CORPORATE GOVERNANCE, EXECUTIVE COMPENSATION, FIRM CHARACTERISTICS AND EARNINGS MANAGEMENT OF COMPANIES LISTED AT NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

I declare this PhD thesis is my authentic work and has not been submitted for an award of any degree to another university.

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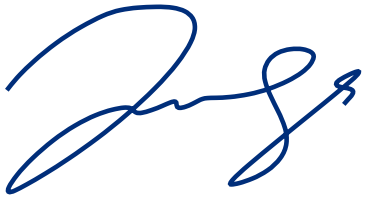
Signed:  Date: 16th November 2021

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DEDICATION

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ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dicker Fuller
BOD	Board of Directors
CBK	Central Bank of Kenya
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CG	Corporate Governance
CGI	Corporate Governance Index
CMA	Capital Markets Authority
DA	Discretionary Accruals
EBIT	Earnings Before Interest and Taxes
EC	Executive Compensation
EM	Earnings Management
FLEV	Firm Leverage
FP	Firm Profitability
FS	Firm Size
GAAP	Generally Accepted Accounting Principles
IFRS	International Financial Reporting Standards
MCGI	Malaysia Corporate Governance Index
NASDAQ	National Association of Securities Dealers Automated Association
NDA	Non-Discretionary Accruals
NSE	Nairobi Securities Exchange
NYSE	New York Securities Exchange
PAT	Positive Accounting Theory
PPE	Plant, Property and Equipment
SOX	Sarbanes-Oxley Act
S & P	Standard and Poor
UK	United Kingdom
US	United States
USA	United States of America
VIF	Variance Inflation Factors

ABSTRACT

The objective of this research was to establish relationship among corporate governance, executive compensation, firm characteristics and earnings management of listed companies in Kenya with an aim to resolve research gaps identified in the literature. The gaps are: first, there has been varied conclusions on how corporate governance impacts earnings management. Secondly, there were no insights on how possible intervening and moderating variables influences the relationship between corporate governance and earnings management. Finally, documentation on how corporate governance, executive compensation and firm characteristics influences earnings management is lacking. This study utilized four hypotheses as a means of testing the objectives and a population of 56 companies for the period 2008 to 2017. The main theories that supported this study were agency and positive accounting. In addition, the study adopted positivism philosophy as its focus was on hypothesis testing. Diagnostic tests conducted were serial correlation, stationarity, multicollinearity and homogeneity as a means of testing the model reliability. Multiple linear regression technique was adopted for data analysis. The findings were as follows: corporate governance has a significant effect on earnings management, executive compensation has a partial intervening effect on the relationship between corporate governance and earnings management, firm profitability and firm size moderates the relationship between corporate governance and earnings management and there is statistically significant relationship among corporate governance, executive compensation, firm characteristics and earnings management. Findings of this study adds to the existing knowledge on how corporate governance influences earnings management by revealing that such relationship is not direct and executive compensation, firm size and profitability impacts the relationship. The findings also add to agency and positive accounting theories by providing support on the relevance of having a structure in place that monitors the activities of managers to limit earnings management practices. Since the findings showed that board size influences earnings management, executive compensation mediates the relationship, firm size and firm profitability moderates the relationship such information will help regulators of listed companies when developing guidelines on good corporate governance structure and earnings quality by incorporating key aspects of board of directors, components of executive compensation and elements of firm size. It will also help future researchers by providing basis for theoretical and empirical discussions.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Corporate governance is the process that influences managers decisions in case of control and ownership separation (Larcker, Richardson & Tuna, 2007). An effective corporate governance structure separates power and initiates space for checks and balances that enhances fairness and transparency in the relationship of management and shareholders (Ogbulu & Emeni, 2012). Lacker and Tayan (2016) indicate that effectiveness of governance system relies on firm's core objectives and the role it plays in society. This effectiveness can be viewed from shareholders or stakeholder's perspectives. According to the shareholder's perspective, effective corporate governance increases value of equity holders by harmonizing incentives of shareholders and management. Stakeholder's perspective highlights that effectiveness of corporate governance leads to policies reinforcement that produces stable employment, mitigation of debt holders' risks and improvement in community (Lacker & Tayan, 2016).

Earnings are considered a significant component in financial reporting because it provides information about company's performance to various stakeholder groups (Almahrog, Marai & Knezevic, 2015). When shareholders invest in companies they are concerned with the firm's earnings since it is the determinant factor of their rewards that is dividends. The information on firms' earnings is usually summarized in the income statement. Earnings are also useful during asset valuation, determination of bonus plan for executives and contractual obligations such as debt covenants. Therefore, earnings management occurs when managers select accounting policies which affects earnings with an aim of achieving some specific reported earnings objectives (Scott, 2015). The presence of an effective corporate governance system

limits earnings management practices as it ensures that managers do not select accounting choices that do not reflect the true earnings of the firm

According to Norwani, Mohamed and Chek (2011) effectiveness of corporate governance structures as a monitoring device intended to protect investor's interests and control opportunistic managerial behaviour has been questioned over the years following collapse of companies such as Ahold, Enron and WorldCom in USA due to accounting fraud. There have also been questions of the integrity of financial reporting systems resulting from failure of the board as an oversight body. It is board of directors' role to supervise work of management to make sure quality is maintained when financial statements and reports are prepared.

Weak governance structures provide managers with opportunity to engage in behaviors that would lead to lower quality of reported earnings, that indicates decay in business ethics (Gonzalez & Garcia-Meca, 2014). The uncovering of accounting fraud in the stock markets in the years 2001 in Enron and 2002 in WorldCom resulted to the development of guidelines on corporate governance in various countries as a response to corporate scandals (Norwani et al., 2011). The responses entailed measures to protect transparency of information, reduce disagreement between shareholders and management and warrant auditors independence.

In Kenya, the first document of rule based guidelines on corporate governance practices were issued by Capital Markets Authority in 2002 under gazette notice No. 3362. This was later amended in 2015 under gazette notice number 1420 to principle based guidelines on corporate governance practices (CMA, 2015a). The current approach recognises satisfactory explanation and full disclosure of any non-compliance with the code guidelines by the board. In addition, the corporate governance guidelines promotes board members independence and

eliminates idea of duality on board chairmanship and chief executive officer positions (CMA, 2015a). It also encourages the need to have a remuneration or nomination committee in place that handles the compensation given to the executive directors. The continued collapse of companies worldwide and in Kenya which has been linked to earnings manipulation motivated the study to analyse the relationship between corporate governance and earnings management in the context of listed firms in Kenya.

Empirically, executive compensation has been listed as a motivation for managers to engage in earnings management since compensation such as bonus schemes and salaries are based on firm earnings for a particular period (Cornett, Marcus & Tehranian, 2008; Bergstresser & Philippon, 2006). The studies have also outlined that when executive compensations are linked to earnings it increases managers engagement in earnings management practices (Chang, Luo & Sun, 2011). Determination of executive compensations for Kenyan companies is a role of board of directors which is implemented by having remuneration or nominating committees as part of the BOD committees (CMA, 2015a). The establishment of remuneration committees limits the influence of executives in determination of their own pay. Therefore, executive compensation is a tool that can intervene correlation between earnings management and corporate governance, reason being executive compensation is determined through remuneration committee which is part of corporate governance structure and in turn compensation influences earnings management practises.

Firm characteristics have empirically been established to influence practices of earnings management (Kapoor & Goel, 2017; Bassiouny, Soliman & Ragab, 2016). The studies have varying results on how firm size, leverage and profitability impacts earnings management but they have not looked at the possible impact of these variables on asssocaition between

corporate governance and earnings management (Ghaffar, 2014). The association between corporate governance and earnings management can be moderated by factors like size of the firm, fnancial levarage and level of profitability. For this study the three components were considered as moderating variables..

Corporate governance being a system that is put in place to monitor the activities of the managers, plays a key role through the remuneration committee in establishing compensation of the executive directors. Empirically compensation has been regarded as a motivation for managers engagement in earnings management practices. The effectiveness of corporate governance system will determine how managers engage in activities of earnings management although this can be influenced by factors like size of the firm, profitability and leverage level. Due to this the study attempted to establish association among corporate governance,executive compensation, firm characteristics and earnings management.

This study is anchored on agency theory, positive accounting theory and information asymmetry theory. The theories attempt to describe relationship among corporate governance, executive compensation, firm characteristics and earnings management. Agency theory explains that for managers not to pursue their self-interested strategies, an appropriate governance structure that safeguards shareholders interest should be put in place (Jensen & Meckling, 1976). According to agency theory an organization corporate governance structure is effective when post of board chairman is held by a different individual with the post of chief executive officer. In addition, the board should have majority of independent members. This theory therefore explains how corporate governance influences earnings management. The theory supports the selection of board composition, board diversity, board size and remuneration committee as corporate governance components. It also supports the need to

have executive compensation as mediating variable since it explains the link between executive directors' rewards and the decisions they make with regards to firm earnings.

Information asymmetry theory specifies that when managers have superiority of information over the stakeholders, they can use such information to act opportunistically for their own gains, hence leading to manipulation of earnings (Auronen, 2003). The theory is relevant for this study because an effective corporate governance structure eliminates problem of information asymmetry and limits earnings management practises. This is because managers do not get undue advantage over the shareholders on information dissemination. The remuneration committee which sets the salary of executives plays a key role in ensuring that information about compensation is not limited to a few people which creates an unfair advantage and manipulation of accounting earnings. This theory supports the need to have an effective corporate governance structure in place as a means to limit earnings management through managers discretion on accounting decisions. It also supports the need to have a committee that establishes executives' compensation.

Positive accounting theory explains that managers have been given a choice to select accounting policies to adopt in relation to different transactions. The choices can lead to manipulation of earnings especially if the chosen policies benefits managers personal interests such as bonuses (Watts & Zimmerman, 1978). Positive accounting theory supports the requirement of having a successful corporate governance structure that monitors how executive directors operate, as this will ensure that manipulation of earnings is not done under the cover of generally accepted accounting principles. This theory is explained through three hypotheses. Bonus plan hypothesis indicates that when compensation contracts specify minimum levels of profits to grant bonuses it provides motivation for managers to participate

in earnings manipulation practices (Healy, 1985). Size hypothesis highlights that large sized firms' engagement in earnings management practises is more in comparison to firms of small size. On the other hand, debt/equity covenants hypothesis describes that the level of debt influences managers on their GAAP choices which in turn may lead to earnings manipulation. Positive accounting theory shows how corporate governance, executive compensation and firm characteristics jointly influences earnings management. The theory supports choice of executive compensation as mediating variable while size, leverage and profitability as moderating variables in the study. The theory also backs up conceptualization of dependent variable as discretionary accruals because it focuses on the discretionary choices that directors make which are within the limits of accounting standards.

Although studies such as Latif and Abdullah (2015); Buniamin, Johari, Rahman and Rauf (2012); Nugroho and Eko (2011); Bekiris and Doukakis (2011) among others have determined how earnings management is influenced by corporate governance, their studies relate to countries such as USA, Europe, Pakistan, Indonesia and Malaysia whose economy are considered developed. Minimal studies have been conducted on developing economy nations which have different macro level factors in comparison to developed countries. This motivated the study to determine joint association among corporate governance, executive compensation, earnings management and firm characteristics.

Study focus was listed companies at Nairobi Securities Exchange because it is essential for those companies to follow the laid down guidelines on corporate governance practices (CMA, 2015a). In Kenya the suspension and delisting of Marshall East Africa, A. Baumann, Hutchings Biemer, deacons, ARM cement and Atlas Africa Industries companies was attributed to lack of adherence to the laid down rules (NSE, 2017). There has also been

decline in the performance of some companies such as Mumias sugar, Uchumi supermarket, National Bank of Kenya and Kenya airways over the years that has been attributed to corporate governance challenges (Anyanzwa, 2018). These companies have adopted changes in their management boards as a scheme of improving performance and some have even considered restructuring as a technique to remain afloat but they have still been struggling financially. In the year 2016, trading of Chase Bank corporate bond at NSE was suspended after Central Bank of Kenya placed the bank on receivership due to weak governance structure and cases of earnings manipulation (NSE, 2016). The closure of Dubai bank in 2015 (CBK, 2015), Imperial and Chase banks being placed on receivership in 2016 were also due to weak corporate governance structure and earnings manipulation (CMA, 2015a; CBK, 2016). The selection of NSE was therefore key in determining whether corporate governance influences earnings management while considering the mediating influence of executive compensation and moderating influence of firm characteristics into the relationship.

1.1.1 Earnings Management

Earnings management entails managers usage of available prudence that GAAP provides in selecting and applying accounting principles to achieve its goals. It is performed within the framework of acceptable accounting practices (Scott, 2015). EM occurs when there is application of judgement by managers in financial reporting that entails organization of transactions which leads to changes in financial reports, with an intention of influencing contractual results that depend on accounting numbers or misguide stakeholders concerning financial outcome of a company (Healy & Wahlen, 1999). There are two ways in which earnings management may happen they include: income increasing also referred to as positive

or opportunistic earnings management and income decreasing referred also as negative or conservative earnings management (Yang, Chun & Ramadili, 2009).

Definition of earnings management entails the following: It is a legal, rational management decision making and disclosures meant for attaining steady as well as anticipated financial results (Rahman, Moniruzzaman and Sharif, 2013). They further stated earnings are indicators of how resources were allocated in capital market and represents extent to which value-added activities have been engaged into by a company. Man and Wong (2013) defines earnings management as managers decision on various accounting choices, other operations such as voluntary disclosure, estimation of accruals with an aim to impact earnings deliberately and voluntary earnings forecasting while Davidson III, Jiraporn, Kim and Nemec (2004) defines it as application of variability in accounting concepts which enables managers interference with earnings reported, hence distorting the income reported. From the various definitions' earnings management entails usage of accounting methods that leads to manipulation of financial statements for specific reasons.

Stice, Stice and Skousen (2007) indicates that managers participate in earnings management practises because of the need to accomplish internal organization targets, the need to attain external business expectations, need for income smoothing and window dressing for purposes of loan or initial public offer. The other motivations for managing earnings include increasing manager's compensation tied to reported earnings, increasing stock price and lobbying for government subsidies (Subramanyam, 2014). Moreover, other motivations for earnings management according to Scott (2015) are bonus purposes, debt covenants, need to meet investors' expectations and for stock offerings.

Subramanyam (2014) and Scott (2015) indicate that managers can engage in earnings management practises through income maximization, income minimization or big bath and income smoothing techniques. Income maximization occurs when managers increase current period's reported income to portray good performance of company. Big bath/ income minimization is when managers reduce current period income by recognizing future periods costs in the current period when the company has recorded poor performance or when unusual events such as management change, merger, or restructuring has occurred. Income smoothing on the other hand, entails not disclosing part of earnings in profitable periods through reserves creation and disclosing them in periods when firm's performance is bad (Subramanyam, 2014; Scott, 2015). They further document that earnings management may involve altering methods of accounting, this is considered obvious design of earnings management or modifying accounting policies and estimates this is regarded as invisible form of earnings management.

Accrual based management of earnings takes place at the time managers employ their prudence and judgement in relation to accounting choices during the financial reporting process while real activities earnings management is motivated by manager's desire to mislead stakeholder's which is achieved through departures from normal business practises (Kothari, Mizik & Roychowdhury, 2015). The accrual component of earnings is that portion of revenue and expense items on the income statement that is not represented by cash flow. In any business which uses accrual accounting, there will be a certain level of accruals that correlate with the level of activities. Managers can participate into earnings management practises through decrease or increase of normal accruals as this will result in manipulation of reported income.

Epps and Ismail (2009) summarize that accruals concept as given under the generally accepted accounting principles, allows firms to document financial effects of transactions and other events in the periods in which they occur and not only when cash is paid or received. This approach gives managers an opportunity to decide on the information that they can disclose especially if it's not a requirement by the International Accounting Standards Board hence being an open door for them to participate earnings management (Epps & Ismail, 2009; Xie, Davidson III & DaDalt, 2003).

Earnings management practises can be attributed to accounting standards flexibility that enables managers to approximate and forecast accounting numbers which may not reflect the actual economic environment of a company (Arun, Almahrog & Aribi, 2015). When disclosed earnings are modified in accordance to GAAP for example choice of accounting techniques, its application and timing of asset purchases and disposals then earnings management is legal but when the adjustments are outside the stipulated accounting principles then earnings management is regarded fraudulent and an illegal activity (Yang et al., 2009; Park & Shin, 2004).

Park and Shin (2004) further state that even when there is no fraudulent reporting, companies can still alter reported income since GAAP gives options on different ways by which accounting events can be presented. Alteration of earnings can be done when management chooses accounting method that delays or advances realization of revenues and expenses with the intention to change the reported earnings upwards or downwards. After an accounting method has been selected, management can further manipulate reported earnings by using a wide scope of discretionary features of the utilization of the selected accounting methods

(Park & Shin, 2004). This manipulation of reported earnings can be reduced when there is an effective supervision of managers activities through efficient governance structure.

