

# ACCRAUL-BASED VERSUS REAL EARNINGS MANAGEMENT; THE EFFECT OF OWNERSHIP STRUCTURE: EVIDENCE FROM EAST AFRICA

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**Abstract:** Existing literature suggests that different ownership structure have different impact on earnings management. The findings from prior studies provide confliction and contradicting results regarding the relationship between ownership structure and earnings management. We examine whether ownership structure has impact on both accrual-based and real earnings management. Using a sample of 44 non-financial East African listed firms for years from 2003 to 2013, we find little evidence to suggest that ownership structure has an impact on accrual-based earnings management in East Africa. However, we find that ownership concentration and institutional ownership has significant negative effect on real earnings management. Therefore our results highlight the importance of analyzing both earnings management strategies in order come up with a definitive conclusion.

**Keywords:** Real earnings management, Discretionary accruals, Ownership structure, Emerging Markets

## Introduction

"Earnings management occurs when managers use judgment in financial reporting and structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers" Healy and Wahlen (1999). The phenomenon earnings management has recently been at the core of accounting research as many firms are now going public due to the globalization of businesses and financial markets which result inseparation of ownership and controls.

However, there is evidence that Earnings management occurs in two ways: (1) via accounting choice<sup>1</sup> and (2) via real activity manipulation<sup>2</sup>(McNichols and Wilson 1988, Schipper 1989, Roychowdhury, Kothari et al. 2012). There has been extensive research on the relationship

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<sup>1</sup>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.

<sup>2</sup>Real activity manipulation is the departure from normal operational practices, for example offering price discounts to temporarily increase sales volume. Roychowdhury, S. (2006). "Earnings management through real activities manipulation." *Journal of Accounting and Economics* 42(3): 335-370.

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between earnings management and certain corporate governance practices including ownership structure for example see (Ali, Salleh, & Hassan, 2010; Alves, 2012; Dechow, Sloan, & Sweeney, 1996; Iturriaga & Hoffmann, 2005; Kim & Yi, 2006; Koh, 2003; Shleifer & Vishny, 1989). The results of these studies are conflicting and contradicting; there is no consensus regarding the effects of ownership structure on earnings management. As most of the previous studies on the impact of earnings management have concentrated largely on discretionary accrual as a proxy for earnings management, thus focus only on accruals-based earnings management. However, there is evidence that firms engage in real earnings management e.g., (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) and real earnings management may have greater effects than accrual earnings management because it alters firms' behavior and not just their accounting records. Moreover, accrual-based earnings management is more prone to scrutiny, therefore, can be easily constrained by auditors and regulators. Apart from that accruals can be reversed in future periods (Zhu et al, 2015.). Thus real earnings management not only affects the current period cash flows but also impact the future profitability of the firm. Cohen & Zarowin, (2010) find that in post-Seasoned Equity Offering (SEO), the decline in operating performance due to real earnings management is more than due to accrual earnings management. Zang, (2011) provide evidence that managers trade-off between real activities manipulation and accrual-based earnings management. That is when manager's ability to employ accrual earnings management is constrained they usually switch to real activity manipulation. Cohen, Dey, & Lys, (2008) also find that in the post-Sarbanes-Oxley Act (SOX), managers have shifted from accrual-based to real earnings management. Furthermore, Graham, Harvey, & Rajgopal, (2005) in a survey of top executives, provide evidence suggesting that managers prefer real earnings management activities compared to accrual-based earnings management. Given the fact that managers can choose between the two earnings management strategies, in order to assess the effect of any variable on earnings management both earnings management strategies should be considered.

While most earnings management studies have focused only on accrual-based earnings management, we contribute beyond the previous studies by providing evidence on the relationship between different ownership structure and the two earnings management strategies in East Africa<sup>3</sup>. Fields, Lys et al. (2001) pointed out that, examining either type of earning management in isolation cannot lead to a definitive conclusion as cited in Zang, (2011).

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

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<sup>3</sup>East Africa refers to the area now comprising the five countries of Kenya, Uganda, Tanzania, Rwanda and Burundi.

