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The Economic Effect of Earnings per Share and Cash Flows per Share on Dividend Policy of Firms in Pakistan

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The study aims to examine the economic effect of earnings per share and cash flow per share on dividend policy of non-financial firms listed on Pakistan Stock Exchange over the period 2009-2018. For this purpose, static and dynamic panel are used for empirical testing of the hypothesis. Fixed effect model is appropriate for static panel model while difference GMM is used for dynamic panel model. The results are conclusive in those econometric techniques and indicate that earning per share is a significant economic factor for dividend policy of firms. Firms with better earnings per share prefer to announce dividends, which creates the positive signals in the market. Moreover, cash flow per share also significantly positively affects the dividend payments. The results are conclusive across both measures but earnings have more explanatory power in dividend payment decisions. Overall, the result supports the signalling hypothesis and provides a great insight about dividend policy of firms. Firms can better go for dividend announcement decisions based upon their earnings and cash flows. In this way, they can create better signals in the market and consequently can increase the shareholders wealth.

Key words: *Dividends, earnings per share, cash flows, static model, dynamic model.*

Introduction

Dividend policy has been one of the contentious subjects among financial economists over the years, although many studies have been conducted to fix the puzzle of dividend. Globally, most of the firms pay a major portion of their earnings as cash dividend (Faccio et al., 2001). A substantial variation in dividend ratios internationally has been shown by the recent studies, both in emerging markets (Goyal & Muckley, 2013; Mitton, 2004) and developed nations (Denis & Osobov, 2008). Nevertheless, a relative dearth of research indicated that concerning dividend policies in emerging economies would likely to affect the firm value. Firms with a relative smooth dividend payment in well-organized countries of the world would follow the trade off and pecking order behavior (Benavides et al., 2016). Firms in these countries prefer to pay cash dividend rather than the equity interest payment, despite of having the tax incentives on the other hand (Boulton et al., 2012).

An alternative view of dividend policy is the need to distribute the free cash flows is driven by the optimal dividend policy (DeAngelo & DeAngelo, 2006). Cash flows significantly increase the dividend payment of firms in emerging economies (Afza & Mirza, 2010; Khushi, Din & Sulaiman, 2020). Firms optimally alter their dividend decisions over the period of time in response to evolution in their opportunities. They pay a little amount of dividends because the investment opportunities exceed the internally generated funds. Besides, if internal funds exceed the investment opportunities then firms pay the excess cash flows as dividends to mitigate the agency problem (DeAngelo, DeAngelo, & Stulz, 2006). Hence, it is better for firms to pay the excess cash and earnings as dividend to avoid the discretionary activities of management and agency conflicts (Seyed, Samira & Mahnoosh, 2013, Al-gharaibeh, Zurigat & Al-harahsheh, 2013; Issa, 2015). There are various reasons why businesses pay dividends, it can either decrease the agency costs between executives and shareholders or decrease the investors ' uncertainty. Dividend payments are normally associated with persistent earnings, greater earnings informativeness and higher accrual quality. Firms having sufficient cash flows have better liquidity position which is a determining factor in the payment of dividend since management might manipulate the earnings (Adelegan, 2002).

The free cash flow hypothesis indicated that dividends are paid to managers for the purpose to prevent them from unnecessary activities. Firms having sustainable and high cash flows are most likely dividend payers and they prefer a higher fraction of their earnings as dividend. A higher or increasing level of dividend payment creates credible signals to the investors that firms are confident in generating sustainable cash flows. Stock prices reacts upon those announcements where positive signal is most likely increases the stock prices and investors use the information to price their securities. Modigliani and Miller (1961) put forward the “information content of dividend” which claims that dividends could send information about the future cash flow of companies. The dividends convey better information about the

prospects of the firm than any other source. It might be the investor's objective to continuously obtain returns and prefers to invest in dividend paying companies. Companies that pay more dividends have simple access to capital markets and that dividends affect the stock's valuation. These companies have stable earnings and are in good position to pay the dividend (Bacon, 2005).

The study aims to investigate the dividend prediction of non-financial firms in Pakistan. For this purpose, earnings per share and cash flow per share were used to identify their economic impact on dividend policy of firms in Pakistan. The study was consisted on non-financial firms over the period 2008 to 2017. Dynamic panel model and fixed effect model were used for empirical estimation and which method is most suitable for dividend predictability based on earnings per share and cash flow per share.

