inverse relation between liquidity and dividend payout. Regarding banking sector, liquidity ratio is kept high as compared to other sectors, so it is negatively associated with firm's payout ratio. They found no impact of firm size, leverage, agency cost, growth and risk.

Sheikh and Wang (2011) studied Greek banking industry and found no relationship of previous year's dividend with current year's dividend. They reasoned that banking industry don't make long term planning of dividend payout that affect their performance. Rehman (2012) studied Nigerian firms and concluded that previous dividend significantly affect current year's dividend and try to keep smooth or incremental dividends. Kashif Imran (2011) explained that dividend payouts and capital gain are components of firm's return on investment. It is difficult to optimally distribute the returns in both components. They investigated dividend payout in engineering sector of Pakistan and concluded that there is positive association of last year's dividend, earning per share, profitability, sales growth and firm size while there is negative relationship of dividend payout with cash flow. Firms try to increase their dividends from last year's dividends parallel with Linter's (1956) survey. Similarly, large and more profitable firms are in better position to pay dividends. They have taken current ratio to measure liquidity and found no significant relationship with dividend payout.

Studying determinants of 30 listed private banks of Bangladesh over time period of 2006-2012 Sumaiya Zaman (2013) concluded that profitability is primary determinant in banking sector as compared to growth and size but it is not only a determinant other factors also determine dividend policy. It is not necessary that companies that earn more, have high dividend payout ratios. Some companies that are more profitable have low payout ratio because they keep cash and have higher growth (Basley and Brigham, 2008).

Hughes (2008) investigated the impact of research and development and dividend payments on firm's value. According to their study, special dividend is a signal toward investors that firm's earning will increase in future. Changes in dividend policy indicate permanent increase in profitability. Firms distribute special dividends to avoid excess availability of cash to reduce agency problems. When agency problem resolve, firm's value increases.

Examining the relationship of dividend policy, managerial incentives and firm's value Fairchild (2010) indicated that whenever a firm has good projects to invest, it needs to cut dividends to increase its cash flow but by doing this investors take it as a bad news. So, firms forego those projects. They explored the relationship between dividends and firm's value. If dividend increases, it conveys good news about firm's value and decrease in free cash flow. But is also conveys negative information that firm don't have opportunities to grow while decrease in payout ratio show that firm have opportunities to grow. Higher dividends indicate increase in firm's value either due to increase in current earnings or reduction in free cash flows.

Fairchild et al. (2014) investigated dividend policy in emerging market of Thailand for the time period 1996-2009. They found no evidence of firms that increase their dividends and spend more in their capital as according to signaling theory but they argued that after increasing dividend amount, firms with higher cash flow decrease their capital spending. They also concluded that domestic and foreign investors wish for higher dividends as well as higher ownership concentration which lead to increase dividend amount.

Existing studies focused on dividend payouts of banking sector, engineering sector, financial and non-financial sector collectively and observed the relationship of dividend payout with firm's value. Current study aimed at identifying most significant factors of dividend policy in manufacturing sector of Pakistan. It is also intended to explore the relationship of profitability, liquidity, earned equity and growth opportunity with market capitalization while introducing dividend payout as mediator. Therefore, it is required to conduct study for developing dividend policy in manufacturing sector of Pakistan. Our study will serve this purpose.

**4. Sampling procedure, variables and descriptive statistics**

For present study, whole sector is taken as sample of study. For construction materials manufacture sector 36 companies are taken including 18 companies of cement and clinker manufacturing only while other 18 deal with different construction material products. Data collected comprises information regarding profitability (PROF), liquidity (Liq), earned equity (EE), growth opportunity (Gr\_o), dividend payout (DPO) and market capitalization (MC) extracted from company's annual reports, Karachi stock exchange, State bank of Pakistan analysis reports and from business recorder website through 2009-2013. Variables in our research model are defined:

**Table 1: Variables, description and their expected signs**

Factor	Variable name	Description	Expected sign
Profitability	PROF	Net profit margin=net income after taxes/net sales	+
Liquidity	Liq	current ratio=current assets/current liabilities	+
Earned equity	EE	Unappropriated profit or loss/Total shareholder's equity	+
Growth opportunity	Gr_o	Utilized capacity/ production capacity	-
Dividend payout	DPO	Dividends paid annually / net income after taxes	+
Market capitalization	MC	Number of outstanding shares × market price per share after AGM	

Table 1 explains the relationships of profitability, liquidity, earned equity and growth opportunity with dividend payout and market capitalization in the light of past studies while table 2 narrates descriptive statistics and correlation of all variables.

