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The Impact of Corporate Governance and Firm-Specific Characteristics on Earnings Management: Evidence from East Africa

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Abstract
In this study we assess the role played by corporate governance and firm-specific characteristics in determining how firms substitute accruals-based earnings management for real earnings management using a sample of forty-four (44) non-financial companies listed in East African security markets for ten (10) years from 2004-2013. With the use of three models and panel data regressions, we found that; managers in East Africa also substitute accruals-based earnings management for real earnings management. Moreover, both corporate governance and firm-specific characteristics play a major role in determining how firms substitute the two earnings management strategies. In addition, among real earnings management strategies, sales manipulation is the most commonly used strategy in East Africa. These findings have important implications for policy makers, standard setters and regulators such as capital market authorities as well as other researchers in the region. It helps inform them about the importance of considering both earnings management strategies as well as both corporate governance and firm uniqueness in ensuring the quality of reported financial information.
Keywords: Corporate governance, Firm-specific characteristics, Accrual-based earnings management and Real activity manipulation.

1. Introduction

Prior studies (Chen, Elder, & Hsieh, 2007; Ching, Firth, & Rui, 2006; Fama & Jensen, 1983; Jensen & Meckling, 1979; Klein, 2002) suggested that, among other things, effective corporate governance mechanisms provides effective control and monitoring mechanisms that are needed to reduce agency conflicts and costs in firms. Despite the fact that corporate governance plays a significant role in the process of building investor confidence, there have been very few number studies on corporate governance in Africa (Okeahalam & Akinboade, 2003).

Apart from corporate governance practices, firms vary in many ways, therefore, it is also worth considering how those differences among firms might influence the quality of reported information. Firm-specific characteristics such as firm size, performance, leverage, cash flow are often selected as control variables in most earnings management research. These variables usually correlate with the level of accruals, therefore, linked to earnings quality. Gaio (2010) pointed out that firm characteristics play a significant role in explaining firm-level earnings quality worldwide. As a result, the relationship between corporate governance and earnings management cannot be established without controlling for firm's specific characteristics.

Earnings management is "the process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about the desired level of reported earnings." (Davidson, Stickney, & Weil, 1987), cited in Schipper (1989, p. 92). Earnings management occurs in two ways: (1) via accounting choice[1] and (2) via real activity manipulation[2] (McNichols & Wilson, 1988; Roychowdhury, Kothari, & Mizik, 2012; Schipper, 1989). However, there is evidence that managers tradeoff (substitute) between accrual-based and real earnings management see for example, (Daniel A Cohen, Aiyesha Dey, & Thomas Z Lys, 2008; Cohen & Zarowin, 2010; Graham, Harvey, & Rajgopal, 2005; Katherine Ann Gunny, 2005; Roychowdhury, 2006; Zang, 2011; Zhang, 2008; Zhu, Lu, Shan, & Zhang). That is when manager's ability to engage accrual-based earnings management is constrained they usually switch to real activity manipulation. Real earnings management alters not only firm's accounting records but also their behavior.

Therefore, real earnings management have greater effects than accrual earnings management as accrual-based earnings management is more prone to scrutiny, therefore, can be easily constrained by auditors and regulators. Therefore, the objective of this paper is to examine the impact of corporate governance practices and firm-specific characteristics on the tradeoff between the two earnings management strategies in East Africa.

East African security markets are newly established and underdeveloped capital markets. The region has a total

[1] Earnings management that occurs via accounting choice is termed as Accrual-based earnings management and is achieved by changing the accounting method or estimates used in presenting transactions in financial statements, for example changing depreciation policy or estimates for provision for doubtful debts.

[2] Real activity manipulation is the departure from normal operational practices, for example offering price discounts to temporarily increase sales volume. (Roychowdhury, 2006)

of only 103 listed companies as by December 2014. Kenya is the biggest economy in the region and has 61 listed companies, followed by Tanzania (21), Uganda (16) and Rwanda (5) while there is no stock exchange in Burundi (Outa, 2013). It is abundant in natural resource endowment, such as a recently discoveries of oil and gas in Tanzania also has made the region attractive to foreign direct investment and hence increase the world's attention to East Africa. Hence, increase in demand for quality information to attract more foreign capital investment in the region. Therefore, against this background, it worth investigating whether listed firms in East Africa tradeoff between the two earnings management strategies. Moreover, we also investigate whether corporate governance practices and firm-specific characteristics influences the trade-off between accrual-based and real earnings management in East Africa.

We add to the emerging market accounting literature on the tradeoff between the two earnings management strategies by providing evidence that East African manager's also substituted accrual-based earnings management for real earnings management. Second, we also add to the emerging market accounting literature by identifying which strategy of earnings management is preferred most by managers in East Africa. Moreover, the evidence in this paper suggests that both corporate governance practices and firm-specific characteristics plays a major role in determining how firms substitute the two earnings management strategies. Therefore, these finding has important implications for policy makers, standard setters and regulators such as capital market authorities (CMAs) as well as other researchers. As it helps inform them about the importance of considering both earnings management strategies in order to come up with a definitive conclusion. Also, it helps inform them about the importance of considering both corporate governance and firm uniqueness in ensuring the quality of reported financial information.

The rest of the paper is arranged as follows. Section 2 provides an overview of Corporate Governance in East Africa. Section 3 Review the relevant previous studies and develop hypotheses for testing. Section 4 describes research design of the study. In Section 5 we analyze the empirical results and, finally, Section 6 concludes this paper.

2. Literature Review and Hypothesis Development

2.1 Prior research on trade-off between accrual-based and real Earnings Management

Roychowdhury (2006) presented evidence that managers use multiple real earnings management methods (price discount to boost temporarily sales, reduction in discretionary expenditure to improve reported margins and overproduction to lower costs of goods sold) in order to avoid reporting losses. Empirical studies also have shown evidence that managers tradeoff between the two earnings management strategies; accrual-based and real earnings management and they do prefer real earnings management compared to accrual-based earnings management because real earnings management is less likely to be scrutinized by auditors and other regulators, thus less chance of being detected (Graham, Harvey, & Rajgopal, 2005).

Zang (2011) studied whether managers use real activities manipulations and accrual-based earnings management as substitutes in managing earnings. Their study found a significant negative relationship between the level of accrual-based earnings management and the level of real activity manipulation. Indicating that managers can tradeoff the two earnings management strategies based on their relative costs and that they adjust the level of accrual-based earnings management according to the level of real activities manipulations realized. Cohen, Dey, and Lys (2008) investigate whether the passage of SOX reduced earnings management. Their results showed that the level of accrual-based earnings management decreases significantly while the level of real earnings management increases significantly after the passage of SOX. Indicating that, firms have switched from accrual-based earnings management to real earnings management after the adoption of the SOX because this strategy is hard to detect.

Therefore, this study examines whether East African firms do substitute accrual-based for real earnings management. Therefore our first hypothesis is as follows;

H1: There is a significant relationship between accrual-based and real earnings management.

2.2 Corporate Governance Practices and Earnings Management

Ownership Concentration

There is no consensus in prior studies regarding the effect of ownership concentration and earnings management. Some studies supported the efficient monitoring hypothesis t (Ali, Salleh, & Hassan, 2010; Alves, 2012; Dechow, Sloan, & Sweeney, 1996; Shleifer & Vishny, 1986) among others. Suggesting that, ownership concentration constrains earnings management. These studies found a negative relationship between ownership concentration and discretionary accruals as a proxy for earnings management. Thus suggesting that large shareholders have a strong incentive to monitor actively and influence firm management to protect their significant investments, which in turn reduces the scope of managerial opportunism to engage in earnings management.

