ROLE OF REAL AND ACCRUAL EARNINGS MANAGEMENT IN DETERMINING OVERINVESTMENT PRACTICES: EVIDENCE FROM DISTRESSED AND NON-DISTRESSED PAKISTANI NON-FINANCIAL FIRMS

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Abstract

Overinvestment practices are led by opportunistic managers to fulfil their self-motives. Earnings management, however, adds fuel to it by giving full freedom to managers to go through such investment endeavours that are detrimental to shareholders long term interest but are sufficient enough to help them seek perks and privileges in their short term tenure. This study helps to identify how Pakistani managers in distressed and non-distressed firms use both objective (Real Earning Management, REM) and subjective (Accrual Earning Management, AEM) forms earning management to full fill their self-driven motives under overinvestment practices. This study takes 37 non-distressed and 188 distressed firms from the period of 2010 till 2017 to conclude that distressed companies ensure more overinvestment than non-distressed firms by employing REM activities and AEM practices, however, curb overinvestment in distressed and non-distressed companies. This helps shareholders to understand that reducing REM practices is the need of an hour to make managers refrain from indulging in overinvestment activities.

*Key words:*Real Earnings Management, Accural Earnings Management, Overinvestment, Distressed Non Financial Firms, Earnings Management

INTRODUCTION

The accounting information presented serves as a basis on which the decision-making process is established before any financial decision is taken. If any of the critical accounting information is incorrectly reported, an impaired financial judgment is the result. In the decisions taken by investors, managers, executives, and regulators, the implications of earnings management are essential. Investment decisions, among several financial decisions, depends on expectations of the benefits of the investment that in turn depend on expectations of future growth and demand for the product. Future growth projections are based on information that includes sales and earnings. This study aims to provide evidence as to whether earnings management, potentially driven by compensation goals or stock market expectations, is a direct cost to investorscreating distortions in investment decisions made within companies engaged in EM practices.

The numerous works conducted in the literature provide plenty of examples of how investment decisions are influenced by earnings management actions within companies. Investment decision-makers may understand the true state of the business, but choose to over-invest to turn around results in a high-risk strategy. Managers widely use REM practices over AEM for hoodwinking and litigation free nature after the adoption of the Sarbanes–Oxley Act of 2002 (Gunny, 2010; Hapsoro et. al., 2020).According to several reports, including (McNichols et. al., 2008), earning management is often connected with overinvestment. The choice of selecting REM and AEM under different financial conditions adopted by managers in going for overinvestment decisions is yet to be answered.

This paper illustrates the role of real earnings management in evaluating managers' over-investment practices in a business.This study implies that in companies which are under stressed managers may find it convenient to use them for indulging in overinvestment to reap short term profits at the expense of shareholders. It also offers ample evidence to understand the role of AEM in the presence of various financial circumstances (i.e. financially troubled and healthy firms) in curtailing firm overinvestment practices.

LITERATURE REVIEW

An analysis of companies threatened by the compliance activities of the SEC by Dechow et.al., (1996) concluded that the ability to gain external funds with lower prices, which are probably charged for capital expenditure, is an essential motivation for earnings manipulation. When faced with lucrative investment ventures, managers with financial constraints can often be tempted to exploit earnings to receive sufficient financing. However, it is unclear why such managers would choose overinvestment with the current funds rather than optimum investment.One of the causes for this may be the use of distorted facts by individuals making investment decisions rather than the need to raise capital.

Inefficient investment ventures are more likely to be picked up by companies misreporting to project undertaking by overstating their finances to secure cheaper funding (Kothariet.al., 2016). This hypothesis is supported by evidence provided by Wang (2006), who found that overinvestment in R&D and stock-funded mergers are more likely to be the target of firms that misreport their finances. Similarly, Kedia and Philippon (2009) projected that to escape detection, firms with overstating financial reports attempt to pool with firms with better output by mimickingtheir stronger performances. However, as a benefit of the doubt, we assume that at least one of the relevant parties receives the wrong accounting information, leaving them to misreported investment decisions instead of accusing them of deliberately replicating better firms' decisions. (Gao et.al., 2019)

Information asymmetry can be minimized by disseminating more accurate accounting information among managers and outside capital suppliers, leading to better investment decisions (Boubaker et. al., 2018). Biddle and Hilary (2006) found a strong negative association between accounting efficiency and investment-cash-flow sensitivities, which suggests that companies with higher firm quality have less effect on investment from financial constraints.