Literature Review

Cash flow is considered as the cash and cash equivalents which are transferred into and out of a business. Cash flow distribution is considered to be a primary determinant while setting the dividend policy of a firm. This primary determinant provides a strong support for life cycle theory of dividend. According to this theory, firm trade off the floatation cost against agency cost of cash retention. This agency cost of cash retention is perhaps due to greater cash flow problems which increases the propensity to pay the dividends (Denis & Osobov, 2008).

According to cash flow hypothesis, it's necessary for companies to keep control sufficient amount of cash flow for dividend payments and also aligned the interest of shareholders with management. There is a negative relationship between cash flows and dividend (Jabbouri, 2016: Faccio et al, 2001). Firms hold lower amount of cash under the control of the manager due to high dividend payouts and debt financing payments (Kadioglu & Yilmaz, 2016). Managerial theory describe that managers are mostly interested to hold more cash and invested only those projects in which their personal benefits increases but not favorable for shareholders. According to agency theory, dividend reduces the problem of information asymmetry (Jensen, 1992; Denis, Denis & Sarin, 1994; Yoon & Starks, 1995; Hope, 2003). There is also a significant positive association between cash flow and dividend (Giriati, 2016; Wang, 2014; Jacob & Jacob, 2013). Firms have to pay greater dividends when their cash flows are higher. They holds large amount of cash during financial crisis flows and cut the dividend payments to finance their investment (Danietl et al., 2012).
Free cash flows are used to run the operating activities and are scaled by total assets held at the end of year. It controls the relationship between free cash flows and dividends under agency theory (Chow, Song, & Wong, 2010; Jensen, 1986; Lee & Xiao, 2003) and the signaling incentive (LaPorta et al., 2000). Bradford, Chen and Zhu (2013) studied the dividend policies of state owned and privately owned firms listed in China. This study

concluded that state owned firms pay more dividends than privately owned firms. The study found the contrasted results with signaling and agency theory that free cash flows are statistically significant negative in predicting the dividend payout. The reason of this negative relationship is that free cash flows reflect the investment opportunities and exploiting the growth opportunities results in lower dividends.

H_1: Cash flow per share is a significant economic factor which is more likely increase / decreases the dividend payout policy of firms

Managers pay the dividend based on firm size and patterns of cash dividend paid to shareholders over the time (Frankfurter & Wood, 2003). The payment of dividends did not deter companies from engaging in accounting fraud. Dividend paying companies may not necessarily behave in accordance with shareholder interests. Companies with less earning manipulation associated with dividend strategies to mitigate agency issues and build reliable reputation, thus facilitating access to external resources (Zhang and Liu, 2017).

Gordon and Lintner (1963) stated in bird in hand theory that investors consider the present earnings to be less dangerous than anticipated future dividends or capital gains. They point out that most shareholders are risk averse and would now prefer certain dividend payments to a promise of better future yields. Present dividend payments decrease the shareholder uncertainty and thus lead shareholders to lower the company's earnings and place a greater value on the company's stock. By contrast, a decrease in dividend payments (or zero dividends) improves the uncertainty of investors, causing them to increase the necessary return and lower the stock value. Ouma (2012) discovered that the company's performance is largely influenced by the company's dividend payout, and investors prefer actual current earnings to capital gains.

Malkawi (2007) suggest that many investors prefer capital gains rather than dividends and it is less desirable to focus exclusively on dividends. Investors use dividends as a signal about future opportunities of the company (Waweru et al., 2012). Musa (2009) showed that earnings, prior dividends and cash flow all have a positive effect on the dividend policy. Muindi (2006) studied the relationship between earning per share and dividend per share. He found that there was an important favorable correlation between the two factors based on the assessment performed on the 47 listed companies in kenya. Mutiso (2011) found that low-capitalized companies reinvested most of their earnings instead of paying shareholders dividends. This means that companies with high capitalization maintain fewer profits and are likely to pay comparatively greater dividends.