On the other hand, as pointed out earlier that large shareholder or their representatives usually serve as directors

of the company that put them in the position to intervene in the firm's decision-making, and may encourage managers to engage in earnings management to maximize their private benefits. Therefore, some studies have also documented that earnings management is positively related to ownership concentration (Chang, 2003; Filip & Raffournier, 2014). That is, higher ownership concentration in the firm was found to relate to earnings management. Whereas, Demsetz and Lehn (1985) and Farooq and El Jai (2012) found that ownership concentration has no significant impact on constraining earnings management. Therefore, it's hard to predict the direction of relationship; as a result, Hypothesis 2a is a non-directional hypothesis;

H2a: Firms with high ownership concentration are more (less) likely to engage in real earnings management than accrual-based earnings management

Institutional Ownership

The efficient monitoring hypothesis also suggests that institutional investors can provide active monitoring that is difficult for smaller, more passive or less-informed investors. Al-Zyoud (2012), Farooq and El Jai (2012)and Rajgopal, Venkatachalam, and Jiambalvo (1999) found a negative relationship between institutional ownership and absolute values of discretionary accruals.

However, when institutional investors hold relatively few shares and the shares are highly marketable, they are more likely to liquidated their holdings in poorly performing firms than to expend their resources in monitoring and improving their performance (Maug, 1998). Roychowdhury (2006) also found a negative relation between institutional ownership and real activity manipulation to avoid reporting losses. Indicating that, institutional investors play a monitoring role in reducing real activity manipulations. Thus, managers find difficult to manipulate both real activities and accruals when their operations are being closely monitored by institutional investors.Therefore, this study tested the following hypothesis with regards to Institutional ownership;

H2b: Firms with higher Institutional Ownership are more (less) likely to engage in accrual based earnings management than real earnings management

Managerial Ownership

The traditional agency literature argued that shareholdings by managers help align their interests with those of shareholders (Jensen & Meckling, 1976). This alignment effect suggests opportunistic managerial behaviors decreases with an increase in managerial ownership. However, the empirical studies provide contradicting results. Some studies have found a negative relationship between managerial ownership and earnings management for example Alves (2012), Warfield, Wild, and Wild (1995) and Klein (2002).

In contrast, Morck, Shleifer, and Vishny (1988), Lennox (2005) and Teshima and Shuto (2008) suggested that, at high and low levels of managerial ownership, earnings management decreases as managerial ownership increases (alignment of interest effect). While it increases for intermediate levels of managerial ownership thus consistent with the entrenchment effect. Whereas Al-Zyoud (2012) and Peasnell, Pope, and Young (2005) did not find a significant systematic relationship between managerial ownership and earnings management. This study provides evidence on the relationship between managerial ownership and real activity manipulations too. Then, the hypothesis that should be verified is as follows;

H2c: Firms with high Managerial Ownership are more (less) likely to engage in real earnings management than Accrual based earnings management

Board composition/Independence

Board of Directors plays an important role in monitoring management to protect shareholders' interest. The role of independent non-executive directors is to bring independent judgment to the board; therefore, the board composition is associated with confidence in the firm's financial reporting system. Dechow et al. (1996), Petra (2005), Park and Shin (2004), Klein (2002) among others, found a negative relationship between the higher proportion of outside directors and abnormal accruals. Whereas, Zgarni, Halioui, and Zehri (2014) found that a board comprising of the majority of independent directors reduced the extent of real activity manipulations. Prior studies have examined either accrual or real activity manipulation in isolation, (Zang, 2011) suggested, examining either type of earnings management in isolation cannot explain the overall effect. Led us to this hypothesis;

H 3a: Firms with a high proportion of independent board members are more (less) likely to engage in real earnings management than accrual-based earnings management.

Board Size

Prior studies pointed out that large board (beyond seven or eight people) are less likely to function effectively in controlling management due to problems of coordination and communication (Shu, Yeh, Chiu, & Yang). Board size has a negative association with earnings management. Thus small boards are more effective and efficient than large ones (Ahmed, Hossain, & Adams, 2006; Mashayekhi & Bazaz, 2010; Vafeas, 2000; Yermack, 1996). However, some studies also argued for larger boards. That is larger board brings more resources to the firms regarding skills and competence (Xie, Davidson, & DaDalt, 2003). Therefore, the following non directional hypothesis was tested;

H3b: Firms with smaller board size are more (less) likely to engage in real earnings management than

accrual-based earnings management.

Audit Quality

Audit firm's size is a proxy for auditors' reputation and, therefore, the quality of the audit. L. E. DeAngelo (1981) argued that large auditor firms (Big N[1]) are more experienced, and reputation, therefore, can easily detect material misstatements in financial statements and they are more willing to report what they find than small audit firms. Kim, Chung, and Firth (2003), Francis and Yu (2009), Francis, Maydew, and Sparks (1999), Becker, DeFond, Jiambalvo, and Subramanyam (1998) among others, also found that firms audited by the Big N auditors have a lower amount of discretionary accruals compared to firms audited by the non-Big N auditors. These results were consistency with the notion that Big N auditors constrain aggressiveness and opportunistic managerial behavior.

However, prior studies also argued that as a consequence of constrained accrual earnings management, clients of higher quality audits are a likely switch to more real activities manipulation. Chi, Ling, and Mikhail (2010) found that the presence of Big 4 auditors is associated with higher levels of real activity manipulations. Because accrual-based earnings management is more likely to be detected by high-quality auditors. On the other hand Hyo Jin and Soon Suk (2008) for Chinese reverse merger (RM) firms with Big 4 auditors have lower levels of both accrual-based and real earnings management. Therefore the hypothesis to be tested is;

H 3c: Firms audited by Big 4 auditors are more (less) likely to engage in real earnings management than accrual-based earnings management.

2.3 Firm-Specific Characteristics and Earnings Management

Firm Size

The positive accounting theory suggested that managers of larger firms are more likely to engage in earnings management to reduce political costs (Watts & Zimmerman, 1986). On the other hand, managers of large firms have fewer opportunities to manage earnings because larger firms are more likely to be closely monitored by security analysts (Rajgopal et al., 1999). Large firms also have high-quality internal control and are usually audited by the Big 4 auditors, hence less likely to be able to hide abnormal accruals (Siregar & Utama, 2008). Therefore, the study predicted larger firms are likely to engage in real activity manipulation because is difficult to be detected. That leads to the following hypothesis;

H 4a: Larger firms are more (less) likely to engage in real earnings management than Accrual based earnings management.

Firm Leverage level

Earlier studies documented that, firms facing financial constraints or distress have strong incentives to utilize income increasing accounting procedures to lower the potential loss arising from violation of debt contracts (Dichev & Skinner, 2002; Jaggi & Lee, 2002; Sweeney, 1994). This argument would predict a positive relationship between financial leverage ratio and discretionary accruals. However, Kim et al. (2003) suggested that as a firm becomes highly leveraged, its ability to boost earnings through income increasing accruals become weaker. Zang (2011) also suggested that the marginal cost of deviating from optimal business strategies are relatively high for firms with poor financial health (highly geared firms). Therefore, managers of these firms perceived real activity manipulations as relatively costly compared to accrual-based earnings management as their primary goal is to improve operations. Then the hypothesis hereunder;

H 4b: Highly leveraged firms are more (less) likely to engage in accrual-based earnings management than real earnings management.

