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Exploring the Link between Earnings Management and Financial Risk Ratios: A New Evidence from Pakistan and Bangladesh Construction Sector (Cement Companies)

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Abstract: The critical effort in this research is to observe the difference of mean in leverage, earning management, and financial distress between countries like Pakistan and Bangladesh. Based on the construction sector from Pakistan and Bangladesh, five cement companies are selected from each side to measure the difference in earning management, financial distress, and leverage in that sector. These firms are selected from the Karachi stock exchange and Dhaka stock exchange of public listed companies. The financial data of Bangladeshi firms are collected from the Dhaka Stock Exchange or their official websites. The economic data of Pakistani cement firms are gathered from their official websites. The result shows a meaningful difference in means for leverage, financial distress, and earnings management from Pakistan and Bangladesh. The present study is limited to the construction sector of Pakistan and Bangladesh. These results assist in the construction sector in Pakistan and in Bangladesh act in the light of results obtained in this study. This research may aid in the creation or improvement of knowledge among judgement call in firms throughout the world in terms of improving both financial leverage and earnings management.

Keywords: Earnings management, Financial risk, Construction sector, Pakistan, Financial distress, Bangladesh

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INTRODUCTION

There is an indication that international accounting standards lead to a general development in earnings quality (Barth, Landsman, & Lang, 2008). In the occasions and gaps accessible in accounting methods, management will be capable of handling incomes by selecting adequate accounting techniques in the Generally Accept Accounting Principle (GAAP) or by doing alterations in a manner in which specified approaches are appropriate (Al-Sraheen, 2019). In another way, managerial interference may happen in the report procedure via operational decisions, such as changes in delivery, timetables, speeding up sales decisions, and postponing of keep and research and development (R & R&D) expenses. Previous studies also emphasize boards' character in obliging earnings management activities, mainly concentrating on two aspects of board construction and structure: (1) the occurrence of external or independent directors and (2) the presence of an audit committee. Though past experiential study extensively provisions the theory that there is a negative association in earnings management toward the number of external boards of directors, that is, earnings management is decreasing when there is additional freedom (Astami, Rusmin, Hartadi, & Evans, 2017; Rusmin, Astami, & Hartadi, 2014) the audit committee's result on earnings management actions is more contentious.

Purpose of the Study

This study aims to understand that the two countries' economy is growing almost equally, but to some extent, the Bangladeshis economy is growing more as compared to Pakistan because there are a lot of reasons behind it. One of the major is terrorism, in which the government has been spending a lot for twenty years which is a big challenge toward the country. Another one is an attack on the investors who come to invest in the country, resulting

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in resistance toward foreign direct investment (FDI). The next one is the political influence of other countries, e.g., the recent contract of China to Pakistan regarding economic corridor opposed mainly by countries like India, Israel, USA, etc. Here we will review several problems regarding financial distress, leverage toward earning management. There is limited study in comparison between two countries regarding Pakistan and Bangladesh. Moreover, Pakistan and Bangladesh were involved in the financial crises in 1997. The primary purpose of this study is to have a comparative analysis and contrast for a a substantial difference in the leverage, financial distress and earning management between Pakistan and Bangladesh.

Research Gaps

Here, we will study the comparison of the earning management, financial distress and leverage between these two countries. Why did we select it? Because the study was done comparing countries like Thailand and Malaysia, India and China and many other countries in Asia are in plenty. Still, the comparison of Pakistani firms to other countries is very low even in some cases it does not exist. Conclusion: Many studies are required to compare the firms with these two countries with more variables like leverage, debt ratio, etc. (Ahmed & Afza, 2019). The economy of India is growing consistently with the growth of their firms, so we have to study what are the variables perform which stimulate the firms towards change, which variables are not allowed to grow very well in Pakistan and what are the problems which dominate in Pakistani firms toward declines and how to overcome these problems by managements and governments (Kumala & Siregar, 2020).

