

Dividend Policy as a Core Determinant of Earnings Management: Evidence from Pakistan

Muhammad Danish Habib^a, Sania Shaheen^b, Lal K. Almas^c

Abstract

The current study estimates the impact of dividend policy on earnings management for the non-financial firms of Pakistan listed on the Karachi Stock Exchange/Pakistan Stock Exchange (PSX) and belonging to all sectors. The data was collected for the period 2010-2020 and the analysis was carried out using the random effect generalized least square regression. The findings report that dividend policy has a significant relationship with earnings management and may limit the financial manager's involvement in earnings management practices to adjust dividends. This research provides us with the relevant empirical evidence regarding the role of the key contributing factors of earnings management. Regulators can implement corporate governance rules and regulations based on empirical tracts in place of motivational debates on politics. The results offer a compact platform for investors to eradicate ambiguity by recognizing the likelihood of resourceful goals and improving their policymaking process. The findings also provide the investors with a clear idea about the various factors that contribute in financial reporting and prevent the misreporting of profits. These contributing factors allow investors to be careful about the ingenious purpose and effectiveness of management to obtain returns for their benefit.

Keywords: dividend yield, earnings management, generalized least squares (GLS), Karachi stock exchange, random effect

JEL Classification: G35, G32, G10, C23

1. Introduction

Earnings quality is a vital concept in financial economics and accounting literature. A large number of empirical studies and accounting debates internationally have reflected on the quality of earnings and set standards for the highest quality/best type of earnings reporting (Levitt, [1998](#)). The concept of earnings quality is very extensive and covers multivariate topics including smooth earnings, earnings persistence, asymmetric loss recognition, predictability, income increasing accruals, the magnitude of accruals, and discretionary accruals, where the probability of a clear description and measurements are scarce (Dichev et al., [2013](#)).

Earnings measurement (EM) is a process that includes the estimation and interpretation of business activities, events, and transactions. Since this process depends on applied principles and assumptions, therefore, it is impossible to offer a single amount of earning. Earnings analysis, as documented in the literature, shows that the accounting of earnings does not result in a unique amount; instead, it depends on the principles applied and assumptions used for reporting it. For instance, the complexity of EM is due to the difference between cash accounting and accruals. Cash flows accounting recognizes the outflow and inflow of cash regardless of whether cash flows are incurred or earned, while accrual accounting only takes into account expenses if they are incurred and revenue when it is earned (Wild et al., [2004](#)).

As far as the complexity of EM is concerned, existing research on this concept cannot precisely analyze the proportion of income managed by the fundamental earnings process (Dechow et al., [2010](#)). A significant increase has been observed in the academic investigation of EM over the past decades. Practitioners, academics, and regulators have shown an increased interest in the unfolding of the underlying processes of EM. This is due to the policy concerns of accounting standard setters and the development of easy-to-calculate EM measures (Jones, [1991](#); Dechow et al., [1995](#)). A chain of corporate accounting scandals, such as Xerox, World Com, Tyco, and Enron were recorded across Europe and United States in the late 1990s and the early 21st century. The main aspect common to all these scandals was EM (Habbash, [2010](#)).

The current research conducts the panel data analysis of non-financial listed firms at KSE/PSX, representing an extensive variety of industries, over a period of nine years with a more reliable EM model known as the Modified Jones model. It uniquely contributes to the literature on EM by investigating the association between EM and dividend policy. Dividends are recognized as a handy tool employed to ease the agency problem by distributing the shares of/to shareholders. However, in the Pakistani setting, dividends are considered as a measure of future firm growth. Moreover, dividend literature underlines the basis of the association between dividends and EM. One view is that dividends are a determinant of earnings, while another view is that earnings are a precursor of dividends (Shah et al., [2010](#)). Based on the former viewpoint, this study examines dividends as an antecedent of EM (Caskey & Hanlon, [2013](#)).

The results contribute to the development of a richer view of investors concerning the influence of various donating/contributing factors in the process of financial reporting and earnings

misrepresentation. These supportive factors allow investors to be aware of opportunistic determinations as well as the management capacity to obtain profits at their level of interest.