Firm Performance

Empirical evidence suggests that accruals are opportunistically manipulated by managers to conceal poor performance, to avoid reporting losses or to postpone of a portion of the unusual good year to the future years (Burgstahler & Dichev, 1997; H. DeAngelo, DeAngelo, & Skinner, 1994; Liu & Lu, 2007). However, Alves (2012) found no evidence that firm performance affects the level of earnings management. Therefore we are not able to predict the direction of the relationship. Thus the following non direction hypothesis is proposed for this study;

H 4c: Firms with higher (better) performance are more (less) likely to engage in real earnings management than accrual-based earnings management

Firm cash flow from operation

Prior studies (Chen et al., 2007; Dechow, Sloan, & Sweeney, 1995; DeFond & Jiambalvo, 1994) found that, firms' cash flow had a negative relationship with discretionary accounting accruals. High cash flows from operation thus high profits, therefore the firm will have less incentive to manipulate discretionary accounting

[1] Currently known as Big Four (4) auditors, were once known as the "Big Eight", and was reduced to the "Big Six" and then "Big Five" by a series of mergers. The Big Five became the Big Four after the demise of Arthur Andersen in 2002, following its involvement in the Enron scandal

accruals. However, as argued by Zang (2011) that the marginal cost of deviating from optimal business strategies are relatively high for firms with poor financial health. Then the hypothesis hereunder;

H 4d: Firms with high level of cash flow from operations are more (less) likely to engage in real earnings management than accrual-based earnings management

3. Conceptual Framework and Research model

Prior literature suggests corporate governance and firm specific characteristics have impact on the extent of earnings management either through accounting choice or real activity manipulations. Moreover, there are also evidences that, managers substitute the two earnings management strategies (Braam, Nandy, Weitzel, & Lodh, 2015; Cohen et al., 2008; Cohen & Zarowin, 2010). This study examined the impact of corporate governance practices and firm-specific characteristics on the trade-off between the two strategies of earnings management in East Africa.

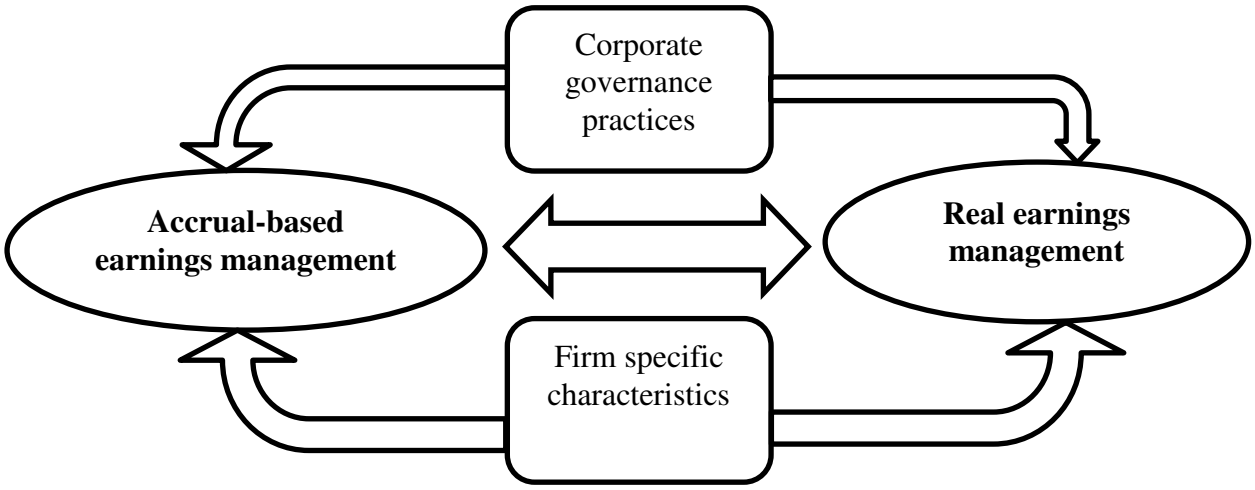

Figure 1Conceptual Framework

Source: Researcher (2016)

3.1 Econometric Estimation models

In order to examine whether the firm's substitution of accrual-based earnings management for real earnings management differs based on different levels of corporate governance practices and firm specific characteristics, we extended the econometric estimation model by Braam et al. (2015). As pointed out earlier that real activities manipulations usually occur during the fiscal year and realized at the year end, managers still have the chance to manipulate the level of accrual-based earnings management (AEM). Thus, the timing difference allows managers to adjust the accrual-based earnings management based on the outcomes of the real activity manipulation (REM). Therefore we use AEM a dependent variable and REM as independent variable. However, prior studies provide evidence that corporate governance practices and firm specific characteristics constrain accrual-based earnings management, and once manager's ability to manipulate accruals is constrained, they do shift to real earnings management. Therefore, the relationship between accrual-based (AEM) and real earnings management (REM) may differ depending on the level of constraint imposed by corporate governance practices and/or firm specific characteristics. Thus, the relationship between AEM and REM is moderated by corporate governance practices and firm specific characteristics. Therefore the study included an interactive term REM on each corporate governance and firm specific variables. The resulting coefficients indicate the incremental effect of each variable on the relationship between AEM and REM. However, we include also all of the corporate governance and firm specific variables as an independent variable to control the possibility that each variable has a direct influence on AEM. The econometric models to test the research hypotheses were as follows;

Model 1: Corporate governance and the tradeoff between accrual-based and real earnings management;

$$AEM_{it} = \beta_0 + \beta_1(REM_{it}) + \beta_2(MAN_{it}) + \beta_3(INST_{it}) + \beta_4(CONC_{it}) + \beta_5(BSIZE_{it}) + \beta_6(BINDP_{it}) + \beta_7(AUDIT_{it}) + \beta_8(MAN * REM) + \beta_9(INST * REM) + \beta_{10}(CONC * REM) + \beta_{11}(BSIZE * REM) + \beta_{12}(BINDP * REM) + \beta_{13}(AUDIT * REM) + \beta_{14}(BETA) + \beta_{15}(MTB) + \beta_{16}(VOLATILITY) + \varepsilon_{it}$$

Model 2 Firm specific characteristics and the tradeoff between accrual-based and real earnings management;

$$AEM_{it} = \beta_0 + \beta_1(REM_{it}) + \beta_2(SIZE_{it}) + \beta_3(ROA_{it}) + \beta_4(LEV_{it}) + \beta_5(CFO_{it}) + \beta_6(SIZE_{it} * REM) + \beta_7(ROA_{it} * REM) + \beta_8(LEV_{it} * REM) + \beta_9(CFO_{it} * REM) + \beta_{10}(BETA) + \beta_{11}(MTB) + \beta_{12}(VOLATILITY) + \varepsilon_{it}$$

Model 3 Corporate governance, Firm specific characteristics and the tradeoff between accrual-based and real earnings management;

$$AEM_{it} = \beta_0 + \beta_1(REM_{it}) + \beta_2(MAN_{it}) + \beta_3(INST_{it}) + \beta_4(CONC_{it}) + \beta_5(BSIZE_{it}) + \beta_6(BINDP_{it}) + \beta_7(AUDIT_{it}) + \beta_8(SIZE_{it}) + \beta_9(ROA_{it}) + \beta_{10}(LEV_{it}) + \beta_{11}(CFO_{it}) + \beta_{12}(MAN*REM) + \beta_{13}(INST*REM) + \beta_{14}(CONC*REM) + \beta_{15}(BSIZE*REM) + \beta_{16}(BINDP*REM) + \beta_{17}(AUDIT*REM) + + \beta_{18}(SIZE_{it} * REM) + \beta_{19}(ROA_{it} * REM) + \beta_{20}(LEV_{it} * REM) + \beta_{21}(CFO_{it} * REM)\beta_{22}(BETA) + \beta_{23}(MTB) + \beta_{24}(VOLATILITY) + \varepsilon_{it}$$

Where;
AEM= Accrual-based earnings management measured by modified Jones model
REM= the sum of the two standardized real earnings management measures
Other variables definitions see Table 2
Subscript *it*= firm i for a period t
β_0 = constant; β_1 to β_{24} are the regression coefficients to be estimated