Research Objectives

This research is to be undertaken by numerous enthusiasms. First, the government and clients have been concerned about financial distress because the decrease in financial performance might increase costs and go towards bankruptcy (Campa et al., 2015). If the company declines in a financial distress situation, the company may be incapable of funding its business process and the managers' compensations and posts are likely to be unsafe. This financially distressed condition may suffer a firm to decline in reputation and to some extent, the firms may go to a position of acquisition in some cases (Akbar, Akbar, Tang, & Qureshi, 2019). Next, agency problems may be occurred by free cash flow (Orazalin, 2019). Agency problems might have deteriorated especially in case of huge free cash flows and low investment opportunities. These things happen only when managers invest in those unprofitable firms that benefit the manager's self-interest, such as evading one's duty (Mitnick, 2019). Hence the company may go in to decline direction. So that, hide these deeds, managers have no alternative but to do earnings management by accounting decisions (Mitnick, 2019; Bukit & Nasution, 2015; Choi et al., 2012).

LITERATURE REVIEW

Earnings management has no specific definition; different authors defined it in their own words. Healy and Wahlen (1999) defined earnings management is a tool used by the board of directors or managers to judge financial reporting and structuring transactions in this way, which either misinforms the stakeholders regarding how company performed in the past or manipulate the outcomes based on accounting reports. On the other hand, (Perols, Bowen, Zimmermann, & Samba, 2017) says fraud has the same objective as earning management: financial statement deception occurs when a biased manager uses accounting techniques that do not follow GAAP. However, managers are mainly involved as members of the board because they are aware of the information necessary for decision-making (Marra & Mazzola, 2014). Kapoor and Goel (2019) found that the independent board of directors and earning management has a more significant relationship in the active board as a proxy by most annual board meetings.

Similarly, earning management causes the management to manipulate financial reporting for their serve own interests which could harm others (Hasan, Omar, & Hassan, 2018). As a result, earning management is a technique in which management involves indulge in corruption for their self-interest. From the opinion of different author literature, earning management can be reduced by using the General Accepted Accounting Principles (GAAP) or by doing alterations based on recommended methods. Similarly, its states that an independent audit committee can reduce the earning management. Although such a board can enhance the credibility of stated earnings, setting up an audit committee does not liberate the full panel of legal financial reporting accountabilities.

The effect of the leverage on earnings management before and after the period has been studied on Australian cash flow regulation (Sun, Si, Sun, & Si, 2018). The study results include that the leverage had a dissimilar impact on earning management, but free cash flow had no effect before or after the creation of regulation. In addition, the association between the possibility of fraud and earlier earnings management assumes no indication of inated revenue and no sign of nancial statement handling to fulfil or go beyond analyst predictions. The consequences also show that prior earnings management is associated to a higher possibility of rms that come across or beat analyst forecasts are obligating fraud and a higher probability that rms with inated revenue are obligating fraud (Perols et al., 2017). In another study, financially distressed firms are more likely to indulge in income decreasing earning management than healthy firms even after the financial crisis. It also found that accruals and free cash ows decline in value relevance as the inducement for earnings management enlarge it (Nwogugu, 2019). Campa et al. (2015)said that financially distressed firms indulge in facing earnings management practice, which offers managers incentive to handle earnings. From time-to-time managers may be likely to get engaged in earnings management in the sense of hiding illegal transactions and therefore counter high-risk litigation. However, the prior research states that management can better handle earnings to escape reporting the instability of earnings and losses (Kapoor & Goel, 2019). In a roundabout, the company board deliberately tries to sustain its status by presenting that their firms are doing well in the market.

Consequently, the management will advantage more rewards like job security, respect, pension contributions, bonus, stock prizes and future advancements (Demirkan & Platt, 2009). The managers in a little growing firm with excess free cash flow (FCF) deliberately managed earnings as they did not want to report the loss studied by Dogru, Kizildag, Ozdemir, and Erdogan (2020). This low developed is go along with funds in negative net present values (NPVs). A study by Ali and Kamardin (2018) reported that the board who handle accruals are inspired by purpose to chances the outside standard like raising the firm's donation base, to discharge account payables' sufferings and decreasing the rate of foreign capital meanwhile they had not openly share funds. This way, the earnings management may change, allowing the helpful method, incentive, form of a firm and a country(Ali & Kamardin, 2018).

