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A Study on Earnings Management of Indian Bankrupt Companies

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ABSTRACT

In order to suppress their financial crises from stakeholders and prevent unfavorable outcomes like a damaged reputation or legal action, bankrupt enterprises could be more motivated to forge revenues. Therefore, in comparison to other organizations, bankrupt firms are probably going to be more involved in actual earnings management. We have thus made the decision to look at how much real earnings management is used by bankrupt firms in comparison to other businesses.

This study imparts evidence that managers in bankrupt companies employ real earnings management (REM) activities to manipulate earnings prior to bankruptcy. Bankrupt companies exhibit higher levels of aggregated REM compared to control companies, indicating a pattern of earnings manipulation to conceal poor performance. The findings support the hypothesis that bankrupt companies engage in more REM than control companies in an attempt to endure financial distress.

Keywords: Earnings Management, Bankruptcy, Real Earnings Management, Financial Performance, REM.

1. INTRODUCTION

Every time question arises in our mind why companies become bankrupt, what they do when they know that situation is going out of control. How do they manage their funds? How are they able to show that the company has a good financial state. Then " the earnings management" comes into our mind which is the deliberate manipulation of accounting data by the businesses to give the impression that one is in good financial standing. Research by Healy and Wahlen (1999) and Roychowdhury (2006) suggests that this strategy might mislead regulators, investors, and other stakeholders, jeopardizing the company's general viability. Dechow, Sloan, and Sweeney (1995) made clear that upholding credibility and guaranteeing openness in financial reports are necessary in order to preserve the legitimacy of accounting procedures.

The definition of management of earnings is Dechow & Skinner (2000) and Roychowdhury (2006) as the intentional manipulation of monetary statements to meet particular monetary objectives or mislead parties involved. This could involve using strategies like inflating costs, falsifying financial information, or boosting sales figures. But these steps might conceal the company's true financial performance, which might have unfavorable consequences. It is crucial that companies follow moral and open financial reporting guidelines, as noted through Healy & Wahlen (1999) or DeFond & Jiambalvo (1991).

There are many different approaches and tactics that can be used to manage earnings; some of them are legal, while others might be considered immoral or fraudulent (Schipper, 1989; Burgstahler & Dichev, 1997). According to Dechow & Skinner (2000) and Graham, Harvey, & Rajgopal (2005), identifying management of earnings practices is vital for guaranteeing the accuracy and legitimacy of financial statements, requiring watchfulness from auditors, regulators, and investors.

On the other hand, accrual management of earnings refers to the falsification of results through the application of optional accruals that change revenue. This could entail taking steps like capitalizing expenses to delay revenue recognition or rapidly recognizing revenue, as mentioned by Roychowdhury (2006) and Schipper (1989).

Simply expressed, real earnings management describes the actions businesses take to change reported earnings through operational and financial modifications. The concept's associated activities are covered in great detail by Roychowdhury (2006) and Dechow, Sloan, and Sweeney (1995). a number of related actions,

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such as accelerating or delaying revenue recognition, changing product prices, managing discretionary spending, and adjusting output levels. Syafiqoh & Rochmatullah (2024) stated that earning management is unaffected by liquidity, institutional ownership, and high or low return on assets. However, the value of earning management decreases as a company's net profit margin, return on equity, and size increase.

LITERATURE REVIEW

There have been mixed findings in the research on how real management of earnings affects the performance of businesses. According to certain research, there may not be a favorable association between real management of earnings and long-term corporate success. Businesses that use aggressive real management of earnings strategies, for example, might see a drop in operating performance in the future or have to incur higher capital costs (Roychowdhury, 2006; Richardson, Sloan, Soliman, & Tuna, 2005). Boachie & Mensah (2022) stated how earnings management improves performance point to efficiency as a driving force behind earnings management strategies in Africa.

Companies using real earnings management techniques may see lower future profitability and value erosion, according to research by Feng, Ge, Luo, and Shevlin (2019). Further evidence that these actions may result in lower operational efficiency, less room for future growth, and more financial distress comes from Cohen, Dey, and Lys (2008) and Roychowdhury (2006). Furthermore, research highlights the potential influence of corporate leadership practices on the effect of management of actual earnings on business performance. Dechow, Sloan, & Sweeney (1995) and Wang & Cheng (2020) both highlight the important role that effective corporate legal practices can play in protecting shareholders' interests by discourage managers from pursuing real earnings management.