## Review of Literature and Hypothesis Development

Previous studies bring evidence that different ownership structures have a different influence on the monitoring mechanism of a company including the monitoring of earnings management activities. Wang (2006) states that ownership structure has significant effect on reported earnings. However, the influence of insiders (managerial ownership), institutional investors, block-holders (concentrated ownership) and their ability to restrain managers from manipulating earnings remains a controversial issue.

### *Ownership concentration and Earnings management*

According to the efficient monitoring hypothesis ownership concentration limits earnings management. This is due to the fact that, small shareholders would not be interested in monitoring because they would bear all the monitoring costs, but only share a small proportion of the benefit. Consequently, shareholders owning a small fraction of outstanding shares have incentives to free-ride in monitoring management. Prior studies have suggested that large shareholders have a strong incentive to actively monitor and influence firm management to protect their significant investments, which in turn reduces the scope of managerial opportunism to engage in earnings management (see Shleifer and Vishny, 1986; Dechow, Sloan & Sweeney, 1996). Recent studies also documented negative relationship between ownership concentration and earnings management, suggesting that earnings management is significantly lower for firms with higher ownership concentration (Ali et al., 2008 and Iturriaga & Hoffmann 2005). Additionally the most recent study by Sandra (2012) finds that earnings management is negatively related to ownership concentration. These results corroborate the efficient monitoring hypothesis which suggests that large shareholders reduce the scope of managerial opportunism. Ownership concentration reduces the managers' discretionary behavior because there will be less pressure on management to meet short-term earnings expectations because controlling shareholders focus more on the long term. Therefore, ownership concentration is expected to reduce agency costs by increasing monitoring and alleviating the free-ride problem.

On the other hand, other studies have documented a positive relationship between earnings management and ownership concentration (Shleifer & Vishny, 1997; Choi, Jean & Park, 2004; Bolton et al. 2006; Jaggi & Tsui 2007 and Kim & Yoon 2008). That is, higher ownership concentration in the firm was found to relate to earnings management. They argued that firms with concentrated ownership may be subject to conflicts of interest between majority and minority shareholders. Large shareholders can exercise their control rights to create private benefits, sometimes expropriating minority shareholders (expropriation hypothesis). Given this discussion, the effect of ownership concentration on earnings management is still not clear, it can have a negative effect due to the closer monitoring of managers or a positive effect as a consequence of the expropriation effect. Does ownership concentration support the efficient monitoring hypothesis or the expropriation hypothesis? This is an open question that will be answered by this study.

*Hypothesis 1 Ownership concentration has significant effect on both accrual-based and real earnings management*

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*Institutional Ownership and Earnings Management*

The efficient monitoring hypothesis also suggests that monitoring by institutional ownership can be an important governance mechanism. In fact, institutional investors can provide active monitoring that is difficult for smaller, more passive or less-informed investors (Almazan, Hartzell & Starks 2005). The efficient monitoring hypothesis suggests an inverse relationship between a firm's earnings management activity and its institutional share ownership. In this vein, several studies documented that institutional ownership inhibits managers to engage opportunistically in earnings management (Bange & De Bondt 1998; Bushee 1998; Chung et al. 2002; Koh 2003; Ebrahim 2007; Cornett et al. 2008; Farooq & Hind El Jai, 2012). Institutional investors have the opportunity, resources, and ability to monitor managers. Therefore, the institutional ownership is associated with a better monitoring of management activities, thus reducing the ability of managers to manipulate opportunistically earnings.

However, some researchers argue that institutional investors do not play an active role in monitoring management activities (see Porter 1992; Duggal and Millar, 1999; Claessens & Fan 2002). Institutional investors are passive investors who are more likely to sell their holdings in poorly performing firms than to expend their resources in monitoring and improving their performance. Accordingly, institutional investors may collude with management (Pound 1988; Sundaramurthy, Rhoades & Rechner 2005). It is also argued that institutional owners are overly focused on short-term financial results, and as such, they are unable to monitor management (Bushee 1998; Potter 1992). So, there will be a pressure on management to meet short-term earnings expectations. Therefore institutional investors may not limit managers' earnings management discretion and may increase managerial incentives to engage in earnings management (passive hands-off hypothesis). These mixed findings on the institutional ownership effects on earnings management warrant further research.