Indeed, the results provide an appropriate opportunity for investors to mitigate uncertainty by recognizing opportunistic/new possibilities and expanding their decision-making process. It also offers empirical evidence concerning the role of the major contributing factors of EM. Regulators can impose corporate governance rules and regulations based on experimental grounds relating to policy-based motivational debates.

Overall, the main aim of this research is to analyze the impact of dividend policy on EM. Furthermore, it aims to develop and empirically examine the structural association between dividend policy and EM.

2. Literature Review

2.1 Dividend Policy and EM

Corporate managers are responsible for making several critical decisions regarding business management and finance. Dividend policy is one of the key financial aspects of a business because it signals the financial condition/health of a corporation. Keeping in view the perspective of a perfectly effective market proposition, Miller and Modigliani (1961) argued that dividend policy has no significant impact on a firm's value. However, in reality, the perfect market does not hold. Literature provides many theories including the signaling theory, agency theory, bird-in-hand theory, and clientele theory which collectively explain that the firm equity value can be increased by adopting an attractive dividend policy. Furthermore, investors are more concerned about dividend-paying firms.

Dividends are usually paid at the end of a specific period based on declared earnings and on the recommendations of managers or directors. Normally, managers decide the distribution of dividends and reinvest them as retained earnings from profits. Numerous studies in the literature have investigated the association between EM and dividend policy, since dividends represent cash payment of a firm's earnings to stockholders and their payment is one of the key decisions faced/taken by managers.

Kasanen et al. (1996) were the first to study the relationship between the earnings of firms and their dividend policy. The findings showed that firms act aggressively to manage their earnings in order to show/save sufficient amounts to pay dividends. Kato et al. (2001) validated these results

and stated that firms manage their earnings to stay on top. Furthermore, their higher rankings also increase investor expectations of higher dividends. The findings of Edelstein et al. (2008) are also in line with Kato et al. (2001) and revealed that dividends encourage EM.

Robust corporate governance and performance reduce the likelihood of EM in a country. Dividends are also considered an important tool to deal with the agency problem that arises between shareholders and the management (Gomes, 1998; Zwiebel, 1996). Managers can manage a firm's earnings upwards or downwards in order to cope with the pressure exerted by large institutional shareholders and to accomplish regulatory constraints, respectively (Edelstein et al., 2008; Kasanen et al., 1996). Lintner (1956) proposed a smooth earnings model in the form of a partial dividend adjustment. Garret and Priestley (2000) argued that managers make adjustments in their earnings to adjust the target dividends. However, some studies, such as Shah et al. (2010), did not document any significant association between dividends and EM.

2.2.Dividend Yield and EM

Previous literature emphasized the importance of dividend yield, since it reduces agency costs by preventing the misrepresentation and misallocation of capital (Faccio et al., 2001). Stulz (1990) indicated/found that to run through their own goals, managers may misallocate firm capital as invested in projects instead of paying dividends. Thus, payment in the form of dividends may restrict such over-investment. Therefore/Subsequently, the payment of dividends to the shareholders can be used to limit this managerial choice and lower the cost of over-investment. La Porta et al. (2000) found that with savings with sound legal certainty the dividend yield ratio of shareholders is greater. This argument suggests that in case of poor legal protection, managers may manage their earnings through misallocation of investments.

Liu (2011) investigated the effect of dividend policy on the falling and rising pattern of EM. He strived to explore “whether the firms paying dividends manipulate their earnings through real activities to smooth dividend yield and dividend payout ratios?” The findings explained a significant influence of dividend policy on both downwards and upwards EM. He argued that firm dividends are an important benchmark of earnings. The manager manipulates the firm's earnings with the help of real activities to mitigate the shortfall of the pre-managed earnings. Additionally, he stated that firms with conservative dividend policies are more prone to earning manipulation, unlike the firms that do not follow such policies.

He et al. (2012) examined the importance of dividends information in financial reports to improve earnings quality in a global context. They stated that firms pay dividends to ensure high-quality earnings and to forgo the benefits of private control. The study illustrated that firms that pay dividends have less abnormal accumulations and enjoy high earnings quality. Furthermore, the analysis showed that dividend payers have/avail more accurate earnings forecasts than non-payers. Savov (2006) investigated the direct relationship between investment, EM, and their impact on dividend payments. The results showed a direct association between investment and earnings manipulation and a negative association between earnings manipulation and dividend payment. Based on the above review of the literature, we developed the following hypothesis:

H_{1a}: There is an inverse association between dividend yield and EM.