There is a shortage of research focused on earnings management between Pakistan and Bangladesh, and plenty of research is created on the international assessment between numerous nations. Many researchers conducted the research to investigate the association between management characteristics and earnings management behavior by selecting definite stock exchange-listed firms in different countries as sample. By applying four proxies for management features, they concluded that management is more likely to hinder earnings management because they had possible awareness and proficiency in business dealing matter affairs. Hereafter, they use their knowledge and skill to observe their companies' execution relatively by using earnings management. A study conducted by Degiannakis, Giannopoulos, Ibrahim, and Rozic (2019) initiated that management of the companies in Thailand and Singapore apply earnings management to escape reporting loss and negative earnings progress. The consequences were not consistent when financial crises among different firms were being measured. From the other point of view, research in Thailand suggests an exclusive culture in the nation that may substantially influence managers' approach to earnings management. Thailand managers are not significantly willing to highlight earnings management actions as related to the western managers due to different cultures (Goodwin, Williams, & Snell Herzog, 2020). Based on the above-discussed literature review, the following hypotheses have been formulated:

H1: Mean significant difference exists for earnings management between Pakistan and Bangladesh.

H2: Mean significant difference exists in Leverage between Pakistan and Bangladesh.

H3: Mean significant difference exists in financial distress between Pakistan and Bangladesh.

METHODOLOGY

The sample for this research contains two industrial sectors listed in Karachi Stock Exchange Pakistan and the Dhaka Stock Exchange Bangladesh. The one sector of Construction from Pakistan comprises five cement companies and one sector from the Dhaka stock exchange, consisting of 5 cement companies. These sectors are selected because a similar distinction will give a more precise result. At the time of independence, there was not a more developed industry of cement, but now it is growing more than the Pakistan Cement Industry. Therefore, we must check how much these sectors are growing and the significant difference between these sectors. After the partition of Bangladesh, their economy is growing compared to Pakistan because Pakistan has faced many challenges regarding terrorism for 20 years. We have to check how much it is growing and the variable affecting it. The Cement sector in Pakistan is a very old sector that has played a key role in Pakistan's economy.

Sample Selection

Table 1: Sample selection from Pakistan and Bangladesh

	Pakistan	Bangladesh
Total Number of Companies in construction sector	7	8
Less:		
Two companies from Pakistan and three Companies from Bangladesh because of insufficient data	(2)	(3)
Final Sample	5	5

Time Frame

In this study, the time frame is from 2016 to 2020, while 2016 is taken as a base year.

Data Collection

The financial data of Bangladeshi firms are collected from the Dhaka Stock Exchange or their official websites. The economic data of Pakistani cement firms are gathered from their official websites. The collected information is consolidated by auditor reports or published information disclosed by cement firms.

Study Type

The study is quantitative, whereas descriptive statistics and an independent T-test will be used to investigate the significant difference of mean in the earning management, leverage, and financial distress between Pakistan and Bangladesh.

Dependent Variable

This research involves a proxy for earnings management such as discretionary accruals. The theory used to measure earnings management in this research is Modified Jones Model as suggested by Modified Jones Model proposed by Mitnick (2019); Pham, Chung, Roca, and Bao (2019) because this theory is mainly related to the economic atmosphere in Pakistan and Bangladesh. In addition, unlike researchers who have suggested this model as an effectual instrument in discovering nonstandard accruals, which detect that companies (board of directors) include in earnings management observes. This formula delivers a cross-sectional form in calculating earnings management. This research used an altered technique to get the complete value of earnings management. It is steady with the research of Outa, Eisenberg, and Ozili (2017).

The suggested formula of estimated Total Accruals by (Pham et al., 2019) is shown below:

$\mathrm{TA} = \Delta\mathrm{CA_{it}} - \Delta\mathrm{CL_{it}} - \Delta\mathrm{Cash_{it}} + \Delta\mathrm{STD_{it}} - \mathrm{Dep_{it-}}$ This equation is applied for the calculation of total accruals, which is:

$\Delta\mathrm{CA}$ = Change in the total current asset from year $\mathrm{t_1}$ to t

$\Delta\mathrm{CL}$ = Change in total current liabilities from year $\mathrm{t_1}$ to t

Δ Cash = Change in cash and cash equivalent from year t_1 to t

Δ STD = the change in debt which involves the total current liabilities from year t_1 to t (It may include the current liabilities and the short term and long term loan which its repayments end in year t.