*Hypothesis 2 Institutional ownership has significant effect on both accrual-based and real earnings management*

*Managerial Ownership and Earnings management*

With regard to the effects of managerial ownership on earnings management, agency theory argues that shareholdings held by managers help align their interests with those of shareholders (Jensen and Meckling, 1976). This incentive alignment effect is expected to have more impact as managerial ownership increases, suggesting that as managerial ownership increases and opportunistic managerial behavior decreases. Empirical evidence provides contradicting results on the relationship between managerial ownership and earnings management. Warfield et al. (1995) documented that, a negative association exists between earnings management and insider ownership (managerial ownership) in the United States (U.S). Based on the theory of Jensen and Meckling (1976) they hypothesized that, low managerial ownership provides deeper incentives for managers' to manipulate earnings for their own benefit. In line with the findings of Warfield (1995) are the findings of Klein (2002) and Shwu-Jen You et al. (2003) which suggest that insiders' ownership is negatively associated with discretionary accruals (a proxy for earnings management). Dempsey et al. (1993) also suggests that large insider's ownership reduces earnings management. A recent study by Sandra (2012) using a sample of 34 non-financial listed

Portuguese firms also found a negative relationship between discretionary accruals and managerial ownership.

In contrast, Morck et al. (1988) documented that, there is a positive correlation between managerial ownership and corporate performance for low and high levels of ownership, suggesting the dominance of the alignment effect at these levels of ownership. That greater ownership provides managers with deeper entrenchment, therefore, greater scope for opportunistic behavior. In line with the results of Morck et al. (1988) are the findings of a recent study from Nedal Al-Fayoumi et al. (2010) and Isenmila et al. (2012) which also identified a positive, significant relationship between insider ownership and earnings management. Bergstresser and Philippon (2006) presented evidence that when a CEO's compensation is tied to the value of stock and options, the likelihood of profit manipulation occurrence increases.

However, Francis et al. (1999), finds that there is no significant systematic relationship between managerial ownership and earnings management in the U.S. Other authors who didn't reach to any significant association between insider ownership, and earnings management are Bowen, Rajgopal, and Venkatachalam, (2008) and Peasnell et al., (2005). Additionally, a very recent study by Spinos (2013) using U.S data for the period between 2004 and 2009 found that the association between managerial ownership and earnings management at a 5% significance level is not significant implying that there is no systematic relationship between these two variables. There is no consensus on findings from prior studies as they suggest that, there can be a positive relation, a negative relation or no relation between managerial ownership and earnings management.

*Hypothesis3. Managerial ownership has significant effect on both accrual-based and real earnings management*

To sum up, despite the fact that earnings management and its relationship with ownership structure has drawn a significant attention from the academic community, in the previous literature it appears that there is no consensus regarding the relationship and the effects of ownership structure on earnings management. Because the results from prior studies provide conflicting and contradictory results more research is needed to be done to shed further light on this association. We contribute to the existing literature by providing evidence on the relationship between ownership structure and real earnings management in the emerging markets. This is achieved by an in-depth study that analyzes a different ownership structures and both earnings management strategies.

## **Methodology and Data**

This study examined the relationship between ownership structure and earnings management both accrual-based (AEM) and real earnings management (REM) in East Africa. We examined three types of ownership structures namely; Ownership concentration, Institutional ownership and managerial ownership. Given that ownership structure is not the sole factor affecting earnings management, we evaluate the association between ownership structure and earnings management, after controlling for the impact of other relevant variables. Previous studies suggest that Audit quality (Audit), board size and composition (Board), political costs (Size),

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performance (Performance), leverage (Lev), and operating cash flows (Cash flows) are associated with earnings management (Dechow, Sloan & Sweeney (1995); DeFond & Jiambalvo (1994); Klein (2002)).

*Measuring Accrual-based earnings management*

Following standard accounting literature, the study uses the cross-sectional version of the modified Jones model (1991) to estimate the non-discretionary accrals portion of the total accrals. The modified Jones' model was estimated as follows:

First, we estimate regression parameters ( $\beta_0$ ,  $\beta_1$  and  $\beta_2$ ) using industry-year regression model below;

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

Where;

- $TACC_{it}$  Total accrals in year t computed as a different between net income before extra ordinary items & discontinued operations and cash flow from operating activities.  

$$TACC_{it} = EARNINGS - CFO$$
- $TA_{i,t-1}$  Total assets at the beginning of year t,
- $\Delta REV_{it}$  Change in revenues;
- PPE Gross property, plant, and equipment

We scale all variables by beginning total assets to adjust for heteroscedasticity.