2.3. Dividend Payout Ratio and EM

Numerous studies in the literature have discussed the association between EM and dividend payouts. Kasanen et al. (1996) showed that dividends are a significant determinant of EM based on a sample of listed financial firms. Various previous studies have linked dividend payouts to EM. Firms satisfy their institutional investors by managing their earnings upwards; if uncontrolled, earnings remain lower than the dividend payouts of the previous year. Additionally, firms run wages down when non-regular earnings are greater than the previous year's dividend payouts, in order to lower the taxes. In the same vein, this study presents empirical evidence for dividend-based EM. Some studies explored the causes of the decrease in EM. Daniel et al. (2008) investigated the association between dividend restrictions in bond agreements and EM behavior. The results showed that earnings were managed upwards to meet dividend expectations, as pre-managed earnings fell relative to the expectation. The findings indicated that EM practices are driven by debt covenants. Hence, debt covenants can restrain the current earnings-based cash distributions.

Atieh and Hussain (2012) and Daniel et al. (2008) investigated the above mentioned issue using a sample of the dividend paying firms of UK and documented that firms increase their income to attract institutional investors. Thus, firms that do not pay dividends do not declare their losses, if the expected dividends are greater than their pre-managed earnings. Skinner and Soltes (2011) explored the influence of earnings persistence on dividends and argued that earnings reports are more consistent for firms that pay dividends, relative to firms that do not pay dividends. Shahwan and Almubaydeen (2020) found an inverse relationship between dividend payouts and

EM for the listed industrial firms in Jordan. Kusuma and Nuswantara (2021) found that dividend policies are not the main factor in reducing EM. Based on the literature, we suggest the following hypothesis:

H_{1b}: *There is an inverse association between dividend payouts and EM.*

3. Data and Methodology

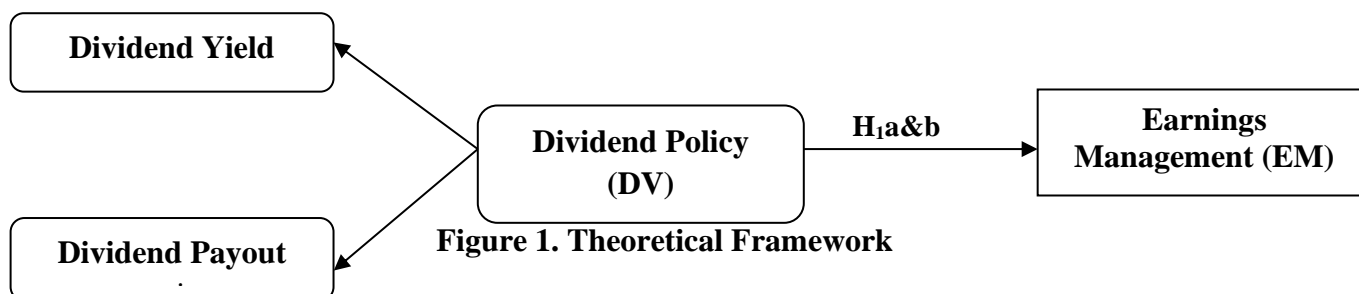
3.1. Data Source

In the current study, we used firm-level panel data of 100 non-financial firms of Pakistan listed at KSE/PSX and belonging to all sectors. Out of the 100 non-financial firms, we selected 74 firms as sample covering the period 2010-2020. Financial sector data is missing in our study. The description/details of excluded firms are as follows: non-life insurance (n=2), life insurance and investment services (n=8), commercial bank (n=14), and equity and trust (n=2). These firms were excluded due to their unique capital structures and different income measurement rules, which may not be treated/tested by using the modified Jones model. This is due to the fact that they have diverse accrual processes which may not be addressed to estimate discretionary accruals (Wells, 2002; Klein, 2002). Firms that do not have an audit committee and the firms that have missing required corporate governance and non-financial firms' financial data are missing from the sample size. Hence, the final sample size comprised 62 listed non-financial firms, while observations were recorded for the years 2010-2020. The initial sample size consisted of/comprised 666 observations which were reduced to 558 observations after cleaning up missed variables. Accounting data for estimating dividends and EM was collected from the Balance Sheet Analysis (BSA, 2010-2020) and from the website of open doors for all (www.opendoors.pk), business recorder (www.brecorder.com.pk), and the published reports of the State Bank of Pakistan (SBP).