However, some research suggests that a valid oversight of earnings can enhance the performance of the company. By strategically managing their earnings or strategically planning their investments, for example, businesses can demonstrate their ability to generate future cash flow and increase the profitability of their company (Graham, Harvey, & Rajgopal, 2005; Kasznik, 1999). The effects of manipulating revenues on durability and bankruptcy risk have been clarified by recent research.

According to their research, businesses that used techniques to fictitiously boost their profits saw a drop in overall success and a higher chance of going bankrupt. Furthermore, Liao, Chang and Wang (2023) examined into how a firm's long-term stock performance is impacted by how its earnings are actually handled. According to Gajdosikova, Valaskova & Durana (2022), small businesses with a public limited ownership structure, tend to employ vigorous earnings management strategies. According to their research, businesses that manipulate earnings could eventually experience negative returns on stock, which would affect shareholders and investors. Furthermore, Gu (2020) investigated the connection between real management of earnings and business risk.

Recent research indicates that businesses using real earnings management techniques frequently run a higher risk of financial failure. Examples of this include higher risk and financial difficulties, both of which increase the chance of bankruptcy. Wang and Cheng's (2020) study also examined the impact of managing actual earnings on a company's credit risk.

Several studies (McNichols, 2002; Altman & Hotchkiss, 2006) discovered that companies that use real management of earnings strategies to boost revenue have an increased risk of going bankrupt. Businesses with high levels of debt and poor financial performance may be more susceptible to the detrimental effects of managing real income on bankruptcy risk, as demonstrated by Ronen and Yaari (2008). Additionally, studies have looked at how corporate oversight procedures can reduce the association between actual revenue generation and bankruptcy risk.

A recent study by Xu, Zhang, Hao & Guo (2021) looked at how listed Chinese companies' bankruptcy risk was affected by real earnings management. Actual income regulation and bankruptcy risk were found to be strongly correlated, which highlights the possibility of risks associated with basic earnings manipulation techniques. Suwandi, Lambyombar, Junaidi & Yuliana (2024) stated that business size and tax planning significantly improve profits management techniques. On the other hand, deferred tax costs have a negligible detrimental impact on earnings management.

In contrast, Lin, Shi & Zhang (2024) study examined the impact of real management of earnings on the company's credit risk. Their study indicates that companies that employ bold real-time earnings control techniques are more exposed to credit risk, which increases their risk of insolvency and other financial problems. Teoh, Welch & Wong (1998) study on the connection between bankruptcy and management of real earnings during recessions provided further insight. The findings demonstrated that companies that supervise

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their real profits during recessions have a higher probability of running into financial difficulties and going bankrupt when the economy recovers.

RESEARCH OBJECTIVES

The examination of texts and the previously discussed supporting data indicate that insolvent companies may employ shoddy accounting techniques to meet their debt obligations and keep funding sources available, which raises the risk of a financial crisis and ultimate bankruptcy. In addition, companies that are about to file for bankruptcy might feel pressured to overstate their income to hide their problems from stakeholders and prevent negative consequences like reputational harm or legal trouble. As a result, it's likely that insolvent companies manage their real earnings more than their fluid counterparts.

Based on the above construal from the review of literature, this study has the following objectives:

1. Looking into whether bankrupt companies managed their real earnings during the time before they filed for bankruptcy in comparison to other businesses.

2. To examine how companies in better financial health manage their real earnings in comparison to financially troubled companies prior to bankruptcy.

3. To examine how accrual-based revenue management and actual management of earnings in bankruptcy-prone businesses relate to one another.

4. To determine how bankrupt companies' real earnings management affects their operational performance.

Further based on objectives we have formulated our hypotheses:

H_1: Bankrupt companies do more real management of earnings before bankruptcy than normal companies.

H_2: Companies having sound financial health do more real management of earnings than financially distressed companies before bankruptcy.

H_3: There is an association between the real management of earnings and the level of accrual-based management of earnings in bankrupt companies.

H_4: There is an impact in real management of earnings of the bankrupt companies on operating performance.

RESEARCH DESIGN

Real earnings management measurement

In order to calculate the typical levels of the management of actual earnings, Roychowdhury (2006) provided three proxies. These are: (1) cash flow from operations (Dis_CF_Opr), which detects manipulations of earnings by increasing sales; and (2) production costs (Dis_PR_Cost), which detects manipulations of earnings by lowering unit level cost through overproduction. (3) Disposable expenses (Dis_EXPS), which are used to detect manipulation of earnings by lowering R&D, advertising, and selling, general, and administrative (SG&A) costs.