Earnings management concept is anchored on positive accounting and agency theory. The theories outline that when management act on their own behalf and in an opportunistic manner while ignoring the shareholders interest, it may lead to earnings manipulation (Jensen & Meckling, 1976: Watts & Zimmerman, 1986). The theory of agency is related to agency problem which occurs when managers operate a company without shareholders' best interests, it arises when investors and other stakeholders are not able to make optimal decisions concerning a company.

When firms participate in earnings management practices it influences stakeholders' financial decisions since it is based on numbers which perhaps do not depict accurate economic conditions of the firm. This may result in agency problem and in the end, agency costs (Davidson III et al., 2004). Positive accounting theory stipulates that manager select accounting policies that can decrease payment of taxes, help in securing favourable regulations, decrease costs of information production, lower political costs and grow accounting earnings (Watts & Zimmerman, 1978).

Empirically, earnings management has been measured as discretionary accruals that is computed using different models which include Modified Jones model by Uwuigbe, Ranti and Okorie (2015); Iraya, Mwangi and Muchoki (2015); Nugroho and Eko (2011) among others; Larcker and Richardson model that incorporate book value and operating cash flows components, used by Bekiris and Doukakis (2011); Yoon model which focuses on the concept that total accruals is dependent on revenue from cash sales , variation in cash and some non-

cash expenses this was used by Islam, Ali and Ahmad (2011); Dechow-Dichev (DD) model and modified DD model used by Peni and Vähämaa (2010), KS model utilized by Ardison, Martinez and Galdi (2012) while Chang et al. (2011); Lakhal, Aguir, Lakhal and Malek (2015) utilised Kothari formula which incorporates an intercept and lagged return on assets to diminish econometrics problems in estimating discretionary accruals. In all the aforementioned models, Modified Jones model has commonly been utilised in determining discretionary accruals. Therefore, this model was used for this study as it has empirically been proven to be the most reliable way of identifying managerial discretions in financial statements.

1.1.2 Corporate Governance

Corporate governance is a structure that administers firms' operations towards increasing business success and responsibility to stakeholders with an aim of achieving shareholders value while considering other stakeholder's interests (CMA, 2015a). Larcker and Tayan (2016) defines it as group of control systems embraced by an organization to avert managers from participating in activities that are unfavourable to the prosperity of stakeholders. Hitt, Ireland and Hoskisson (2007) defines it as set of procedures that directs strategic management and performance of organizations through managing relationship among stakeholder while Liu, Harris and Omar (2013) define CG as an internal mechanism which intends to ensure shareholders and managers interests are aligned and there is good management of issues related to companies' decision makings and operations.

Corporate governance is an oversight system, both external and internal to firms, which guarantees that organizations execute their responsibility to each stakeholder and behave in a philosophically accountable manner in every sector of their company activity. It entails

ensuring accountability, credibility and transparency while maintaining effective channel of information disclosures (Norwani et al., 2011). Murthy (as cited in Norwani et al., 2011) indicates that effective corporate governance should ensure maximization of shareholders value while ensuring equity and transparency to every stakeholder.

Corporate governance monitoring mechanisms are divided into external and internal components. Board of directors and ownership concentration constitutes the internal components while market for corporate control is an external component (Hitt et al., 2007). Hitt et al. (2007) defines board of directors as individuals whose responsibility is to represent firm owners by evaluating strategic decisions of top-level managers. BOD has also been defined by Gonzalez and Garcia-Meca (2014) as a jurisdiction which shareholders assign responsibility of approving major firms' strategic projects and overseeing managers activities. Hitt et al. (2007) also defines ownership concentration as proportion of stock that executive directors own and number of large-block stockholders, while market for corporate control mechanisms consists of set of possible individuals and firms that seek to acquire firms that are undervalued with an intention of earning an above average returns on their investments.

The board of directors undertakes major part in company's general administration and in particular overseeing activities of top management (Jensen and Meckling, 1976). It is regarded as a crucial element of corporate governance. It is also considered a vital internal mechanism element used in reduction of agency conflicts. Dey (2008) documents that board composition, independent board committees, independent audit committees, board size and directors age are components that constitute board of director's variable of corporate governance.

Lacker and Tayan (2016) documents that at the lowest, corporate governance monitoring structure entails board of directors who are mandated to supervise managers and outside auditors. The role of auditors is to communicate an opinion in relation to financial statements trustworthiness. Liu et al. (2013) additionally state that corporate governance is significant because it provides effectual monitoring that ensures shareholders and managers' interests are aligned and integrity of financial information is upheld. According to CMA (2015a) the focal point of corporate governance regulatory body has been to increase reliability of financial information, increase ability of directors to dispense their duties and to ensure there is dependability on financial information being prepared.

Corporate governance concept is anchored on agency and information asymmetry theories. The agency theorist suggests that board of director's effectiveness in their monitoring role is determined by dominance of non-executive directors (Jensen & Meckling, 1976; Dey, 2008). According to Bekiris and Doukakis (2011) good corporate governance system will bring together the affairs of shareholders with those of managers and decrease agency costs leading to constrain of management's personal gain motives and high-quality financial reports. The agency theory supports the concept of board being diverse in terms of gender, age and education background. The Capital Markets Act encourages board size that is inclusive of members with wider expertise and skills but discourages a larger board that may undermine interactive discussions (CMA, 2015a). The problem of information asymmetry can be resolved through effective corporate governance structure that ensures shareholders are not biased of any information that may be relevant to them.

Board composition is represented as the number of people on BOD. Kenyan corporate governance code states that BOD ought to consist of symmetrical number of external and

internal directors with non-executive/external directors as majority members (CMA, 2015a). Additionally, it outlines that board composition should reflect the company's shareholding structure. Yang et al. (2009) states that, non-executive directors' role is to give unrestrained opinion to the BOD and provide check and balance on activities of inside directors. The board also have an important task of managing agency problems. Board members independence promotes fairness in board decisions and ensures effective control of managers activities hence promoting information transparency and image of the firm (Garcia-Meca & Sanchez-Ballesta, 2009).

Presence of external directors on the BOD makes it more efficient in supervising managers and executing control on shareholders behalf (Fama & Jensen, 1983). There are several empirical evidences on how independent directors influence earnings management. The studies have revealed that when board has high number of independent directors, firm produces high quality financial information and there is reduction in practices of earnings management practises (Dey, 2008; Iraya et al., 2015; Abbadi, Hijazi & Al-Rahahleh, 2016). Other studies however depict board independence not to have significant association with earnings management (Gonzalez & Garcia-Meca, 2014; Abed, Al-Attar & Suwaidan, 2012; Shah, Zafar & Durrani, 2009).

The board composition of this study was computed as percentage of external directors on board (Nugroho & Eko, 2011; Dey, 2008). Dey (2008) defines executive/ inside directors as employees of the company while non-executive/ external directors are people not employed by the company. The external directors are regarded to be independent from management and not involved with company in any business activities or association that could significantly affect with the use of their independent judgment.

Board diversity is representation of various groups of people in relation to their ethnic and gender differences on the board (Buniamin et al., 2012). Diversity is a group of social, personal and institutional attributes that adds to forming of personality and identity of individuals. The Kenyan rule of corporate governance practises outlines that board should have policy which enhances attainment of diversity in its composition. The rule documents that diversity relates to age, gender, relevant industry knowledge, experience, academic qualifications, technical expertise, nationality and race (CMA, 2015a). This guideline also specifies that nomination of board members should be sensitive to gender and not appear to portray interest of a narrow or single constituency

The empirical studies have outlined contradictory conclusions on association between women directors and earnings management. For some studies, it was evident that firms with high number of women directors or women CFOs followed more conventional financial reporting approach hence engaged in less in earnings management practises or income decreasing discretionary accruals (Gavious, Segev & Yosef, 2012; Lakhal et al., 2015; Enofe, Iyafekhe & Eniola, 2017). Buniamin et al. (2012) concluded that when female directors are high in number as compared to men it results to an increase in earnings management practises while studies by Sun, Liu and Lan (2011); Hili and Affess (2012) revealed women representation on board have no significant influence on earnings management. These contradictory findings led to inclusion of board diversity as corporate governance components. For this study board diversity was determined as ratio of women to men on the board of directors.

Conyon and He (2011) defines board size as number of all individuals who constitute the board. The Kenyan code of corporate governance does not document how many members should constitute a board and instead it outlines that BOD should have a number that will

permit the core mandate of the company be attained (CMA, 2015a). The guideline further states the board size should not be too big to limit interactive discussions when board meetings are held or too small to compromise its monitoring effectiveness. Jensen and Meckling (1976) indicate that when board size is large its advantageous to the company as board members are able to share various experiences of managing the firm hence leading to decrease in incidences of earnings manipulation.

Empirically, studies on how board size influences earnings management have had contradictory results. Some research document that firms with small board sizes engaged less in earnings management practises (Okougbo & Okike, 2015; Epps & Ismail, 2009) while other researches like Abed et al. (2012) indicate negative association exists between board size and earnings management meaning when we have small sized board, practices of earnings management is high. For this study, board size was represented as logarithm of total board members.

Remuneration committee is one of board committees set up to determine among other things the compensation of directors. CMA (2015a) needs board of directors to establish an independent remuneration committee or designate the order to a nomination committee that consists mainly of independent directors, to give recommendations on directors' remuneration and structure of their compensation package. Studies have revealed that independence of remuneration committee lowers activities of earnings management in a firm (Liu et al., 2013; Epps & Ismail, 2009). For this study the component of remuneration committee was computed as proportion of independent members on committee.

The internal structure of corporate governance has been the focus of changes in governance laws and earlier researches. Presence of a well-structured corporate governance system has an ability to lower practices of earnings management in a firm, due to its role of ensuring that financial reporting process done by management are effectively monitored. Empirically, there has been inconsistent conclusions on association between corporate governance measures and earnings management. Following the inconsistencies, this research examined relationship between corporate governance and earnings management with board of directors as component of corporate governance. BOD was operationalized to include board composition, size of board, board diversity and remuneration committee independence. This study also expanded its relationship to incorporate executive compensation and firm characteristics as mediators and moderators of association that links corporate governance and earnings management.

1.1.3 Executive Compensation

Scott (2015) defines executive compensation plan as agency contract linking the managers and firm that aims at bringing together owners and managers interests. This is attained by determining manager's compensation based on his or her performance in the company. Compensation is the monetary and non-monetary benefits given to top managers of a firm in exchange for their services to an organization (Mallin, 2010). The governing boards of companies utilize management compensation contracts in an attempt to ensure that management actions result in successful performance for a firm (Ashley & Yang, 2004). It is the responsibility of compensation committee of the board to recommend how executive directors should be compensated (Larcker & Tayan, 2016; Laux & Laux, 2009).

Larcker and Tayan (2016) outline that compensation plan adopted by the committee must attract right people in the position of manager. It must be sufficient to retain those individuals and motivate them to perform appropriately. This agrees with guidelines outlined in the Kenyan code of corporate governance practices in relation to executive's compensations (CMA, 2015a). Adams and Ferreira (2009) defines total director's compensation as the sum of annual retainer, meeting allowance multiplied by the times board meetings were held and amount of all stock-based compensations. Compensation of executive directors entails the following five basic components annual bonus, salary, long term incentives plans, restricted option grants and restricted stock grants (Frydman & Jenter, 2010; Conyon, 2006; Lacker & Tayan, 2016).

Salary is the predetermined cash payments made equally on a monthly basis to the executives. Annual bonus is based on accounting performance measures and it is the incremental payment, mainly in form of cash awarded to the executives when firm's annual performance exceeds predetermined targets (Conyon, 2006; Lacker & Tayan, 2016; Cornett et al., 2008; Mallin, 2010; Conyon & He, 2011). Stock options is a right, but not a requirement, to buy stocks in future at a set exercise price. Restricted stock is an outright grant of shares that are limited in terms of their transferability and are subject to a time-based vesting schedule (Mallin, 2010; Conyon & He, 2011; Lacker & Tayan, 2016). According to Cornett et al. (2008) stock options and restricted stock compensation is majorly a means that management can utilize inorder to increase its wealth. This can be done through inflation of stock prices in years when the business does sales of stock or exercise options.

The other benefits that managers can get include performance shares, perquisites and contractual agreements. Performance shares can be in form of equity or cash awards that are

allowed only after specified financial and non-financial targets are met during a time period of three- to five-years. Perquisites entails other facilities bought or provided by the company, for example use of company car, club memberships and company house. Contractual agreements are other stock and cash payments specified in the employment contract which may include post-retirement consulting agreements, severance agreements and golden parachutes (Cornett et al., 2008; Mallin, 2010; Conyon & He, 2011; Lacker & Tayan, 2016).

Agency theorist suggest that compensation contract is one of the means of monitoring behaviours of an agent as it perfectly aligns interest of principals and agent (Jensen & Meckling, 1976). On the other hand, positive accounting theory asserts that when executive remuneration is paid as bonus plans linked to firms' earnings there is a high chance that managers will take part in earnings management (Watts & Zimmerman, 1986). Conyon and He (2011) indicate that executives' pay in an organization is determined based on magnitude of agency problems, economic factors and difficulty of aligning shareholders and managerial interests.

Several studies such as Epps and Ismail (2014) and Xie et al. (2003) point out when managers' rewards are pegged on firms' earnings, they are inspired to participate in practices of earnings management so as to portray the firm as performing better. Xie et al. (2003) further indicate that many companies compensate their managers directly using salary and bonuses while indirectly they are compensated inform of promotions in the future, prestige and security of job that's dependent on earnings performance of a firm in respect to specific predetermined standard.

Studies by Chhaochharia and Grinstein (2009); Conyon & He (2011); Laux and Laux (2009) findings revealed in companies where executive remuneration is more closely linked to stock value practices of EM is more requent and high. Laux and Laux (2009) outline that since compensation linked to stocks encourages CEOs to influence earnings there is need to have separation of roles on the board by having an established compensation committee which is tasked with the role of overseeing the process of setting CEOs compensation.

This study incorporated executive compensation as one of its variables and it consists of cash and non-cash benefits given to executives measured as logarithmn of cummulative cash and equity incentives. Executive compensation is the mediating variable of this study.

1.1.4 Firm Characteristics

The distinctive features that differentiate one firm from another can be defined as firm characteristics. There is inconclusive result on firm characteristics impact on relationship between corporate governance and earnings management. Firm size, leverage and profitability are elements that represents firm characteristics for this study. These three characteristics were selected because they are the ones that can directly influence the practises of managers to take part in earnings management.

Bassiouny et al. (2016) defines firm size as total asset of a company. Political cost hypothesis outlines that size of firm influences manager's decision on accounting procedures to adopt. It states that large sized firms would participate in earnings management practices to escalate their reported profits due to great attention from the public as compared to small sized firms (Watts & Zimmerman, 1986). In addition, Jensen and Meckling (1976) states that large sized

firms witness higher agency costs as compared to small sized firms and this means greater opportunistic practices.

Uwuigbe et al. (2015); Enofe et al. (2017); Nalarreason, Sutrisno and Mardiati (2019) findings revealed that large firms' engagement to earnings management practices is more which is contrary to findings by Ahmad, Anjum and Azeem (2014); Abbadi et al. (2016) who state that firms that are large sized engage in less earnings management practise. Furthermore, findings of the studies by Waweru and Riro (2013); Veronica (2015) revealed size of firm does not significantly influence earnings management. Computation of size was done using logarithm of total assets which is similar to the formula adopted by Bekiris and Doukakis (2011); Waweru and Riro (2013); Uwuigbe et al. (2015) in computation of firm size.

Firm leverage represents capital structure of a firm that utilises debt (Uwuigbe et al., 2015). It is also defined as firm's ability to utilize assets that has fixed costs in order to increase income level for company shareholders. Ehrhardt and Brigham (2011) divides firm leverage into operating and financial. Operating leverage is the extent to which firm uses fixed costs in its operations while financial leverage is the extent to which a firm uses debt and preferred stock in its capital structure

Debt covenant hypothesis states that company debt equity ratio has an impact on the various decisions that firms make with regards to reported earnings for the period (Watts & Zimmerman, 1986). Ardison et al. (2012) indicate that opportunistic behaviour of managers decreases when there is an increase in leverage because when a firm is highly leveraged its cash flows is affected due to debt repayments and there is more scrutiny of the firm by the lenders. These findings are contrary to the ones by Waweru and Riro (2013); Bekiris and

Doukakis (2011); Abbadi et al. (2016) Nalarreason et al. (2019) who concluded that earnings management is associated positively with leverage. Studies by Uwuigbe et al. (2015); Veronica (2015); Ardison et al. (2012) found firms that are highly leveraged do not engage in earnings management practises. This study calculated firm leverage as a ratio of total debt which is the same measurement used in studies by Waweru and Riro (2013); Bassiouny et al. (2016); Uwuigbe et al. (2015). The measure reveals how firm depends on financing through debt in relation to equity.