Shahzad et.al., (2019)considered financial reporting quality extremely negative with over and underinvestment. Bushman et.al., (2006) submitted that the earlier the organization acknowledges economic losses, the less likely it is for managers to engage in negative net present-value investment, curbing overinvestment by managers fearing diminishing investment opportunities. However, there is no evidence in these studies that deliberate misuse of accounting

numbers affects investments. McNichols et. al., (2008) discussed this further indicating that, in addition to influencing external parties, earnings management can also influence internal decisions. He concluded that under the SEC inquiry for accounting fraud, businesses manipulating earnings are sued by shareholders and restating financial statements are all likely to make significant overinvestments while misreporting. After the time of misreporting, these companies were no longer reinvesting to correct information and fell into a more productive investment stage.

Since investment decisions primarily rely on the expected benefits of investment, based on future demand and growth, we are testing whether earnings management also affects investment decisions. Future growth can be calculated by information like sales and earnings, so while manipulating financial results during the reporting period, misreported financial status can also obscure underlying trends in income and earnings growth. According to Richardson et. al ., (2002) to produce a consecutive rise in earnings, growing companies may be more likely to restate financial results, thereby demonstrating that income overstatement may be unintentionally used by those unaware of the failure to distort growth.

Decision-makers may be over-stimulating and over-investing inadvertently as they can be believed in the misreporting given to them due to their personal over-optimism. However, investment decision-makers may also realize the manipulation, but prefer to ignore it and continue to place the company in a high-risk position, so it is forced to turn results around. Regardless of why overinvestments were made, it could have been avoided by using factual reporting. Investment decisions include more than one group, including managers, who are the key decision-makers, board members reviewing the capital budget, and everlasting capital suppliers. Capital access would have been restricted by Capital Markets board members, had the financial situation been truthfully stated as both parties use financial statements for their respective decisions. Besides, overstatement could also have been detected by investors, contributing to the company's stock price decline. This suggests that earnings management avoids disciplining mechanisms to minimize overinvestment. When managers announce better financial statements, there is less potential for overinvestment correction. We hypothesise that when companies overestimate their financial performance, they are likely to spend considerably

more than they would under truthful reporting, meaning that the misrepresentation of financial results prevents successful investment decisions.

The evidence that firms overinvest in the period which they have misreported is based on accrual earnings. In contrast, there is none present for cases of real earning management, including its relativity to firm health. As such, our hypotheses in distressed and non-distressed firms are as follows:

H_{1a}: Distressed firms that manipulate their accrual earnings, overinvest substantially during the misreporting period.

H_{2b}: Non-Distressed firms that manipulate their accrual earnings, overinvest substantially during the misreporting period.

H_{3c}: Distressed firms that manipulate their real activities, overinvest substantially during the misreporting period.

H_{4d}: Non-Distressed firms that manipulate their real activities, overinvest substantially during the misreporting period.

METHODOLOGY

Description of the Sample

This research covers all those companies that are not financial firms. This study's population is non-financial Pakistani companies. The final selection of companies included in this analysis is those whose data for the selected variables is retained during this analysis. Companies providing financial services and lacking data for selected variables are excluded. The projected period for the present study is 2010-2017. This period is robust as Pakistani firms went through different phases of economic cycles. This helps our estimations as figures of our variables represents different crises and non crises situations. Owing to lags and factors, 2010 and 2011 are sacrificed. The total number of firms chosen as the final sample is 225 for 2012-2017, with total firm-year observations of 1350. Further division between distressed and non-distressed firms divided 225 firms between 37 non-distressed and 188 distressed firms. To provide insights into the above matter, the present study uses annual reports from Pakistan's non-financial companies to receive numeric for the variables used in the study.