3.2 Study sample and period

The study sample were selected from the population of non-financial companies listed in East African security markets for ten (10) years from 2004-2013. The period was chosen because most East African companies were listed in the late 2000s. Also, the Code on Corporate Governance was introduced in the region in 2002 and was expected that not all companies complied with the code at the initial stage of its implementation. Therefore, to avoid the confusion, the researcher selected the year 2004 and 2013 for analysis. However, following the standard accounting literature, financial companies were excluded from the study. This is because according to (Ali et al., 2010; Klein, 2002; Park & Shin, 2004) financial companies are subject to other regulations that lead to more strict guidelines and also because of their specific accounting practices among others. Newly listed firms were also excluded due to inadequate data to estimate discretionary accruals. Therefore the study sample comprised with forty-four (44) non- financial companies as shown below;

Total listed companies in East Africa		103
Less Financial institutions	(37)	
Less: Newly listed firms	(22)	
Final Sample	**(44)**	

Out of the 44 firms, 33 firms were listed in Nairobi Stock Exchange (NSE) Kenya, 7 listed in Dar-es-Salaam Stock Exchange (DSE) Tanzania and four firms listed in the Uganda Stock Exchange (UGE) Uganda. Whereas, no firms from Rwanda and Burundi. All the five firms listed in Rwanda Stock Exchange (RSE) were excluded from the sample as two firms were financial institutions while the remaining 3 were newly listed firms. Burundi does not have a stock exchange. The initial sample included 44 firms for ten (10) year 2004-2013, which is equivalent of 440 firm-year observations. However, after omitting missing observations the study remained with unbalanced panel data set of between 234 to 441firm-year observations. The 44 firms is the representative of the East African Securities Market as some of the companies listed in Kenya, Tanzania or Uganda are also operating in Rwanda and Burundi. Outa (2013) also while examining the impact of corporate governance disclosure on earnings management in East Africa, had a sample 34 companies with 232 firm-year observations. Thus pointed out that in exploratory research, sample sizes of 10-30 are sufficient as they are large enough to test the null hypothesis and small enough to overlook weak treatment effects.

3.3 Research Design and Data

Due to significant variations in a number of firm-year observations caused by capital market development, the study adopted a panel data research design, particularly unbalanced panel data where certain years, the data category was not observed. The design was chosen because the population is small and the use of panel data helps to increase the number of observations as there will be no elimination of firms lacking observations for the whole study period (Waweru & Riro, 2013).

We extensively relayed on secondary data. Consolidated financial statements data necessary for the study were obtained from OSIRIS Database that contains data for publicly listed companies worldwide. The study

considered the consolidated financial statements as they provide a broad picture of the parent company and its subsidiaries. Also because of cross listing (same Company is listed in all the 4 East Africa stock markets). In this case only the parent company was considered for the study. The financial statements data collected were in Tanzanian shillings, Kenyan shillings and Ugandan shillings for Tanzania, Kenya and Uganda respectively. Therefore for comparability, we converted data into US dollar using annual average exchange rates. We obtained the exchange rates data from EIU Country Data, a powerful database of annual, quarterly and monthly economic indicators and forecasts. Corporate governance variables data were manually collected from annual reports of listed companies obtained from the respective countries Stock Exchange markets websites, African Financials' Portal and company's websites. African Financials' Portal is a free Annual Reports portal focusing on enhancing investment community visibility for African companies.

3.3.1 Variables Definition and Measurement

Our dependent variables was the proxy for accrual-based earnings management whereas, the independent variables were the proxies for real earnings management, corporate governance practices and/or firm specific characteristics.

Measuring the discretionary accrual component of earnings.

In measuring discretionary accruals we followed a recent literature (González & García-Meca, 2014). Where the cross-sectional variation of the modified Jones model (1991) as proposed by (Dechow et al., 1995) which is the most powerful model used in most of earnings management studies was used.

Consistent with most of previous earnings management studies (DeFond & Jiambalvo, 1994; Kim & Yi, 2006; Kothari, Leone, & Wasley, 2005) among others, it is assumed that earnings are managed through accounting accruals and the accrual generating process is similar for the companies in the same industry. Thus, while estimating the modified Jones (1991) model, companies were grouped according to industry membership as classified by the East African Capital market Authorities (CMAs). However, in order to allow for proper computation of earnings management variables, the sample was reclassified to have at least five (5) observations in each industry-year group by merging together some of industries with some similarity in accounting systems. Therefore the final sample comprises of four (4) industries as shown in Table 1 below including their percentage of representation in the total firm-year observations.

Table 1: Industry-Year sample classification (reclassified)

INDUSTRY	YEAR											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Firm-year observation	Representation
Agricultural	6	6	6	7	7	7	7	7	7	7	67	16.03%
Commercial &Services	5	8	8	8	10	10	10	10	10	10	89	21.29%
Construction & Allied	8	9	9	9	9	9	9	9	9	9	89	21.29%
Manufacturing & Allied	12	17	18	18	18	18	18	18	18	18	173	41.39%
											418	**100%**

From table 2 above, it can be seen that, the manufacturing &Allied industry is well represented. Out of 418 firm-year observations manufacturing &Allied industry has 173 observations (41.39%). Whereas Construction &Allied and Commercial &Services had equal percentage of representation (21.29%) while Agricultural sector with the least representation percentage (16.03%).

We estimated the modified Jones' model as follows:

First, we estimate the regression parameters (β_0 , β_1 *and* β_2) using industry-year regression model below;

$$\frac{TACC_{it}}{TA_{it-1}} = \beta_0\left(\frac{1}{TA_{it-1}}\right) + \beta_1\left(\frac{\Delta \mathrm{Rev}_{it}}{TA_{it-1}}\right) + \beta_2\left(\frac{PPE}{TA_{it-1}}\right) + \varepsilon_{it} \quad (1)$$

Where;

$TACC_{it}$ Total accruals in year t as computed in equation (ii) above (see equation 2 below

$TA_{i,t-1}$ Total assets at the beginning of year t;

ΔREV_{it} Change in revenues;

PPE Gross property, plant and equipment

All variables are scaled by beginning total assets to adjust for heteroscedasticity.

We followed Hribar and Collins (2002) in calculating total accrual (TACC) as follows;

$$TACC_{it} = EARNINGS_{it} - CFO_{it} \quad (2)$$

Where:

$TACC_{it}$ Total accruals for firm i at time t

$EARNINGS_{it}$ Net income before extra-ordinary items and discontinued operations

CFO_{it} Net Cash flows from operating activities reported in the statement of cash flows.

Second, we used the estimated regression parameters $\hat{\beta}_0$, $\hat{\beta}_1 and\ \hat{\beta}_2$ to estimate non-discretionary accruals (NDAC) for each sample firms. Non-discretionary accruals (NDAC) are the predictions from the Ordinary Least Square (OLS) estimation of model below;

$$NDAC_{it} = \hat{\beta}_0\left(\frac{1}{TA_{it-1}}\right) + \hat{\beta}_1\left(\frac{\Delta \mathrm{Rev}_{it} - \Delta \mathrm{Rec}_{it}}{TA_{it-1}}\right) + \hat{\beta}_2\left(\frac{PPE}{TA_{it-1}}\right) \quad (3)$$

The changes in revenue is now adjusted by the changes in account receivables ΔREC_{it} to allow for the possibility that the firm could have manipulated sales by changing credit terms (Dechow et al., 1995) as cited in (González & García-Meca, 2014).

Lastly, discretionary accruals (DAC) are computed as the difference between total accrual and the non-discretionary accruals;

$$DAC_{it} = \left(\frac{TACC_{it}}{TA_{it-1}}\right) - NDAC_{it} \quad (4)$$

Following Cohen et al. (2008), the DAC was measured in absolute values $[Abs(DAC_{it})]$ that is, regardless of whether the accrual earnings management is earnings increase or decrease. Absolute values of discretionary accruals also captures accrual reversals due to earnings management (Braam et al., 2015).

Measurement of Real Earnings management

Following also standard accounting literature (Katherine Ann Gunny, 2005; Katherine A Gunny, 2010; Roychowdhury, 2006; Roychowdhury et al., 2012). We examined three real activities manipulation: Sales manipulation, reduction of discretionary expenditure and overproduction. The abnormal level of each type of real activities manipulation was measured as the residual from the relevant estimation model.