Ghaffar (2014) indicate that profitability represents profits of the firm. Positive accounting theory states that decisions on accounting choices are dependent on various business decisions such as level of expected bonus linked to firm earnings, anticipated earnings for the period among others (Watts & Zimmerman, 1978). Trisnawati, Sasongko and Fauzi (2015) outline that companies with high profits strive to raise the amount of reported earnings so as to maintain investors' confidence while Sun and Rath (2009); Latridis and Kadorinis (2009); Abbadi et al. (2016) in their studies show that lower profitable firms easily take part in earnings management practices as compared to highly profitable firms. This study measured profitability as return on asset ratio which is in line with the measures adopted by Ghaffar (2014); Kapoor and Goel (2017) among others.

1.1.5 Companies Listed at Nairobi Securities Exchange

The registration of Nairobi Securities Exchange under societies act took place in 1954. Capital Markets Authority are the regulators of NSE in Kenya. Companies listed at NSE includes all companies whose shares trade at Nairobi securities exchange. According to NSE (2017) sixty-five companies were listed and trading at NSE as at 31st December 2017. The

firms are classified into insurance, investment, agricultural, investment services, commercial and services, automobile and accessories, allied and construction, banking, petroleum and energy, real estate investment trust, manufacturing, technology and telecommunication sectors as per Appendix II.

It is mandatory for all companies listed at NSE to adhere to the corporate governance guidelines. In the year 2002, Capital Market Authority published its first corporate governance practices guidelines for only listed companies which was revoked in 2015 and a new code that included guidelines for listed and non-listed companies were issued. The new issue was a measure to improve the existing guidelines on corporate governance practices (CMA, 2015a). The guideline outlines various aspects that listed firms needs to comply with such as board composition which entails board size, number of independent and non-independent directors among other items. The listed firms are also required to annually publish corporate governance statements that outlines the corporate governance system that the company adopted.

CMA (2015a) also recommends how directors are to be remunerated. This guideline further states that, executive director's remuneration should be connected to performance among them share option scheme so as to ensure shareholders value is maximized. Juma (2015) stated that the combined value of shares held by employees of firms listed at NSE through employee share options schemes increased to Ksh 8.5 billion in 2014 from Ksh 8.2 billion in 2013 indicating that companies compensate their executive's directors using stock options. The CMA guideline requires disclosures on compensations be done annually and should include incentives of directors and top management that entail fees, emoluments, share options, other forms of compensation and aggregate director's loans (CMA, 2015a).

Firms listed at NSE have experienced tremendous changes over the years in terms of their profitability, size and leverage. Waweru and Riro (2013) found that performance of firms at NSE for years 2006 to 2010 had a mean of 15.27, firm size mean was 23.66 and leverage had 42.1% while in the year 2013 the average profitability of the firms listed at NSE was 19% and the leverage mean score was 50%. For one to determine whether firms participated in earnings management, financial statements analysis should be conducted so as to examine how various accounting decisions have been made in relation to accruals. IFRS recommends that firms should prepare their financial statements using accrual accounting concept and this is adopted by companies listed in Kenya (IFRS Newsletter, 2015). In Kenya, listed companies are required to publish their annual financial reports which outlines the company's financial performance and position.

The choice of NSE listed companies was due to emphasis being placed on the listed firms with regards to adherence to code of corporate governance practices (CMA, 2015a) and listed companies contributes to a larger percentage of the countrys' economy. In addition it is a requirement for the listed companies to publish their annual reports this will make it possible for the accessibility of corporate governance statements and financial reports that are key data components for the study.

1.2 Research Problem

Shareholders invest in companies with an objective of maximizing their wealth while getting dividends from earnings as return on their investment. Agency theory supports this argument by stating that effective corporate governance mechanism needs to be in place to guard managers in engaging into earnings manipulation that can result into loss of shareholders wealth (Jensen & Meckling, 1976). The flexibility of making choices on various accounting

treatments by accountants in accordance with IFRS has given managers an opportunity to practise earnings management (IFRS newsletter, 2015).

Despite continuous emphasis being placed on corporate governance as a device for safeguarding shareholders wealth, cases of corporate scandals are still rife both internationally and locally. Internationally, they include Enron, WorldCom and Ahold in the USA (Norwani et al., 2011) and bankruptcy of Pramuka Bank (Kalainathan & Vijayarani, 2014) in Sri Lanka among others. Locally, placement of Imperial Bank on receivership in 2015 was largely attributed to misrepresentation of financial statements (CMA,2015b). Dubai Bank was closed in 2015 due to weak corporate governance and failure to maintain adequate capital and liquidity ratios (CBK, 2015). The placement of Chase Bank on receivership in 2016 was blamed on directors lending themselves more than 25% of the total credit limit set in the banking act resulting into liquidity difficulties which shows the existence of weak corporate governance structure (CBK, 2016). CMA amended the corporate governance guidelines code in the year 2015 (CMA, 2015a) as a means of addressing shortcomings of corporate governance practises in Kenya. This study was motivated by continued cases of corporate scandals despite existence of corporate goverance mechanisms in companies.

Although some studies such as Waweru and Riro (2013); Nugroho and Eko (2011); Buniamin et al. (2012); Iraya et al. (2015); Abed et al. (2012) have attempted to explain how earnings management is influenced by corporate governance, their findings have given conflicting results. For example, Waweru and Riro (2013) concluded that when ownership concentration of a firm increases its earnings management practices increases. Abed at al. (2012) concluded that the board size had negative significant effect on earnings management while Iraya et al. (2015) findings established that an increase in ownership concentration, board independence

and board size decrease practice of earnings management. In addition, Nugroho and Eko (2011) results indicated independence of board members, size and audit committees had no direct influence on earnings management practices while Buniamin et al. (2012 results revealed that women on board have a positive significant effect on discretionary accruals. The different conclusions of these studies were in relation to how corporate governance was operationalized. Different studies adopted different components of operationalizing corporate governance. The current study focused on only board composition as components of corporate governance as this is considered a key component that influences effectiveness of corporate governance structure.

Executive remuneration has been regarded empirically as a key motivator of manager's engagement in earnings management practices. According to CMA (2015a) remuneration of executives is set by board of directors and they should include share option schemes so as to ensure shareholders value is maximized. The link between compensation and firm earnings motivates executives to take part in earnings management. Empirically, the relationship between corporate governance and earnings management has been regarded as not direct and executive compensation is a possible mediating variable.

Empirically, influence of firm characteristics and executive compensation on corporate governance and earnings management relationship is still not conclusive. Studies by Cornett et al. (2008); Chhaochharia and Grinstein (2009) summarized that executive compensation linked to equity leads to high earnings management practices. Kapoor and Goel (2017); Sun and Rath (2009) found that firm size and profitability influences earnings management practices while studies by Latridis and Kadorinis (2009); Waweru and Riro (2013); Latif and Abdullah (2015); Uwuigbe et al. (2015) revealed that leverage may have negative, positive or

no influence on earnings management. Conflicting empirical studies results is an indication that direct association between corporate governance and earnings management does not exist. This is attributed to the possible mediating influence of executive compensation and moderating influence of firm characteristics in the relationship. Executive compensation is usually determined by the remuneration committee that forms part of the board of directors therefore their input will determine how managers are motivated financially and its impact on practises of earnings management. Firm characteristics are various components that make firms unique, the difference in firm characteristics can result to various practises of earnings management.

There was also methodological differences on how earnings management was measured because different researchers utilized different models to determine the discretionary accruals for example Bekiris and Doukakis (2011) used Larcker and Richardson model which included book to market value; Islam et al. (2011) used Yoon model, Peni and Vähämaa (2010) used Dechow-Dichev (DD) model and modified DD model , Chang et al. (2011) utilised Kothari model while Uwuigbe et al. (2015); Iraya et al. (2015) used Modified Jones model which may result to varying results on relationship between corporate governance and earnings management. Modified Jones model was utilized in this study since it is considered effective in detection of earnings management (Cornett et al., 2008; Dechow, Sloan & Sweeney, 1995).

Empirical studies revealed contextual differences which was evidenced from the chosen scope of studies. Some research among them Okougbo and Okike (2015); Bassiouny et al. (2016); Rauf et al. (2012) excluded financial institutions from the samples, others studies were specific to a certain sector of the industry like textile (Buniamin et al., 2012; Bekiris & Doukakis, 2011), family and non-family owned listed companies (Mansor, Che-Ahmad,

Ahmad-Zaluki & Osman, 2013); banking sectors (Ghaffar, 2014) while others considered all listed firms at the securities exchange (Iraya et al., 2015, Waweru & Riro, 2013). The differences in scope is a possible explanation of the varying results in the reviewed studies. Most of the studies had omitted financial institutions yet for this study it has been incorporated since in Kenya we have witnessed banks collapsing due to weak corporate governance structure and earnings management practices. This gap was addressed in the study by focusing on firms from all sectors that are listed at NSE because of their uniqueness.

Moreover, for association between corporate governance and earnings management, reviewed studies focus has been on countries that are regarded to have developed economies such as USA, Australia, Athens, Milan and Indonesia (Latif & Abdullah, 2015; Bergstresser & Philippon, 2006; Cornett et al., 2008) and limited studies have focused on developing countries such as Kenya. The macro level factors in Kenya are different with that of developed nations hence the need to establish relationship between corporate governances and earnings management practises in Kenyan context which is focus of this study.

There were also theoretical gaps in how the theories explained association between corporate governance and earnings management. Agency theorists implied when managers are well compensated, they will not pursue their selfish interest and instead will focus on the shareholder's interest by not participating in earnings management (Jensen & Meckling, 1976). On the other hand, positive accounting theory through bonus plan hypothesis indicates that when managers are compensated especially using stock compensation, they will be inspired to take part in earnings management for their personal gains (Watts & Zimmerman, 1978). These contradictions of theoretical explanation on how corporate governance

influences earnings management can be resolved by board of directors' composition. The board is mandated with setting of executive's compensation.

In order to address the above contextual, conceptual, methodological and theoretical gaps, this study attempted to establish relationship among corporate governance, executive compensation, firm characteristics and earnings management of listed companies in Kenya through answering the question: is there relationship among corporate governance, executive compensation, firm characteristics and earnings management of companies listed at Nairobi Securities Exchange?

1.3 Research Objectives

The main objective is to establish relationships among corporate governance, executive compensation, firm characteristics and earnings management of companies listed at Nairobi Securities Exchange. The specific objectives are:

i) To determine relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange.

ii) To establish influence of executive compensation in relationship between corporate governance and earning management of companies listed at Nairobi Securities Exchange.

iii) To determine influence of firm characteristics in relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange.

iv) To determine joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at Nairobi Securities Exchange.

1.4 Value of the Study

Regulators will benefit from this study for policy formulation and implementation of the code of corporate governance guidelines gazette No. 1420 of 2015. The findings will enable CMA to understand how corporate governance, executive compensation and firm characteristics influence firm earnings. This will therefore guide them on future amendments on the existing code of corporate governance guidelines by incorporating aspects of corporate governance measures, standards on development of executive compensation policies and differentiation method of corporate governance system based on the uniqueness of firm characteristics.

The study findings add on existing knowledge of corporate governance, executive compensation and earnings management by affirming agency theory, positive accounting theory and information asymmetry theory. The findings of the study on how corporate governance, executive compensation and firm characteristics affect earnings management affirms how important agents are in ensuring interest of principals are achieved, it also shows how information asymmetry influences organization decisions and indicates how accounting choices affects firm earnings hence adding or confirming agency, positive accounting and information asymmetry theories.

The study findings are important to top management of the companies as it will help them to understand how corporate governance structure, firm characteristics and executive compensation influences the reported earnings. It will also help top management to

understand role board of directors play in guaranteeing that reported earnings show the true financial position of a company.

The future researches will use findings of this study to form a foundation for the empirical investigation as the study has expanded association between corporate governance and earnings management by incorporating how executive compensation and firm characteristics influences the relationship.

1.5 Organisation of the Thesis

Organization of the study has been divided into six chapters which are discussed as follows: Chapter one was introduction section that briefly described the background of study. This was followed by discussion of study main variables which include corporate governance, executive compensation, firm characteristics and earnings management. The contextual discussion on firms listed at NSE were done. These discussions were followed by research problem, research objectives, value of study and thesis organization.

The second chapter discusses theoretical foundation of study and empirical review that explains interrelationships among study variables. The theories included agency theory, positive accounting theory and information asymmetry theory. The chapter also has summary of the empirical studies that had been reviewed. The chapter ends by discussing the conceptual framework of the research and hypotheses that have been developed from the research objectives.

Third chapter entails research methodology. It also includes research design, philosophy, study population, methods of data collection, diagnostics tests, study variables operationalization and techniques of data analysis. In chapter four regression results of

earnings management, descriptive statistics, results of diagnostic tests and correlation analysis of various relationships are discussed.

Chapter five provides discussion of findings and tests of hypotheses. This includes correlation between corporate governance and earnings management, moderating influence of firm characteristics on association and mediating influence of executive compensation on corporate governance and earnings management relationship. It also discussed combined relationship among corporate governance, executive compensation, firm characteristics and earnings management. Finally, chapter six covers summary of results, conclusions, contributions of study, suggestions for further research and limitations of research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter covers theoretical foundation of this research and empirical evidence on association among corporate governance, executive compensation, firm characteristics and earnings management. This chapter also covers empirical literature review summary, conceptual framework and research hypotheses derived from specific study objectives.

2.2 Theoretical Foundation

The various theories that explains relationship among corporate governance, executive compensation, firm characteristics and earnings management have been discussed in this section. The study is anchored on positive accounting theory, agency theory and information asymmetry theory. The theories discussion are as follows:

2.2.1 Positive Accounting Theory

The development of this theory was pioneered by Watts and Zimmerman (1986) with an attempt to explain how firms make choices on particular accounting methods and their influence on reported earnings. The theory proposes that managers always select accounting approaches that enables them maximize their personal wealth. The accounting choices of the managers can be understood by understanding the three key hypotheses proposed by the theory which include bonus plan hypothesis, political cost or size hypothesis and debt/equity covenant hypotheses (Watts & Zimmerman, 1986).

The bonus plan hypothesis indicates when managers are paid compensation inform of bonuses that are linked to earnings, they have a high chance of engaging in earnings management

practices. Debt/equity covenant hypothesis state that a high debt equity ratio may result to high chances of firms violating its debt covenants which may result to the managers using their discretion to conduct earnings manipulation. On the other hand, Watts and Zimmerman, (1986) highlight as per size hypothesis, firm size influences earnings management practices and managers of large sized firm are likely to influence earnings reported for a period in comparison to small sized firm manager.

Positive accounting theory asserts that opportunistic behaviours such as earnings management is encouraged by the level of freedom that managers are given in the determining accounting policies. These opportunistic behaviours to participate in earnings management can be monitored when company adheres to effective corporate governance practises. It also supports that nature of executive compensation will determine the managers motivation to focus on stakeholders' concerns. In addition, effective governance structure assists investors by first, bringing together affairs of shareholders with those of managers and secondly, increasing financial information credibility and trustworthiness of financial reporting process (Watts and Zimmerman,1986). This theory is concerned with explaining how various accounting practices influences management decisions in relations to reported earnings but does not give guideline on the appropriate accounting practices to be adopted when situations require use of judgement and estimates.

PAT theory is relevant in relation to corporate governance, executive compensation, firm characteristics and earnings management variables. According to this theory, when executive compensation is linked to bonus there is likelihood of earnings manipulation. It also outlines that the expected profits for the period, leverage level and size of the firm have a role in influencing manager's decision in relation to reported earnings. Therefore, the theory supports

proposal of corporate governance negatively influencing earnings management. It also supports the possible mediation and moderation effect of executive compensation and firm characteristics on association between corporate governance and earnings management.

2.2.2 Agency Theory

The theory was developed by Jensen and Meckling (1976). It states that agency relationship happens when the agent is concerned about principal interest in a specific area of making decisions. The foundation of the theory is on belief that interest of the principal and the agents are different (Hill & Jones, 1992). They further indicate that opportunistic action by the agent can be limited when an appropriate incentive for the agent is established by the principal.

Eisenhardt (1989) explains that establishment of most effective contract governing the agent principal relationship is the main focus of agency theory. This is because the theory attempts to resolve two problems that are caused by agency relationship. First, it's the problem that comes about when principal and agents' desires conflict and when it is hard for the principal to confirm the work being done by the agent. Secondly, it is risk sharing problem that arises when principal and agents view towards risks are different (Eisenhardt, 1989).

Dey (2008) documents that agency conflict arises from segregation of control and ownership, presence of information asymmetry among shareholders and managers, divergent management and shareholder objectives. These agency conflicts enable managers to be motivated and have power to enhance their individual benefits at cost of corporate shareholders hence leading to earnings management. The ability to resolve such agency conflicts can only be effective through establishment of corporate governance structures in the organization. Dey (2008) further explains that the governance structure of a firm involves

mechanism to minimize agency conflicts. This means that if the degree of conflict is high a stronger governance structure should be put in place in comparison to when degree of conflict is low. The agency theorist viewed management compensation contracts as a tool that can be used for reduction of interest conflicts between shareholders and managers (Sun, 2012).