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

$$NDAC_{it} = \hat{\beta}_0 \left( \frac{1}{TA_{it-1}} \right) + \hat{\beta}_1 \left( \frac{\Delta Rev_{it} - \Delta Rec_{it}}{TA_{it-1}} \right) + \hat{\beta}_2 \left( \frac{PPE}{TA_{it-1}} \right) \quad (2)$$

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

Lastly, we compute discretionary accrals (DAC) as the difference between total accrual and the non-discretionary accrals;

$$DAC_{it} = \left( \frac{TACC_{it}}{TA_{it-1}} \right) - NDAC_{it} \quad (3)$$

Following Cohen, Dey et al. (2008), we measure the DAC in **absolute values** [ $Abs(DAC_t)$ ] that is, regardless of whether the accrual earnings management is earnings increase or decrease. Absolute values of discretionary accrals also captures accrual reversals due to earnings management(Braam, Nandy et al. 2015).

#### *Measuring Real earnings management*

##### 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 et al. 1998), we express the normal levels of CFO as a linear function of sales and change in sales;

$$\frac{CFO_t}{TA_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{TA_{t-1}} \right) + \beta_1 \left( \frac{S_t}{TA_{t-1}} \right) + \beta_2 \left( \frac{\Delta S_t}{TA_{t-1}} \right) + \varepsilon_t \quad (4)$$

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 for the period

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

We measure the abnormal level of cash flow from operations ( $Abn\_CFO$ ) as deviations from the predicted values from the above industry-year regression.

##### Overproduction

The last type of real activity manipulation is the production of more goods than necessary to meet expected demand (Overproduction). 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). We estimate the normal level of COGSas ;

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

Where;

COGS is the cost of goods sold in period t

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

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$S_t$  is the sales during the period

Whereas, we estimate the normal level of inventory as;

$$\frac{\Delta INVENTORY_t}{TA_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{TA_{t-1}} \right) + \beta_1 \left( \frac{\Delta S_t}{TA_{t-1}} \right) + \beta_2 \left( \frac{\Delta S_{t-1}}{TA_{t-1}} \right) + \varepsilon_t \quad (6)$$

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

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

$\Delta S_{t-1}$  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 (5) and model (6) above, the study estimated the normal production cost by the following industry-year regression;

$$\frac{PROD_t}{TA_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{TA_{t-1}} \right) + \beta_1 \left( \frac{S_t}{TA_{t-1}} \right) + \beta_2 \left( \frac{\Delta S_t}{TA_{t-1}} \right) + \beta_3 \left( \frac{\Delta S_{t-1}}{TA_{t-1}} \right) + \varepsilon_t \quad (7)$$

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

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

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

We measure the abnormal level of production cost (REM\_PROD) for every firm-year 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 is 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. Therefore abnormal level of discretionary expenditure (REM\_DEXP) for every firm-year is measured as deviations from the predicted values from the corresponding industry-year regression.

$$\frac{DEXP_t}{TA_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{TA_{t-1}} \right) + \beta_1 \left( \frac{S_{t-1}}{TA_{t-1}} \right) + \varepsilon_t \quad (8)$$

Where:

$DEXP$  is the total Discretionary expense (the sum of Research and Development costs (R&D), Advertising, and Selling, general and administrative (SG&A) expenditure).

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

$S_{t-1}$  is the previous period sales

However, as noted earlier that managers can utilize one or multiple real earnings management strategies (Cohen, Dey et al. 2008, Cohen and Zarowin 2010, Zang 2011, Braam, Nandy et al. 2015). These prior studies found a significant correlation among the proxies for real earnings management, suggesting that firms can choose between several methods of real earnings management. Therefore, in this particular study we have considered only two real earnings management strategies (sales manipulation and overproduction). We were unable 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 model (8) was not estimated to avoid additional reduction in number observations.

Consistent with Cohen and Zarowin (2010) 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 more severe manipulation of sales through either price discount or more lenient credit terms and production manipulations.