H2: Earnings per share have a significant positive/ negative economic relationship with dividend payout policy

Research Methodology

Research methodology describes the procedure in a way that seems appropriate to the audience (Zikmund et al., 2013). It is regarded as the most appropriate ways for analyzing the effects of dividend policy in Pakistan (Khan, Jehan & Shah, 2017; Hamid, Yaqub & Awan, 2011; Arif & Akbar, 2013; Hassan et al., 2013). The sample data was collected over the period 2009-2018 and sample size is consisted on 102 non-financial firms that are paying dividend during the sample period. Data was collected from annual financial statement of firms listed on Pakistan Stock Exchange. Both static and dynamic panel models are used for empirical estimation of results. Fixed effect model for static panel data regression is recommended by the Hausman test and is subsequently applied in this study. A strong linkage is established between the dependent variable and the explanatory variables when fixed effect estimation model is applied (Stock & Watson, 2008). It takes care of the unobserved heterogeneity problems in the regression model.

Dividend policy is used as dividend per share, which is measured as dividend paid over the number of shares outstanding. Liquidity is the current ratios and the computation of this variable is as current assets over current ratios. The study employs the natural log of total assets as a representation of firm size (Azhagaiah & Priya, 2008; Shah & Khan, 2009).

Data Estimation Method

Panel data method issues arising are corrected by the use of Generlized Method of Moments (GMM) and this method deals with panel data problems constructively. According to Arellano and Bond (1991), the unobserved problem pertaining to firm specific effects are totally removed by the transformation of first difference of the regressors in GMM. However, weak dynamic linear panel model is encountered by the use of the difference GMM and provides poor and bias estimations and this becomes inappropriate as a result of two conditions (Blundell & Bond, 1998, 2000).

The first condition arises when there is a close random walk of variables and the second condition occurs as a result of increases in unobserved fixed effect, (Blundell & Bond, 1998). Hence, weak instruments are highly correlated with the regressors and to correct this highly problematic situation, system GMM is the most appropriate and preferable estimator estimations. These equations are employed by the system GMM and regression estimate are arrived at the same time in the model (Arellano & Bover, 1995; Blundell & Bond, 1998). The system obtains additional instruments by employing the second equation and applies the first difference and instruments by engaging lag value as suitable solution point to resolve weak instruments disturbances.

Correlation of explanatory variables is one condition and at the same time the explanatory variable must be uncorrelated with the error term for the second condition before an instrument can be specified (Wooldridge, 2009). Proper instrument identification is quite a difficult problem and at the same times a very significant issue in GMM modelling. According to Anderson & Hsiao, (1981) lag value selection as an instrument is the most imperative and common exercise in GMM estimation. Efficient estimations are provided by system GMM and estimators are more improved and efficient when the cross sections are more than the observation number in a time series model.

Endogeniety issues might arise when specific firm variables are used and is one cause of potential error estimation. A potential endogenous problem can also come about when variables are based on accounting values (Gaud et al., 2005). In addition, debt estimation is represents an endogenous variable because of trade-off between distress cost and tax benefits while going for optimal capital structure (George & Hwang, 2010). The study follows the Amidu and Wolfe (2013) and applies the dynamic panel regression model using the two-step system GMM to deal with endogeneity problem. The generalized method of moments produces excellent results in dealing drastically with heteroskedasticity and autocorrelation issues (Baum et al., 2003; Antoniou et al., 2006).

Econometric Model

This section describes the econometric model which is being adopted in this study. Dividend is very important factor for the stability of organization. This study adopted the static model as supported by different studies (Chen, Leung & Goergen, 2013; Jabbouri, 2016). This study also examined the hypothesis with dynamic panel model due to endogeniety problems and heteroscedasticity issues. Taking into consideration the above assertions, the study developed the following static and multiple linear dynamic panel models.

Dynamic Panel Model

$$DPS_{it} = \beta_1 DPS_{i,t-1} + \beta_2 EPS_{it} + \beta_3 CFPS_{it} + \beta_4 MTB_{it} + \beta_5 SIZE_{it} + \beta_6 DR_{it} + \beta_7 LR_{it} + \beta_8 BETA_{it} + \varepsilon_{it}$$

Static Model

$$DPS_{it} = \beta_1 DPS_{it} + \beta_2 EPS_{it} + \beta_3 CFPS_{it} + \beta_4 MTB_{it} + \beta_5 SIZE_{it} + \beta_6 DR_{it} + \beta_7 LR_{it} + \beta_8 BETA_{it} + \varepsilon_{it}$$

Where DPSit is dividend per share measured as total dividend paid divided by number of shares outstanding, EPSit is measured as net income to outstanding shares, CFPSit is

measured as net income + depreciation + net working capital to common share (Liu, Nissim, & Thomas, 2007), MTB is calculated as average price per share to book value per share. Sizeit is measures as log of total assets. DRit is measured as total liabilities to total assets, LRit is measured as current assets to current liabilities, Betait is measured as quarterly beta (Consler, Lepak, & Havranek, 2011).