Empirical Model to test Hypothesis

We apply the following OLS model of regression to test (H1, H2, H3 Hypothesis):

$$REM\_VAR_t = \alpha_o + \beta_1 * Bankruptcy + \beta_2 * Adj\_ROA_t + \beta_3 * Z_{Score} + \beta_4 * Loss + \beta_5 * Growth_t + \beta_6 * Size_t + \beta_7 * MTB_t + \beta_8 * Leverage_t + \beta_9 * Int\_Own_t + \varepsilon_t \quad (1)$$

The REM_AGG, which represents an excess of revenues from actions (Dis_CF_Opr), cost of production (Dis_PR_Cost), and discretionary expenses (Dis_EXPS), are the four real earnings management indicators that make up the REM_VAR. A binary variable that reads "1" for bankrupt companies and "0" for others indicates bankruptcy. The Z score is a stand-in for the presence of financial distress.

We include a number of control variables to guarantee a thorough investigation. First, Adj_ROA, or return on equity, is determined by dividing net income by the average book worth of equity.

Second, the overall price of equity at the end of the fiscal year is converted into the simple logarithm of the firm size. Third, Growth takes into account the yearly shift in sales. Fourth, leverage is calculated by dividing total liabilities by total assets. The MTB (Markets to Book ratio) compares the firm's market value to its book value.

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The Back & Forth between Real & Accrual Management of Earnings

We examine how managers in bankrupt firm settings trade-off in REM and AEM using the model presented by Zang (2012). To testH4, the model that follows is utilized:

$$REM\_AGG_t = \alpha_o + \beta_1 * Disc_{Accrual} + \beta_2 * Loss + \beta_3 * Size_t + \beta_4 * Growth_t + \beta_5 * ROA_t +$$

$$\beta_6 * Leverage_t + \beta_7 * Int\_Own_t + \varepsilon_t (2)$$

In bankrupt companies, a negative coefficient on Disc_Accrual suggests that REM and AEM are substituted for one another. A positive coefficient, however, demonstrates the complementary of REM and AEM.

Stimulus to Engage in Real Management of Earnings in Bankrupt Companies

According to Vorst (2016), there are several reasons for rigging earnings through real activities, such as: (1) meeting ET_Meetmarks for earnings; (2) avoiding covenant violations; (3) issuing fresh bonds or equity; and (4) obtaining higher payoffs for compensation. By making the following modifications to Vorst (2016)'s model, we can test the incentives for tracking earnings through REM activities:

$$REM\_AGG_t = \alpha_o + \beta_1 * ET\_Meet + \beta_2 * ET\_Beat + \beta_3 * E2P + \beta_4 * Issuance + \beta_5 * AQC +$$

$$\beta_6 * Z_{Score} + \beta_7 * Loss + \beta_8 * Size_t + \beta_9 * Growth_t + \beta_{10} * Adj\_ROA_t + \beta_{11} * MTB_t + \beta * Leverage_t + \beta_{12} * Int\_Own_t + \varepsilon_t \quad (3)$$

Issuance reflects the advantages of real earnings management (REM) in obtaining more favorable credit terms from lenders, with a value of 1 indicating the issuance of more debt or stock. AQC denotes the level of merger and acquisition activity within the company. It is expected that ET_Meet, ET_Beat, Issuance, and AQC will exhibit a positive correlation with REM.

Earnings-to-Price (E2P) is a ratio associated with stock price expectations. A low E2P diminishes the benefits of REM. Therefore, E2P is anticipated to have a negative relationship with real earnings management.

The Impact of REM on Company Performance

In comparison to AEM, REM can lead to a decline in the performance of company in the future (Chen & Zhang, 2013; Cohen ẽt al., 2018; Zang, 2012). REM and the company's performance, however, have varied relationships depending on the research context.We employ the following model to test H4:

$$Adj\_ROA_{t+1} = \alpha_o + \beta_1 * REM\_AGG_t + \beta_2 * Z_{Score} + \beta_3 * Loss + \beta_4 * Size_t + \beta_5 * Growth_t - + \beta_6 * MTB_t + \beta * Leverage_t + \beta * Int\_Own_t + \varepsilon \quad (4)$$

The industry-adjusted profit from assets, or Adj_ROA, is the disparity among the company-level ROA and its corresponding industry-level ROA for the same year. (Gunny, 2010).

FINDINGS & INTERPRETATION

Three sector groups, Manufacturing, Real Estate, and Construction—comprising 91.11% of the failed businesses in our sample are shown by the results shown in Table 1.