DESCRIPTION OF THE VARIABLES

Dependent variable

Over Investment: In order to prove that accrual earnings manipulations and real earning manipulations has positive impact on over investments, Augmneted form of Fazzari *et. al.,* (1988) investment equation is assessed. After that, we obtained positive residuals of investment equation that are representatives of overinvestment and regressed them on accrual earnings manipulations and real earning manipulations along with certain control variables.

$$Investment_{i,t} = \alpha_0 + \beta_1 Leverage_{i,t-1} + \beta_2 Growth_{i,t-1} + \beta_3 Cash_{i,t-1} +$$
$$\beta_4 Age_{i,t-1} + \beta_5 Return_{i,t-1} + \beta_6 size_{i,t-1} + \beta_7 Investment_{i,t-1} + Industry\ Effect +$$
$$Years\ Effect + \varepsilon_{i,t} \quad \text{………………………………..} (3.9)$$

Where an investment is the amount of expenditures on capital & R&D and acquisitions subtracting sales of land, plant and equipment, the overall asset is lagged. Growth is the growth rate of annual sales.The leverage is the long-term indebtedness ratio divided by the long-term debt volume and the current value of the owner's capital; the cash ratio is the cash ratio divided by total assets.Size is the natural log of the total assets of the company. Return is the return of the stocks. The age of the company shall be measured from the first year of the company to the end of the period. Investment lag is the investment of the preceding year.

INDEPENDENT VARIABLES

1. **Discretionary Accruals:** It is employed in the current analysis as the dependent variable. An updated version of Jones' (1991) accrual model (Dechow, Sloan, and Sweeney, 1995) is calculated by discretionary accrual, as shown in equation 1. This approach measures total accruals at the first level, followed by using a unique model to distinguish discretionary accruals from total accruals. Total accruals are, by definition, the difference in cash flow in various processes scaled by the lag of total assets and revenue (Kasznik, 1999).

$$TA_{it} = NI_{it} - CFO_{it} \quad \text{…………………………………..…….} (1)$$

Where TAit represents the company's overall accruals at time t, NIit is referred to as the company's net earnings at time t, and the cash flow from operations is CFOit.

A model by Dechow et. al., (1995) is used to measure discretionary accruals and to assess the massiveness of the outcomes for comparison. Dechow et. al. (1995) modifies the

accounting model of Jones (1991) to examine executives' control over income generated. The change in account receivables (Δ REC) from the change in revenue (ΔREV) is deducted earlier. This model is defined by Equation (2) as:

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_1 \left(\frac{1}{A_{i,t-1}}\right) + \alpha_2 \left(\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}}\right) + \alpha_3 \left(\frac{PPE_{i,t}}{A_{It-1}}\right) + e_{it} \ldots\ldots\ldots (2)$$

Where TA_{it} is the cumulative accruals of the company i at time t, $A_{i\,t-1}$ represents the lagged total assets at time t, ΔREV is change in the company i revenues at time t, ΔREC is change in company i 's account receivables at time t, and PPE represents company i 's PPE at time t. Dechow et. al., (1995) has shown that compared to the other naive accrual models such as Peltier-Rivest et al., (2000) acknowledges, this model is the most effective model for assessing EM in a broad range of businesses.

2. REAL EARNING MANAGEMENT:

In order to construct representations, the present research relies only on previous literature studies for real earnings management. The current analysis takes three metrics into account, following in the footsteps of Roychowdhury (2006); 1. The abnormal grades of operating cash flow (CFO), 2. Discretionary costs; and 3. Manufacturing costs to denote the degree of manipulation of actual activities. The paradigm validity of these commissions is indicated by further studies, such as those performed by Zang (2006) and Gunny (2006).