**Table 2: Descriptive statistics and correlation coefficients**

	PROF	LIQ	EE	GR O	DPO	MC
Mean	0.062	1.15	0.62	0.62	0.112	3.68
Median	0.035	0.99	0.36	0.70	0.000	0.87
Maximum	0.752	4.45	3.05	0.99	0.793	78.08
Minimum	0.0004	0.03	0.02	0.005	0.000	0.0002
Std. Dev.	0.081	0.72	0.68	0.29	0.163	8.57
<i>Correlation matrix</i>						
Prof	1	0.26	0.061	0.236	0.405	0.442
Liq		1	-0.065	0.147	0.334	0.266
EE			1	-0.232	-0.128	-0.131
Gr_o				1	0.239	0.217
Dpo					1	0.341
MC						1

Table 2 show that when profitability measured in terms of sales, it has mean value of 6.2% while having maximum value of 75% indicating that few companies are market leaders which pay high dividend as compared to low profit earning companies. More profitable companies keep their liquidity ratio high up to 4.45 as compared to low profit earning companies having low liquidity ratio up to 1.15. Mean value of earned equity is 62% of sample firms showing that remaining 38% of equity is contributed by owner's investment. Growth opportunity in terms of production capacity also shows variability. For companies having 1% growth level, have 99% growth opportunity while for companies achieving maximum target have opportunity of investment in terms of installing new plant to fulfill domestic as well as foreign demand. Likewise profitability and liquidity; dividend payout ratio also show dispersion. On average dividend payout is 11% while its minimum value is 0% and maximum 79% indicating that few companies outperform in the market and distribute high dividend while others even don't pay dividend.

Regarding market capitalization it is concluded that lowest capitalization is 0.0002 billion while highest capitalization is 78.08 billion. This also narrates that few companies are having maximum market share. Moreover, all correlations are significant at  $p < 0.01$ .

## 5. Individual outcomes

Individual outcomes like profitability, liquidity, earned equity, growth opportunity, dividend payout and market capitalization are measured through ratio scale. Two major hypotheses derived for this study are:

**H1:** Changes in dividend policy predicts dividend payout.

**H1a:** Profitability positively predicts dividend payout ratio.

**H1b:** Liquidity positively predicts dividend payout ratio.

**H1c:** Earned equity positively predicts dividend payout ratio.

**H1d:** Growth opportunity negatively predicts dividend payout ratio.

**H2:** Changes in dividend policy and firm's value is mediated by dividend payout.

**H2a:** Dividend payout mediates the relationship of profitability with market capitalization.

**H2b:** Dividend payout mediates the relationship of liquidity with market capitalization.

**H2c:** Dividend payout mediates the relationship of earned equity with market capitalization.

**H2d:** Dividend payout mediates the relationship of growth opportunity with market capitalization.

## 6. RESULTS AND DISCUSSION

As variables measured for 36 companies listed on KSE for the time period of 2009-2013, we have pooled the data and analyzed 180 observations in E-views. By applying ordinary least square regression, fixed effects and random effects estimations we found fixed effects model as most appropriate technique. Fixed effect model is also supported by redundant test and hausman test. It is appropriate because it consider differences of intercepts across cross-sectional and time series data. Using this we have restricted all regression coefficients to be similar for cross-sectional and time series units. Using Baron and Kenny (1986) three steps for mediation, we formulated equations as:

**Step 1:** Direct effect of independent variables on dependent variables is observed. For this we purpose we regressed Firm's value (Market capitalization) acting as dependent variable on changes in dividend policy (profitability, Liquidity, earned Equity and Growth opportunity) as independent variable (Equation 1).

**Step 2:** In next step effect of independent variable on intervening variable is explored. To confirm its correlation we regressed Dividend shifts (Dividend payout) on changes in dividend policy (profitability, Liquidity, earned Equity and Growth opportunity) - Equation 2.

**Step 3:** By applying this step we indented to investigate the mediating effect of dividend shift (Dividend payout) on relationship between changes in dividend policy (Profitability, Liquidity, Earned Equity, Growth opportunity) and firm's value (Market capitalization) – Equation 3.

### Equation 1: Direct effect of changes in dividend policy on firm's value

In our first equation, effect of profitability, liquidity, earned equity and growth opportunity which are determinants of changes in dividend policy on firm's value i-e market capitalization is examined. The following equation represents this relationship:

$$Mc = \beta_0 + \beta_1(\text{Prof}) + \beta_2(\text{Liq}) + \beta_3(\text{EE}) + \beta_4(\text{Gr}_o) + \epsilon_0$$

Derived equation presents the relationship of profitability, Liquidity, Earned Equity and growth opportunity with Market capitalization.  $\beta_0$  is constant coefficient while  $\beta_1(\text{prof})$ ,  $\beta_2(\text{Liq})$ ,  $\beta_3(\text{EE})$  and  $\beta_4(\text{Gr}_o)$  explains the coefficient or relationship of profitability, Liquidity, Earned Equity and Growth opportunity with Market capitalization.  $\epsilon_0$  is error term.