Table 1. Sample Distribution of the Various Sectors

S.No.	Sector Group	Bankrupt Companies	Control Companies	Percentage (%)
1	Manufacturing	152	150	51.87
2	Real Estate, Renting &Business Activities	75	70	25.59
3	Construction	40	42	13.65
4	Wholesale & Retail Trade	14	15	4.77
5	Transport, Storage &Communication	12	15	4.09
	Total	293	292	100

Table 2 presents the business characteristics of both control and declaring bankruptcy enterprises along with the descriptive stats findings of the REM/AEM measures. As can be seen in Part A, the combined REM value for failed businesses is 0.153, which is higher than the value to earn control enterprises (-0.143). Additionally, for bankrupt companies, the Means of the three REM factors is (Dis_CF_Opr, Dis_EXPS, and Dis_PRO_CST) are 0.027, 0.065, and 0.059, respectively; for non-bankrupt companies, the means are 0.114, - 0.032, and -0.062. Companies that are in bankruptcy have negative operating cash flows, whereas businesses that are in

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continuous operation have upbeat cash flows.

Table 2. Descriptive Statistics

Part A: Bankrupt Companies (N=293)			
Variable	Mean	Standard Deviation	Median
REM_AGGT	0.153	0.591	0.172
Dis_CF_Opr	-0.027	0.227	-0.025
Dis_EXPS	-0.065	0.219	-0.074
Dis_PRO_CST	-0.059	0.335	0.060
Dis_Accrual	0.002	0.349	-0.011
Z_Score	0.431	0.671	0.475
Loss	0.330	0.234	0.500
Growth	0.017	0.117	0.011
Size	3.439	0.564	3.332
Adj_ROA	-0.041	0.130	-0.022
MTB	0.576	1.045	0.409
Leverage	0.252	0.166	0.225
Inst_own	0.256	0.138	0.269
Part B: Control Companies (N=292)			
REM_AGGT	-0.143	0.573	-0.132
Dis_CF_Opr	0.114	0.201	0.102
Dis_EXPS	-0.032	0.203	0.103
Dis_PRO_CST	-0.062	0.302	-0.061
Dis_Accrual	-0.003	0.336	-0.011
Z_Score	0.813	0.559	0.845
Loss	0.126	0.216	0.000
Growth	0.035	0.093	0.037
Size	3.428	0.571	3.324
Adj_ROA	0.010	0.087	0.011
MTB	1.231	1.176	0.946
Leverage	0.155	0.124	0.142
Inst_own	0.277	0.147	0.308

Variable definitions are in Appendix 1.

Additionally, Table2 demonstrates that non-bankruptcy businesses' mean AEM proxy (Dis_Accrual) value is lower (-0.003) than that of bankrupt companies' (0.002). In terms of business performance, bankrupt companies' adjusted ROA is -0.041, which is worse than continuous companies' (0.01). Bankrupt companies have a leverage of 0.252, which is greater than the continuing companies' (0.155).

Table 3. Comparison in Bankrupt and Control Companies With Respect to Real Management of Earnings Activities

'Variable'	'Mean'		'Median'		'Standard Deviation'		'Sig. of Diff'	
	'Bankrupt'	'Non_ Bankrupt'	'Bankrupt'	'Non_ Bankrupt'	'Bankrupt'	'Non_ Bankrupt'	'Mean'	'Median'
Year = t								
REM_AGGT	0.275	-0.107	0.279	-0.143	0.588	0.650	***	***