Sales manipulation

Sale manipulation is the acceleration of the timing of sales through increased price discounts or more lenient credit terms (Roychowdhury, 2006). Such discounts and lenient credit terms are expected to lower current-period cash inflow per sale. Hence lower current-period cash flow from operations (CFO). Based on (Dechow, Kothari, & Watts, 1998), the normal levels of CFO is expressed as a linear function of sales and change in sales;

$$\frac{CFO_t}{TA_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{TA_{t-1}}\right) + \beta_1\left(\frac{S_t}{TA_{t-1}}\right) + \beta_2\left(\frac{\Delta S_t}{TA_{t-1}}\right) + \varepsilon_t \quad (5)$$

Where;

CFO The current period cash flow from operations

TA_{t-1} The total assets at the beginning of year t

S_t Net sales during the period

ΔS_t Change in net sales $(\Delta S_t = S_t - S_{t-1})$

The abnormal level of cash flow from operations (Abn_CFO) is measured as deviations from the predicted values from the above industry-year regression. Following previous literature (Cohen and Zarowin (2010) and Braam et al. (2015)) we estimate our first proxy for real earnings management (REM_CFO®) as the abnormal cash flow from operations (Abn_CFO) multiplied by minus (−1), such that a higher value of abnormal cash flow from operations indicates more severe manipulation of sales through price discount and/or more lenient credit terms.

Overproduction

Our second type of real activity manipulation was overproduction (the production of more goods than necessary to meet expected demand). Overproduction reduces cost of goods sold (COGS), which results in higher operating margin. Production cost is the total of COGS and Inventory. Since, delaying write-offs of obsolete inventory reduces the COGS but increases the cost of ending inventory (Roychowdhury, 2006). The model for normal level of COGS is estimated as;

$$\frac{COGS_t}{TA_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{TA_{t-1}}\right) + \beta_1\left(\frac{S_t}{TA_{t-1}}\right) + \varepsilon_t \quad (6)$$

Where;

COGS is the cost of goods sold in period t

TA_{t-1} is the total assets at the beginning of year t

S_t is the sales during the period

Whereas, the normal level of inventory is estimated as;

$$\frac{\Delta INVENTORY_t}{TA_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{TA_{t-1}}\right) + \beta_1\left(\frac{\Delta S_t}{TA_{t-1}}\right) + \beta_2\left(\frac{\Delta S_{t-1}}{TA_{t-1}}\right) + \varepsilon_t \quad (7)$$

Where;

$\Delta INVENTORY_t$ is the change in Inventory in period t

TA_{t-1} is the total assets at the beginning of year t

ΔS_t is change in sales during the period t $(\Delta S_t = S_t - S_{t-1})$

ΔS_{t-1} is the change in the previous period sales $(\Delta S_{t-1} = S_{t-1} - S_{t-2})$

The production cost for firm i in period t is estimated $PROD_t = COGS_t + \Delta INVENTORY_t$ .Thus using model (6) and model (7) above, we estimated the normal production cost by the following industry-year regression;

$$\frac{PROD_t}{TA_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{TA_{t-1}}\right) + \beta_1\left(\frac{S_t}{TA_{t-1}}\right) + \beta_2\left(\frac{\Delta S_t}{TA_{t-1}}\right) + \beta_3\left(\frac{\Delta S_{t-1}}{TA_{t-1}}\right) + \varepsilon_t \quad (8)$$

Where;

$PROD_t$ is the Production cost ($COGS_t + \Delta INVENTORY_t$)

TA_{t-1} is the total assets at the beginning of year t

S_t is the sales during the period

ΔS_t is change in sales during the period $(\Delta S_t = S_t - S_{t-1})$

ΔS_{t-1} is the change in previous period sales $(\Delta S_{t-1} = S_{t-1} - S_{t-2})$

The abnormal level of production cost (REM_PROD) for every firm-year is the measured as deviations from the predicted values from the corresponding industry-year regression. A higher value of abnormal production cost indicates more manipulation through increased overproduction.

Reduction of discretionary expenses

Another type of real activity manipulation is discretionary expense (DEXP). Managers can reduce discretionary expenditure to boost earnings. Again following (Roychowdhury, 2006), DEXP was measured as the sum of Research and Development costs (R&D), advertising, and Selling, general and administrative (SG&A) expenditure. The model is based on the assumption that discretionary expenditure is a linear function of sales.

However, we were not able to estimate the reduction of discretionary expenditure because all the firms in East Africa do not report separately research and development expenditure (R&D), selling, general and administrative expenditure. Thus to avoid additional reduction in number observations our study considered only two real activity manipulations (sales manipulation and overproduction).

Consistent with Cohen and Zarowin (2010) and Braam et al. (2015) in order to capture the aggregate effects of real earnings management, the two individual real earnings management measures are combined together to form a single variable aggregate real earnings management (REM). The REM is computed as the sum of standardized variable REM_CFO multiplied by minus (−1) and standardized variable REM_PROD, such that a higher value of this aggregate variable indicate the more likely the firm is engaging in real earnings management. That is more severe manipulation of sales through either price discount or more lenient credit terms and production manipulations.

3.3.3 Operational definitions of other independent and control variables

Table 2 below provide the operational definitions of corporate governance, firm specific and control variables of the study

Table 2: Operational definitions of variables

Independent variables	Operational definition	Source(s) of data
Corporate Governance Practices		
Ownership structure Ownership concentration (CONC)	Proportion of total company's share held by the largest stockholder (large shareholders participate in costly monitoring)(Jeeshim & Kucc, 2002)	Company annual reports
Institutional ownership (INST)	Proportion of total company's share held by institutional investors. Institutional investors are; Insurance companies, Pension Funds, investment companies, banks and other financial institutions (Koh, 2003)	Company annual reports
Managerial ownership (MAN)	Proportion of the total company's shares directly owned by the manager/directors of the company	Company annual reports
Board Size (BSIZE)	Is the number of directors (executive and non-executive) serving on the board at fiscal year-end.	Company annual reports
Board Composition (BINDP)	The proportion of independent board members (non-executive) serving on the board at fiscal year-end. That is the number of independent non-executive directors to the total the number of directors on the board	Company annual reports
Audit Quality (AUDIT)	Dichotomous, 1 or 0 One (1) for Big Four (4), otherwise zero (0)	Company annual reports
Firm specific characteristics		
Firm size (SIZE)	Natural logarithm of Total assets	OSIRIS
Performance (ROA)	Operating performance measured by Return on assets (ROA). Earnings before interest and Tax to total assets	OSIRIS
Leverage (LEV)	Gearing ratio that compares owner's equity (or capital) to borrowed funds. Is a measure of financial leverage, demonstrating the degree to which a firm's activities are funded by owner's funds versus creditor's funds	OSIRIS
Cash flow (CFO)	Cash flows from operations from the statement of cash flows	Company annual reports
Control Variables		
Systematic risk (BETA)	36 month Market model beta	OSIRIS
Firm growth opportunities (MTB)	Market to book value ratio, measured as a ratio of market value of shares to book value of shares	OSIRIS
Earnings variability (VOLATILITY)	Is the coefficient of variation of earnings for the previous 5 years (Sánchez - Ballesta & García - Meca, 2007)	OSIRIS

3.4 Descriptive Statistics

The results of the descriptive statistics are shown in table 4 below. The variable firm size (SIZE) had the largest number of observation in the study with (N=441) while market to book value ratio (MTB) had the minimum number of observations (N=269). The variation in firm-year observations between variables could be explained by the immaturity of the stock markets in East Africa. Most of stock market data are only available form year 2007. East African companies' managerial ownership range from 0 to 47.47%, with an average of 1.70395% and a median of 0.00304, indicating that with exception of very few firms, majority of firms' directors have very few or have not bought shares of the company at all. East African companies as most of other developing economies, it can be described as having concentrated ownership (closely owned) as opposed to dispersed ownership, as the mean ownership by largest shareholder is 48.27% with a minimum of 11.59% and a maximum of 92.26%. On average board of directors in East Africa have 8 members (mean=7.9) with a minimum of 2 and a maximum of 16 members. The median board size is 8 members, indicating that the sample contains an equal number of larger

boards and smaller boards. The average board independence is 78%, with a minimum 33.33% and a maximum of 114.28%. Because the data were not available to enable the researcher differentiate non-executive directors and independent directors1, in this particular study board independence is defined as the percentage of non-executive directors in the board. The minimum proportion of independent directors is in line with the Capital Market Authority (CMA) criteria that mandated all listed public companies to have at least one-third (1/3) of the total Directors to be independent. Firm specific characteristics descriptive statistics also revealed the average firm size is equivalent to US dollars 10.8611 million; the median is US dollars 10.905 million, indicating that the sample represents equally large firms and small firms. On average Beta is 0.3048627 that means the beta is below 1, hence the stocks traded in East African stock markets are less volatile.