In order to achieve the objective, by using the model established by Dechow, Kothari and Watts (1998) and initiated in Roychowdhury (2006), the present study produced the normal levels of CFO, discretionary expenses and production costs. The standard CFO is expressed as a linear sales function and sales change. In addition, the following panel regression for each industry and their given year is performed as shown in Equation 3 to test the model under consideration:

$$\frac{CFO_{i,t}}{ASSETS_{it-1}} = \alpha_1 \frac{1}{ASSETS_{i,t-1}} + \alpha_2 \frac{SALES_{i,t}}{ASSETS_{i,t-1}} + \alpha_3 \frac{\Delta SALES_{i,t}}{ASSETS_{i,t-1}} + \varepsilon_{i,t} \ldots\ldots\ldots (3)$$

Where assets i t-1 are lagged with total assets at time t, Salesi, t is the total sales of the company i at time t, and the cash flow from operations is CFOit. The difference between the real CFO and the standard CFO level calculated using the residuals from equation 3 is calculated as an abnormal CFO. The cost of production is specified as the amount of the cost of the goods sold (COGS) and the change in inventory over the year in question. COGS

is designed in the present study as a linear function of co-existing sales as given in equation 4:

$$\frac{COGS_{i,t}}{ASSETS_{it-1}} = \alpha_1 \frac{1}{ASSETS_{i,t-1}} + \alpha_2 \frac{SALES_{i,t}}{ASSETS_{i,t-1}} + \varepsilon_{i,t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Where assets i t-1 are the lagged total assets at time t, Sales$_{i,t}$ is the total sales of the company i at time t, and the cost of goods sold is measured by COGS$_{it}$.

Next, inventory growth is constructed as a linear function of the sales shift that coexists and lags:

$$\frac{\Delta INV_{i,t}}{ASSETS_{it-1}} = \alpha_1 \frac{1}{ASSETS_{i,t-1}} + \alpha_2 \frac{\Delta SALES_{i,t}}{ASSETS_{i,t-1}} + \alpha_3 \frac{\Delta SALES_{i,t-1}}{ASSETS_{i,t-1}} + \varepsilon_{i,t} \quad \ldots\ldots\ldots\ldots\ldots(5)$$

Where assets$_{it-1}$ lagged total assets at time t, ΔSales$_{i,t}$ change in the company i sales at time t, ΔSales$_{i,t-1}$ is lagged change in the company i sales, and ΔINVit reflects a change in company inventory.

Using equations (4) and (5), the calculation of the normal level of cost of output is as follows:

$$\frac{PROD_t}{ASSETS_{it-1}} = \alpha_1 \frac{1}{ASSETS_{i,t-1}} + \alpha_2 \frac{SALES_{i,t}}{ASSETS_{i,t-1}} + \alpha_3 \frac{\Delta SALES_{i,t}}{ASSETS_{i,t-1}} + \alpha_4 \frac{\Delta SALES_{i,t-1}}{ASSETS_{i,t-1}} + \varepsilon_{i,t}\ldots.(6)$$

Where assets $_{i\,t-1}$ lagged total assets at time t, ΔSales$_{i,t}$ change company i sales at time t, ΔSales $_{i,t-1}$ lagged company i sales change, and ΔProd$_{it}$ refers to company cost of production.

As a linear function of revenue, the usual amount of discretionary expenditures can be expressed as follows:

$$\frac{Disc\ Exp_{i,t}}{ASSETS_{it-1}} = \alpha_1 \frac{1}{ASSETS_{i,t-1}} + \alpha_2 \frac{SALES_{i,t}}{ASSETS_{i,t-1}} + \varepsilon_{i,t}\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (7)$$

Where assets $_{i\,t-1}$ lagged at time t, Sales $_{i,t}$ is a company i sales at time t, and Disc Exp $_{it}$ is discretionary expenses.