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Dis_CF_Opr	-0.078	0.122	0.065	0.134	0.229	0.215	***	***
Dis_EXPS	-0.109	-0.044	-0.086	-0.054	0.176	0.220	***	***
Dis_PRO_CST	0.088	-0.030	0.064	-0.058	0.333	0.346	***	***
Dis_Accrual	0.045	0.025	-0.019	-0.021	0.411	0.396	n.s	n.s
Year = t – 1								
REM_AGGT	0.206	-0.139	0.199	-0.144	0.537	0.596	***	***
Dis_CF_Opr	-0.096	0.116	-0.085	0.107	0.200	0.194	***	***
Dis_EXPS	-0.054	-0.038	-0.060	-0.053	0.194	0.224	n.s	n.s
Dis_PRO_CST	0.055	-0.061	0.039	-0.073	0.330	0.324	***	***
Dis_Accrual	0.018	0.031	-0.026	-0.144	-0.015	0.435	n.s	n.s
Year = t – 2								
REM_AGGT	0.172	-0.131	0.149	-0.103	0.550	0.561	***	***
Dis_CF_Opr	-0.065	0.100	-0.049	0.093	0.209	0.203	***	***
Dis_EXPS	-0.040	-0.022	-0.053	-0.048	0.228	0.227	n.s	n.s
Dis_PRO_CST	0.067	-0.052	0.041	-0.052	0.319	0.307	***	***
Dis_Accrual	0.033	0.053	-0.015	-0.103	-0.007	0.400	n.s	n.s
Year = t – 3								
REM_AGGT	0.112	-0.142	0.129	-0.109	0.597	0.633	***	***
Dis_CF_Opr	-0.015	0.108	-0.012	0.094	0.258	0.227	***	***
Dis_EXPS	-0.037	-0.029	-0.065	-0.051	0.254	0.230	n.s	n.s
Dis_PRO_CST	0.060	-0.063	0.042	-0.067	0.348	0.342	***	***
Dis_Accrual	-0.017	0.007	-0.014	-0.109	-0.010	0.360	n.s	n.s
Year = t – 4								
REM_AGGT	0.078	-0.156	0.107	-0.146	0.658	0.668	***	***
Dis_CF_Opr	0.009	0.123	0.007	0.113	0.255	0.222	***	***
Dis_EXPS	-0.052	-0.035	-0.070	-0.063	0.239	0.230	n.s	n.s
Dis_PRO_CST	0.035	-0.067	0.026	-0.062	0.369	0.345	***	***
Dis_Accrual	-0.045	-0.043	-0.015	-0.016	0.282	0.263	n.s	n.s
Year = t – 5								
REM_AGGT	0.067	-0.154	0.073	-0.137	0.626	0.607	***	***
Dis_CF_Opr	0.017	0.124	0.009	0.099	0.248	0.210	***	***
Dis_EXPS	-0.047	-0.040	-0.075	-0.068	0.250	0.208	n.s	n.s
Dis_PRO_CST	0.037	-0.070	0.031	-0.078	0.359	0.325	***	***
Dis_Accrual	-0.020	-0.002	-0.002	0.006	0.287	0.240	n.s	n.s

'Year t is the year when the company filed for bankruptcy. ***, **, * and n.s are statistical significance at 1%, 5%, 10% and >10% respectively.' 'Variable definitions are in Appendix 1.'

According to the t-test results in Table 3, in the five years before bankruptcy, bankrupt companies had an aggregated REM proxy mean that was considerably higher than control companies. The findings in Table 3 support hypothesis ($H1_a$) that managers in failing businesses use more REM than managers in operating businesses to mask subpar performance.

Figure 1 demonstrates the rising trend of combined REM activity in failing companies as bankruptcy draws near. However, there is no corresponding tendency for REM activities in the control businesses. In this study, we hypothesize that in order to escape bankruptcy, bankrupt companies manipulate earnings through REM activities. The management must participate in REM despite knowing the high expenses because they have limited financial freedom. The study's findings offer further empirical proof that bankrupt companies heavily engaged in REMactivities prior to going out of business.

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Figure1. Real Earnings Management Trend Before Bankruptcy

The company (Spearman) correlation results for the main study variables are shown in Table 4. The four REM proxies and bankruptcy showed statistically significant positive correlations (coefficients of 0.25, 0.315, 0.079, and 0.191, respectively). On the other hand, there is no real connection between bankruptcy and AEM. Once more, this lends credence to our initial theory that ex-post companies participate aggressively in REM. Four REM proxies, including Adj_ROA, Activity, and Z-score (financial medical care), have negative and significant correlations with one another, suggesting that REM is bad for business performance.