Dep = Amortization and Depreciation expenses

$\mathrm{A_i, t-1}$ = Total amount of assets at the beginning of the year

Δ Rev = The change in the amount of sale in year t_1 to t

$\Delta\mathrm{AR}$ = The change in accounts receivables from years $\mathrm{t_1}$ to t

PPE = The net property, plant and equipment

Independent Variables

This research used two independent variable types: leverage and financial distress. There are miscellaneous views on whether management, founded on research in Malaysia that leverage had no impact on earning management (Moleong, 2018). There was a study that the firms that are in greater leverage handle the earnings to avoid debt contracts damages. Some viewers proposed that the liabilities might dissuade the process of free cash flows in business operations. Hereafter, liability or leverage might decrease managers' tendency to use earnings management practice (?, ?).

The financial distress, the Altman z-Score is to being involved so that assess the financial situation for a company as a sign of financial distress advanced by (Altman, 1968) The company which has z-scores lesser than 1.8 will be grouped as a financially distressed company but the company with z-scores over 2.67 will be grouped as financially healthy. The company will be grouped as grey if its z-scores are between the range of financially strong and financially distressed firms as recommended by (Degiannakis et al., 2019).

The equation for Z-score analysis is given below:

Z = 0.012X1 + 0.014X2 + 0.033X3 + 0.006X4 + 0.999X5

Where:

X1 = Working Capital/ Total Assets

X2 = Retained Eamings/ Total Assets

X3 = Eamings before interest and Tax/ Total Assets

X4 = Market value of Equity/ Total Liability

X5 = Sales/ Total Assets

Z is an overall benchmark; the firms which have lower z-score value has a chance to bankrupt.

The company may also be categorized as a likely for the agency problems for free cash flow may also occur when the price to book value is below an average and free cash flow is above average. In addition, the company manager might also hope that extra recompenses such as bonuses and others encourage if the company has excess cash in hand.

RESULTS AND FINDINGS

Descriptive Statistics

Table 2: Descriptive statistics for Pakistan & Bangladesh

	Pakistan				Bangladesh			
	Min	Max	Mean	St. D	Min	Max	Mean	St. D
Dep. Variable								
DACC	-0.0444	1.8938	0.4200	0.5627	-0.5240	8.9701	2.4532	2.9386
Ind. Variable								
LEV	0.3700	1.7900	0.9671	0.3145	0.0200	4.8800	1.7892	1.4749
DISTRESS	1.4704	2.8682	2.0479	0.4038	0.7625	5.6117	2.6679	1.6762

Table 2 shows the result of the descriptive analysis. For leverage (LEV), the firms indicate that the minimum value of leverage is 0.37 for Bangladesh and the minimum value of leverage for Pakistan is .020. The maximum leverage value for Bangladesh and Pakistan is 1.79 and 4.88, respectively. The mean value of leverage for Pakistan and Bangladesh is 1.7892 and 0.9671, respectively. This indicates that Pakistani construction firms have higher debt than Bangladeshi firms. For the financial distress (DISTRESS), the minimum value of Bangladeshi construction firms is 1.4704, and Pakistani construction firms are 0.7625. Still, the maximum value of financial distress for Bangladeshi firms is 2.8682 and 5.6117 for Pakistani construction firms. The mean value of distress is 2.0479 for the Bangladeshi construction sector and 2.6679 for the Pakistani construction sector. Financial distress is Z-Score value. The firms with a greater Z-score value will be considered healthier than the lower Z-score value. According to Degiannakis et al. (2019), the company is sorted as distressed if its z- Score value is less than 1.80. The mean value of z-Score for the Pakistani construction sector 2.6679 is more than the Bangladeshi sector 2.0479. The

Pakistani industry is healthier than the Bangladeshi sector based on the cement sector. But based on individual firms, the value also lies below 1.80 in some years.

In this research, 80% of the cement sector is analyzed from Bangladesh and 70% from Pakistan. Standard deviation is used for all continuous variables in this research. The squire root of the variance is known as standard deviation. It is used to determine how much data is spread from the original data (Fitri & Syamwil, 2020). Total Accrual has the highest standard deviation compared to Pakistan, which indicates that the value has more dispersion.