Donaldson (1990) critiqued agency theory by arguing that it is primarily a principal-agent model that prioritizes the needs of the principals above those of the agents but its ability to explain the essence of contractual association between stakeholders of the firm remains unexplored. The principal-agent relationship is one-sided as it negatively portrays the agent's behaviour as egocentric but omits opportunistic behaviour by the principal. In addition, Sarens and Merendino (2016) through the multiple agency theory critique agency theory by indicating that dispute which arises in the firm is not only between the principal and agent but also among principals and among agents.

Multiple agency theory supports the idea that corporate governance practises should not only focus on agency problems but should also incorporate county level and organizational level factors (Sarens & Merendino, 2016). According to Ahrens, Filatotchev and Thomson (2011) when analysing organization corporate governance there should be combination of traditional agency theory with institutional analysis to give robust conclusions or assumptions since each country has a different corporate governance norm.

Sarens and Merendino (2016) indicate that unlike agency theory that looks into the aspect of agency problem as key motivation of having governance structure in place, the corporate governance structure needs to focus on the following matters: many to many relationships that exists in an organization, the possibility of an organization to have both cooperative and

conflicting behaviours with its members, the dilemmas that agents and principals face and the interlocking responsibilities of directors in various board committees (Sarens & Merendino, 2016).

The agency theory was relevant to this study as corporate governance mechanism supports the agent and principal relationship, where shareholders are the principals while management are the agents. The theory also explains that for managers and shareholders interest to be aligned a firm needs to design compensation contract for management that will ensure they operate with the shareholders interest at hand. This theory outlines that an effective corporate governance system should have majority of independent members as this will lead to reduction in agency costs and line up the desires of shareholders and managers. It supports a that corporate governance significantly influences earnings management. It additionally supports that executive compensation is an intervening variable in such relationship.

2.2.3 Information Asymmetry Theory

This theory originated from Akerlof (1970) who state problem of information asymmetry arises when one party has advantage of information about a product as compared to another party. This gives party with more information and incentive ability to sell goods of lower quality to the party with less information. Connelly, Certo, Ireland and Reutzel (2011) state that since some information are private, asymmetries of information occur between people who are custodian of information with those who require the information to make decisions. This is line with sentiments by Lasdi (2013) that information asymmetry occurs when information about the business internal affairs and future company's prospects are well known by the managers as compared to stakeholders. At the firm level, information asymmetry presents agency problems because the best information available for planning and control is in

the hands of the controlled (the manager) and not in the hands of the controller (shareholders). This may result in a loss to the firm as the agent can take advantage of the private information to advance self-interest

According to Auronen (2003) when management incentives are linked to earnings such as bonus, this information will enable managers engagement in earnings manipulation so as to meet certain earnings target that will benefit them especially if board of directors do not pay attention to earnings trends. The accounting role is to provide a level ground for all stakeholders by providing information that are reliable, relevant, understandable and comparable (Scott, 2015). Information asymmetry between managers and investors can occur during initial public offerings, the asymmetry problem is resolved through effectiveness of corporate governance by establishing a body that overlooks the work of the executives and this will limit their engagement in earnings management practices.

Akerlof (1970) while developing the theory considered asymmetries in one direction where only one party has advantage of information. This may not be the case throughout because there may also be information differences in favour of the other party. In an organization for example a shareholder may lack information but it does not mean all the other stakeholders also lack the information that managers have. The problem of information asymmetry in organization can be resolved by having relevant and reliable financial statements presented to stakeholders (Lasdi, 2013).

This theory is applicable to the study because information asymmetry problem results into earnings management. This arises from the certainty that when managers have a relative advantage of information over shareholders, they may misuse it for their own gain. If

information asymmetry exists between shareholders and manager's, it gives managers power to engage in discretionary behaviour when reporting earnings of the firms, this may lead to an increase of their own interest. Corporate governance has been regarded as a monitoring mechanism effective in resolving difficulties of information asymmetry among stakeholders and managers. The main way that corporate governance resolves information asymmetry is by establishment of board of directors who are independent and who are mandated to monitor the work of executive directors. Based on this theory, good corporate governance will limit problem of information asymmetry hence reducing earnings management practices that results from such problem.

2.2.4 Summary of the Theories

Positive accounting theory explains that managers can use the available accounting policies to take part into earnings management activities for their own personal gain. The theory argues that when executive compensation is linked to equity incentives it is a motivation for executives to participate in earnings management. It also outlines that size of firm and leverage level influences execution of earnings management by managers. Positive accounting theory reinforces the need to have a mechanism that monitors activities of managers. It also backs up the study objective four which aims at determining the joint association among corporate governance, executive compensation, firm characteristics and earnings management.

Agency theory explains relationships between agent and principal. The theory supports idea of having a corporate governance structure as a mechanism of monitoring managers activities and ensuring earnings quality. It agrees with the concept that executives should be adequately compensated as a way of minimizing their engagement into earnings management practices

for self-interest benefits. This theory attempts to describe relationship among corporate governance, executive compensation and earnings management.

Information asymmetry theory backs up the idea that when an organization has functional corporate governance system it eliminates information imbalance problem and this in turn limits earnings management practices by managers. The theory reinforces that relationship exists between corporate governance and earnings management. The main theory is agency theory as it explains relationship of all the four variables of the study which includes corporate governance, earnings management, executive compensation and firm characteristics.

2.3 Empirical Literature Review

This section deals with empirical literatures of association among corporate governance, executive compensation, earnings management and firm characteristics

2.3.1 Corporate Governance and Earnings Management

Abed et al. (2012) in his study analysed association between earnings management and corporate governance characteristics for listed firms at Jordan. From years 2006 to 2009, 329-year end observations of non-financial companies that had data were selected. Earnings management was measured using accounting accruals approach and corporate governance characteristics entailed examining percentage of independent members, size, insider ownership percentage and the role that duality plays. To determine correlation between variables, Ordinary least square regression technique was utilized. Study results documented that: relationship between percentage of board independence, duality and insider ownership on earnings management was not significant while association between board size and

earnings management was significantly negative. The study did not incorporate aspect of board diversity and committee independence as components of corporate governance. The current study utilizes board of directors' characteristics as proxy of corporate governance but eliminates aspects of insider ownership and CEO duality.

Liu et al. (2013) study established impact of board and sub-committees on restraining earnings management practices at Australian listed companies. By using a sample of 138 companies from 2004 to 2007 and measuring earnings management as discretionary accruals, findings of study are as follows: audit committee independence, existence of nomination committee and frequency of meetings are linked with earnings management negatively. Liu et al. (2013) incorporated component sub committees independence such as remuneration which this current study has also incorporated as one of its corporate governance components. Element of audit committees was not included in our study because the existing corporate governance guidelines in Kenya outlines that audit committees should constitute of at least three outside directors.

Mansor et al. (2013) analyzed influence of corporate governance on earnings management for listed companies at Bursa Malaysia Berhad. Stratified sampling technique was used to select 264 companies that were listed as of 31st December 2008. The findings revealed that for the family owned company the number of meetings was significant in influencing earnings management while for the non-family owned company board independence, non-duality, audit committee size and quality differentiated auditors had influence on earnings management. This study was relevant to current study as components being studied are the same, the only difference being that current study did not incorporate committees of audit as

component of corporate governance since it is a requirement to have such committees as independent for listed companies in Kenya.

The influence of corporate governance on earnings management for firms listed in Athens, Milan and Madrid was done by Bekiris and Doukakis (2011). From 733 listed companies at European Stock Exchanges in year 2008 a sample of 427 companies were selected after employing elimination method. Earnings management was measured as abnormal accruals and corporate governance index that consisted of 55 measures was the measure of corporate governance. The findings revealed that firms which applied a high degree of corporate governance standards engaged less in earnings management as compared to those that applied lower levels of corporate governance standards. Despite the focus of study being on multi-dimensional characteristics of corporate governance its context was specific to firms listed at European Stock Market whose economic environment differs with those listed at NSE. The period of study was one year this is not effective in conducting a comparative analysis on how effective corporate governance has been over time.

Gulzar and Wang (2011) researched on correlation between corporate governance characteristics and earnings management for listed firms in China at Shenzhen and Shanghai. Earnings management was represented as abnormal working capital and discretionary accruals while internal characteristics (BOD and ownership concentration) of corporate governance were utilized. After analyzing a sample of 1009 companies for five-year period, the documented findings indicate that corporate governance characteristics like segregation of CEOs and chairman role, female directors' proportion, number of meetings and concentrated ownership are inversely linked with earnings management. Implication of this is when CEOs and chairman positions are not held by one person, board meetings are higher and female

directors are more than male the earnings management practice are lower. Additionally, the results revealed no significant correlation exists between board size, audit committee, board independence and director's shareholdings with earnings management. In general, it was concluded that the association between corporate governance elements and earnings management for listed companies in Chinese was negative. This study broadened aspects of corporate governance components by using both BOD characteristics and ownership concentration. The current study not only analyses how corporate governance influences earnings management but also incorporates moderating and mediating variables on such relationship.

Yang et al. (2009) analysed how institutional ownership and board structure impacts earnings management in Bursa Malaysia. The study period was from year 2001 to 2003 with a sample of 613 firms from industrial products, construction sectors and consumer products. The findings showed that for consumer and industrial products sectors there was no evidence between extent of earnings management with external directors and institutional ownership. There was weak evidence how external directors' influences earnings management in construction sector. There was evidence that companies engaged in upward discretionary accruals practises. In addition, it was concluded that increasing external directors when ownership concentration is high was not effective in lowering earnings management practices. This study incorporated two key components of internal mechanism of corporate governance but only focused on aspect of board composition and institutional ownership as an independent variable while ignoring board of directors' aspects of size, gender and committee's independence. Scope of this study were firms from three sectors that is

construction, consumer and industrial products whereas the current study incorporated from all sectors of economy.

Gonzalez and Garcia-Meca (2014) explored impact of corporate governance internal mechanisms on earnings management in Latin American Markets. A sample of 1740 observations from 435 firms for period 2006 to 2009 were obtained from listed firms at Mexican Stock Exchange, Santiago Stock Exchange, Stock Market of Buenos Aires and the Sao Paulo Stock Exchange. Using data obtained from economatica database and firms annual reports, internal components of corporate governance and earnings management were determined. Results showed moderate ownership by main shareholder is a constrictor of earnings management, moreover internal ownership could restrict earnings management practices only if shares proportion that insiders own in the company is not very high. This study concentrated only on one detail of internal corporate governance mechanism that's is ownership concentration but current study focus was on the component of board of directors.

Okougbo and Okike (2015) analysed the link between corporate governance and earnings management for listed companies in Nigeria Stock exchange. Using content analysis on 62 selected non-financial listed companies, their findings revealed that firms of small board size had lower practices of earnings management as compared to ones whose board size was large. Most firms engaged in downwards earnings management practices as compared to upward discretionary accruals practices this is due to the need to use current profits to cover for future losses. The study was conducted over a period of one-year and the indexes of corporate governance used like CEO duality and auditor's independence are not applicable in Kenya since it is a requirement for all listed companies to have CEOs and chairman of the board as different persons and 100% independent audit committee members.

Iraya et al. (2015) analysed relation between corporate governance and earnings management of listed companies at NSE. Descriptive design was adopted and its sample was limited to only companies that had actively traded at NSE for period 2010 to 2012. They operationalized corporate governance to include ownership concentration, board size, board activities and duality of CEO. Their findings indicated that ownership concentration, size of board and board independence decreases earnings management. In contrast, earnings management is influenced upwards by number of meetings held and when there is duality of CEOs position. The focus was on direct effect of corporate governance on earnings management and did not consider moderating and mediating influence of firm characteristics and executive compensation on the relationship between CG and EM.

Buniamin et al. (2012) analysed influence of board diversity on earnings management of top 100 MCGI Company for year 2008. Board diversity consisted of board gender, remuneration, competency, Independence and size. Multicollinearity and normality tests were done on the regression model utilized for the study. Documented results revealed that correlation between women on board and discretionary accruals was positive, implying that high number of women on board increases earnings management practices; association between cash flows and discretionary accruals was negative while link between board independence, competence, remuneration and earnings management was not significant. Components of gender has been incorporated in current study as an element of corporate governance in board diversity.

Arun et al. (2015) researched on how women directors' influences practices of earnings management in the UK. They employed 1217-year end observations for periods 2005 to 2011. The documented findings indicated that when board has high number of independent female directors, they employ accounting policies that are more conservative in nature as compared

with companies that has lower number of independent female directors. This implies that companies with higher number of women directors participate in income decreasing earnings management exercise. Literature of this study backs up current study in terms of incorporating board diversity especially ratio of female directors on BOD as a component of corporate governance.

The association among board characteristics and discretionary accruals of listed companies in Indonesia was done by Nugroho and Eko (2011). Using purposive sampling technique, 212 listed companies for period 2004 to 2008 was selected. The results indicated board characteristics do not significantly influence earnings management practices except dual leadership that significantly influences earnings management. The conclusion agrees with agency theory which highlights independence of board negatively affects practices of earnings management. It also supports current study hypothesis one (H_{01}) which states, association between corporate governance and earnings management is not significant. Contrary, current study did not incorporate dual leadership in its corporate governance measures since it's a requirement for listed companies in Kenya to have different individual as CEO and board chairman.

Sun et al. (2011) examined gender of audit committee influence in limiting earnings management in USA. From 175 selected firms for periods 2003 to 2005, 525 firm year observations were utilized. After operationalizing earnings management as discretionary accruals, the findings indicated that aspect of gender on audit committee does not reduce practices of earnings management. This study focused on gender of audit committee while current study incorporated gender on board composition as component of corporate governance (board diversity) and not to a specific committee of the board. The current study

omitted audit committee as a component of corporate governance since in Kenya it's a requirement to have an independent audit committee.

Peni and Vähämaa (2010) assessed correlation between executives' gender and earnings management. 1,955 observations of listed companies obtained from S & P 500 firms for period 2003 to 2007 were used for data analysis by utilizing cross-sectional panel regression method. Data on gender was retrieved from firm's published annual reports and dummy variable was used to indicate if the executives are male or female while discretionary accruals was measured using Dechow –Dichev (DD) and modified DD model. The findings showed that gender of executive's had an effect on quality of reported earnings. Documented results further indicated that income decreasing discretionary accruals is high in firms with female CFOs but there is no link between gender of CEOs with earnings management. This study outlines how gender may have an impact in earnings management practise adopted by firms. The current study scope was broad as it did not only look at the gender of CFOs and CEOs but gender of board of directors.

Epps and Ismail (2009) analyzed association between corporate governance and earnings management in US firms. Data for corporate governance attributes which was represented as board of director's were obtained from published reports for period ended 31st December 2004. Characteristics of BOD included: its composition, size, structure, CEO duality, nominating committee, the board disclosure policies and compensation committee. The discretionary accruals data of year 2004 was obtained from a set of 38 industries of firms on compustat and a sample of 3126 observations was selected. Epps and Ismail (2009) established that discretionary accruals correlates with corporate governance practices. They conclusion were firms with small size boards, fully independent compensation committees

engage into negative discretionary accruals while firms whose board are not fully independent or have large board size of at least nine members engaged into positive discretionary accruals practices. This study has incorporated the corporate governance component that the current study utilizes but its scope is different as the economy in the US is different with that of Kenya.

Lakhal et al. (2015) determined influence of board leadership gender on earnings management at French-listed firms. Sample included 170 listed companies for periods 2008 to 2011. By measuring discretionary accruals using Kothari model, Raman and Shahrur model and Modified jones model while diversity of gender was proportion of women on board, the study concluded that when women are board chairmen or their proportion is higher than men earnings management practises reduces. This study only focused on one component of BOD that is gender diversity unlike the current study that expounded its measure to include other elements among them board size, remuneration committee and board composition.

Gavious, Segev and Yosef (2012) examined association between women directors and earnings management of Israeli companies listed at the NYSE or NASDAQ in the USA. The focus was on companies in the high technology industry. Using various techniques of eliminating firms with incomplete data the sample size was 60 firms that had been trading from 2002 to 2009. Earnings management were measured using discretionary and non-operating accruals while female directors was computed as percentage of female on the BOD. The study findings indicate that where BOD has high number of women than men there is reduction in earnings management. This study focused on firms in technology sector unlike current study that has included companies from different sectors. The current study has also

included board diversity and in specific ratio of women on board as a corporate governance component.

From the reviewed studies, there are contradictory findings on association between corporate governance and earnings management. This is due to different measures which have used by researchers to operationalize corporate governance, different periods of studies and difference in country level and micro level environment of the firms. From these empirical studies, this study operationalized corporate governance as board of directors' attributes. It proposed that there is a significant relationship between corporate governance and earnings management.