Results and Discussions

Descriptive Statistics

Descriptive statistics demonstrate and summarize the information in a meaningful manner that is simpler to comprehend and interpret. Before the summary data are calculated, all variables are winsorized at 1 percent level in both tail distributions to address the impact of outlier (Kale & Shahrur, 2007). In this study, it defines the fundamental characteristics of data and précis the measures and sample of data. The results related to descriptive statistics are presented in Table 1. In descriptive statistics we mainly focused on earning per share, cash flow per share and dividend per share. The results identified that average dividend per share of Pakistani firms is 0.260 which indicates that they pays 26% dividend of outstanding shares. However, the average values of earnings per share and cash flow per share are 3.205 and 5.214 respectively.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
DPS	1020	0.260	0.261	0.000	1.353
EPS	1020	3.205	1.860	-5.910	6.730
CFPS	1020	5.214	1.695	-3.136	6.955
MTB	1020	2.574	1.884	3.085	7.215
Size	1020	8.922	2.776	7.455	9.232
DR	1020	0.562	0.182	0.400	0.904
LR	1020	1.779	0.662	0.780	4.054
Beta	1020	0.022	0.065	0.010	0.584

Note: This table shows the descriptive statistics of variables over the period 2009-2018 of non-financial firms. The observations, mean, standard deviation, minimum and maximum values are presented in this table. The values are stated on the basis of dividend per share (DPS), earnings per share (EPS), cash flow per share (CFPS), market to book ratio (MTB), size (log of total assets), debt ratio (DR), liquidity ratio (LR) and Beta.

Correlation Analysis

The results related to correlation analysis are presented in Table 2. Correlation is a statistical measure, which is used to test the strength and direction of relationship. Earnings per share

tend to have the positive correlation with dividend per share. Cash flow per share shows the negative correlation with dividend per share (-0.0017) but it has positive correlation with earnings per share (0.2977). The correlation analysis shows the rough picture about the direction of relationship between the variables and it seems difficult to draw a conclusion based on this correlation analysis. All the variables in this correlation analysis are partially correlated, therefore no multicollinearity issue among the explanatory variables.

Table 2: Correlational Analysis

	DPS	**EPS**	**CFPS**	**MTB**	**Size**	**DR**	**LR**	**Beta**
DPS	1.000							
EPS	0.1866	1.000						
CFPS	-0.0017	0.2977	1.000					
MTB	0.1812	0.2032	0.0218	1.000				
Size	0.2347	0.2059	0.1731	0.2416	1.000			
DR	-0.0526	-0.1168	-0.0977	-0.0089	-.1208	1.000		
LR	0.0231	0.1323	0.0462	0.1532	0.1109	-0.1851	1.000	
Beta	0.0337	0.1225	-0.0155	0.0748	0.1046	-0.0931	-.0047	1.000

Note: This table shows the correlation among variables used in the study. The observations, mean, standard deviation, minimum and maximum values are presented in this table. The values are stated on the basis of dividend per share (DPS), earnings per share (EPS), cash flow per share (CFPS), market to book ratio (MTB), size (log of total assets), debt ratio (DR), liquidity ratio (LR) and Beta.

Dividend and Earnings per Share

The results related to earning per share as economic predictors of dividend are presented in Table 3. This table demonstrates the outcomes related to OLS estimation regression, fixed effect and random effect. This study tests the relationship without control variables and also tests the relationship with the inclusion of control variables. The coefficient of earnings per share shows a significant positive economic association with dividend per shares of non-financial firms in Pakistan. Higher earnings are likely to results in higher dividend payment which supports the birds in hand and signaling theory. Firms paying dividends creates a positive signals in the market, which in turn leads to shareholders wealth maximization. This shows that higher earnings would results in high level of dividend per share. Therefore, firms paying high dividends are perceived to be less risky and experiencing low agency problems and information asymmetry (Jensen, 1986; Hope, 2003). Dividends may be used to express the obligations to behave in the best interests of shareholders, thereby mitigating the agency issues (Myers, 2000). Thus, private control advantages accessible to insiders are limited by companies through dividends payment, as money outlays provide fewer possibilities for insiders to consume these advantages (Pinkowitz et al., 2006).