### *Measuring Ownership structure*

The managerial ownership (*Managerial*) was calculated as the proportion of the company's shares directly or indirectly owned by the managers or board of directors of the company. Ownership concentration (*Concentration*) was measured as the proportion of total company's shares outstanding held by the largest shareholders. Institutional ownership (*Institutional*) was measured as the percentage of total company's shares outstanding held by the institutional investor. The following organizations were classified as institutional investors; Insurance companies, Pension Funds, investment companies, banks and other financial institutions (Koh, 2003) as cited in Isenmila and Elijah (2012).

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The tables below provide the list of independent, dependent and control variables used in the study.

Table 2.1 Variables Definition and Measurement

Variable	Measure
Independent variables	
Level of ownership concentration ( <i>CONC</i> )	the proportion of total company's shares held by the largest shareholders
Level of institutional ownership ( <i>INST</i> )	the proportion of total company's shares held by the institutional investor; Koh, (2003) define institutional investor as ;Insurance companies, Pension Funds, investment companies, banks and other financial institutions
Level of management ownership ( <i>MAN</i> )	proportion of the total company's shares directly or indirectly owned by the manager/directors of the company
Control Variables	
Audit quality (AUDT)	Dummy variable '1' for 'Big 4' and '0' otherwise
Board composition ( <i>BINDP</i> )	The proportion of non-executives directors in the board.
Board size ( <i>BSIZE</i> )	Number of board members who serves on the board of directors in a given financial year
Leverage ( <i>LEV</i> )	Total Debt/Total Assets
Performance ( <i>ROA</i> )	EBIT/Total Assets
Political cost ( <i>SIZE</i> )	Natural log of Total Assets
Cash flows ( <i>CFO</i> )	Cash flows from operating activities

Source: Author, 2015

*Study sample and period*

Our sample comprises of non-financial companies listed in East African security markets for ten (10) years from 2004-2013. We chose the period because most East African companies were listed in the late 2000s. However, the Code on Corporate Governance was introduced in the region in 2002 and we expect that not all companies complied with the code at the initial stage of its implementation, therefore, to avoid the confusion, the study selected the year 2004 and 2013 for investigation.

However, following the standard accounting literature, we also exclude financial companies from the sample because they are subject to other regulations that lead to more strict guidelines and also because of their special accounting practices (Klein 2002, Park and Shin 2004, Ali,

Salleh et al. 2010) 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	<u>(22)</u>
<b>Final Sample</b>	<b><u>(44)</u></b>

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 4 firms listed in the Uganda Stock Exchange (UGE) Uganda. Whereas there were no firms from Rwanda and Burundi. We excluded all five (5) firms listed in Rwanda Stock Exchange (RSE) from the sample as 2 firms were financial institutions while the remaining 3 were newly listed firms. Burundi does not have a stock exchange. The sample size of 44 firms which is equivalent to 440 firm-year observations is therefore representative of the East African Securities Market. Previous studies have established that in exploratory studies, 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.

#### *Research Design and Data*

The paper adopted a panel data research design that includes both cross-sectional and time-series data. The study extensively relayed on secondary data. We obtained the Financial statement data necessary for the study from Osiris Database that contains data for publicly listed companies worldwide. We also manually collected Corporate governance variables data from annual reports of listed companies obtained from the Stock Exchange markets of the respective countries and company's websites.

#### *Regression model:*

$$AEM_{it} \text{ or } REM_{it} = \beta_0 + \beta_1(INST_{it}) + \beta_2(CONC_{it}) + \beta_3(MAN_{it}) + \beta_4(SIZE_{it}) + \beta_5(ROA_{it}) + \beta_6(BSIZE_{it}) + \beta_7(BINDP_{it}) + \beta_8(AUDT_{it}) + \beta_9(CFO_{it}) + \beta_{10}(LEV) + \varepsilon_{it}$$

Where:

AEM= Accrual-based earnings management measured by modified Jones model

REM= Real Earnings Management, measured as the sum of the two standardized real earnings management measures

Other variables as defined in Table (2.1) above

## Empirical Results and Discussion

The results of the descriptive statistics are shown in Tables 4.1 below. The firm variable size (SIZE) has the largest number of observation in the study with (N=441) while Real earnings management proxy (REM) has the minimum number of observations (N=397). The variation in firm-year observations between variables could be explained by the immaturity of the stock markets in East Africa. Most of firms were listed in late 2000's, therefore, REM involves the use of lag sales.