3.2. Methodology

3.2.1. Theoretical Framework

Figure 1 shows the theoretical framework of the current study.



We used the modified Jones model proposed by Dechow et al. (1995). It is a variant of the discretionary model known as standard Jones (1991). The standard Jones model classifies accruals into discretionary and non-discretionary. When sales changes are adjusted into receivables, standard Jones model becomes the modified Jones model. The modified Jones model was created to reduce the errors of measurement in discretionary accruals, when discretion is exercised over sales. Numerous studies in the literature used the modified Jones model to measure discretionary accruals, such as Dechow et al. (1995) concluded that the modified Jones model offers the most robust test of EM relative to Healy DeAngelo, standard Jones, and the industry model. In this research, we analyzed discretionary accruals for EM proxy. Data was analyzed in Stata 15 software.

The regression equation of our model is given below.

$$EM_{it} = \alpha + \beta_1 DY_{it} + \beta_2 DP_{it} + \varepsilon_{it} \quad \dots \dots \dots (1)$$

where EM_{it} is the EM of i th firms in time t , while DY_{it} is the dividend yield of i th firms in time t .

We measured it by taking the summation of all dividends in cash form, paid by the companies to their shareholders per share (Faccio et al., 2001; La Porta et al., 2000; Stulz 1990; Liu, 2011).

DP_{it} is the dividend payout of i th firms in time t . It is the proxy of dividend policy calculated by the amount of dividends paid divided by earning after interest and taxes (Atieh & Hussain, 2012; Daniel et al., 2008; Skinner & Soltes, 2011).

ε_{it} is the residual term that captures the firm-specific discretionary portion of total accruals.

α, β_1, β_2 are the firm-specific parameters

3.2.2 Measurement of EM

The theoretical framework of this research is based on EM as the dependent variable. EM is calculated by estimating discretionary accruals using the modified Jones model (1995). Numerous studies in the literature used and suggested discretionary accruals as a proxy of EM (Teoh et al., 1998). This study used the modified Jones model for calculating discretionary accruals. Modified Jones is considered as one of the most accurate estimators of EM. In this method, data is used from the income statement and accruals are calculated. For the measurement of discretionary accruals, total accruals are estimated. Total accruals (TACC) are the sum of discretionary (DACC) and non-discretionary accruals (NDACC). DACC are part of TACC (subject to manipulation) as they are at the discretion of management and require judgment. The

cash flow approach is used to calculate TACC. Collins and Hribar (1999) suggested that the cash flow statement is a more precise estimator than the balance sheet approach. Hence,

$$TACC = Net\ Income - operating\ Cash\ Flows \dots \dots \dots (2)$$

In this research, net income was used instead of income before special items or extraordinary to avoid the misclassification of abnormal accruals using the modified Jones model. Researchers have argued that special items are usually not estimated as discretionary. However, the approach used in the modified Jones model misclassifies them (Bernard and Skinner, 1996). To eliminate any potential measurement errors, this research calculated total accrual from activities (as stated in the cash flow statement).

Following the process of the modified Jones model, DACC was calculated by subtracting NDACC from TACC. NDACC was calculated using the following equation:

$$NDACC = \alpha_1 (1/A_{it-1}) + \alpha_2 (\Delta REV_{it} - \Delta REC_{it} / A_{it-1}) + \alpha_3 (PPE_{it} / A_{it-1}) + \varepsilon_{it} \dots \dots \dots (3)$$

Here, ΔREV_{it} is the revenue of the current year minus the revenue of the previous year divided by the lag of total assets (TA).