Discretionary expenditures are modelled as a function of current revenues producing a mechanical problem; if firms manage upward revenues to increase recorded earnings in a given year, a regression would result in substantially lower residuals as stated in equation 7. Therefore,

the present study models discretionary expenses as a feature of lagged sales and estimate the following model to extract 'natural' levels of discretionary expenses as follows:

$$\frac{Disc\ Exp_{i,t}}{ASSETS_{it-1}} = \alpha_1 \frac{1}{ASSETS_{i,t-1}} + \alpha_2 \frac{SALES_{i,t-1}}{ASSETS_{i,t-1}} + \varepsilon_{i,t} \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (8)$$

Where assets $_{i\ t-1}$ lagged total assets at t-time, Lagged Sales$_{i,t-1}$ is the company i sales, and Disc Exp$_{it}$ refers to discretionary expenses.

In the above equations CFO is cash flow from operations in period t (Operating Activities-Net Cash Flow) – (Extraordinary Products and Discontinued Operations); Prod refers to production costs in period t and is defined as the sum of COGS (Cost of Goods Sold) and the change in inventories (Inventories-Total); Disc Exp reflects the discretionary spending in period t, defined as the Selling, General, and Administrative Expense. Abnormal CFO (R CFO), abnormal production costs (R PROD) and abnormal discretionary expenditures (R DISX) are measured as the variations between the real values and the normal levels expected by equations (3)(6) and (8).

To define the effects of real earnings management across all three variables in an inclusive measure, this study calculates a single variable by combining the three individual real earnings management variables. Steady with Zang (2006), this study multiplies R CFO and R DISX by negative so the higher the sum of R CFO and R DISX, the greater the company 's chances of manipulating revenue by reducing price discounts and discretionary expenses. In the present analysis, R PROD is not multiplied by negative as higher production costs, as discussed earlier, are flags of overproduction to decrease the cost of goods sold. The combined measure used in this analysis, RM PROXY, is measured as the number of standardised variables, R CFO, R PROD and R DISX. Therefore, the recorded results refer to the only REM PROXY (RM PROXY).

MEASUREMENTS OF DISTRESSED AND NON-DISTRESSED FIRMS

For each firm-year in an industry, we adapt the distress / non-distress classification of the company based on Altman Z Score discriminate model, Altman (1968), and classify a company as stressed if it exhibits score of less than three and non-stressed if equal or greater than three. To

predict widespread financial distress, Professor Edward Altman developed Z-Score (Bemmann 2005).

For the Z-Score, we created dummy variable, 0 shows that if the company's position is high, it shows the company is in boom time, and if it is 1 shows the company's position is week. According to Altman Z-Score, if its cut-off value is 1.81 or less, a company's financial condition is bad. If the cut-off value hits 1.81, it's high. Based on these parameters, our dummy variable takes the value of 0 if its value exceeds 1.81 for non-distressed firms, which amounts to 37 firms for Pakistani non-financial firms, and if the z-score value is equal to or below 1.81 for distressed firms in the overall analysis. Using the model above, Altman's Z score provided evidence to predict 94% of failed firms in his sample bankruptcy (Altman, 1968). The primary reason for adapting Altman, 1968 model is that this model's 'Z score' is industry-specific, as Grice and Ingram (2001) formulated for operating manufacturing companies.

The final discriminant function is as follows:

$$Z = 0.012X1 + 0.014X2 + 0.033X3 + 0.006X4 + 0.999X5 \dots\dots\dots\dots\dots\dots\dots. (9)$$

Where,

X1 = working capital/total assets,

X2 = retained earnings/total assets,

X3 = earnings before interest and taxes/total assets,

X4 = market value equity/book value of total liabilities,

X5 = sales/total assets, and

Z = overall index

REGRESSION EQUATIONS

The following regressions are carried out on both troubled and healthy firms:

Impact of Real and Accrual Earnings Management on firm Investment Decisions

For analyses, we use Fazzari *et. al.,* (1988) model to investigate the relationship between earnings management and over investment.