Managerial ownership (MAN) measures the directors' interest in the company, for 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 the exception of very few directors, the 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%. Fan and Wong (2002), argued that concentrated ownership (i.e. existence of one largest ultimate owner) is the determinant of Asian companies' poor corporate governance practices. 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 directors<sup>4</sup>, in this particular study we define board independence as the percentage of non-executive directors on 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.

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. The gearing ratio (LEV) of 123.19% with a minimum of 16.38% and maximum of 749.89% is high an indicator that a number of listed companies have high debt levels in their statements of financial position (Balance Sheet). The average return on asset (ROA) is 14.2% and minimum of -36.6% and maximum of 67.56%, this indicates that firms in East Africa have higher debt ratio and low performance, this triggers the motive for earnings management to avoid reporting losses and debt covenants violation. The Cash flow from operations (CFO) has a mean of 22,160.12 thousands US dollars with a minimum of -477296.2 and maximum 462908.8 show that majority of East African companies generate slightly high cash flow from operating activities, suggesting a reduced level earnings management activities induced by increase in cash flow generation.

We intend also to use the descriptive statistics to exhibit the distribution of data. The data are considered to be normally distributed if the standard skewness is within the range of  $\pm 1.96$  (Fields 2006). The descriptive statistics indicates that except for accrual-based earnings

<sup>4</sup>An Independent director (sometimes known as an outside director) is a director (member) of a board of directors who does not have a material or pecuniary relationship with company or related persons, except sitting fees. 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.

management proxy, audit quality, managerial ownership, leverage, cash flow from operations, earnings variability and the market to book value ratio, the standard skewness for most of the variables are within the normal range of  $\pm 1.96$ . However, the data are also regarded as been normally distributed if the standard kurtosis is within the range of  $\pm 3$  (Fields 2006). Accordingly, regarding the standard kurtosis most of the data are not normally distributed. Therefore, the descriptive statistics indicate that the data are non-parametric data, hence more attention is required in the analysis and interpretation of the results.

Table 4.1 Summary of Descriptive Statistics

	Mean	Median	standard deviation	Min	Max	Skewness	Kurtosis	N
AEM	0.262423	0.055933	1.009405	1.49E-05	11.74808	7.597098	71.60444	397
REM	-0.02092	0.004659	1.056344	-4.49066	3.738496	-0.08728	5.11155	353
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	-0.05458	2.214391	402
MAN	1.70395	0.00304	6.464497	0	47.47	5.109663	31.10413	402
AUDT	0.965174	1	0.183567	0	1	-5.07448	26.75037	402
BSIZE	7.902985	8	2.556697	2	16	0.337689	3.066443	402
BINDP	78.3379	83.33334	15.30082	33.33333	114.2857	-1.32492	4.509807	402
SIZE	10.86111	10.90546	1.697952	4.579565	14.73304	-0.26625	3.10652	441
ROA	14.2401	10.8951	15.64158	-36.6	67.56	0.518753	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	462908.8	2.044065	28.86146	415

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)]; 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

### *Correlation analysis*

As indicated by the descriptive statistics our data are not normally distributed. Therefore, we run Spearman's correlation to assess the relationship between ownership structure and the two earnings management strategies; accrual-based and real earnings management while allowing for non-normality for some of the variables. Table 3.2 below presents a Spearman's correlation matrix for the variables included in the analysis. The significance of the relationship is identified at a confidence level of 5%. Institutional ownership and ownership Concentration are negatively and significantly related with real earnings management suggesting that earnings management is considerably lower for firms with greater institutional ownership and higher ownership concentration. A negative correlation between Managerial and Concentration indicates that managers' equity interest in the firm is declining as ownership concentration increases. No significant effect was found between any types of ownership structure and accrual-based earnings management, indicating the importance of examining both earnings management strategies at par.

As expected, audit quality is negatively and significant correlated with accrual-based earnings management, pointing out that the big 4 auditors constrains accrual-based earnings management. However, it is also negatively but insignificantly correlated with real earnings management. Indicating that big 4 auditors might not constrain real earnings management. The results are consistent with Zhu, Lu et al. (2015) who found that, for Chinese reverse merger (RM) firms with Big 4 auditors have low levels of both accrual-based and real earnings management.