2.3.2 Corporate Governance, Executive Compensation and Earnings Management

Laux and Laux (2009) analysed association between board committees, executive compensation and earnings management. This research analysed role which board of directors through compensation committee play in setting executives' salaries. The data comprised of 30 corporations that constitutes Dow Jones Industrial average for years 2005 and 2006. The study focused on stock plans as a tool of compensation for the CEOs and measured executive compensation as the number of shares offered to the executives. The documented results revealed that presence of compensation committee on BOD is linked with greater equity-based compensation of executive directors. They further state that an increase in equity compensation is not directly linked to higher level of earnings management. This study backs up current study that attempts to determine how executive compensation mediates association between corporate governance and earnings management.

Cornett et al. (2008) analysed how corporate governance and CEO compensation influences earnings management for USA firms listed on Standard & Poor's 100 index for the period 1994 to 2003. Executive compensation was measured using incentive ratio that incorporated both cash and equity incentive, corporate governance measures included institutional shares ownership, institutional board representation and independent external directors while earnings management measure was discretionary accruals. Study findings revealed that when good corporate governance structure is in place, earnings management are lower while EM increases when CEOs are given compensation inform of stock options. The study revealed executive compensation and corporate governance influences earnings management. It agrees with current study that proposes executive compensation as intervening variable in relationship between corporate governance and earnings management.

Relationship of CEO incentives and earnings management for USA firms in the period of 1990s was examined by Bergstresser and Philippon (2006). Using discretionary accrual to compute earnings management and incentive ratio for executive's compensation, the study found option exercises, holdings and other insiders sell shares which are associated with discretionary accruals. This therefore revealed linking CEO's compensation to stock value leads to high earnings manipulation as it creates reason for CEOs to participate in upwards manipulation of earnings. This study is relevant to the current study as components used as measure of executive compensation was also adopted, the study though only focused on direct influence of equity compensation on earnings management and not its possible mediating influence on link between corporate governance and earnings management.

Cheng and Warfald (2005) determined correlation between manager's equity compensation and earnings management. The equity compensation consisted of restricted stock, option

grants, stock options, exercisable options and unexercisable options while discretionary accrual was a representation of earnings management. The results revealed that, CEOs likelihood to sell stocks in periods that follows earnings pronouncements especially when they possess stock ownership or high unexercisable option is high. When this likelihood occurs practises of earnings management are always high as it will benefit the CEOs. The study only focused on the equity incentives while omitting the cash incentives such as salaries and bonuses that are also given to the executives. The current study was able to incorporate both the cash and equity incentives and determined how corporate governance influences the compensation which in turn influences earnings management.

Chhaochharia and Grinstein (2009) determined how board structure influences CEO compensation for US public firms listed at NYSE and are members of NASDAQ for the period 2000 to 2005. Using sample of 865 firms and secondary data to obtain information on CEO compensation and board structure, their findings revealed that board composition and procedures significantly affects how CEO's are compensated. The study focus was on the board structure (board composition and board committees) role in CEO compensation. This study supports the current study that considers executive compensation as an intervening variable.

Chang et al. (2011) researched on the effect of overlapping board structures on pay-performance sensitivity, executive compensation and accruals management. From initial 5,934 firm year observations on the sample period, elimination process led to a sample of 4,949 observations from 1999 to 2004. The period was divided into Pre-SOX (1999-2001) and post-SOX (2002-2004). The study employed cash-based compensation, total compensation and equity-based compensation as measures of CEO compensation. While

discretionary accruals were measured using Kothari model. The documented findings indicated that overlapping compensation committee's relation with level of CEO compensation is negative in pre-SOX period. Additionally, overlapping compensation committees have an association with increase in percentage of cash compensation and decrease in percentage of equity compensation granted to CEOs during post SOX period. Findings further outline that association between independence of compensation committee and equity-based compensation is positive. The results also revealed that independent audit committees are highly efficient on monitoring earnings management in comparison to overlapping audit committees. This is for reason that overlapping board structure diminishes the oversight efficacy of audit committees when overseeing accruals management hence leading to an increase in earnings management. This study incorporated compensation committee and how it affects setting of the CEO compensation, this agrees with current study that considered executive compensation as intervening variable in correlation between corporate governance and earnings management.

Chu and Song (2012) determined whether over-investment explained the interrelationship between earnings management and executive compensation. Context of study were companies in Bursa Malaysia listed under the Industrial Classification Benchmark subsector 2000 level. The sample size was 196 Malaysian public listed firms in the year 2009. Executive compensation was measured using incentive ratio and executive salary, earnings management was computed as absolute discretionary accruals and over investment was represented by dummy variable. Dummy variable of one were assigned to companies with high cash flows than its' respective industrial cash flow while a variable of zero was given to companies that had cashflows lower than the respective industrial cash flow. The findings outlined that

association between earnings management and executive compensation was negative. Positive relationship exists between executive compensation, over investments and earnings management. Current study included executive compensation as mediator in correlation between corporate governance and earnings management.

Most of reviewed studies determined pair wise association between corporate governance and executive compensation, executive compensation and earnings management but no single study investigated intervening effect of executive compensation on association between corporate governance and earnings management. From these conclusions, it was evident when executive compensation is linked to firm's equity, they influence earnings management practices. This study therefore proposed that executive compensation intervenes the relationship between corporate governance and earnings management.

2.3.3 Corporate Governance, Firm Characteristics and Earnings Management

Nalarreason et al. (2019) analysed impact of firm size and leverage on discretionary accruals of manufacturing firms at Indonesia for periods 2013 to 2017. By utilizing panel data methodology and a sample of 75 companies that had all the required data, the study findings concluded that firm leverage and size had significant positive influence on earnings management. The study only measured pairwise association of size and leverage on earnings management but not it's possible moderating influence on association between corporate governance and earnings management. This study however, has incorporated firm leverage size and profitability as moderating variables.

Ghaffar (2014) analysed in Islamic banks at Pakistan how corporate governances' influences profitability. Using convenience sampling technique, a sample of five Islamic banks was

selected. They operationalized corporate governance practises to include size of board and its independence. The findings revealed that corporate governance positively influences profitability. Study focused on how board size and independence influences profitability and it was specific to Islamic banks. Current study expanded this research by incorporating profitability as one of moderating variables in CG and EM relationship.

Veronica (2015) analysed extent that firm size and financial leverage impacts earnings management for manufacturing firms listed at Indonesia. By utilizing purposive sampling, thirty (30) firms were selected for five-year period. Firm size was operationalized as logarithm of total assets, leverage included operating and financial leverage and earnings management was measured as discretionary accruals. The findings revealed firm size, operating leverage and financial leverage do not affect earnings management of manufacturing firms listed at Indonesia. This study was specific to manufacturing firms while the current study looked at firms in various sectors. Additionally, it only analysed relationship among firm size, leverage and earnings management while current study used these two elements as moderating variables in relationship between corporate governance and earnings management.

Enofe et al. (2017) analysed influence of female gender, foreign directorship, board size, firm size and board independence on earnings management of Nigerian listed companies. Their documented findings state that negative relationship exists between foreign directors on board, female directors and board independence with earnings management. This implies, when number of foreign directors, female directors and independent member on board is high the practises of earnings management are reduced. Additionally, size of board and firm have positive relationship with earnings management. The study did not include remuneration

committee independence and it focused on one firm characteristics component that is firm size. The current study has incorporated other firm characteristics components such as firm leverage and firm profitability. It has also analysed moderating impact of firm characteristics on corporate governance and earnings management relationship.

Waweru and Riro (2013) researched impact of corporate governance and firm characteristics on earnings management of listed companies at NSE. From the population of 52 firms, they selected 37 companies (148-firm year's observations) that had five-year period data from 2006 to 2010. Using quantitative methods to examine relationship and accounting accruals approach as proxy of earnings management. The results were: concentrated ownership structure had positive impact on earnings management, companies with high number of independent members on BOD have low chance of participating in earnings management and highly geared companies have high chance of taking part in earnings management. The results further disclosed that individual association between audit committee independence, firm size, firm performance and earnings management was not significant. Despite the study incorporation of firm characteristics elements, the aspect of how firm characteristics moderates association between corporate governance and earnings management variables were not examined which is part of current study objectives.

Kapoor and Goel (2017) investigated association between firm profitability, board attributes and earnings management for companies listed at Bombay in India for period 2007 to 2012. It was found size of board positively influences earnings management, board independence does not significantly impact earnings management while firm profitability moderate's association between audit committee independence and earnings management. This study focused on profitability impact to association among audit committee and earnings management. Current

study incorporated size, leverage and profitability as moderating variables in relationship of corporate governance and earnings management.

Study of Bassiouny et al. (2016) assessed influence of firm characteristics on earnings management of listed firms in Egypt. Sample that constituted 60 non-financial active firms for periods 2007 to 2011 that gave 300 firm years' observations were utilized. Earnings management was represented by discretionary accruals while firm age, size, audit quality and financial leverage were representation of firm characteristics. By applying Pearson's correlation matrix to test for multicollinearity and Stata program for data analysis. Their findings indicated that it is only firm's financial leverage which had significant positive influence on earnings management. This study explored aspect of firm characteristics extensively although it did not show how firm characteristics affect relationship between corporate governance and earnings management.

Abbadi et al. (2016) investigated effect of corporate governance quality on earnings management for service and industrial companies trading at Amman based in Jordan for five years from 2009. The governance index entailed attributes of BOD, board meeting, compensation committees and audit committees. The documented outcome indicates: correlation between corporate governance quality and earnings management was negative, companies with compensation committees had lower practises of earnings management since the committees oversees the compensation determination of managers. The findings also revealed: large and highly profitable firms' engagement in earnings management are low, financial leverage associates positively with earnings management while insignificant association exists between growth and earnings management. By controlling some variables,

this study supports inclusion of size, leverage and profitability as moderating variables in association between corporate governance and earnings management.

Impact of firm characteristics on earnings management for listed firms in Nigeria was studied by Uwuigbe et al. (2015). Using judgemental sampling technique, twenty (20) companies for from year 2006 to 2010 was selected. By utilizing descriptive statistics and econometric analysis technique, the study conclusions were as follows: firm size and corporate strategy positively relates to earnings management while insignificant association exists between leverage and management of earnings. The research focus was on direct association between firm characteristics and earnings management. Current study has incorporated firm characteristics as moderating component in association between corporate governance and earnings management.

Ardison et al. (2012) analysed impact of financial leverage on earnings management for listed companies at Brazil. Their sample entailed all the companies listed at Brazilian stock market from years 1994 to 2011. Earnings management was measured using KS (1995) model, Jones (1991) model and Modified Jones (1995) model while leverage was measured using leverage ratio. The conclusion of study was leverage does not significantly associate with earnings management. This study only analysed direct linkage of the two variables but the current study has incorporated financial leverage as one of its firm characteristics' components. The study determined moderation influence of this variables on corporate governance and earnings management relationship.

Rauf et al. (2012) analysed influence of board attributes on earnings management for listed companies at Malaysia in year 2008. Population entailed 977 listed companies. Using random

sampling technique 214 non-financial firms were selected that gave 428 firm year observations. They operationalized company and board characteristics to include firm size, cash flows from operations, board size and board race while discretionary accrual was computed using modified Jones model. By using Spearman's Rho to test for multicollinearity, results revealed that association between firm size and earnings management were positively significant, operational cash flows and earnings management relationship was negative while influence of race and board size on earnings management was not significant. These findings demonstrate direct correlation exists between board attributes and earnings management. Current study has also incorporated board characteristics as component of corporate governance and firm size to represent firm characteristics. It has also tested the moderating impact of firm characteristics on corporate governance and earnings management relationship.

Analysis of corporate governance effect on earnings management of firms in various Asian stock exchange market was done by Shen and Chih (2007). By utilizing firms governance data of nine Asian countries obtained from Credit Lyonnais Security Asia and classifying earnings management to include earnings smoothing and aggressiveness, Shen and Chih results indicated that: First, association between corporate governance and earnings management was negative, secondly, big firms exhibit high earnings smoothing practices in comparison to small firms but there is no evidence of how size relates to earnings aggressiveness, third, earnings smoothing is more for higher leveraged firms when the market is performing well as compared to when the market performance is poor and fourthly, earnings smoothing and aggressiveness is more in firms with higher growth. The study incorporated influence of firm characteristics on earnings management but did not determine its possible moderating effect on corporate governance and earnings management association.

Most studies as reviewed in literature analyzed pair wise connection between corporate governance and individual components of firm characteristics (firm profitability, leverage and size) or individual components of firm's characteristics analyzed pair wise connection between corporate governance and individual components of firm characteristics (firm profitability, leverage and size) or individual components of firm's characteristics (firm profitability, leverage and size) and earnings management. These Pair wise studies indicated possible correlation exists between firm characteristics and earnings management. This study proposed that firm characteristics moderates the relationship between corporate governance and earnings management.

2.3.4 Corporate Governance, Executive Compensation, Firm Characteristics and Earnings Management

Latif and Abdullah (2015) analysed how successful corporate governance structures are in restraining earnings management practises at Pakistan. The findings revealed that audit committee independence is critical in restraining firms from engaging in earnings management while institutional shareholding and CEO duality increases earnings management. The result further revealed: there is no impact of CEO compensation and leverage on earnings management while firm size inversely relates to earnings management. This study analysed direct association between various variables and not the joint impact of corporate governance, CEO compensation and firm characteristics on earnings management.

Narwal and Jindal (2015) did a research on how corporate governance influences profitability of textile industry in India. The sample constituted fourty (40) textiles for periods 2009 to 2014. By using regression model to analyse data, the results indicated that director's remuneration positively relates to profitability, audit committee are significantly negative to

profitability while board meetings is not statistically significant to profitability. The study analysed how corporate governance and director's remuneration influences firm's profitability but did not further determine how profitability influences correlation between corporate governance and earnings management. This study supports assertion of possible joint relationship between corporate governance, executive compensation, earnings management and firm characteristics.

Various empirical studies stipulate a possible link among corporate governance, executive compensation, firm characteristics and earnings management but no single study sought to determine joint association among these variables. This study therefore proposed the joint relationship among corporate governance, executive compensation, firm characteristics and earnings management is significant.

2.4 Summary of Empirical Literature Review and Research Gaps

The empirical review of association between corporate governance, executive compensation, firm characteristics and earnings management of listed companies has yet to provide a convincing causal link among these factors. A number of contextual, conceptual, and methodological research gaps emerge from the analysis of papers evaluated in this chapter.

The contextual gap arises from the fact that earnings management concept has largely been understudied in Kenya and at a level addressed by this study. Most studies have concentrated on companies listed in developed countries and very few have focused on developing countries. Most of the studies have also omitted financial institutions yet for this study it has been incorporated since in Kenya we have witnessed banks collapsing due to weak corporate governance structure and earnings management practices.

Conceptual gaps include lack of consensus on association between corporate governance and earnings management since findings are inconclusive. This study has provided more evidence especially in context of Kenya and with the introduction of moderating and intervening variable it has explained conclusively relationship between corporate governance and earnings management of listed firms. Another conceptual gap was that most studies on correlation between corporate governance and earnings management have not incorporated any mediating or moderating variable. This study introduced executive compensation as mediating variable and firm characteristics as moderating variable in an attempt to explain further relationship between corporate governance and earnings management of listed firms at NSE.

Major restriction with most of researches undertaken so far is that they consider only two of the variables (corporate governance, executive compensation, firm characteristic and earnings management) at a time. None of the studies has considered the effects of all the four variables taken together. This study has tested joint impact of corporate governance, executive compensation and firm characteristics on earnings management of listed firms at NSE.

Methodological gap arises from varying models utilized to measure earnings management. Most studies have measured earnings management as discretionary accruals but its computation have been done using different models such as modified Jones (1995) model (1995), Larcker and Richardson (2011) model, Yoon (2010) model, Kothari (2005) model. This study utilized modified Jones model as a means to compute earnings management since it has been tested to perform better in determining discretionary accruals as compared to the other formulas.