Table 4. Correlation of Variables in Models

Varaible	REM_AGGT	Dis_CF_Opr	Dis_EXPS	Dis_PRO_CST	Dis_Accrual	BKruptcy	Z_Score	Loss	Adj_ROA	Size	Growth	MTB	Leverage	Inst_own
REM_AG GT		**0.592**	**0.763**	**0.939**	0.085	**0.25**	−0.051	0.207	−0.207	0.041	−0.152	−0.280	0.159	−0.047
Dis_CF_Opr	0.59		0.041	0.37	0.111	**0.315**	−0.125	0.385	−0.265	−0.072	−0.157	−0.213	0.172	−0.053
Dis_EXPS	0.764	0.117		0.722	0.043	**0.079**	0.071	−0.016	−0.023	0.097	−0.232	−0.219	0.155	−0.021
Dis_PRO_CST	0.944	0.394	0.756		0.053	**0.191**	−0.052	0.124	−0.183	0.061	−0.019	−0.222	0.073	−0.033
Dis_Accr ual	0.116	0.136	0.065	0.083		0.011	0.113	−0.043	0.117	−0.032	0.017	−0.006	−0.023	-0.111
BKruptcy	**0.28**	**0.379**	**0.096**	**0.224**	−0.007		−0.294	0.411	−0.227	0.013	−0.080	−0.282	0.312	−0.071
Z_Score	**−0.036**	**−0.148**	**0.095**	**−0.026**	0.131	−0.325		−0.448	0.469	−0.124	0.142	0.192	−0.394	0.204
Loss	0.228	0.436	−0.004	0.147	−0.119	0.411	−0.482		−0.442	−0.003	−0.201	−0.265	0.331	−0.097
Adj_ROA	**−0.307**	**−0.493**	**−0.042**	**−0.229**	0.12	−0.435	0.443	−0.731		0.059	0.169	0.221	−0.251	0.055
Size	0.037	−0.053	0.06	0.067	−0.037	0.016	−0.192	0.015	0.015		−0.064	−0.045	−0.010	0.077
Growth	**−0.182**	**−0.235**	**−0.237**	**−0.052**	0.08	−0.124	0.093	−0.258	0.252	−0.059		0.274	−0.069	0.006
MTB	−0.312	−0.340	−0.191	−0.245	0.074	−0.399	0.304	−0.415	0.476	−0.038	0.36		−0.236	0.098
Leverage	0.188	0.2	0.148	0.13	−0.025	0.344	−0.400	0.323	−0.350	0.057	−0.062	−0.296		−0.155

'Bold numbers indicate the correlation is significant at 5% level of significance.' 'Variable definitions are in Appendix 1.'

We examine three main predictions ($H1_a$, $H1_b$, and $H1_c$) utilizing the Ordinal Least Squares (OLS) the regression analysis Model (1). The significance levels and parameter estimates are shown in Table 5.

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According to Roychowdhury (2006), there is a significant positive correlation between bankruptcy and REM_AGGT (the dependent variable, which is the aggregate level of four REM measures; 1 represents insolvent businesses and 0 represents ongoing companies). This bolsters H1a, indicating that companies that are bankrupt typically manage their real earnings more frequently than businesses that were profitable before filing for bankruptcy. Higher Z_Score values reveal better financial condition; Z_Score is used as a proxy to stay financial health. Table 5's Z Score coefficient, which deviates significantly from zero, is consistent with Zang (2012)'s findings and supports H1b, suggesting that companies in better financial standing are more likely to participate in actual management of earnings activities, especially when facing bankruptcy.

Table 5. Real Management of Earnings and Bankruptcy: A Relationship

	'REM_AGGT'	'Dis_CF_Opr'	'Dis_EXPS'	'Dis_PRO_CST'	'Dis_Accrual'
'Intercept'	-.679***	-.358***	-.141	-.162	.328**
	(-2.98)	(-2.97)	(-1.58)	(-1.59)	1.98
'BKruptcy'	**.428*** **	**.175*** **	**.163*** **	.029	**.117** **
	6.01	4.33	**6.02**	.118	**2.21**
'Z_Score'	**.148*** **	**.072*** **	**.045*** **	.023*	**.078*** **
	5.91	**5.28**	**3.58**	**1.86**	**3.29**
'Loss'	**.214*** **	.078*	**.235*** **	**-.089*** **	-.010
	2.93	1.78	**7.97**	**(-3.32)**	(-.16)
'Adj_ROA'	**-.889*** **	-.578***	**-.336*** **	.026	.148
	(-5.64)	**(-6.55)**	**(-4.32)**	.36	1.03
'Size'	.009	.016	-.022*	**-.029** **	-.001
	.32	**1.15**	(-1.88)	**2.458**	(-.07)
'Growth'	**-.398*** **	.098	**-.196*** **	**-0.381*** **	.098
	(-3.62)	1.61	(-3.39)	(-6.78)	-.9
'MTB'	-.001	0	**-.015*** **	**-.038*** **	-.003
	(-1.26)	(-1.14)	(-2.30)	**(-6.12)**	(-.28)
'Leverage'	.128	-.088	-.039	**.232*** **	-.032
	1.12	(-1.34)	(-.82)	**(4.84)**	(-.35)
'Inst_own'	-.073	-.035	-.006	.045	**-.159** **
	(-.65)	(-.55)	(-.15)	1.072	(-1.98)
'N'	293	293	293	293	293
'Adjusted **R²'**	12.10%	7.69%	23.10%	12.60%	12.95%

'T-statistics are shown in brackets are statistical significance indicated by the symbols ***, **, and * at the 1%, 5%, and 10% levels, respectively'. 'Appendix 1 contains definitions for variables.'