No significant relationship is detected between firm size and any of the earnings management proxies. However, the significant positive impact on audit quality and board size suggests that large firms tend to be audited by the big four auditors, have larger boards of directors. Firm performance (ROA) and cash flow from operations have negative and highly significant relationship with real earnings management, indicating that firm with better performance engage less in earnings management. As expected also we found positive and highly significant relationship between leverage and both accrual-based and real earnings management, suggesting that an increase in leverage encourages managers to use more accruals to manage earnings to avoid debt covenant violation. Size is positively associated with Leverage, suggesting that larger firms have larger leverage levels.

Table 4.2 Spearman's Correlation Coefficients Matrix

	AEM	REM	INST	CONC	MAN	AUDT	BSIZE	BINDP	SIZE	ROA	LEV	CFO
AEM	1											
REM	-0.028	1										
	0.6114											
INST	-0.044	-0.1959*	1									
	0.4254	0.0003										
CONC	0.0525	-0.1451*	-0.2636*	1								
	0.3411	0.0082	0.000									
MAN	-0.0083	0.0223	0.0189	-0.2628*	1							
	0.88	0.6854	0.7324	0.000								
AUDT	-0.1674*	-0.0392	0.105	-0.1490*	-0.1268*	1						
	0.0022	0.4777	0.0564	0.0066	0.021							
BSIZE	0.0385	-0.0582	0.1863*	-0.2067*	-0.0957	0.1583*	1					
	0.4853	0.291	0.0007	0.0002	0.0822	0.0039						
BINDP	0.0067	-0.0275	0.2149*	-0.2003*	0.3102*	0.0513	0.3510*	1				
	0.9035	0.6185	0.0001	0.0002	0.000	0.3525	0.000					
Size	0.0097	-0.068	0.0131	-0.0746	-0.1751*	0.2679*	0.5635*	-0.0251	1			
	0.8608	0.2171	0.8117	0.1756	0.0014	0.000	0.000	0.6495				
ROA	0.0818	-0.4016*	0.1533*	0.1741*	-0.0132	0.2249*	0.0802	0.0134	0.1655*	1		
	0.1375	0.000	0.0052	0.0015	0.8114	0.000	0.1456	0.8078	0.0025			
LEV	0.1198*	0.3178*	-0.1649*	-0.1599*	-0.0088	-0.0753	0.0412	-0.071	0.1419*	-0.3762*	1	
	0.0293	0.000	0.0026	0.0035	0.8729	0.1716	0.4545	0.1974	0.0098	0.000		
CFO	-0.0282	-0.4325*	0.1832*	0.0043	-0.102	0.1602*	0.4978*	0.1228*	0.6421*	0.3541*	-0.1207*	1
	0.6086	0.000	0.0008	0.9377	0.0638	0.0035	0.000	0.0254	0.000	0.000	0.0281	

\* Significant at the level of 5%

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)]; MAN- managerial ownership; CONC- Ownership concentration; INST- Institutional ownership; BSIZE- Board size; BINDP- Board Independence; AUDT- Audit Quality; ROA- Return on assets; LEV- Leverage ratio; CFO- Cash flow from operations; SIZE- Firm size

A negative correlation between Managerial and Concentration indicates that managers' equity interest in the firm is declining as ownership concentration increases. Managerial is negatively correlated with Size, suggesting that managers' equity interest in the firm is declining as firm size increases. A negative correlation between Lev and Cash flows indicates that firms with high leverage have lower cash flows from operations.

Lastly, the correlations coefficients indicate that multicollinearity is not a problem in our model as none of the coefficients is greater than point nine ( $\geq 0.9$ )

### *Regression results*

The empirical tests of the main hypotheses examine the association between ownership structure and both accrual-based and real earnings management. As indicated by the descriptive statistics that our data are not normally distributed, therefore we adopted pooled Ordinary Least Square (OLS) with a robust standard error. Table 4.3 below presents the results of regression estimates to examine the association between the three measures of the ownership structure and earnings management controlling for other relevant variables that may affect earnings management.