$$Over\ Investment_{i,t} =$$

$$\alpha_0 + \beta_1 DAC_{i,t} + \beta_2 lev_{i,t-1} + \beta_3 CF_{i,t-1} + \beta_4 Size_{i,t-1} + \beta_5 Industry\ Effect +$$

$$\beta_6 Years\ Effect + \varepsilon_{i,t} \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(10)$$

$$Over\ Investment_{i,t} = \alpha_0 + \beta_1 REM_{i,t} + \beta_2 Size_{i,t-1} + \beta_3 CF_{i,t-1} + \beta_4 lev_{i,t-1} +$$

$$\beta_5 Industry\ Effect + \beta_6 Years\ Effect + \varepsilon_t. \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\ (11)$$

Here,

From the investment equation the positive residuals generated reflect overinvestment mentioned earlier, REM is real earnings manipulations, DAC are discretionary Accruals, Ratio of total debt to total assets represents leverage i.e., LEV, Ratio of operating cash flow to total assets represents CF, natural log of sales is measured for Scale.

PANEL DATA REGRESSION MODEL

This study incorporates the pooled regression because to estimate the generalized results of earning management characteristics of the firm. The main purpose of the study was to identify the factor that has an impact on earnings management practices of Pakistani non-financial firms. Thus for the generalized effect, pooled OLS technique is used. Further fixed effect controls for industry specific heterogeneity, our estimation has incorporated industrial fixed effects and time effects by using industrial and time dummies as control variables. In order to remedy hetroscadasticy, study undertakes variables to winsorize at 1% and 99% to remove outliers and get robust results.

RESULTS AND DISCUSSIONS

Descriptive Stats

Table 1 is a representation of the statistical summary reflecting the variables majorly taken due to interest in this study. The variables have been chosen for relevant Pakistani distressed as well as non-distressed non-financial organizations. In panel A, table 1 shows an outline of the statistical summary for distressed while Panel B shows vice versa.

The final column shows the significance values between differences in the mean values of all the variables related to distressed and non-distressed enterprises, assuming unequal variances.

Over-all, the current research used 1128 observation from distressed and 222 observations from non-distressed firms among each of its variables, respectively.

The summary statistics offered profound findings. The mean difference for Real Earning Management, REM, is significant and shows that REM practices are more profound in non-distressed firms than in distressed firms. The mean difference for Accrual Earning Management practices, AEM, indicated that non-distressed firms are more into AEM, but the mean difference is statistically insignificant. The main fact that is revealed from these stats is that REM practices are more in both types of firms than AEM. This confirms from literature which says that more than 80% of earning management practices which managers resort to is real activities manipulation. In Pakistan, managers use REM for their ulterior managerial motives more than AEM and show that they behave opportunistically in both types of firms in Pakistani non-financial firms. Table 1 reveals that managers of the firm resort more to over-investment in non-distressed firms rather than in a distressed firm.

This difference is significant and can be justified on the grounds that mangers in healthy firms overinvest free cash flows so to show profits in the short term, this entitles them for reaping their perks and privileges. However, since firms are healthy, they can even cover it for shareholder by not effecting long term value of such firms. As the correlation is less than 50% and therefor the problem of Multi-collinearity doesn't exist.

Table 1 Summary Stats

	Panel A: Distressed Firms				Panel B: Non-Distressed Firms				Mean Difference (A-B)
	Mean	**Sd**	**Min**	**Max**	**Mean**	**Sd**	**Min**	**max**	
Rem	0.692	0.427	0.001	2.904	2.043	0.741	0.534	5.349	-1.35***
Da	0.020	0.011	0.000	0.054	0.016	0.013	0.000	0.048	-0.02
Oi	0.033	0.024	0.049	0.112	0.039	0.015	0.005	0.072	-0.006***
N	1128				222				

$^{*}p< 0.1,$ $^{**}p< 0.05,$ $^{***}p< 0.001$

Results of Investment Equation

The table 2 below highlights the results of the Investment equation. The table represents winsorized variables at 1% and at 99%. This tabulated form has also been checked with robust standard errors. The estimation of industry impact along with year's effect at the firm level is included.