Table 2.1 provides synopsis of studies reviewed that are related to the current study variables which include: corporate governance, firm characteristics, executive compensation and earnings management. For each study: Authors name, objective, findings, research gaps and current study address of these gaps have been summarized:

Table 2.1: Summary of the Empirical Literature and Research Gaps

Authors	**Focus**	**Findings**	**Research Gaps**	**Gaps address in the current study**
Nalarreason et al. (2019)	Impact of leverage and firm size on earnings management for companies listed at Indonesia.	Association between size and leverage on earnings management is positively significant.	Moderation influence of leverage and firm size on CG and EM association was not considered	Incorporated firm size, leverage and profitability as moderating variables in relationship between corporate governance and earnings management.
Enofe et al. (2017)	Influence of female gender, foreign directorship, board size, independence of BOD and firm size on earnings management.	Female directors and board independence have a negative relationship with earnings management	Did not incorporate other components of firm characteristics	The current study incorporated firm characteristics as moderating variable on the correlation between CG and EM
Kapoor and	Effect of firm	The association	Corporate	The current study has

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
Goel (2017)	profitability, board characteristics and earnings management on listed companies in Bombay stock exchange.	between audit committee and earnings management is moderated by profitability.	governance measure was limited to audit committee independence.	five measures for corporate governance element and it also incorporates executive compensation and firm characteristics as intervening and moderating variables
Abbadi et al. (2016)	Effect of quality of corporate governance on earnings management.	The association between CG and EM is negative.	The moderating and mediating variables were not included to test their effect on the relationship.	Executive compensation included as a mediating variable.
Bassiouny et al. (2016)	Influence of firm characteristics on earnings management of companies listed firms at Egyptian Stock Exchange	Influence of financial leverage on earnings management is positively significant.	Moderating influence of firm characteristics on association between CG and EM was not established.	The study has incorporated firm characteristics as moderating variable.
Arun et al.	Influence of women	When board has	It only determined	Current study has

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
(2015)	presence on BOD on earnings management practices in the United Kingdom	higher number of females, the engagement into earnings management practises is constrained.	direct association between women directors and earnings management	incorporated ratio of women on board as one of corporate governance components.
Lakhal et al. (2015)	Impact of board leadership gender on earnings management at French listed companies.	When proportion of women on board is high there is reduction in EM practises.	The study was specific to only one component of the board of directors.	Current study included board composition, size and remuneration committee as CG components.
Latif and Abdullah (2015)	Role of corporate governance mechanism in restraining earnings management on listed companies in Pakistan.	CEO compensation and leverage have no effect on EM.	The study only analysed direct relationship between variables	The current study goal was to establish joint impact of corporate governance, executive compensation and firm characteristics on earnings management.
Iraya et al.	Impact of corporate	The association	No control for	The mediating and

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
(2015)	governance practices on earnings management of listed companies in Kenya.	between board size, and independence of members on earnings management is negative.	mediating and moderating variables in the study	moderating influence of executive compensation and firm characteristics respectively was considered
Okougbo and Okike (2015)	Determine association between corporate governance and earnings management in Nigeria.	Firms that had small board sizes engaged in earnings management practices minimally.	The study focus was on direct correlation between corporate governance and earnings management.	Moderating and mediating variable was included in the study. The study period was 10 years.
Narwal and Jindal (2015)	Empirical analysis on how corporate governance influences profitability of textile industry in India T	Director's remuneration positively relates to profitability, while board meetings are not statistically	The study did not analyse the possible moderating impact of firm profitability on correlation between corporate governance and	Current study incorporated firm profitability as one of the moderating variables in determining association between

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
		significant to profitability.	earnings management.	corporate governance and earnings management.
Veronica (2015)	Influence of leverage and firm size on earnings management for listed companies at Indonesia.	In manufacturing companies' earnings management is not influenced by firm size or financial leverage.	The study was specific to manufacturing firms and analysed direct relationship of firm size and leverage on earnings management.	The current study focuses on twelve sectors and utilizes firm characteristics as moderating variable in association between corporate governance and earnings management.
Ghaffar (2014)	Influence of corporate governance practises on profitability of Islamic banks in Pakistan	Correlation between corporate governance and profitability is positive.	Focus was on direct relation between corporate governance and profitability of Islamic banks in Pakistan.	In the current study profitability is a moderating variable in association between corporate governance and earnings management.
Abed et al. (2012)	Corporate governance	Correlation between board	Focus was direct link between	The study analysed association among

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
	characteristics and earnings management of Jordan listed firms.	independence and earnings management is not significant.	corporate governance and earnings management.	corporate governance, executive compensation, firm characteristics and earnings management
Ardison et al. (2012)	Establish effect of leverage on earnings management of firms listed in Brazil.	Firm leverage does not influence earnings management.	This study analysed direct relationship between earnings management and financial leverage.	Current study included financial leverage as one of the moderating variables.
Buniamin et al. (2012)	To determine correlation between board diversity and discretionary accruals	Women on board positively influence earnings management practices.	The study only considered one year as a period of analysis which may not provide sufficient evidence to be conduct a comparative analysis.	The current study has incorporated women as part of board diversity and has also considered a period of 10 years for all listed companies.
Gavious et al. (2012).	Women directors and earnings	Where proportion of	This study incorporated only	Current study scope of corporate governance

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
	management in Israeli high technology firms listed in the USA	women on the board is higher than men earnings management level is low.	proportion of women as a component of corporate governance.	included board composition, size and remuneration committee.
Rauf et al. (2012	Influence of board characteristics on earnings management of listed companies on Bursa Malaysia in the year 2008	Firm size has a positive significant effect on EM while size of board and race do not influence practices of earnings management.	The period was for one year which limits one to do comparative analysis over the years.	The current study analyses joint association among corporate governance, executive compensation, firm characteristics and earnings management for ten-year period.
Chu and Song (2012)	Analysis of whether over-investment explained the interrelationship between executive compensation and	Association between executive compensation and earnings management is	This study did not incorporate executive compensation as a mediating variable	The current study incorporates executive compensation as a mediating variable.

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
	earnings management	negative.		
Bekiris and Doukakis (2011)	Establish association between corporate governance and accruals earnings management	Firms which applied high degree of corporate governance standards engaged less in earnings management.	The study determined direct link between corporate governance and earnings management. Period of study was only one year hence limiting its scope.	Current study introduced the aspect of mediating and moderating variables in association between corporate governance and earnings management and the period was ten years.
Chang et al. (2011)	Effect of independent and overlapping board structures on pay-performance sensitivity, CEO compensation and accruals management.	Independence of board and compensation committees are not effective oversight mechanism in restraining CEO compensation.	The study focus was compensation and audit committees as bodies for setting CEO compensations	The current study has incorporated remuneration committee independence as independent variable and executive compensation as a mediating variable in

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
				association of CG and EM
Gulzar and Wang (2011)	To determine association between corporate governance characteristics and earnings management of companies listed companies in China.	The association between corporate governance and earnings management in Chinese listed firms was negative.	This study analysed direct link between corporate governance and earnings management.	Current study incorporates firm characteristics as moderating variable and executive compensation as mediating variable on association between CG and EM
Nugroho and Eko (2011)	Board characteristics influence on earnings management	Board characteristics do not significantly influence earnings management practices except dual leadership that significantly influences	The board characteristics did not include board diversity and remuneration committee independence	The current study included board diversity and remuneration committee independence as components of corporate governance

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
		earnings management.		
Sun et al. (2011)	To determine impact of audit committee gender in limiting earnings management practices.	There is no significance link between gender of audit committee in reducing earnings management practises.	This study was limited to the aspect of gender on only one committee of the board.	Current study included board diversity as component of corporate governance.
Epps and Ismail (2009)	To analyze the association between corporate governance and earnings management in US firms	Firms whose board size is small, has only independent members in the nominating and compensating committees engage into income	It only analysed the direct link between corporate governance and earnings management.	Current study analysed relationship among corporate governance, executive compensation, firm characteristics and earnings management for a ten-year period.

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
		decreasing EM practices.		
Chhaochharia and Grinstein (2009)	Board of directors' role in setting CEO compensation	Structure and size of the CEO compensation is significantly influenced by board structure.	Did not consider executive compensation as mediating variable in the relation between CG and EM.	Current study incorporated executive compensation as an intervening variable.
Yang et al. (2009)	To analyse influence of institutional ownership and board structure on earnings management in Bursa Malaysia	There was no evidence on how institutional holdings and board structure influences earnings management in consumer and industrial sectors firms.	The study focus was on direct link between institutional ownership and board structure on earnings management.	Current study analysed relationship among corporate governance, executive compensation, firm characteristics and earnings management for ten-year period.
Cornett et al.	To establish impact	EM practices are	The study focus	The current study

Authors	Focus	Findings	Research Gaps	Gaps address in the current study
(2008)	of corporate governance and CEO compensation on earnings management of USA firms	lower when corporate governance structure is effective and high when executives' compensation is in form of equity.	was on direct effect of CEO compensation on earnings management	included executive compensation as an intervening variable.

Source: Author (2019)

2.5 Conceptual Framework

This study adopts positivism philosophy in determining association among corporate governance, executive compensation, firm characteristics and earnings management of listed companies at NSE. It is anchored on positive accounting theory that explains how presence of executive compensation, firm size and firm leverage can influence the correlation between corporate governance and earnings management. Agency theory is key due to its proposition that good corporate governance structure limits managers from engaging into self-interested strategies such as earnings management.

The dependent variable was earnings management which was operationalized as discretionary accruals. Modified Jones was utilized to compute the accruals. The inputs for this model included total accruals, change in net receivables, lagged total assets, net revenue change and gross PPE. Corporate governance is the independent variable that influenced earnings management as supported by the various empiric studies such as Latif and Abdullah (2015);

Buniamin et al. (2012) and Iraya et al. (2015). Corporate governance included board of directors' components which are composition, diversity, size and remuneration committee independence. Hypothesis one tested association between corporate governance and earnings management.

Executive compensation is mediating variable in relationship between corporate governance and earnings management because remuneration committee influences determination of executive's compensation. Consequently, executive compensation influences earnings management practices in a company. Studies by Cornett et al. (2008) and Chhaochharia and Grinstein (2009) reveal when executive compensation is linked to earnings it gives managers an opportunity to apply discretion when dealing with earnings so as to gain more. Executive compensation included both cash and stock incentives. The mediation effect of executive compensation on correlation between corporate governance and earnings management was tested using hypothesis two.

Firm characteristics includes size, financial leverage and profitability. Firm characteristics includes size, financial leverage and profitability. These are the variables that are possible moderators in the correlation between corporate governance and earnings management. This is evident in studies by Ghaffar (2014); Kapoor and Goel (2017); Narwal and Jindal (2015) and Uwuigbe et al. (2015). Therefore, moderation influence of firm characteristics on the association between corporate governance and earnings management was tested using sub hypothesis three (a, b and c) while the joint relationship of corporate governance, executive compensation and firm characteristics and earnings management was tested using hypothesis four.

Figure 2.1 describes conceptual model of variables. Earnings management was operationalized as discretionary accrual which entails accruals in revenue and expenses. Corporate governance includes board composition, remuneration committee composition, size and diversity. Executive compensation includes monetary and non-monetary benefits such as salary, bonus, stock ownership and stock options. Firm characteristics includes size, financial leverage and firm profitability.

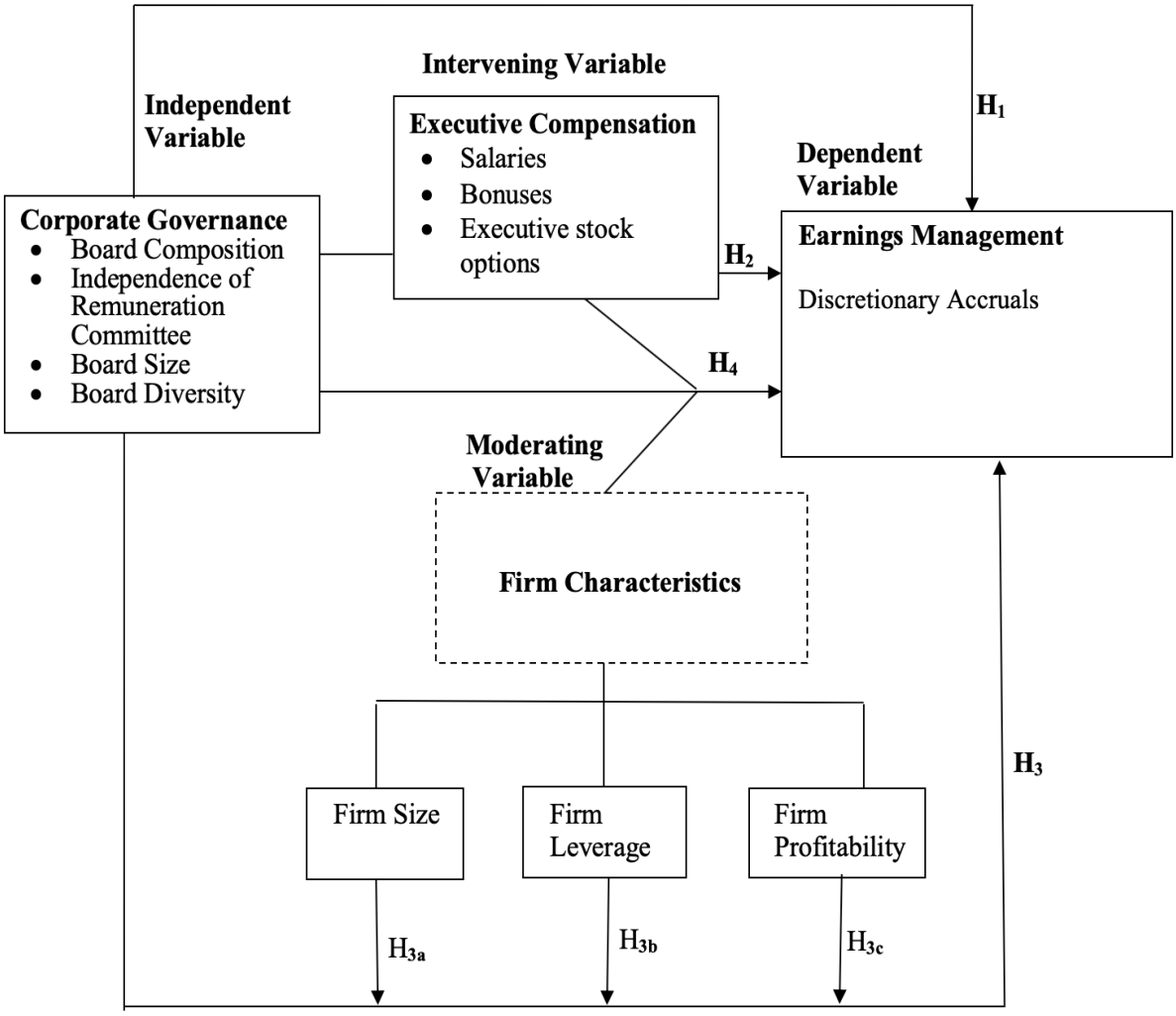


Figure 2.1: Conceptual Model **Source: Author (2019)**

2.6 Research Hypotheses

The hypotheses (H_{01}, H_{02}, H_{03} and H_{04}) are generated from the objectives of the study. Null hypotheses for this study were as follows:

H_{01}: The relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant

H_{02}: The mediating role of executive compensation in relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant

H_{03}: The moderating influence of firm characteristics on relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant

H_{03a}: The moderating influence of firm size on relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant

H_{03b}: The moderating influence of firm leverage on relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant

H_{03c}: The moderating influence of firm profitability on relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant.

H_{04}: The joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at Nairobi Securities Exchange is not significant.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Methods and approaches applied in carrying out this study are discussed. They include research design, research philosophy, data collection methods, population and operationalization of study variables. This chapter further covers data analysis methods and diagnostic tests.

3.2 Research Philosophy

This is associated with nature and development of knowledge (Saunders, Lewis & Thornhill, 2009). It is belief of how research data is collected, examined and utilized. It has the following perspectives realism, positivism, interprevistism and pragmatism. Positivism philosophy is when a researcher views that credible data and facts can only be obtained from observable phenomena while realism philosophy outlines that the methods chosen for data collection must fit the subject matter (Saunders et al., 2009). Interprevistism philosophy emphasizes on details of situation, reality behind the details and personal meanings prompting actions. Pragmatism philosophy outlines that a researcher can provide satisfactory knowledge based on research questions from personal meanings and observable phenomena (Saunders et al., 2009).

The research philosophy that one adopts is influenced by practical considerations or a specific opinion of the link between knowledge and its development. The kind of philosophy one adopts will not only influence the researcher's strategies and methods but also their opinion on what is fundamental and perhaps more significantly, what is helpful (Saunders et al.,

2009). Since positivism philosophy is dependent on observations that can be quantified and which leads to statistical analysis, it was relevant for this study.

This study entailed forming four hypotheses that were tested scientifically. Quantitative data was collected from the published annual reports for each of the variable in the study, the data were then fit into the multiple regression models that had been developed for each hypothesis testing. The procedure that was followed to attain the study objectives fits the characteristics of positivism philosophy hence why it was considered relevant for this study.

3.3 Research Design

This is a structure, strategy and plan of investigation that enables a researcher to get answers to research problems (Kumar, 2011). It can further be explained as a plan used to answer questions accurately, validly, economically and objectively. In addition, research design is the process of collecting and analysing data with an aim of bringing importance to purpose of research (Kothari, 2004). Saunders et al. (2009) specifies three types of research design as exploratory, explanatory or causal and descriptive. Exploratory studies try to seek new insights, find out what is happening, assess phenomenon in a new light and asks questions. Causal studies attempt to establish the cause effect link between variables and descriptive studies attempt to describe profiles of persons, situations and events accurately.