Table 4.3 below shows that, the relationship between ownership structure and accrual-based earnings management is negative but not significant. Inconsistent with previous studies (Ali et al. (2008), Banderlape (2009), Dhaliwal et al. (1982), Ebrahim, (2007), Klein (2002) and Warfield et al. (1995)) that has found significant effect between the magnitudes of discretionary accounting accruals different types of ownership structure. However, our results are consistent with Francis et al. (1999), who also found no significant systematic relationship between managerial ownership and earnings management in the U.S. Other studies that didn't reach to any significant association between insider ownership and earnings management are Bowen, Rajgopal, and Venkatachalam, (2008) and Peasnell et al., (2005). Additionally, a very recent study by Spinos (2013) using U.S data for the period between 2004 and 2009 found that, the association between managerial ownership and earnings management at a 5% significance level is not significant implying that there is no systematic relationship between these two variables. This confirms the argument by Fields, Lys et al. (2001) that, examining either type of earning management in isolation cannot lead to a definitive conclusion.

However, we find negative and significant at 10% level relationship between ownership concentration, institutional ownership and real earnings management. These results suggest that real earnings management is significantly lower for firms with higher ownership concentration and institutional investors. This result corroborates the efficient monitoring hypothesis that suggests that large shareholders reduce the scope of managerial opportunism. These findings are consistent with the findings of Ali et al. (2008) and Iturriaga & Hoffmann (2005) who also found a negative relationship between ownership concentration and earnings management.

Consistent with Kim, Chung et al. (2003), Francis and Yu (2009), Francis, Maydew et al. (1999), Becker, DeFond et al. (1998) among others, who 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. Our results indicates audit quality is negatively and significant correlated with accrual-based earnings management, pointing out that the big 4 auditors constrains accrual-based earnings management. However, it is also negatively but insignificant correlated with real earnings management. Indicating that big 4 auditors may constrain accrual-based earnings management but might induce managers to shift to real earnings management. This result is

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consistent Chi, Ling et al. (2010) who found that the presence of Big 4 auditors is associated with higher levels of real activity manipulations.

Regarding the other variables, Lev is significantly positive, providing evidence that an increase in leverage encourages managers to use more real activity manipulations to manage earnings to avoid debt covenant violation, confirming the prediction and results of DeFond & Jiambalvo (1994) and Jiang et al. (2008). Finally, the results suggest, that real earnings management is significantly lower for firms with greater operating cash flows and better performance.

Table 4.3 Regression with AEM or REM as dependent variable

	AEM			REM		
AEM/REM	Coef.	t	P>t	Coef.	t	P>t
INST	0.000265	0.19	0.852	-0.00522*	-1.72	0.087
CONC	-0.00022	-0.15	0.883	-0.00558*	-1.63	0.105
MAN	-0.00099	-0.18	0.86	0.000266	0.03	0.972
AUDT	-2.24266**	-2.18	0.03	-0.13826	-0.29	0.775
BSIZE	-0.01278	-0.39	0.697	-0.01868	-0.57	0.571
BINDP	0.004841	1.06	0.289	0.003598	0.94	0.35
SIZE	0.076485	1.16	0.247	0.064085	1.57	0.118
ROA	0.007386	1.39	0.165	-0.01733***	-3.98	0.000
LEV	0.000459	0.85	0.396	0.000876*	1.83	0.068
CFO	-2.94E-06	-0.82	0.41	-4.86E-06***	-5.46	0.000
_cons	1.233123	1.28	0.2	-0.15016	-0.24	0.807
N				N	331	
Adjusted R <sup>2</sup>				Prob > F	0	
F-statistic				R-squared	0.2166	

\*\*\* Significant at the level of 1%, \*\* 5% and \* 10%

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)]; 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

## Conclusion

This study examined whether there is a relationship between corporate ownership structure and both strategies of earnings management in East Africa. Using a panel of 44 non-financial listed firms in East Africa for 10 years from 2004 to 2013 we find little evidence to suggest that ownership structure has an impact on accrual-based earnings management. However, ownership concentration and institutional ownership have negative and significant (at ten% level) relationship with real earnings management. Therefore, the study highlights the importance of analyzing both earnings management strategies in order to come up with a definitive conclusion. Our findings are relevant for countries with an institutional environment (mainly concentrated ownership) similar to that of East Africa.

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