Table 3: Estimation results between earnings per share and dividend per share in a static panel model

Dividend is the dependent variable in all the columns						
Variables	**OLS**		**Fixed Effect**		**Random Effect**	
EPS	0.040***	0.030***	0.020**	0.020**	0.030***	0.020***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
MTB		0.016***		0.007		0.009**
		(0.004)		(0.005)		(0.004)
Size		0.017***		0.004		0.016***
		(0.003)		(0.011)		(0.005)
DR		-0.032		-0.114*		-0.090*
		(0.044)		(0.065)		(0.055)
LR		-0.014		-0.045***		-0.036***
		(0.012)		(0.013)		(0.012)
Beta		-0.049		0.084		0.047
		(0.122)		(0.142)		(0.131)
Constant	0.232***	-0.114*	0.249***	0.257	0.244***	-0.018
	(0.009)	(0.069)	(0.008)	(0.237)	(0.017)	(0.116)
Observations	1020	1020	1020	1020	1020	1020
R Square	0.0348	0.0348	0.1023	0.0697	0.1023	0.1541
No. of Cross Sections	102	102	102	102	102	102

Note: Table 3 report the results related to different robust econometric techniques that are pooled OLS, fixed effect and random effect in a static panel model. Dividend payout is the dependent variables in all these specification which is scaled as dividend announced over number of shares outstanding. Column 2 and 3 show the results in pooled OLS, column 4 and 5 show the results in fixed effect while 6 and 7 indicates the results in random effect model. EPS is calculated as net income divided by number of shares outstanding, MTB is market price per share over book value per share. Size is the log of total assets; DR indicates the total debt over total assets. LR is liquidity ratio which is calculated as current assets over current liabilities, while beta is systematic risk and is calculated as Beta = covariance (return of market, return of security) over variance of market. Standard errors in parentheses and *** (0.01), ** (0.05) and *(0.10) represents the significant levels at 1%, 5% and 10% respectively.

The results related to the economic relationship of earnings per share with dividends policy of firms in a dynamic panel model are presented in Table 4. This table demonstrates the outcomes of estimation i.e one step difference GMM and System GMM (one step system GMM and two step system GMM). The lagged dependent variable is significant in all the columns, indicating that model is dynamic in nature and there might the possibility of

endogeneity issue. The findings of this study suggested that earnings per share are a significant economic factor that causes the increase in dividend payment of firms in Pakistan. This study finds that earning per share has a significant positive impact on dividend per share, which is consistent with (Bacon, 2005; Fama, 2001; Ranti 2013; Musa, 2009) and also supported by bird in hand theory. The results also support the signaling theory where dividend payment creates the positive signals in the market. A rise in dividends into a certain quarter may result from a company's good performance. This is a case of encouraging a positive causal relationship between existing dividends and future earnings (Fariso et al., 2004; Bali et al., 2008). Earnings or profitability is a major determinant for dividend payments in Pakistan and the findings of this study appears to be consistent with (Khan et al., 2011).

Table 4: Estimation results between dividend and earnings per share in a dynamic panel model

Dividend is the dependent variable in all the columns						
Variables	**Diff GMM**		**System GMM**			
			One Step		Two Step	
$DPS_{(t-1)}$	0.490**	-0.414**	0.698***	0.518***	0.616***	0.491***
	(0.207)	(0.201)	(0.252)	(0.132)	(0.199)	(0.052)
EPS	0.020**	0.013***	0.011*	0.060**	0.080***	0.070***
	(0.009)	(0.005)	(0.006)	(0.030)	(0.020)	(0.010)
MTB		-0.010		0.007		0.009***
		(0.024)		(0.012)		(0.004)
Size		-0.062		0.006		0.006***
		(0.100)		(0.007)		(0.002)
DR		-0.129		-0.003		-0.038
		(0.391)		(0.151)		(0.057)
LR		-0.156***		0.027		0.022*
		(0.052)		(0.034)		(0.013)
Beta		2.124 ***		-0.367		-0.432***
		(0.866)		(0.344)		(0.078)
Constant			(0.047)	-0.027	0.044	-0.009
			0.070	(0.178)	(0.057)	(0.047)
AR (1)	0.000	0.050	0.000	0.000	0.000	0.000
AR(2)	0.970	0.150	0.100	0.100	0.280	0.231
Sargan / Hansen Test	0.466	0.521	0.611	0.630	0.791	0.790
Number of Instruments	14	21	29	73	21	73
Number of Groups	102	102	102	102	102	102