***Table 3: Direct effect of changes in dividend policy on firm's value***

Dependent Variable: LOG(MC)  
 Method: Panel Least Squares  
 Sample: 2009-2013  
 Time period: 5 years  
 Number of units: 36  
 Total panel (balanced) observations: 180

Variable	Coefficient	Prob.
C	0.316448	0.0880
LOG(PROF)	0.100644	0.0615
LOG(LIQ)	0.430617	0.0009
LOG(EE)	0.225081	0.0216
LOG(GR_O)	0.071903	0.5114
R-squared	0.947045	
Adjusted R-squared	0.932293	
Durbin-Watson stat	1.719196	
F-statistic	64.19823	
Prob(F-statistic)	0.000000	

Results are shown in table 3. To remove heteroscedasticity we have taken log of all variables. Results indicate that Prof, liq and EE positive and significantly relate with MC while Gr\_o has positive insignificant association with MC. R-squared value is 94% indicating fitness of our model within sample while probability of F-statistics indicate fitness of our model within population.

**Equation 2: Effect of changes in dividend policy on dividend shift**

Using Baron and Kenny second step of mediation, we observed direct effect of changes in dividend policy as determined by profitability, liquidity, earned equity and growth opportunity on dividend shift as indicated by dividend payout. The following equation represents this relationship:

$$Dpo = \beta_{10} + \beta_{11}(\text{Prof}) + \beta_{12}(\text{Liq}) + \beta_{13}(\text{EE}) + \beta_{14}(\text{Gr}_o) + \epsilon_{10}$$

Equation 2 presents the relationship of profitability, Liquidity, Earned Equity and growth opportunity with Dividend payout.  $\beta_{10}$  is constant coefficient while  $\beta_{11}(\text{prof})$ ,  $\beta_{12}(\text{Liq})$ ,  $\beta_{13}(\text{EE})$  and  $\beta_{14}(\text{Gr}_o)$  shows the coefficient or relationship of profitability, Liquidity, Earned Equity and Growth opportunity with Market capitalization respectively.  $\epsilon_{10}$  is error term.

*Table 4: Effect of changes in dividend policy on dividend shift*

Dependent Variable: LOG(DPO)  
 Method: Panel Least Squares  
 Sample: 2009-2013  
 Time period: 5 years  
 Number of units: 36  
 Total panel (balanced) observations: 180

Variable	Coefficient	Prob.
C	-1.711210	0.0000
LOG(PROF)	0.318196	0.0017
LOG(LIQ)	0.460452	0.0528
LOG(EE)	0.531797	0.0038
LOG(GR_O)	-0.101149	0.6203

Effects Specification

Cross-section fixed		
R-squared	0.626079	
Adjusted R-squared	0.521915	
Durbin-Watson stat	2.116805	
F-statistic	6.010517	
Prob(F-statistic)	0.000000	

Table 4 presents results of equation 2. To make data uniform, we have taken log of all variables and observed that Prof, liq and EE have positive and significant relationship with Dpo while Gr\_o has negative insignificant association with Dpo. R-squared value is 62% indicating fitness of our model within sample while probability of F-statistics indicates fitness of our model within population.

**Equation 3: Mediating effect of dividend shift on relationship between changes in dividend policy and firm’s value**

In our third equation, mediating role of dividend shift as indicated by dividend payout is observed. Following equation represents this relationship:

$$Mc = \beta_{20} + \beta_{21}(\text{Prof}) + \beta_{22}(\text{Liq}) + \beta_{23}(\text{EE}) + \beta_{24}(\text{Gr}_o) + \beta_{25}(\text{Dpo}) + \varepsilon_{20}$$

Given equation indicate the mediating effect of dividend shift (Dividend Payout) on relationship of independent and dependent variable.  $\beta_{21}$  is constant coefficient while  $\beta_{21}(\text{prof})$ ,  $\beta_{22}(\text{Liq})$ ,  $\beta_{23}(\text{EE})$ ,  $\beta_{24}(\text{Gr}_o)$  and  $\beta_{25}(\text{Dpo})$  shows the coefficient or relationship of profitability, Liquidity, Earned Equity, Growth opportunity and Dividend payout with Market capitalization respectively.  $\varepsilon_{20}$  is error term.