Independent *t*-test

Table 3 shows the summarized result of the independent sample *t*-test between Pakistan and Bangladesh on leverage, financial distress, and earning management. The result displayed in the independence *t*-test shows that the mean value of Earning management for Bangladesh is (Mean=0.4200, Standard Dev.=0.5627) and for Pakistan is (Mean=2.4532, Std. Deviation=2.9386). Therefore, the mean difference of DACC is -2.0332 at p=0.003 which is (p<0.05). So the result shows that there is a mean significant difference between Pakistan and Bangladesh. Thus, Hypothesis H_1 is accepted.

Table 3: Independent *t*-test outcomes

	Country	Mean	Std. D	Mean sig.	Mean Diff.
DACC	Bangladesh	0.4200	0.5627	0.003	-2.0332
	Pakistan	2.4532	2.9386		
LEV	Bangladesh	0.9671	0.3145	0.001	-0.8221
	Pakistan	1.7892	1.4749		
DISTRESS	Bangladesh	2.0479	0.4038	0.000	-0.6200
	Pakistan	2.6679	1.6762		

The mean, standard deviation, and mean difference of Earning management, Leverage and financial distress is given below in Fig 1.

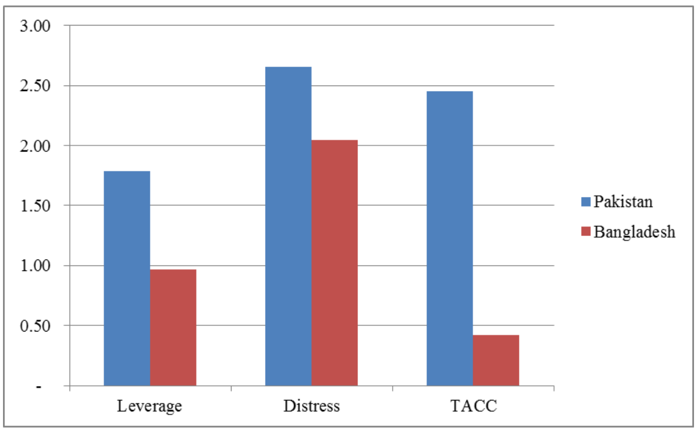

Figure 1: Mean by way of country

For leverage, the mean value of Bangladesh is (Mean=0.9671, St. D=0.3145) and for Pakistan is (Mean=1.7892, Std. D=1.4749). The difference for leverage is -0.8221 at the value of p=0.001 (p<0.05). The test outcomes shows a significant difference in leverage between Pakistan and Bangladesh so we will accept hypothesis H_2. The result also shows a significant difference in financial distress between Pakistan and Bangladesh. Similarly, the mean value of financial distress for Bangladesh is (Mean=2.0479, Std. D=0.4038) and the mean value for Pakistan is (Mean= 2.6679, Std. D= 1.6762). The mean significant difference of financial distress is -0.6200 at the value of 0.000 (p<0.05). These outcomes display a mean significant difference in financial distress between Pakistan and Bangladesh. Thus, Hypothesis H_3 is accepted.

DISCUSSION

The objectives of this paper is to measure and analyze the research problems. Based on the proposed hypotheses and results in this research, it was discovered that there is a link between analyzing about qualities such as earning management, leverage and financial distress (Outa et al., 2017). Findings from this study, a determination of validation was conducted to find an explanation for the outcome, which was examined for both a direct and indirect effect. The veracity of discoveries made by investigating comparable publications to back up a previous reports assertion (Kumala & Siregar, 2020).

The results shows that hypothesis first which stated that significant difference exists for earnings management between Pakistan and Bangladesh. The core notion of earnings management underpins the distortion of financial statements by management of a company for their own personality at the detriment of others, despite the fact that it has been characterized in a range of methods (Orazalin, 2019). Earnings management is thus a tool used by organizations to purposefully alter a company's financial performance so that the numbers completely fit the projected worth of the company (Kapoor & Goel, 2019). The second hypothesis stated that there is a significant difference exists in Leverage between Pakistan and Bangladesh. The study discovered that leverage had a varying effect on earnings management during the laws were implemented, although free cash flow would have the same effect (Choi et al., 2012). In a study conducted, Hasan et al. (2018) discovered that unstable corporate managers participate in more earnings management methods than strong economic actors, and that these results hold true even after the global recession. Earning management, on the other hand, is more inclined to control results in order to prevent revealing the instability of profits and deficits, according to the research. Obliquely, managers helps to keep the business' reputation by demonstrating that their companies are operating well in the industry. Therefore, executive compensation will improve, including bonuses, reputation, job protection, retirement benefits, equity incentives, and potential advancements (Ge & Kim, 2014). The third hypothesis stated that there is a significant difference exists in financial distress between Pakistan and Bangladesh. Organizations are in financial hardship because they are able to fully control and sustain the sustainability of their profitability, which originates from a lack to advertise their goods, resulting in fewer revenues (Shahab, Ntim, Chengang, Ullah, & Fosu, 2018). As a result of the fall in revenue from lowest purchases, the business now has operational loss and revenue loss for the present period. Moreover, the continued deficits would result in financial shortfalls as the worth of cash flows used to sell stock decreases. As a result, the entire capital as a whole will be deficient.