Note: This Table report the results related to GMM (Difference GMM and System GMM) in a dynamic panel model. Dividend payout is the dependent variables in all these specification which is scaled as dividend announced over number of shares outstanding. Column 2 and 3

show the results related to difference GMM, column 4 and 5 show the results about one step system GMM while 6 and 7 indicates the two step system GMM results. EPS is calculated as net income divided by number of shares outstanding, MTB is market price per share over book value per share. Size is the log of total assets, DR indicates the total debt over total assets. LR is liquidity ratio which is calculated as current assets over current liabilities, while beta is systematic risk and is calculated Beta as covariance (return of market, return of security) over variance of market. The significant value of AR (1) shows the existence of first order serial correlation while AR (2) is insignificant showing no second order serial correlation in level regression among error term. Sargan / Hansen test overid value is insignificant, indicating the validity of instruments and are not over identified. Overall, the results of AR (1), AR (2) and Sargan / Hansen test shows that GMM is correctly specified with no identification issues. Standard errors in parentheses and *** (0.01), ** (0.05) and *(0.10) represents the significant levels at 1%, 5% and 10% respectively.

Dividend and Cash Flow Per Share

Table 5 demonstrates the results between cash flow per share and dividends per share in a static panel model. This table demonstrates the outcomes of the estimation of OLS regression, fixed effect and random effect. The results indicated that cash flow is significant economic factors that tend to increase the dividend payment of firms. Large cash flow produces more cash dividends to be allocated to shareholders. Companies that have bigger in size and cash flows have a positive effect on the payout ratio of dividends. It is because larger firms accumulate more revenues and cash flows that are needed to distribute as dividends (Noorozani, Hakimeh & Kheradm, 2014; Labhane & Das, 2015). The results support the bird in hand theory and signaling theory. Dividend payment creates a positive signal in the market and investors in the market are optimistic about those firms.

Table 5: Estimation results between cash flow per share and dividend per share in a static panel model

Dividend is the dependent variable in all the columns						
Variables	OLS		Fixed Effect		Random Effect	
CFPS	0.016**	0.022***	0.012***	0.016***	0.006***	0.026***
	(0.008)	(0.008)	(0.002)	(0.001)	(0.001)	(0.009)
MTB		0.016***		0.007		0.009**
		(0.004)		(0.005)		(0.004)
Size		0.018***		0.004		0.018***
		(0.003)		(0.011)		(0.005)
DR		-0.039***		-0.116*		-0.099*
		(0.004)		(0.065)		(0.056)

LR		-0.015		-0.045***		-0.035***
		(0.012)		(0.013)		(0.013)
Beta		-0.071		0.081		0.046
		(0.122)		(0.142)		(0.132)
Constant	0.229*	-0.133**	0.264***	0.250	0.263***	-0.045
	(0.009)	(0.069)	(0.010)	(0.238)	(0.019)	(0.116)
Observations	1020	1020	1020	1020	1020	1020
R Square	0.0384	0.0943	0.0003	0.0748		0.1222
No. of Cross Sections	102	102	102	102	102	102

Note: The Table report the results related to different robust econometric techniques that are pooled OLS, fixed effect and random effect in a static panel model. Dividend payout is the dependent variables in all these specification which is scaled as dividend announced over number of shares outstanding. Column 2 and 3 show the results in pooled OLS, column 4 and 5 show the results in fixed effect while 6 and 7 indicates the results in random effect model. CFPS is calculated as net income plus net working capital plus depreciation over number of shares outstanding, MTB is market price per share over book value per share. Size is the log of total assets; DR indicates the total debt over total assets. LR is liquidity ratio which is calculated as current assets over current liabilities, while beta is systematic risk and is calculated as Beta = covariance (return of market, return of security) over variance of market. Standard errors in parentheses and *** (0.01), ** (0.05) and *(0.10) represents the significant levels at 1%, 5% and 10% respectively.