Bankruptcy and the ratio of discretionary production costs to cash flows from operations (Dis_PRO_CST/Dis_CF_Opr) exhibit a close association. Nevertheless, there is no discernible relationship between bankruptcy and discretionary spending (Dis_EXPS). This suggests that rather than cutting back on discretionary spending, insolvent businesses typically rely heavily on modifying sales and overproducing in order to generate revenues. When prices ascend to normal, offering price breaks or loose credit terms may result in lower future sales and negative operating cash flows (Roychowdhury, 2006). Additionally, these additional sales often come with lower profit margins, thereby reducing future cash flows (Zang, 2012). Conversely, cutting discretionary costs is not strongly linked to bankruptcy. This implies that in order to create cash flow and, consequently, reported earnings, executives of financially distressed companies might not place as much emphasis on reducing non-operating expenses. The findings regarding the assessment of the equilibrium between real earnings management (REM) and accruals-based management of earnings in insolvent companies are displayed in Table 6. The coefficients for Discretionary Accruals (Dis_Accrual) are substantial and positive in both control and bankrupt companies, with values of 0.126 and 0.167, respectively.

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According to the findings in Table 6, managers utilize both REM and AEM as complementary approaches to manage profits. When companies are facing imminent bankruptcy, managers are likely to employ all available techniques to boost profits and avoid violations of debt agreements (DeFond & Jiambalvo, 1991).

Table 6. Back & Forth between Real & Accrual Management of Earnings

	'REM_AGGT Bankrupt Companies'	'REM_AGGT Control Companies'
'Intercept'	-.381	-.156
	(-.97)	(-.59)
'Dis_Accrual'	**.126***	**.167****
	1.81	**2.98**
'Loss'	.237*	-.189
	1.88	(-.35)
'Size'	.158***	-.054
	2.69	(-.15)
'Growth'	-.334	-.841***
	(-1.52)	1.07
'ROA'	-.403*	-2.105***
	(-1.75)	-.27
'Leverage'	-.605***	.829***
	(-3.32)	(-.29)
'Inst_own'	-.678***	.218*
	(-3.52)	(1.64)
'N'	293	292
'Adjusted **R^2'**	7.36%	8.29%

'T-statistics are shown in brackets are statistical significance indicated by the symbols ***, **, and * at the 1%, 5%, and 10% levels, respectively'. 'Appendix 1 contains definitions for variables.'

Table 7 provides a comparison of the incentives, costs, and benefits associated with Real management of earnings (REM) activities for both continuing and bankrupt companies. Issuance and ET_Meet each have positive coefficients significant at the 1% level, with values of 0.431 and 0.283. These findings suggest that companies in the process of going bankrupt are incentivized primarily by REM to benefit from more favorable financing conditions.

Table 7. Stimulus to Engage in Real Management of Earnings

	'Expected Sign'	'REM_AGGT Bankrupt Companies'	'REM_AGGT ControlCompanies'
'Intercept'		-1.189***	-0.719**
		(-2.31)	(-2.29)
'ET_Meet'	+	.29	**0.283****
		1.09	**2.46**
'ET_Beat'	+	-.141	.232
		(-.89)	1.04
'E2P_Ratio'	–	.003	.151*
		.21	1.64
'Issuance_Debt'	+	**.431****	-.256
		1.92	(-1.48)
'AQC_Trans'	+	**-1.083****	.348

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		(-2.24)	.67
'Z_Score'		.076*	.268***
		1.69	5.98
'Loss'		.289	.262*
		1.31	1.83
'Adj_ROA'		-.130	-2.216***
		(-.712)	(-5.95)
'Size'		.141**	-.059
		1.89	(-1.61)
'Growth'		-.341*	-.701***
		(-1.96)	(-3.45)
'MTB'		0	-.039**
		(-.63	(-3.01)
'Leverage'		-.284	1.187
		(-1.36)	(6.07)***
'Inst_own'		**-.648*** **	-.061
		(-3.01)	(-.39)
'Industry fixed'	Fixed	-	-
'Year fixed'	Fixed	-	-
'N'		293	292
'Adjusted R^2'		10.38%	12.97%

'T-statistics shown in brackets are statistical significance indicated by the symbols ***, **, and * at the 1%, 5%, and 10% levels, respectively'. Appendix 1 contains definitions for variables.

Table 8 tells how real earning management (REM) will affect future business performance. The adjusted returns on Assets at year t + 1 is the dependent variable that is used as a stand-in for future firm performance. REM_AGG has a coefficient of -0.016, which is essential at the 1% level. This suggests a bad correlation between REM and the performance of the company going forward.