The descriptive statistics were also intended to exhibit the distribution of data. The data are considered to be normally distributed if the standard skewness is within the range of ±1.96 and standard kurtosis is within the range of ±3 (Field, 2005). The descriptive statistics indicates that the data are not normally distributed hence more attention is required in the analysis and interpretation of the results.

Table 3: Summary statistics for the variables in the analysis

	Mean	Median	Standard deviation	Minimum	Maximum	Skewness	Kurtosis	N
Dependent variable								
AEM	0.2624234	0.0559333	1.009405	0.0000149	11.74808	7.597098	71.60444	397
Independent variables: Corporate governance practices								
REM	-0.0209157	0.0046587	1.056344	-4.490656	3.738496	-0.0872752	5.11155	353
REM_CFO ®	1.82E-10	7.01E-08	0.8507301	-6.476089	5.835203	1.024709	33.85971	397
REM_PROD	2.57E-07	0.0001467	0.1799196	-0.5890287	0.5465105	-0.0482499	4.365774	354
INST	14.89749	10.84	15.66671	0	75.55	1.882937	6.658179	402
CONC	48.27661	50.93	16.94793	11.59	92.26	-0.0545841	2.214391	402
MAN	1.70395	0.00304	6.464497	0	47.47	5.109663	31.10413	402
AUDT	0.9651741	1	0.183567	0	1	-5.074482	26.75037	402
BSIZE	7.902985	8	2.556697	2	16	0.3376889	3.066443	402
BINDP	78.3379	83.33334	15.30082	33.33333	114.2857	-1.324919	4.509807	402
SIZE	10.86111	10.90546	1.697952	4.579565	14.73304	-0.2662456	3.10652	441
Independent variables: Firm specific characteristics								
ROA	14.2401	10.8951	15.64158	-36.6	67.56	0.5187527	3.998404	400
LEV	123.194	87.4977	104.9591	16.38879	749.8914	2.318261	10.95414	398
CFO	22160.12	3496.281	61991.57	-477296.2	462908.8	2.044065	28.86146	415
Control variables								
MTB	26.81691	1.467629	339.1093	-14.53433	5544.321	16.10898	262.4875	269
BETA	0.3048627	0.304691	0.283993	-0.235289	1.106475	0.7464039	3.836505	336
VOLATILITY	0.557211	0.0409457	5.406648	0.0017117	59.28568	10.78391	117.3093	358

* Statistical significance at 10% level, ** Statistical significance at 5% level, *** Statistical significance at 1% level

AEM- absolute discretionary accrual a proxy of Accrual-based earnings management measured by Modified Jones model (1995); REM- aggregate real earnings management [standardized Abn_PROD+ (standardized Abn_CFO*-1)]; Abn_PROD- Abnormal production cost, an individual proxy for real earnings management; REM_CFO®- reversed Abnormal cash flow from operations, a second individual proxy for real earnings management; MAN- managerial ownership; CONC- Ownership concentration; INST- Institutional ownership; BSIZE- Board size; BINDP- Board Independence; AUDIT- Audit Quality; ROA- Return on assets; LEV- Leverage ratio; CFO- Cash flow from operations; SIZE- Firm size; VOLATILITY- Earnings variability; BETA- Market model beta; MTB- Market to book value ratio

4. Empirical Results

Real earnings management is not a new phenomenon in East Africa. Figure 2 below indicates a similar trend of accrual-based and real earnings management. That is as real earnings management increase accrual-based earnings management also increases. Suggesting that, managers in East Africa use both earnings management strategies at the same time. However, the REM graph lay above AEM graph throughout the sample period. Suggesting that, managers in east Africa prefer most real earnings management than accrual-based earnings management probably because it is harder to detect. These results are consistent with Graham et al. (2005) survey findings that managers prefer real activities manipulation than accruals manipulations.

[1] Independent Directors do not own shares in the company. But for this study the independent directors are the non-executive directors who might also happen to be shareholders.

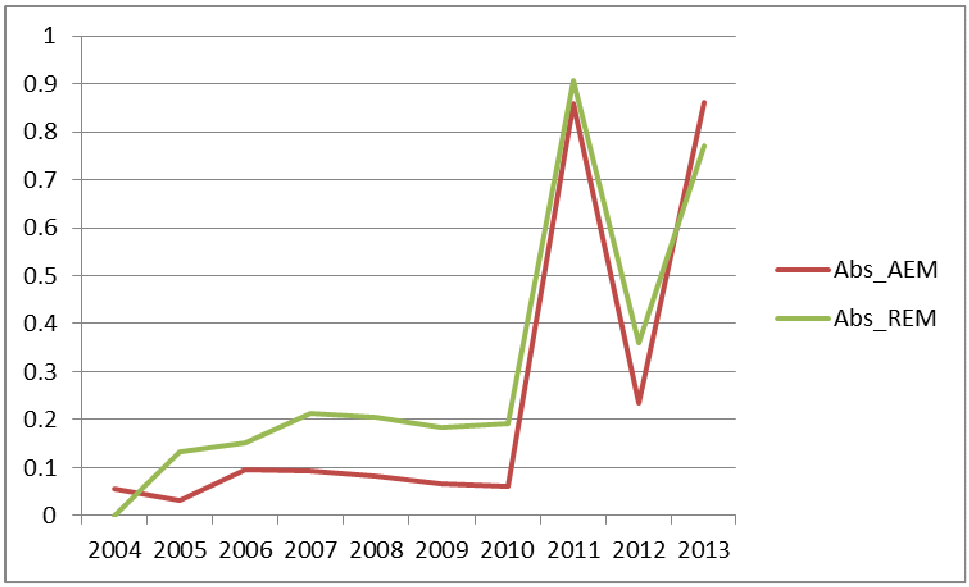

Figure 2 Time trend of Accrual-based and real earnings management

Both earnings management strategies peaked in 2010- 2011 and there was prompt fall in 2012 and the peaked again in 2013. The possible explanation for the two peaks is that, the period was characterized political stress due General elections. General elections were held in Tanzania in 2010, Uganda 2011 and Kenya 2013. During the year 2011 Uganda also faces a potential oil shock. Filip and Raffournier (2014) argued that, earnings management should be higher in periods of economic stress. As in such periods, most firms probably exhibit lower earnings, which should motivate managers to engage in income-increasing earnings management to compensate for the decrease of operational performance. Our results are consistent with Cohen et al. (2008) who also found a peak in 2000, which was the scandal period and interpreted that the scandal period was characterized by high earnings management activities.

Among the proxies of earnings management sales manipulations (Abs_abnCFO) is practices most in East Africa. Abnormal production cost variable shows a slight increase during the sample period. Thus indicating the abnormal cash flow contributed mainly to the aggregate real earnings management trend above.