The results related to cash flow per share as predictors of dividend are presented in Table 6. This table demonstrates the outcomes of estimation i.e one step difference GMM and System GMM (one step system GMM and two step system GMM). The lagged value of the dependent variable is significant in all the columns, indicating that model is dynamic in nature. The coefficient of cash flow per share is significant positive which indicates the increase in dividends payment. A number of studies demonstrate that paying high dividends can be used to lessen agency costs and mitigation of information asymmetry problems (Faccio et al., 2001; Gomes, 2000).

Table 6: Estimation results between dividends and cash flows in a dynamic panel model

Dividend is the dependent variable in all the columns						
Variables	**Diff GMM**		**System GMM**			
			One Step		Two Step	
DPS(t-1)	0.520***	0.043***	0.636***	0.525***	0.818 ***	0.618***
	(0.192)	(0.011)	(0.124)	(0.127)	(0.097)	(0.021)
CFPS	0.026***	0.009**	0.016***	0.008*	0.015***	0.003***
	(0.008)	(0.004)	(0.006)	(0.005)	(0.005)	(0.0004)
MTB		0.003		0.025*		0.008***
		(0.013)		(0.014)		(0.001)
Size		-0.071**		0.005		0.003***
		(0.034)		(0.009)		(0.001)
DR		-0.374**		0.023		-0.093***
		(0.187)		(0.176)		(0.019)
LR		-0.054***		0.079*		-0.036***
		(0.018)		(0.042)		(0.003)
Beta		0.502		-0.139		0.212***
		(0.412)		(0.395)		(0.043)
Constant			0.184***	-0.055	0.136***	0.071***
			(0.046)	(0.243)	(0.036)	(0.026)
AR (1)	0.000	0.000	0.000	0.000	0.000	0.000
AR(2)	0.375	0.442	0.250	0.126	0.217	0.202
Sargan / Hansen Test	0.340	0.113	0.365	0.197	0.391	0.132
No. of Instruments	15	48	23	55	29	85
Number of Groups	102	102	102	102	102	102

Note: This Table report the results related to GMM (Difference GMM and System GMM) in a dynamic panel model. Dividend payout is the dependent variables in all these specification which is scaled as dividend announced over number of shares outstanding. Column 2 and 3 show the results related to difference GMM, column 4 and 5 show the results about one step system GMM while 6 and 7 indicates the two step system GMM results. CFPS is calculated as net income plus net working capital plus depreciation over number of shares outstanding, MTB is market price per share over book value per share. Size is the log of total assets; DR indicates the total debt over total assets. LR is liquidity ratio which is calculated as current assets over current liabilities, while beta is systematic risk and is calculated as covariance (return of market, return of security) over variance of market. The significant value of AR (1) shows the existence of first order serial correlation while AR (2) is insignificant showing no

second order serial correlation in level regression among error term. Sargan / Hansen test overid value is insignificant, indicating the validity of instruments and are not over identified. Overall, the results of AR (1), AR (2) and Sargan / Hansen test shows that GMM is correctly specified with no identification issues. Standard errors in parentheses and *** (0.01), ** (0.05) and *(0.10) represents the significant levels at 1%, 5% and 10% respectively.

Conclusion

The study aims to examine the economic impact of earnings per share and cash flow per share on dividend policy of non-financial firms listed on Pakistan Stock Exchange over the period 2009-2018. For this purpose static and dynamic panel are used for empirical testing of the hypothesis. Fixed effect model is appropriate for static panel model while difference GMM and system GMM is used for dynamic panel model. This study also analyzes the models with or without control variables. The study concluded that earning per share is a significant economic factor that results an increased dividend payment of firms in Pakistan. Moreover, cash flow per share is also a significant economic factor which positively impacts the dividend per share. Firms with high cash flow availability are more likely to issue the dividends as compare to firms with insufficient availability of cash flows. This increase the firm's likelihood to pay cash dividends which supports the signaling theory. The direction of both factors is same but the magnitude varies where explanatory power of earnings per share is better than cash flow per share. Dividend announcement decisions keeping in view the earnings and cash flows are beneficial for managers of firm in emerging and developing markets. By implication on policy perspective, investors should focus more investments on firms with high earnings and cash flow streams in Pakistan.

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