All variables have a significant relation to investment. The positive association of sales growth indicates that when growth opportunities for sales increases, firm increase their investment endeavours. When firms are highly indebted, they use their cash more for debt servicing and therefore curtail investments. Cash has a positive effect on investments which means that firms use internal cash for investment. The older the firms get the more investments they get indulged in, and as the assets of firms increase in scale, firms investing activities increase as well. Investments are also driven by previous year market returns and investments of the previous year. The results are in accordance with Fazzari *et. al.,* (1988).

Table 2   Regression Result of Investment Equation

	(All Firms) Winv
L.wsgr	0.028^{**}
	(0.012)
L.wlev	-0.006^{**}
	(0.002)
L.wcash	0.105^{**}
	(0.049)
L.wage	0.013^{**}
	(0.005)
L.wsz	0.004^{**}
	(0.002)
L.wret	0.015^{**}
	(0.005)
L.winv	0.115^{**}
	(0.029)
_cons	-0.082^{**}

	(0.032)
Years Effect	Yes
Industry Effcet	Yes
R-Sq	0.11
N	1125

Standard errors in parentheses

$^{*}p< 0.1,\ ^{**}p< 0.05,\ ^{***}p< 0.01$

Regression Results for the Impact of AEM and REM on Over-Investment in Distressed and Non-Distressed Firms

INTERPRETATION OF THE STUDY

The present study has investigated the impact of AEM and REM on over-investment in distressed and non-distressed firms of Pakistan. The results are shown in Panel A and Panel B of table 3, respectively. In panel A, there is a negatively significant the impact of AEM and a positively significant impact of REM practices on overinvestment in distressed firms. Panel B of the table 3 depicts that AEM has negatively significant effect on overinvestment whereas REM has positively insignificant impact on overinvestment in non-distressed firms.

As far as the control variables are concerned, all of these showed a significantly positive relationship for cash flow (CF) in Panel A & B of Table 3. This means that firms with higher cash flow have a greater inclination to overinvest, as already reported in the literature (Jensen, 1976). The size of the firm has a significant positive effect on overinvestment which means that new investment expenditure is increased as the size of the firm increases (Lamont, 2000). Lastly, the present study reveals a negative relationship between leverage and over-investment, as shown in panel A & B of Table 3.This outcome is similar to that reached by Lang et. al., (1996), who discovered that the leverage and potential growth of companies have a negative relationship.

The value of R^{2} in Table 3 is 56.1% AEM and overinvestment and 52.7% for REM and overinvestment in case of distressed firms. At the same time, the value of R square is 56.7% for AEM and 53.6% for REM with overinvestment in case of non-distressed firms.

DISCUSSION OF STUDY

The findings indicate that managers of a distressed firm in Pakistan would not participate in activities that lead to overinvestment by accrual earning management practices. This is because accruals for SEC scrutiny and class action lawsuits are at higher risk. Distressed companies, which have fewer investment opportunities, are likely to have a greater propensity for underinvestment, whereas the problems of overinvestment can arise in the opposite case (López-Gutiérrez, 2015). Financially distressed firms tend to spend less, have lower free cash flows, higher financial leverage and lower growth in sales. Bhagat et. al., (2005) because of these differences has deduced that in reaction to cash flow changes investments by distressed businesses are different to those of financially restricted firms. The different behaviour of companies in financial distress is explained by multiple factors. One of the factors called the impact of "punishment" on managers enables them to make decisions by promising to foil the organisation from bankruptcy issues. The efforts of managers are put on stake, depending on the circumstances they face when the company is in a financial crisis (White, 1996). This impacts their reasons to choose investment projects. Simpler speaking, if managers of less prospective investment firms believe that the success of such ventures is not sufficient to avoid bankruptcy; they have strong incentives to reject projects, even with a positive net present value.The findings of this study are thus affirmative of the notion that Pakistan 's troubled companies do not require overinvestment in the presence of discretionary accruals.