Table 8. Companies Performance & Real Management of Earnings

	'Expected Sign'	'Adj_ROA'
'Intercept'		-.122***
		(-2.98)
'REM_AGGT'	–	-.016***
		(-2.79)
'Z_Score'	+	.069***
		-17.93
'Loss'	–	-.135***
		(-11.94)
'Growth'		.014***
		-1.98
'Size'	+	.046**
		(–2.96)
'MTB'		0
		-.81

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'Leverage'		.028
		-1.41
'Inst_own'		-.049***
		(-3.08)
'N'		293
'Adj R^2'		39.05%

'T-statistics shown in brackets are statistical significance indicated by the symbols ***, **, and * at the 1%, 5%,and 10% levels, respectively'. Appendix 1 contains definitions for variables.

CONCLUSION

Our investigation delves into several crucial aspects. Initially, we explore whether managers in distressed businesses employ real management of earnings tactics prior to bankruptcy. Secondly, we examine the motivations for driving such REM activities. Thirdly, we evaluate the effects of REM on the likelihood of bankruptcy and future business performance.

Furthermore, we contrast the trade-off strategies used by accrual-based money management (AEM) and regression-based management of earnings, specifically looking at whether they are complementary or substitute strategies. We also assess the predictive validity of the progressively rising REM score and the Altman Z score.

We find that failed companies have increased their REM activities during the five years preceding bankruptcy. Furthermore, we discovered a correlation between REM and lower future performance of the company. Thus, we contend that carrying on with REM inside financially distressed companies may cause a company to file for bankruptcy or hasten the process of failing. The results of this study might clarify how earnings management contributes to business failure.

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APPENDIX 1

-Variable Definition-

'Earnings management variables'

Dis_EXPS "Discretionary expenses are the difference between actual discretionary expenses and theestimated normal level of discretionary expenses from the model in Roychowdury (2006)."

Dis_PRO_CST "Discretionary production costs are the difference between actual production cost and estimated normal cost from the model in Roychowdury (2006)."

Dis_CF_Opr "Discretionary operating cash flow is calculated as the variance between the realized CFO and the projected standard level of CFO as per Roychowdury's model (2006)."

Dis_Accrual "The residuals of the Modified Jones Model are used to estimate abnormal accrual valuesat the cross-sectional level (Dechow, Sloan, and Sweeney, 1995)."

REM_AGGT "Dis_EXP, Dis_PROD, and DIS_CFO added together."

INCR_REM "REM Score is the number of years between year t and year t-1 where real earningsmanagement efforts have improved."

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Bkruptcy "0 if the company is not in bankruptcy and 1 otherwise."

'Motivating Factors to Practice Real Earnings Management'

ET_Meet "It is equal to 1 when the income before exceptional items, adjusted by lagged total assets, falls within the range of 0.0 to 0.01, or if the change in income before extraordinary items is between 0.0 and 0.01. Otherwise, it is equal to 0."

ET_Beat "Income before exceptional items divided by lagged total assets equals 1 when it is positive and exceeds 0.01, or if the rise in income before exceptional items is positive and greater than 0.01; otherwise, it is set to 0."

'Cost of Benefits of Real Earnings Management'

AQC_Trans "Divided by the value of all assets in year t, from the acquisition transaction amount inyear t+1."

E2P_Ratio "Earnings-to-Price ratio"

Issuance_Debt " If fresh debt or equity is issued in year t, then the value is 1, else it is 0."

'Control variables'

MTB "Scaled by the book value of common stocks is the market value of common stocks. Winsorized at 3% and 97% by year."

Loss "If the net income for the fiscal year is negative, then the value is 1, else it is 0."

Growth "It is sales fluctuations at year t-1 scaled by total sales. 3% and 97% winorized by year."

Adj_ROA "It is difference between the median ROA for the industry and the current year's ROA (Net income scaled by total assets)."

Altman_Z " It is calculated as follows: [1.2 (CA – CL)/TA + 1.4 RE/TA + 3.3 EBIA/TA + 0.6 MVE/BVTL + 0.999 S/TA]. Total number of outstanding shares held by institutional owners, expressed as a percentage of 100."

CA 'Current_Assets'

CL 'Current_Liabilities'

TA 'Total_Assets'

RE 'Retained_Earnings'

EBIA 'Earning_Before_Interest_&_Taxes'

MVE 'Market_Value_of_Equity'

BVTL 'Book_Value_of_Total_Liabilities'

S 'Sales'