PPE_{it} is the gross property plant and equipment at the end of the current period/year divided by the lag of TA.

ΔREC_{it} stands for net receivables. Finally, DACC was calculated by subtracting NDACC from TACC in the current period/year minus net receivables of the previous year. All of the variables were divided by lagged TA.

A_{it-1} stands for total assets at the end of year t-1, whereas $\alpha_1, \alpha_2, \alpha_3$ are firm-specific parameters, and ε_{it} is the residual that shows the firm-specific discretionary share of total accruals.

$$DACC = TACC - NDACC \dots \dots \dots (4)$$

DACC was used as a proxy of EM. We measured DACC by subtracting TACC from NDACC. Moreover, we estimated the panel data regression equation using random effect GLS regression. We discuss the results briefly in Section 4.

4. Results and Discussion

Correlation analysis was used to determine the association between dependent and explanatory variables. Table 1 shows the results of correlation analysis carried out to check whether correlation exists between dividend policy and EM. Overall, the results reported an inverse association between DY (-0.0302) and DACC. The relationship between DP (-0.0570) and DACC was also found to be significant and negative.

TABLE 1. Pairwise Correlation Matrix

	DY	DP	DACC
DY	1.0000		
DP	0.5960	1.0000	
DACC	-0.0302	-0.0570	1.0000

Table 3. VIF Results

Variables	VIF	1/VIF
DY	1.89	0.8609
DP	1.32	0.9078

Notes: Mean VIF = 1.50

Source: Authors' own calculations

4.1.1. Hypothesis Testing

In this study, panel data set was used. In panel data analysis, fixed effect model (FEM) and random effect model (REM) can both be used for valid and reliable estimation. Himmelberg et al. (1999) stated that both FEM and REM are reliable techniques in panel data analysis that help to eliminate the problem of heteroskedasticity in the given data set. Additionally, Yasser et al. (2011) argued that both FEM and REM are supportive techniques for generating informative results in panel data analysis. It reduces the probability of biasness in pure cross-sectional and time-series data. To choose the appropriate model among/between REM and FEM, Husman test was applied (Kamran & Shah, 2014). The results favoured the use of REM (Table 2).

4.1.2 Hausman Test

H_0 = RE are sufficient and consistent.

H_1 = RE are not sufficient/insufficient and consistent/inconsistent.

TABLE 2. Hausman Test

$\chi^2_{(10)}$	= 12.793
χ^2 (P-value)	= 0.8967

4.1.3 Multicollinearity

Multicollinearity is a statistical approach that shows a strong association between two independent variables. In case of multicollinearity, the regression model does not provide reliable estimates. To resolve this issue, we applied the variance inflation factor (VIF). If $VIF > 10$, it is an indication of multicollinearity that leads to biased estimation (Gujrati, 2003). Table 3 reports the VIF values that indicate the fact that there is no issue of multicollinearity in the data.

4.1.4 Heteroskedasticity

One of the most important assumptions of regression for best fitting the model is that the variance of residuals should be homogeneous.

Table 4. Breusch-Pagan Test for Heteroskedasticity

$\chi^2_{(1)}$	=
	1970.64
χ^2 (P-value)	= 0.000

The heteroskedasticity hypothesis was evaluated using the Breusch-Pagan test. The results in Table 4 show the absence of heteroskedasticity in the data set. In the existence of heteroskedasticity the standard errors (SE) are biased, which affects the t-test and makes the model significant. Hence, we applied the vigorous approach for the remedy of heteroskedasticity to an unbiased estimation of the regression model.

4.1.5. Random Effect Model (REM)

REM is a type of a hierarchical linear model that is also known as variance components model. This model is estimated by assuming that data consists of a pyramid of various populations whose differences are related to their hierarchy. In general, FEM is used in case of a balanced panel. However, REM is considered as more appropriate when the sample includes partial data from the existing cross-sectional component. To test the hypotheses, both DY and DP were regressed with DACC. The results reported that the value of R^2 is 0.25, which represents 25% variation in the model. Wald χ^2 (20.00**) significance shows the statistical significance of the model. To test the hypothesis that DY has a significant and inverse effect on DACC (H_{1a}). The findings indicate that DY is significantly but inversely related to DACC ($\beta = -0.24^*$; $p < 0.05$). Therefore, the findings support H_{1a} . We designed and hypothesized that DIVPOU has a significant inverse effect on DACC (H_{1b}). Overall, the findings reported that DIVPOU has an insignificant effect on DACC (β

= -0.902; $p > 0.05$). Hence, the findings do not support H_{1b} . This result is also consistent with Ahmed et al. (2018).