Descriptive designs are categorized into cross-sectional and longitudinal design. Cross sectional design entails measuring sample of elements from population only once while longitudinal designs are where sample members are repeatedly measured over time (Kumar, 2011). Descriptive designs involve three main methods namely survey studies which describe the status quo, the correlation studies that investigates if connection exists between two or

more elements and developmental studies which seek to determine changes over time (Kumar, 2011).

This study utilized a cross sectional correlation design; it is appropriate when the main purpose is to establish whether association exists among variables. The study focuses on determining how corporate governance, executive compensation, firm characteristics influences earnings management of listed firms at NSE. When using this approach, it enables one to collect data that can give explanations on how different variables relate.

3.4 Population of the Study

Population is an aggregate of totality for all items which conform to specific specification. The context for this study were all firms listed at NSE. Target population included sixty-five listed companies as at 31st December 2017 as per Appendix II. From a population of Sixty-Five listed companies, an elimination method of not including companies that had no data for the specified period was adopted and a final sample of Fifty-Six (56) companies was used.

The sample included companies with published annual reports which had information in relation to corporate governance, earnings management, firm characteristics and executive compensation. Since census survey was adopted, all listed companies at the NSE from 2008 to 2017 were considered. From the ten-year period of this study, a sample of 517 firm year end observations were identified and utilized for data analysis.

Kothari (2004) explains that a census inquiry is a total inclusion of all items in the population. The selection of listed companies was motivated by the law that requires all listed companies to adhere to guidelines of corporate governance code, mandatory requirement of these

companies to have published financial reports and empirical evidence that this area of research has been done for listed companies.

3.5 Data Collection

Panel data methodology was utilized hence secondary data collection approach was considered appropriate. Secondary data was appropriate as compared to primary data because data for all the variables of the study were available in the companies' published financial reports. For this study, we collected data for years 2008 to 2017 for computation of earnings management, corporate governance measures, firm characteristics and executive compensation from corresponding companies' financial reports which were available at CMA website and NSE handbook. The ten-year data was motivated by the need to look into the relationship among the variables for a period that incorporated a time before and after the changes were made in the Kenya corporate governance guidelines. The end period of 2017 was selected since the study was done in 2018 and the last period when data was available was in 2017.

Data on gross PPE, revenues, receivables, operating cash flow, numerical of independent directors, size of board, women ratio on board, independent members ratio on remuneration committee, cash incentives, executive stock ownership, stock options, total assets, total debts, total equity, net profit, and earnings before interest and taxes for each listed company was collected and recorded on the data collection form shown in Appendix I.

3.6 Operationalization of Study Variables

Operationalization is process of defining measurement of a variable. It entails definition of concepts through the operations in which we measure them. The study variables were

corporate governance, earnings management, executive compensation and firm characteristics were operationalized in line with previous studies.

Earnings management was operationalized as discretionary accruals which was computed using Modified Jones model. This measure is supported by studies of Gulzar and Wang (2011); Uwuigbe et al. (2015); Nugroho and Eko (2011) who regard modified Jones models as the most effective way of identifying discretion by managers over accounting choices. This model is a multiple regression model calculated using the following financial statement items: net revenues, net receivables, operating cash flow, total accruals, total assets and gross PPE.

Corporate governance was defined to include board composition, board size, independence of remuneration committee and diversity of the board. For this research, board composition was measured as ratio of independent directors on BOD (Dey, 2008). Board size was quantified as log of cummulative number of members on board (Nugroho and Eko, 2011). Board diversity was percentage of women on the BOD (Buniamin et al., 2012). Remuneration committee independence was assessed as ratio of independent members in remuneration committee (CMA, 2015a; Cheng & Warfald, 2005). The composite of corporate governance (CG) variables was computed as geometric mean of corporate governance components which are board composition, board size, diversity and remuneration committee independence (Ondigo, 2019).

The executive compensation was operationalized to include cash and equity incentives. Cash compensation included basic salary and bonuses while equity incentives included share ownership and stock options (Conyon & He, 2011; Chang et al., 2011). The executive

compensation was computed as logarithm of cummulative compensation of directors which included fees, salary, bonus and stock options (Chang et al., 2011).

Firm characteristics was operationalized to include firm size which was measured as logarithm of total asset of firm (Ahmad et al., 2014), leverage which was measured using debt equity ratio that is total debt (current and non-current liabilities) divide by total equity (Uwuigbe et al., 2015) and profitability which was measured using return on asset ratio that is operating profit divide by total asset (Ghaffar, 2014).

Table 3.1 is a summary of the study variables operationalization.

Table 3.1: Operationalization of Study Variables

Variable	Operational definitions	Indicators	Measurement	Scale	Sources
Dependent variable Earnings Management	This occurs when manager adopt an accounting choice such as accruals that has impact on earnings numbers.	• Accruals in revenue • Accruals in expenses	• Discretionary accrual using modified Jones model as shown in 3.8.1	Ratio	Dechow et al. (1995)
Independent variable Corporate Governance	Structure and system put in place to monitor how organization resources are managed.	• Board Composition (BCOMP) • Remuneration Committee (RCOM) • Board Size (BSIZE) • Board Diversity (BDIV) • CG composite	• Proportion of non-executive directors • Proportion of independent members in the remuneration committee • Log of total number of board members • Percentage of women on board. • Geometric mean of CG attributes	Ratio	Dey (2008) Cheng and Warfald (2005) Nugroho and Eko(2011) Buniamin et al .(2012) Ondigo (2019).
Intervening variable Executive Compensation	Monetary and non-monetary benefits given to executive directors	• Salary • Bonus • Executive stock options	• Log of total executives' pay	Ratio	Chang et al. (2011)
Moderating Variable Firm characteristics	Features that differentiate one firm from another	• Firm Size (FS) • Firm Leverage (FLEV) • Firm Profitability (FP)	• Log of total asset • Debt equity ratio $\frac{\text{Total Debt}}{\text{Total Equity}}$ • Return on asset ratio: $\frac{\text{EBIT}}{\text{Total Asset}}$	Ratio	Ahmad et al. (2014) Uwuigbe et al .(2015) Ghaffar (2014)

Source: Author (2019)

3.7 Diagnostic Tests

In order to use the instruments of analysing data which include correlation and multiple regression analysis techniques, data was subjected to the following diagnostic tests: normality, homogeneity, stationarity, serial correlation, multicollinearity, Random and Fixed effects tests.

Ghasemi and Zahedias (2012) indicate that normality tests are additional to the graphical evaluation of normality. For this study normality of data was tested using Jarque-Bera test (Ahad, Yin, Othman & Yaacob, 2011). The hypotheses for this test are as follows: null hypothesis (H_0) states sample is drawn from population that's normally distributed while alternate hypothesis (H_A) states sample is drawn from not normally distributed population. Ghasemi and Zahedias (2012) highlight that when p-value is lower than critical value ($P < 0.05$) the researcher should reject null hypothesis and alternate hypothesis accepted. In contrast, when value of $p > 0.05$ null hypothesis is to be accepted. Non-normal distribution of data can be transformed to normal using mathematical approaches referred to as variance stabilising approaches such as logarithm, square root or reciprocal methods (Ghasemi & Zahedias, 2012). For this study the non-normal data were transformed using logarithm approach.

Serial correlation test was conducted to determine whether error terms in the time series data has been transferred from one period to another (Montgomery, Peck & Vining, 2001). In order to test for first order auto correlation, Durbin Watson test was employed. The test statistics values range from 0 to 4. Positive autocorrelation is present if the value of test statistics is zero (0) while negative autocorrelation has occurred if the value is Four (4). Both

values imply the existence of autocorrelation problem (Gujarati, 2011). Durbin Watson tests with a value of between 1.5 and 2.3 means that there is no autocorrelation problem (Montgomery, 2001).

According to Gujarati (2011) when autocorrelation problem occurs, the original model should be transformed using various trial and error approaches so as to develop a transformed model that does not have autocorrelation effect. The highest order autocorrelation was done using Breusch-Godfrey LM Test. Null hypothesis (H_0) states data series has no serial correlation while alternate hypothesis (H_A) states that data series has serial correlation. When the $p < 0.05$ reject null hypothesis meaning serial correlation exists. On other hand, fail to reject null hypothesis when $p > 0.05$ meaning serial correlation does not exist among the variables (Gujarati, 2011).

Kwiatkowski, Phillips, Schmidt and Shin (1992) state that to test whether data are stationary or integrated it is important to carry out stationarity and unit root tests. For this study unit root tests were done through Augmented Dicker Fuller tests (Kwiatkowski et al., 1992). Null hypothesis (H_0) of ADF test, states that data series has unit root (non-stationary) while alternate hypothesis (H_A) states that data series has no unit root and its stationary. When the p value is less than critical value ($P < 0.05$) accepts alternate hypothesis meaning null hypothesis is rejected. When p-value is more than critical value ($P > 0.05$) null hypothesis is accepted meaning data set is not stationary. When data is non-stationary, it can be transformed to stationarity through differencing approach so as to obtain reliable results (Kwiatkowski et al., 1992).

Homogeneity test was done to determine whether there are equal variances of errors across the samples (Gastwirth, Gel & Miao, 2009). The test validates that, standard errors are not under or over estimated. Levene's test was employed to establish whether variances of population where various samples were drawn are identical. The Levene test rejects the hypothesis of equal variances if resulting p is less than 5%. When $p > 0.05$ null hypothesis is not rejected implying data have equal variances hence homogenous. When proposition of equal variances is not accepted, it means the sample data is not homogenous (Levene, 1961) hence there is a problem of heteroscedasticity. The non-homogenous data was transformed using reciprocal method to make them homoscedastic (Gujarati, 2011).

Yan and Su (2009) indicate that when level of correlation among two or more independent variables is strong in regression model that is a sign of multicollinearity among the variables. According to Cooper and Schindler (2014) multicollinearity problem arises when coefficient of correlation value is more than 0.8. Yan and Su (2009) further indicate that variance inflation factors is a technique that tests for multicollinearit problem. When value of variance inflation factor is one (1) it means that correlation does not exist between independent variables while a value greater than ten (10) indicates existence of multicollinearity problem.

Problem of multicollinearity is resolved through principal component analysis technique that transforms correlated variables into uncorrelated variables. The technique constructs artificial variables in such a way that they are uncorrelated to each other. These artificial variables called principal component, are extracted from the original regressor*s*. The original regressors are then regressed on the principal components to resolve the multicollinearity problem (Gujarati, 2011). For this study presence of multicollinearity problem among the variables was tested using the variance inflation factors.

Biørn (2016) indicate that when there is need to establish whether an appropriate panel data model is random or fixed effects, hausman tests can be done on regression models. Park (2011) explain that fixed effect model analyzes whether intercepts differ across time periods or groups while model of random effect examines variability in error deviation elements across time periods or individuals. The null hypothesis (H_0) for hausman test states random effects model are appropriate while alternate hypothesis (H_A) states that fixed effects model are appropriate (Biørn, 2016; Park, 2011). When p value is lower than 5% , null hypothesis is rejected implying fixed effects model are appropriate and when p value is greater than 5%, null hypothesis is not rejected implying random effects are appropriate (Park, 2011).

3.8 Data Analysis

Modified Jones (1995) model was utilized to calculate discretionary accruals. The establishment of relationship between various variables at a significance level of 5% was done using multiple linear regression models. Descriptive analysis was adopted as variables of the study are known and measurable. The measures of means, median, maximum, minimum and standard deviations was used to describe the variables. Regression analysis was utilized to determine relationship of two or more independent variables on dependent variable and combined impact of intervening, independent and moderating variables on dependent variable.

3.8.1 Earnings Management Model

Earnings management presence in the financial statements was determined by accruals that varies depending on accounting choices made by managers. Peni and Vähämaa (2010) defines accruals as short-term adjustments that solves problem of timing in the current cash flows at

an expense of creating estimates and assumptions. Accruals include all amendments which allow companies to move from an approach of cash whether it entails making changes in working capital, allocations, changes in accounting methods or provisions.

The past researchers in an effort to study accruals used two models as proxies of earnings management, they included total accruals (Abed et al., 2012; Bekiris & Doukakis, 2011) and discretionary accruals (Liu et al., 2013; Arun et al., 2015). When using total accruals model discretionary and non-discretionary accruals are both considered to reflect earnings management practices. Computation of total accruals is the difference between net earnings and operational cashflows (Nugroho & Eko, 2010).

Discretionary accruals are considered best determinant of earnings management since they represent intervention that management has done during the process of preparing financial reports (Uwuigbe et al., 2015). They are determined by deducting non-discretionary accruals from total accruals. When using discretionary accruals as estimate of earnings management aspects of non-discretionary accruals are omitted as they reflect business conditions that are subject to firm's condition which managers cannot control (Peni &Vähämaa, 2010).

Various techniques have been developed to estimate discretionary accruals. They include Healy (1985) model, Jones (1991) model, DeAngelo (1986) model, KS (1995) model, modified Jones (1995) model, Dechow-Dichev (2002) model, Larcker and Richardson (2011) model, Yoon (2010) model, Kothari (2005) model and modified Dechow-Dichev (2002) model. All these models adopt a regression technique approach that has financial components which are utilized to determine discretionary accruals. Modified Jones (1995) model has been regarded as the most reliable way of identifying managerial discretion over accounting

choices by various researches (Iraya et al., 2015; Uwuigbe et al., 2015; Nugroho & Eko, 2011). For computation of discretionary accruals, the study utilized modified Jones model.

The first step was to use cashflow approach to determine the total accruals as shown in equation 3.1:

$$TA_{jt} = NI_{jt} - OCF_{jt} \quad \text{---------- (3.1)}$$

Where:

TA_{jt} is total accruals for firm j in year t,

NI_{jt} is net income for firm j in year t,

OCF_{jt} is operating cash flow for firm j in year t.

The second step entails determining discretionary accruals. This is computed by deducting non-discretionary accruals from total accruals. The non-discretionary accruals are calculated using equation 3.2

$$\frac{NDA_{jt}}{A_{jt-1}} = \beta_0\left(\frac{1}{A_{jt-1}}\right) + \beta_1\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{jt-1}}\right) + \beta_2\left(\frac{PPE_{jt}}{A_{jt-1}}\right) \quad \text{---------- (3.2)}$$

Where:

NDA_{jt} is non-discretionary accrual for firm j in year t

A_{jt-1} is total assets for firm j in year t-1

ΔREV_{jt} is change in net revenue for firm j in year t

PPE_{jt} – is gross property, plant and equipment for firm j in year t

ΔREC_{jt} is change in accounts receivable for firm j in year t

β_0, β_1, β_2 is coefficients

For the determination of non-discretionary accruals regression model 3.3. was used to compute the coefficient parameter's which was to be used in equation 3.2.

$$\frac{TA_{jt}}{A_{jt-1}} = \beta_0\left(\frac{1}{A_{jt-1}}\right) + \beta_1\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{jt-1}}\right) + \beta_2\left(\frac{PPE_{jt}}{A_{jt-1}}\right) + \varepsilon_{jt} \text{ ---------- (3.3)}$$

Where:

TA_{jt} is total accrual of firm j in year t

A_{jt-1} is total assets for firm j in year t-1

ΔREV_{jt} is change in net revenue for firm j in year t

ΔREC_{jt} is change in accounts receivable for firm j in year t

PPE_{jt} is gross property, plant and equipment for firm j in year t

β_0, β_1, β_2 is coefficients parameters estimates

ε is the error term

Algharaballi and Albuloushi (2008) indicate that the gross PPE, revenue changes and changes in receivables are added in accruals model to limit variations in non-discretionary accruals that arise from dynamic conditions. The inclusion of Gross PPE in the formulae is to limit part of total accruals linked to non-discretionary depreciation expense, because the amount of that expense is usually included in total accruals measure. Scaling of all variables by lagged total assets is to ensure heteroskedasticity does not occur (Algharaballi & Albuloushi, 2008).

The last step of the model was to determine discretionary accruals using equation 3.4:

$$DA_{jt} = \frac{TA_{jt}}{A_{jt-1}} - \frac{NDA_{jt}}{A_{jt-1}} \text{ ---------- (3.4)}$$

Where:

DA_{jt} is discretionary accrual of firm j in year t

TA_{jt} is total accrual of firm j in year t

NDA_{jt} is non-discretionary accruals of firm j in year t

A_{jt-1} is total assets for firm j in year t-1,

The components of discretionary accrual model entail items in the financial statement that allows managers to make decision on how they will be presented. According to IAS 16: Property, Plant and Equipment standards there are various methods that can be used to allocate cost to items of PPE. IAS 2: Accounting for inventory also outlines various methods that can be used to allocate costs on inventories. The availability of the various methods in which managers can select from gives them opportunity to select methods that can match their earnings decisions.

3.8.2 Corporate Governance and Earnings Management

The determination of association between corporate governance and earnings management of companies listed at Nairobi Securities Exchange was done using multiple regression model 3.5. The model was also used to test hypotheses one (H_{01}) which state that the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant

$$DA_{jt} = \beta_{0\,jt} + \beta_1 BCOM_{jt} + \beta_2 RCOM_{jt} + \beta_3 BSIZE_{jt} + \beta_4 BDIV_{jt} + \varepsilon_{jt} \quad \text{---------- (3.5)}$$

Relationship between corporate governance and earnings management exists if β_1 to β_4 are significant.