THEORETICAL IMPLICATIONS

This report's theoretical foundation is that it adds to the ways of earning in literature by giving a new conceptual base. This is incredibly beneficial because there is a paucity of studies on the matter, with no possible link financial leverage to earnings management connections among bank managers as of yet in Pakistan and Bangladesh.The theory used to measure earnings management in this research is Modified Jones Model as suggested by Modified Jones Model proposed by Mitnick (2019); Pham et al. (2019) because this theory is mainly related to the economic atmosphere in Pakistan and Bangladesh. Though past experiential study extensively provisions the theory that there is a negative association in earnings management toward the number of external boards of directors, that is, earnings management is decreasing when there is additional freedom (Astami et al., 2017; Rusmin et al., 2014) the audit committee's result on earnings management actions is more contentious.

PRACTICAL IMPLICATIONS

Some practical implication of this study are, earning management causes the management to manipulate financial reporting for their serve own interests which could harm others (Hasan et al., 2018). As a result, earning management is a technique in which management involves indulge in corruption for their self-interest. From the opinion of different author literature, earning management can be reduced by using the General Accepted Accounting Principles (GAAP) or by doing alterations based on recommended methods. As a result, this research helps us make sense of the current state of financial leverage and its effects on earnings management in a broad sense. This research may aid in the creation or improvement of knowledge among judgement call in firms throughout the world in terms of improving both financial leverage and earnings management.

LIMITATIONS

The present study is limited to the construction sector of Pakistan and Bangladesh. It is strongly suggested to take more sectors in comparisons such as financial institutions like banks, the telecommunication sector, etc. These banks break down the country's economy and financial system. Some firms from Bangladesh whose data was missing are not considered.

CONCLUSION AND RECOMMENDATIONS

This result for indication is based on the comparison of the construction sector in Pakistan and Bangladesh. Five cement companies from Pakistan and five cement companies from Bangladesh have been taken for the analysis for five years, 2016 to 2020, while 2016 is taken as the base year. The result of the independent t-test indicates a significant difference between discretionary accruals taken as earning management; financial distress brought as z-Score and leverage between Pakistan and Bangladesh. It provides that it stands for an experiential study that reflects the efficiency of controlling activities performed by the board of directors and audit committee by alteration in accounting rules. Moreover, we express that the shared management effect on earnings management could not be generalized within frameworks categorized by definite accounting rules. Our results can be significant to the financial analyst. Meanwhile, the outcomes recommend that an operative study of financial statements will consider the company corporate authority attributes simultaneously with the environmental possibility that may cause an effect on corporate governance.

Earning management ruins the value of data in financial information that links the communication to the public, shareholders and investors. The financial report maker should persuade the credibility and best quality data required to damage the financial report analyzer to make the incorrect financial decision. This research shows the difference in the means of leverage, financial distress and earning management between two countries, Pakistan and Bangladesh. The difference in means may also be due to different in culture or the different accounting tools used in the countries and the way of judgment. In addition, the people who set the standard and the people who control them should know the earning management, which creates greater reliability and dependability of accounting data. The management should enlarge the control mechanism to supervise the board action. The board of directors or the management should use international accounting techniques which are generally accepted, such as the Generally Accepted Accounting Principles (GAAP). It also provides incentives to the investors or the stakeholders to attract. The audit committee or policyholders should adequately check the accounting techniques used by the management, which provide greater credibility and reliability in the information system. The policyholders should focus on making a law against the managers involved in earning management. The implementation of legislation is essential to discourage earnings management which can improve the financial statement.

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