The formula used to investigate the strength of relationship between changes in dividend policy and firm’s value after introducing dividend payout as mediating variable is:

$$(\beta_{\text{direct effect}} - \beta_{\text{indirect effect}} / \beta_{\text{direct effect}}) * 100$$

***Table 5: Mediating effect of dividend shift on relationship between changes in dividend policy and firm's value***

Dependent Variable: LOG(MC)  
 Method: Panel Least Squares  
 Sample: 2009-2013  
 Time period: 5 years  
 Number of units: 36  
 Total panel (balanced) observations: 180

Variable	Coefficient	Prob.
C	0.705054	0.0002
LOG(PROF)	0.028384	0.5733
LOG(LIQ)	0.326051	0.0058
LOG(EE)	0.104313	0.2523
LOG(GR_O)	0.094873	0.3414
LOG(DPO)	0.227094	0.0000

Effects Specification

Cross-section fixed

R-squared	0.956549
Adjusted R-squared	0.944045
Durbin-Watson stat	1.871129
F-statistic	76.49964
Prob(F-statistic)	0.000000

Analysis results indicate change in beta value of relationship when direct relation was examined and through introducing Dpo as mediator. The strength of relationship between Prof and MC accounted for by the mediator is 0.0723 that represents  $(0.1006-0.0283)/0.1006*100$ , which is 71.86% of direct effect. The amount of the relationship that is strengthened by introducing Dpo as mediator between Liq and Mc is 24.29% as  $(0.4306-0.3260)/0.4306*100$ . The degree of association between EE and Mc accounted for by the mediator was 0.1207 that represent  $0.2250-0.1043)/0.2250*100$ , which is 53.64% of direct effect. Direct effect of Gr\_o and Mc shows no significant relationship. When Gr\_o and Mc are regressed in the presence of mediator (Dpo) it also shows insignificant relationship. Dpo as mediator has significant positive relationship with MC in this model

R-squared of our model is 95% indicating fitness of model within sample. Durbin-Watson stat is close to 2 indicating there is no autocorrelation. Probability of F-statistics also indicates fitness of model within population.

## 7. SUMMARY AND CONCLUSION

Bird in hand theory, tax-preference theory, and dividend irrelevance theory are prevailing explanations of relationship of dividend policy with firm's value. Previous researchers explored this relationship but findings are contradictory. Regarding non-financial sector of Pakistan negative relationship between dividend payout and market capitalization is observed (Nazir et al. (2012) while Abor and Bopkin (2010) found positive relationship. Regarding manufacture sector we found positive relationship of dividend payout with firm's value.

Overall results support maximum proposed hypothesis that firm's dividend policy is determined by profitability, liquidity, earned equity and growth opportunity and changes in these variables lead to change dividend payout which significantly predicts firm's value or market capitalization. Profitability, liquidity and earned equity positive and significantly predicted dividend payout that support our hypothesis but growth opportunity has negative relationship with dividend payout as proposed but this relationship is insignificant. In our studied sample, it is also observed that some companies that are even more profitable, having zero or low payout ratio. Their earnings are high but keep cash reserves and invest it for their growth. Dividend payout partially mediates the relationship of profitability, liquidity and earned equity with market capitalization that also supports our hypothesis. Regarding growth opportunity, empirical results does not support our hypothesis. As growth opportunity does not has significant relationship with market capitalization and dividend payout does not mediates the relationship of growth

opportunity with market capitalization. So, we reject our hypothesis that dividend payout mediates the relationship of growth opportunity with market capitalization.

We conclude that partial mediation exists in our model. As dividend payout mediates the relationship between independent variable and dependent variable for some variables not for all. Partial mediation implies that there must not be only significant relationship between mediator (Dpo) and dependent variable (MC) but also some direct relationship exist between independent and dependent variable.

Dividend payout decision of a firm affects the value as well as performance of a firm. Investor view performance of firm from its profitability and dividend payout ratio so managers should focus on developing dividend policy and give sufficient time to this decision as dividend policy determine investor's benefits. Regarding Pakistan, firm's having high growth opportunities use their reserves instead of financing from external sources as ownership structure can influence dividend policy of Pakistani firms.

Construction materials (cement) sector comprises few companies and these companies provide financial statements for five years only. This doesn't allow us to expand our sample data to get more reliable results.

Further studies can be conducted to view growth opportunities as company's investment, Research and Development or other capital expenditures in terms of growth. It is also required to discover the relationship between corporate governance and dividend payout in emerging markets of Pakistan. Impact of cultural forces, environmental influences and economic forces are also important in developing dividend policy. Moreover, future research can also be conducted by considering opportunities regarding local demand and exports.

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**Research Model**

$$\Delta \text{ in Dividend policy} = f(\Delta \text{ in Prof, Liq, EE, Gr}_o)$$
$$\text{Dividend Shift} = f(\Delta \text{ in Dividend Policy})$$
$$\text{Firm's value} = f(\text{Dividend Shift})$$