That being said, in distressed businesses, some managers use REM practices for overinvestment. The rationale for this conduct is due to the authorization of managers to take operating decisions, while accounting procedures must comply with auditors' requirements. Research by Graham et.al.(2004), who investigated 401 financial executives on key factors that enable executives to take decisions on published earnings and voluntary disclosure, confirms this notion. 78 percent of managers demonstrated a willingness to sacrifice economic benefit to handle financial reporting discernments, this study shows. Also, the current empirical accounting literature is affirmative of the fact that REM helps achieve many sales targets. López-Gutiérrez (2015) said that the financial turmoil affects the investment policy of the firm, taking into consideration the investment opportunities that could change the investments made by businesses in a crisis.In companies experiencing financial turmoil, the problems associated with over-

investment are also growing, as their managers have strong incentives to make highly risky investments. Bankruptcy proceedings may be stopped or at least postponed upon the successful launch of the project. However, the creditors are responsible for the loss if the project fails.

It is justified, based on the studies published in the literature, that managers of non-distressed companies in Pakistan do not use accrual earning management as an overinvestment device. However, because REM is negatively correlated with overinvestment, it indicates that, in the presence of REM activities, managers may not want to overinvest since they already have the money to invest in successful ventures. This effect, however, is negligible, suggesting that overinvestment within non-distressed companies has some other main variables rather than REM practices. Three of the hypotheses of the present report, namely $H_{1a, b, d}$ are therefore dismissed as they state that overinvestment occurs only in the case of non-distressed companies in the presence of AEM practices in distressed and non-distressed companies and REM practices. That being said, the H_{1c} hypothesis of the current study is acknowledged, proposing that distressed companies known to distort their actual activities appear to substantially overinvest during the time of misreporting.

Table 3   **Impact of AEM and REM on Overinvestment in Distressed and Non-Distressed firms**

	Panel A		Panel B	
	(Distressed Firms) Over Investment	(Distressed Firms) Over Investment	(Non-Distressed Firms) Over Investment	(Non-Distressed Firms) Over Investment
Zda	-0.005[***]		-0.004[***]	
	(0.000)		(0.001)	
Rem		0.006[***]		-0.002
		(0.001)		(0.001)
Zlev	-0.007[***]	-0.008[***]	-0.026[**]	-0.024[*]
	(0.000)	(0.001)	(0.012)	(0.0127)
Wcf	0.020[***]	0.018[***]	0.038[***]	0.043[***]
	(0.006)	(0.006)	(0.009)	(0.009)
Wsz	0.006[***]	0.007[***]	0.004[***]	0.003[***]

	(0.000)	(0.000)	(0.001)	(0.001)
Intercept	-0.043***	-0.054***	-0.073***	-0.065***
	(0.007)	(0.007)	(0.016)	(0.017)
Years Effect	Yes	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes	Yes
r2	0.561	0.527	0.567	0.536
N	863	863	172	172

Standard errors in parentheses

*$p< 0.1$, **$p< 0.05$, ***$p< 0.01$

CONCLUSION

We have clear evidence that distressed companies ensure more overinvestment than non-distressed firms by REM activities. AEM practices, however, curb overinvestment in distressed and non-distressed companies. Since REM is free of regulatory oversight, managers use it to engage in overinvestment, as they have a strong appetite to pursue risky ventures in distressed companies to potentially postpone bankruptcy proceedings. In the other hand, AEM practices managers curb overinvestment activities when such practices are detected, and any financial decision adverse to shareholder interest such as overinvestment that is too risky for distressed companies is curtailed by such practices.

FUTURE DIRECTIONS

Future research can be done in sharia-compliant companies to find out what factors drive those companies' managers to manage earnings in Pakistan. Also, a relative analysis can be performed to see how IFRS moderates the relationship between earnings management and financial decisions in developed and developing countries.

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