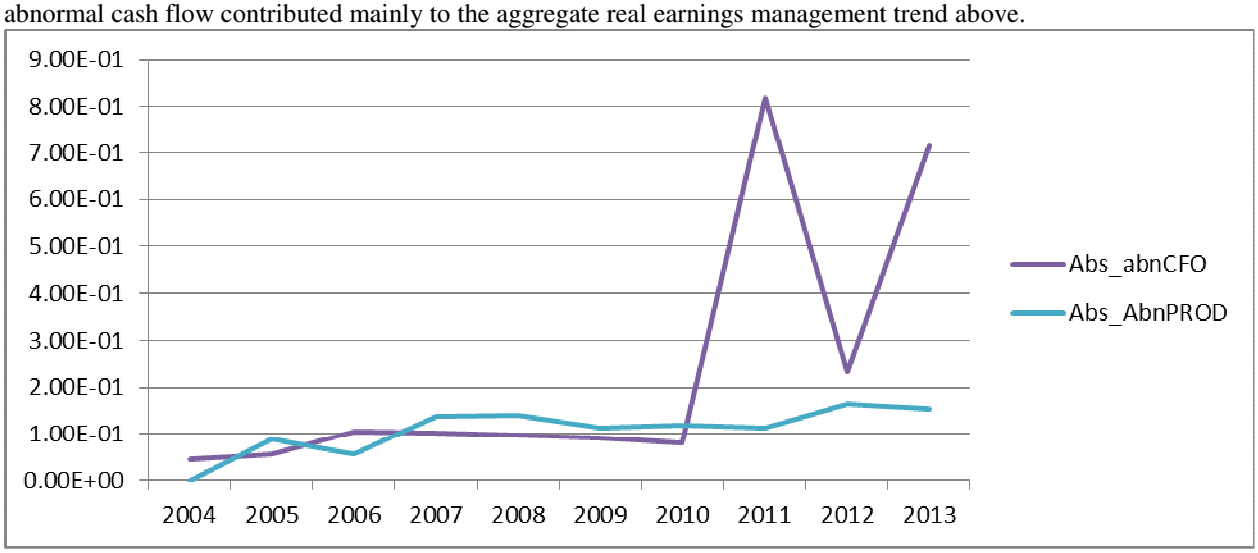

Figure 3 Time-trend of real earnings management proxies

4.1 Correlation analysis

As indicated by the descriptive statistics that the data are non- parametric data therefore we use Spearman's Rank correlation. As indicated by the analysis of the trend, the study also found positive correlation but insignificant between accrual-based earnings management (AEM) and all the proxies for real earnings management (REM, REM_CFO® and REM_PROD). Suggesting that, managers in East Africa use both earnings management strategies at the same time.

None of the ownership structure has significant effect on accrual-based earnings management (AEM) indicating that, in East Africa, ownership structure has no impact on constraining accrual-based earnings management.

However, ownership concentration (CONC) and institutional ownership (INST) were negatively and significantly correlated with all the three real earnings management measures. Suggesting that, ownership concentration and institutional ownership reduces real activity manipulations. Managerial ownership (MAN) has positively and highly significant correlation with abnormal production measure of real earnings management. Indicating that, firms with higher managerial ownership also have abnormal production activities. A negative correlation between Managerial and Concentration indicates that managers' equity interest in the firm is declining as ownership concentration increases. Institutional ownership is also negatively and highly significant correlated with ownership concentration (CONC), reflecting the fact that institutions are not block holders. As expected, audit quality is negatively and significant correlated with accrual-based earnings management, indicating that the big 4 auditors constrains accrual based earnings management. However, it is also negatively correlated with all the three measures of real earnings management. Indicating that big 4 auditors may constrain both types of earnings management. The results are consistent with Hyo Jin and Soon Suk (2008) who found that, for Chinese reverse merger (RM) firms with Big 4 auditors have low levels of both accrual-based and real earnings management. Board size seems to have a significant impact on all types of ownership structure and audit quality.

Table 4 Spearman's Rank correlation

	AEM	REM	REM_CFO®	REM_PROD	INST	CONC	MAN	AUDT	BSIZE	BINDP	SIZE	ROA	LEV	CFO	MTB	BETA	VOLATILITY
AEM	1																
REM	0.0111	1															
REM_CFO®	0.0174	0.9376***	1														
REM_PROD	0.0268	0.6259***	0.529***	1													
INST	-0.0856	-0.1657**	-0.168**	-0.1793***	1												
CONC	0.0662	-0.1794***	-0.1965***	-0.148	-0.2246***	1											
MAN	-0.0367	0.0897	0.0929	0.1828***	-0.0612	-0.2823***	1										
AUDT	-0.1981***	-0.0819	-0.0809	-0.0762	0.0533	-0.1233*	-0.134**	1									
BSIZE	-0.0603	-0.0468	-0.0178	-0.1072	0.2028***	-0.1712*	-0.2029***	0.174***	1								
BINDP	-0.0126	-0.0175	0.0554	-0.0676	0.0942	-0.1364**	0.2329***	0.0339	0.3457***	1							
SIZE	-0.1188*	-0.0985	-0.1263*	-0.0954	0.0194	-0.0152	-0.3289***	0.2343***	0.4795***	-0.1464***	1						
ROA	0.0598	-0.4221***	-0.4092***	-0.4713***	0.1717***	0.2429***	-0.0237	0.1444**	0.0256	0.0077	0.0547	1					
LEV	0.1411**	0.2879***	0.2747***	0.4246***	-0.1309**	-0.204***	-0.0501	-0.0786	-0.0759	-0.1399**	0.0021	-0.4563***	1				
CFO	-0.112	-0.4661***	-0.4716***	-0.3817***	0.1787***	0.1149*	-0.2145***	0.104	0.4486***	0.0764	0.6049***	0.3049***	-0.2055***	1			
MTB	0.1693	-0.3308***	-0.3281***	-0.2891***	0.1639**	-0.0152	0.0846	0.0075	0.1006	0.0806	-0.0821	0.5612***	-0.0275	0.1669	1		
BETA	-0.0332	0.0162	0.0435	-0.0661	-0.1189	-0.2467	-0.2968***	0.2156***	0.3896***	-0.081	0.5055***	-0.1167*	0.0752	0.2423***	-0.0982	1	
VOLATILITY	0.0537	-0.1718***	-0.1673**	-0.1199*	-0.0054	-0.0216	0.2532***	-0.0866	-0.1966***	0.1066	-0.2701***	0.1392**	-0.1132*	-0.0349	0.1982***	-0.2961***	1

* Statistical significance at 10% level, ** Statistical significance at 5% level, *** Statistical significance at 1% level

AEM- absolute discretionary accrual a proxy of Accrual-based earnings management measured by Modified Jones model (1995); REM- aggregate real earnings management [standardized Abn_PROD+ (standardized Abn_CFO*-1)]; Abn_PROD- Abnormal production cost, an individual proxy for real earnings management; REM_CFO®- reversed Abnormal cash flow from operations, a second individual proxy for real earnings management; MAN- managerial ownership; CONC- Ownership concentration; INST- Institutional ownership; BSIZE- Board size; BINDP- Board Independence; AUDIT- Audit Quality; ROA- Return on assets; LEV- Leverage ratio; CFO- Cash flow from operations; SIZE- Firm size; VOLATILITY- Earnings variability; BETA- Market model beta; MTB- Market to book value ra Ownership concentration and managerial ownership has negative relationship while institutional ownership has positive relationship. Indicating that, highly concentrated firms and firms with higher managerial ownership prefer small boards of directors whereas firms with higher institutional ownership prefer also larger boards. Board size is positively and significant correlated with audit quality, suggesting larger boards more audit quality.