TABLE 3: RE-GLS Regression Model for Dividend Policy and EM

Model 4		
Variables	Coefficients	P-values
DY	-0.24*	0.032
DP	-0.902	0.420
$R^2 = .25$, Wald $\chi^2(2) = 20.00^{**}$, $P > \chi^2 = 0.0077$		
Note: * 5% significance level, ** 1% significance level		

4. Conclusion and Policy Suggestions

This main aim of the current research was to determine the association between dividend policy and EM. For this purpose, it investigated the determinants of EM in firms listed at KSE/PSX. This section presents the results, implications, limitations, and future recommendations. The results support the hypothesis H_{1a} which states that there is a significant inverse association between dividend yield ratio and EM. This finding is consistent with the earlier literature (Wang et al., 2011; Faccio et al., 2001; La Porta et al., 2000; Stulz, 1990). The results support the argument that managers, due to their own vested interests, may misallocate firm capital instead of giving dividends (Stulz, 1990). So, dividends are an effective tool to restrict EM because payment in the form of dividends can restrict such over-investment. On the contrary, it was found that the relationship between dividend payout ratio and EM is not significant. This finding does not support the hypothesis H_{1b} . The possible/plausible reason may be the nature of business ownership in Pakistan. The majority of businesses in Pakistan are family owned. So, directors are usually appointed on the basis of nepotism and they are heavily paid along with fringe benefits. The extra cost incurred by the firm results in reduced net profit. Consequently, it is difficult for the firm to declare dividends. Hence, it can be concluded that earnings are not managed to announce or avoid the dividends.

The current research provides a compact platform and much appreciated intuition for academicians who are concerned with the determination of EM for developing and emerging economies. It develops a theoretical model built on the agency cost theory and the prevailing finance literature. It also provides a comprehensive and detailed picture of EM by incorporating the neglected but considerably important factor of dividend policy, which is a very much neglected

aspect in the Pakistani context. This research has a deep potential to be replicated in other markets, cultures, communities, and countries. It also has practical implications for corporations, stakeholders, and policymakers. Corporations can attract and satisfy the needs of investors by ensuring the transparency and quality of their earnings reports.

5. Limitations and Recommendations for Future Research

The current study was conducted on a small sample size for the period 2010-2020. Future research can be carried out on a more informative sample. Irrespective of the valuable results, the current research also has some limitations. In this research, we employed a sample of non-financial firms of Pakistan listed from the KSE/at PSX. Hence, the findings may be specific/generalizable for non-financial firms only, as the government rules and regulations vary for financial firms. Future research may use non-listed financial firms to investigate this theme.

Furthermore, the current study did not focus on sectoral differences regarding EM and dividend policy. Future research can be conducted taking these differences into consideration. Future research can also be conducted to make a comparison between financial and non-financial companies in terms of EM. A cross-country analysis can also be performed to have a broader understanding of the relationship between EM and dividend policy.

Although, the most recommended model was used in this research to ensure unbiased results; however, there is a probability that the accrual model using/based on financial statements may not be supportive/adequate for estimating accurate accruals by dividing non-discretionary components with discretionary components (Siregar & Utama, [2008](#)). Thus, estimating accruals by using different models, such as Jones model ([1991](#)) and Kasznik ([1999](#)), as well as the comparison of these estimations may be helpful for greater insight. Furthermore, some important variables, such as family ownership, could not be included due to the unavailability of data. Additionally, financial institutional ownership may be categorized into mutual funds, insurance companies, banks, and pension funds, in order to explore the distinctive role of each institutional group. Moreover, literature also recommends some other proxies, such as auditor tenure, family ownership and gearing ratio, and dividend payment in the form of cash and systematic risk to examine their impact on EM.

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