This could be explained by the fact that board of directors (through its audit committee) selects the external auditor and the external auditor report to audit committee whereas firms with small boards may not have effective audit committee due to limited number of competencies in the board. Firm size is negatively correlated with all earnings management proxies. Suggesting that large firms have low earnings management activities. (Siregar & Utama, 2008) also found that large firms have high-quality internal control and are usually audited by the Big 4 auditors, hence less likely to be able to hide abnormal accruals

However, the significant positive impact on audit quality, board size, board independence indicate that large firms tend to be audited by the big four auditors, have larger boards of directors and more independent boards. Managerial is negatively correlated with Size, suggesting that managers' equity interest in the firm is declining as firm size increases. The correlation is significant positive between firm's performance and cash flow indicating firms that performs well also generate higher cash flow from operations have low real earnings management activities. Firm's leverage ratio has positive and highly significant correlation with both accrual-

based and real earnings management, suggesting that an increase in leverage encourages managers to manipulate earnings to avoid debt covenant violation. Among the control variables, market to book value ratio (MTB) and earnings variability (VOLATILITY) had negative and highly significant relationship with all the three real earnings management measures.

Spearman's rank correlation also show that the magnitude of correlation between the variable aggregate real earnings management (REM) and abnormal cash flow (Abn_CFO) is pretty high (Spearman's .9807 p=0.000). Hence it is reasonable to suggest that REM causes multicollinearity in the model. This could be explained by the fact that the aggregate measure of real earnings management is the sum the two standardized measures of real earnings management, therefore the two variables measures the same concept. Therefore the study considered only the aggregate measure (REM) for the analysis. However, all other variables the matrices show that the correlation coefficients are less than the limit or cut off correlation percentage of 90%.

4.2 Longitudinal Panel Regression Results

Consistent with previous studies (Braam et al., 2015; Cohen et al., 2008; Cohen & Zarowin, 2010), we also found negative and highly significant results at 1% and 5% level between real earnings management and accrual-based earnings management. Suggesting that, managers substitute real earnings management for accrual-based earnings management. Thus, the results in land support to hypothesis 1 of the study.

Except for audit quality, none of the corporate governance practice alone had significant impact. However, the interaction between managerial ownership and real earnings management is negative and highly significant for both model 1 and model 3, suggesting that firms with higher managerial ownership has higher real earnings management than accrual manipulations. Thus hypothesis 2c is supported.

Table 5: Panel Data regression Results

Model 1				Model 2				Model 3			
AEM	Coef.	t	P>t	AEM	Coef.	t	P>t	AEM	Coef.	t	P>t
REM	-2.48121	-3.46***	0.001	REM	-1.34659	-2.46**	0.015	REM	-1.81898	-2.4**	0.018
INST	0.00217	0.08	0.939					INST	-0.00039	-0.02	0.986
CONC	-0.04841	-2.66***	0.008					CONC	-0.01203	-0.82	0.412
MAN	-0.02592	-0.65	0.515					MAN	-0.01769	-0.58	0.563
AUDT	-4.67303	-6.94***	0.000					AUDT	-2.28838	-3.3***	0.001
BSIZE	0.002994	0.03	0.974					BSIZE	-0.03961	-0.55	0.582
BINDP	0.011415	0.72	0.471					BINDP	0.007199	0.6	0.552
INST x REM	0.000292	0.05	0.962					INST x REM	-0.00028	-0.06	0.955
CONC x REM	0.002245	0.36	0.717					CONC x REM	-0.01483	-2.8***	0.006
MAN x REM	-0.05838	-2.89***	0.004					MAN x REM	-0.05989	-3.77***	0.000
BSIZE x REM	-0.0311	-1.03	0.302					BSIZE x REM	-0.01784	-0.65	0.515
BINDP x REM	0.033316	5.48***	0.000					BINDP x REM	0.021601	4.18***	0.000
AUDT x REM	0.144285	0.58	0.565					AUDT x REM	0.06944	0.26	0.795
MTB	-6.3E-05	-0.25	0.806	SIZE	-1.05E-02	-0.04	0.965	SIZE	0.188538	0.81	0.417
BETA	0			ROA	-0.00661	-0.76	0.448	ROA	-0.00083	-0.11	0.914
VOLATILITY	0.003738	0.19	0.85	LEV	0.000129	0.14	0.89	LEV	0.000696	0.84	0.401
				CFO	-4.23E-06	-2.62***	0.01	CFO	-4.12E-06	-2.67***	0.008
				SIZE x REM	0.072603	1.55	0.124	SIZE x REM	0.075227	1.26	0.208
				ROA x REM	0.03602	8.21***	0.000	ROA x REM	0.024995	5.1***	0.000
				LEV x REM	0.001116	1.16	0.249	LEV x REM	-0.00097	-1.02	0.309
				CFO x REM	-7.76E-06	-10.3***	0.000	CFO x REM	-7.20E-06	-9.53***	0.000
				MTB	-0.00718	-2.82***	0.005	MTB	-0.00489	-2.16	0.032
				BETA	Omitted			BETA	omitted		
				VOLATILITY	1.391244	0.82	0.411	VOLATILITY	-1.08669	-0.66	0.509
_cons	6.301933	3.43	0.001	_cons	0.691068	0.25	0.802	_cons	0.913736	0.32	0.749
N		233		N		223		N		223	
R2:	overall	0.1652		R2	overall	0.3962		R2	overall	0.4915	
Prob > F		0.0000		Prob > F		0.000		Prob > F		0.000	

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed test)

For the definition of variables see Table 2

In contrast with previous studies, the interaction between board independence and real earnings management is positive and highly significant at 1% level, suggesting that board independence weakens the negative association between the two earnings management strategies. Thus, firms with high board independence engage more in both earnings management strategies. The possible explanation here is as pointed out earlier the definition of board independence in this study was the non-executive directors, some of them also happen to be shareholders of the organization. Thus they are not real independent directors. These findings are in line with other East African studies (Barako, Hancock, & Izan, 2006; Outa, 2013) among others, also found insignificant relationship between board independence and earnings management. Arguing that, in East Africa, independent directors nominally are not independent enough or not really independent at all.

Regarding firm-specific characteristics, individually also, firm's level of cash flow from operations has a significant effect on accrual-based earnings management. However, almost all firm-specific characteristics variables had a significant moderating effect on the relationship between accrual-based and real earnings management.

Regarding control variables, except for the market to book value ratio (MTB), none of the control variables had a significant effect. We found that after controlling for real earnings management and other factors that has impact accrual-based earnings management MTB is negatively (but insignificant for Model 1 and Model 3) and highly significant (for Model 2) correlated with accrual-based earnings management. Indicating that, firms with high growth opportunities have less incentive to manipulate accruals. The measure of systematic risk BETA also was omitted form fixed effect regression because fixed effects models do not estimate the effects of variables whose values do not change across time. This variable was measured using 36month BETA that was constant throughout the sample period. However, although omitted its contribution to the variation in the dependent variable is observed in the overall fixed effect.

Concerning the overall significance of the models, Model 3 that combines both firm specific characteristics and corporate governance produced the most powerful results (the overall R2= 49.15%) compared to 16.52% and 39.62% for model 1 and model 2 respectively. Suggesting that, in East Africa firm characteristics play an important role in explaining the variations between accrual based and real earnings management than corporate governance practices. However, there was a substantial increase in R2 when firm specific characteristics and corporate governance practices were combined together in Model 3. The F-statistic is also highly significant, indicating the joint significance of firm specific characteristics and corporate governance practices in explaining the variations between accrual-based and real earnings management. Therefore, both firm specific characteristics and corporate governance practices plays an important role in explaining the variations between accrual based and real earnings management.

5. Conclusion

Our results reinforce the study's general argument that managers do tradeoff between the two earnings management strategies. Moreover, both corporate governance and firm specific characteristics plays an important role in determining how firms substitute accruals-based earnings management for real earnings management. In addition, among real earnings management strategies, sales manipulation is the most commonly used strategy in East Africa.

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