Where:

DA_{jt} is discretionary accruals of firm j in year t

$BCOM_{jt}$ is board composition of firm j in year t

$BSIZE_{jt}$ is board size of firm j in year t

$RCOM_{jt}$ is independence of remuneration committee of firm j in year t

$BDIV_{jt}$ is board diversity of firm j in year t

j is firm

t is time/ period of study

β0, - Constant

β1, β2, β3, β4 are coefficients

ε is error term that describes unexplained variation

3.8.3 Corporate Governance, Executive Compensation and Earnings Management

Intervening effect of executive compensation on relationship between corporate governance and earnings management for firms listed at NSE was determined through four steps mediation analysis approach proposed by Baron and Kenny (1986). This relationship was also applied to test hypothesis two (H_{02}) of the study which state that the mediating role of executive compensation in the association between corporate governance and earnings management for companies listed at Nairobi Securities Exchange is not significant. The four-step approach used was as follows:

Step One: This was to determine association between earnings management and corporate governance. Regression model 3.5 was utilized.

Step Two: The step entailed establishing association between executive compensation and corporate governance while ignoring earnings management. Regression model 3.6 was used:

$$EC_{jt} = \beta_{0\,jt} + \beta_1 BCOM_{jt} + \beta_2 RCOM_{jt} + \beta_3 BSIZE_{jt} + \beta_4 BDIV_{jt} + \varepsilon_{jt} \quad \text{---------- (3.6)}$$

The association between executive compensation and corporate governance exists if β_1 to β_4 are significant.

Step Three: After step two, the association between executive compensation and earnings management while ignoring corporate governance was assessed using regression model 3.7:

$$DA_{jt} = \beta_{0\,jt} + \beta_5 EC_{jt} + \varepsilon_{jt} \text{ ---------- (3.7)}$$

The association between executive compensation and earnings management exists if β_5 is significant.

Step Four: The final step entailed determining the intervention effect of executive compensation on association between corporate governance and earnings management was determined using regression model 3.8:

$$DA_{jt} = \beta_{0\,jt} + \beta_1 BCOM_{jt} + \beta_2 RCOM_{jt} + \beta_3 BSIZE_{jt} + \beta_4 BDIV_{jt} + \beta_5 EC_{jt} + \varepsilon_{jt} \text{ ..... (3.8)}$$

The executive compensation is a mediating variable on association between corporate governance and earnings management when β_1 to β_5 are significant.

Where:

DA_{jt} is discretionary accruals of firm j in year t

$BCOM_{jt}$ is board composition of firm j in year t

$BSIZE_{jt}$ is board size of firm j in year t

$RCOM_{jt}$ is independence of remuneration committee of firm j in year t

$BDIV_{jt}$ is board diversity of firm j in year t

EC_{jt} is executive compensation of firm j in year t

j is firm

t is time/ period of study

β_0, - Constant

β_1, β_2, β_3, β_4, β_5 are coefficients

ε is error term that describes unexplained variation

3.8.4 Corporate Governance, Firm Characteristics and Earnings Management

Moderating influence of firm characteristics on association between corporate governance and earnings management for companies listed at NSE was done using multiple regression models 3.9 to 3.11. The test of hypothesis three (H_{03}) was done by testing the influence of the individual components of moderating variables using hypothesis 3a, 3b and 3c. The multiple regression model 3.9 to 3.11 that was used for analysis is shown below.

The composite of the three variables representing firm characteristics was not done as the effect of the variables are not related in any manner. The composite of corporate governance (CG) variables was computed as geometric mean of corporate governance attributes which are board composition, board size, diversity and remuneration committee independence (Ondigo, 2019).

The creation of interaction term first entailed centering of CG composite and individual firm characteristics components i.e. firm size, firm leverage and firm profitability. After centering the two measures were multiplied to create a single item that represents their product. The centering eliminates possibilities of multicollinearity between the two measures.

$$DA_{jt} = \beta_{0\,jt} + \beta_1 CG_{jt} + \beta_2 FS_{jt} + \beta_3 (CG \times FS)_{jt} + \varepsilon_{jt} \text{ ---------- (3.9)}$$

$$DA_{jt} = \beta_{0\,jt} + \beta_1 CG_{jt} + \beta_4 FLEV_{jt} + \beta_5 (CG \times FLEV)_{jt} + \varepsilon_{jt} \text{ ---------- (3.10)}$$

$$DA_{jt} = \beta_{0\,jt} + \beta_1 CG_{jt} + \beta_6 FP_{jt} + \beta_7 (CG \times FP)_{jt} + \varepsilon_{jt} \text{ ---------- (3.11)}$$

Firm size moderate's association between corporate governance and earnings management if β_3 in model 3.9 is significant. Firm leverage moderates the relationship between corporate governance and earnings management if β_5 in model 3.10 is significant and profitability moderates the relationship between corporate governance and earnings management if β_7 in model 3.11 is significant.

Where:

DA_{jt} is discretionary accruals of firm j in year t

CG_{jt} is composite of corporate governance of firm j in year t

FS_{jt} is size of firm j in year t

$FLEV_{jt}$ is leverage of firm j in year t

FP_{jt} is profitability of firm j in year t

j is the firm

t is time/ period of study

β_0, - is constant

β_1, -β_7 are coefficients

ε is error term that describes unexplained variation

3.8.5 Corporate Governance, Executive Compensation, Firm Characteristics and Earnings Management

Joint association among corporate governance, executive compensation and firm characteristics on earnings management for listed companies at NSE was determined using multiple regression model 3.12. This model was also used to test hypothesis four (H_{04}) which states that joint impact of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at NSE is not significant.

$$DA_{jt} = \beta_{0\,jt} + \beta_1 BCOM_{jt} + \beta_2 RCOM_{jt} + \beta_3 BSIZE_{jt} + \beta_4 BDIV_{jt} + \beta_5 EC_{jt} +$$

$$\beta_6 FS_{jt} + \beta_7 FLEV_{jt} + \beta_8 FP_{jt} + \varepsilon_{jt} \text{ ---------- (3.12)}$$

There is a joint association between corporate governance, executive compensation and firm characteristics on earnings management if β_1 to β_8 are significant in model 3.13.

Where:

DA_{jt} is discretionary accruals of firm j in year t

$BCOM_{jt}$ is board composition of firm j in year t

$BSIZE_{jt}$ is board size of firm j in year t

$RCOM_{jt}$ is independence of remuneration committee of firm j in year t

$BDIV_{jt}$ is board diversity of firm j in year t

EC_{jt} is executive compensation of firm j in year t

FS_{jt} is size of firm j in year t

$FLEV_{jt}$ is leverage of firm j in year t

FP_{jt} is profitability of firm j in year t

j is firm

t is time/ period of study

β_0 - Constant

β_1- β_9 are coefficients

ε is error term that describes unexplained variation

CHAPTER FOUR: DESCRIPTIVE DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter discusses result of descriptive research, data analysis and findings of study. They include computation of earnings management, diagnostic tests, descriptive statistics of variables summarised into means, medians, standard deviation, kurtosis and skewness. In addition, the chapter also covers correlation analysis using Pearson Product-Moment Correlations. The data used for analysis is shown in appendix III and IV.

4.2 Earnings Management Computation

Earnings management was represented as discretionary accruals which was computed using modified Jones (1995) model. The computation of discretionary accruals entailed following steps:

The first step of the model was to use cashflow approach to determine the total accruals as shown in equation 4.1:

$$TA_{jt} = NI_{jt} - OCF_{jt} \quad (4.1)$$

Where:

TA_{jt} is total accruals for firm j in year t.

NI_{jt} is net income for firm j in year t.

OCF_{jt} is operating cash flow for firm j in year t.

The computed values of total accruals for all firms is summarized in Appendix III.

The second step was to compute non-discretionary accruals. Before its computation, the model parameters were determined using equation 4.2.

$$\frac{TA_{jt}}{A_{jt-1}} = \beta_0\left(\frac{1}{A_{jt-1}}\right) + \beta_1\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{jt-1}}\right) + \beta_2\left(\frac{PPE_{jt}}{A_{jt-1}}\right) + \varepsilon_{jt} \quad \text{(4.2)}$$

Where:

NDA_{jt} is non-discretionary accrual for firm j in year t

A_{jt-1} is total assets for firm j in year t-1

ΔREV_{jt} is change in net revenue for firm j in year t

PPE_{jt} – is gross property, plant and equipment for firm j in year t

ΔREC_{jt} is change in accounts receivable for firm j in year t

β_0, β_1, β_2 is coefficients

The summary of the regression model 4.2 as shown in Table 4.1 was used to ascertain parameters of non-discretionary accruals for listed companies at Nairobi Securities Exchange.

Table 4.1: Overall Non-Discretionary Accruals Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
β_0	0.297334	0.056502	5.262375	0.0000
β_1	0.028261	0.013114	2.155134	0.0316
β_2	-0.081237	0.012224	-6.645524	0.0000

R-squared	0.085447
Adjusted R-squared	0.081888
S.E. of regression	0.125814
Sum squared resid	8.136245
Log likelihood	339.6269
Durbin-Watson stat	1.839684

Dependent Variable: Total Accruals

Method: Panel Least Squares

Sample: 2008 2017

Periods included: 10

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019)

As per Table 4.1 all the independent variables of model 4.2 were significant as their p values were less than 0.05. There variables did not depict any autocorrelation problem. This is revealed by the results of Durbin Watson Statistics which is 1.83. The value lies within two critical values of $1.5 < d < 2.5$ which is an indication of no auto correlation. The values of the coefficient were as follows: β_0 0.297334, β_1 0.028261 and β_2 (0.081237). These coefficients were replaced in equation 4.3 below to determine the non-discretionary accruals.

$$\frac{NDA_{jt}}{A_{jt-1}} = \beta_0\left(\frac{1}{A_{jt-1}}\right) + \beta_1\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{jt-1}}\right) + \beta_2\left(\frac{PPE_{jt}}{A_{jt-1}}\right) \text{---------- (4.3)}$$

Where:

NDA_{jt} is non-discretionary accrual for firm j in year t

A_{jt-1} is total assets for firm j in year t-1

ΔREV_{jt} is change in net revenue for firm j in year t

PPE_{jt} – is gross property, plant and equipment for firm j in year t

ΔREC_{jt} is change in accounts receivable for firm j in year t

β_0, β_1, β_2 is coefficients.

The computation of non-discretionary accruals is given in Appendix III.

The final step was to determine discretionary accruals by deducting non-discretionary accruals from total accruals as shown in equation 4.4

$$DA_{jt} = \frac{TA_{jt}}{A_{jt-1}} - \frac{NDA_{jt}}{A_{jt-1}} \text{ ---------- (4.4)}$$

Where:

DA_{jt} is discretionary accrual of firm j in year t

TA_{jt} is total accrual of firm j in year t

NDAjt is non-discretionary accruals of firm j in year t

A_{jt-1} is total assets for firm j in year t-1

Resultant values of discretionary accruals are summarised in Appendix III.

4.3 Descriptive Statistics

This statistic shows mean, maximum values, median, minimum values, skewness, standard deviation and kurtosis of all study variables. The Arithmetic mean is used to calculate average of any numerical data hence it measures central tendency employed to represent most classic values in value sets. Median is defined as middle item of all observations arranged in order. Median separates area of distribution into two parts that are equal. The standard deviation and variance are measures of distribution in the series. Kurtosis measures whether data are flat or peaked in comparative to normal dispersion. Skewness is an estimate of asymmetry of the dispersion of series around its mean. (Triola, 2012).

The descriptive statistics aims to summarize and describe the features of the data. It has two methodologies one of them is the numerical method which measures and represents the mode, median, minimum, maximum and the standard deviation. While the other method is the visual method and this includes the use of dot plot, box plot, pie chart and histogram (Triola, 2012).

Focusing on numerical method, Table 4.2 and 4.3 summarizes mean, minimum values, median, maximum values, kurtosis, skewness and standard deviation for the study variables from sample of 56 listed companies at NSE. The number of observations (N) was 517.

Table 4.2: Earnings Management and Corporate Governance Descriptive Statistics

	Discretionary Accruals	Board Composition	Remuneration Committee	Board Size	Board diversity	CG Composite
Mean	(0.0025)	0.7666	0.8081	0.9042	0.1406	0.6547
Median	(0.0151)	0.8182	0.8000	0.9031	0.1250	0.6686
Maximum	0.9385	1.0000	1.5000	1.1761	0.6667	0.8232
Minimum	(0.7152)	0.0909	0.000	0.4771	0.000	0.2747
Std. Dev.	0.1269	0.1698	0.2476	0.1385	0.1228	0.1016
Skewness	1.5729	(1.7775)	(1.0603)	(0.6149)	0.6734	(1.4415)
Kurtosis	15.5543	6.8912	6.2618	3.0566	3.4042	5.6500
N	517	517	517	517	517	517

Source: Author (2019)

The results of Table 4.2 reveal mean value of discretionary accruals for the companies is -0.0024 with a standard deviation of about 0.13. The value of mean average implies that earnings management practices in the listed firms, are taking downward direction (-0.0024) that is firms are practicing income decreasing earnings management. Firms could be engaging in cookie jar reserves activity which entails making more reserves in the current period so that lower earnings are reported. The positive kurtosis of earnings management implies its distribution measure is leptokurtic and data series has more values that are higher than the

mean. The skewness for earnings management measures is positive implying the distribution is skewed to the right.

For independent variables, the results as shown in Table 4.2 exhibit that mean average of board composition was 0.767 with minimum of 0.09, standard deviation of 0.17, maximum of 1, skewness of -1.77 which means data is negatively skewed. The distribution is leptokurtic as the value of kurtosis is greater than 3 which implies that, the series has more values which are higher than the mean. Remuneration committee independence mean average was 0.808 with maximum of 1.5, minimum of 0, standard deviation of 0.25, skewness of -1.06 which means data is negatively skewed and its leptokurtic as the value of kurtosis of 6.26 is >3 which implies that the series has more values that are higher than the mean. Board size had mean of 0.904 with maximum of 1.18, minimum of 0.48, standard deviation of 0.14, skewness of -0.61 which means data is negatively skewed and the value of kurtosis of 3.05. Board diversity had mean 0.14 with maximum of 0.67, minimum of 0.0, standard deviation of 0.12, skewness of 0.67 which means data is positively skewed and its leptokurtic as the value of kurtosis of 3.40 is >3 which implies that the series has more values which are higher than the mean.

The composite of corporate governance had mean 0.65 with maximum of 0.82, minimum of 0.27, standard deviation of 0.10, skewness of -1.44 which means data is negatively skewed and its leptokurtic as the value of kurtosis of 5.65 is >3 which implies that the series has more values which are higher than the mean. The positive kurtosis for all the corporate governance measures implies distribution of all corporate governance attributes are leptokurtic. The skewness for board composition, board size and independence of remuneration committee is negative implying the distribution is asymmetrical with a long tail to the left while the one for board diversity is positive implying the dispersion is skewed to right.

Table 4.3: Executive Compensation and Firm Characteristics Descriptive Statistics

	Executive Compensation	Firm Size	Firm Leverage	Firm Profitability
Mean	4.472	7.1751	0.8550	0.0323
Median	4.743	7.1740	1.1382	0.0670
Maximum	6.381	8.8107	568.71	5.6881
Minimum	0.000	4.7007	(1,020.88)	(42.0428)
Std. Dev.	1.026	0.8534	52.5735	1.9616
Skewness	-2.821	(0.3361)	(11.8603)	(19.1775)
Kurtosis	12.435	2.6974	303.68	411.7506
N	517	517	517	517

Source: Author (2019).

Table 4.3 show the average of executive compensation is 4.47 with a minimum of 0.00 which means that some directors were not paid any compensation. Maximum value of executive compensation is 6.38, standard deviation of 1.026, skewness of -2.821 which means data is negatively skewed and its leptokurtic as the value of kurtosis of 12.44 is >3 which implies that the series has more values which are higher than the mean. The negative skewness implies that executive compensation distribution is asymmetrical with a long tail to the left.

For moderating variable, the results as per Table 4.3 show that mean average of firm size was 7.18 with maximum of 8.81, minimum of 4.70, standard deviation of 0.85, skewness of -0.34 which means data is negatively skewed and its platykurtic as the value of kurtosis of 2.70 is <3 which implies that firm size distribution have more values which are lower than the mean. Firm leverage average was 0.85 with minimum of -1020, maximum of 568.72, standard deviation of 52.57, skewness of -11.86 which means data is negatively skewed and its leptokurtic as the value of kurtosis of 303.68 is >3 which implies that the series has more

values that are higher than the mean. Firm Profitability average was 0.03 with minimum of -42.04, maximum of 5.68, standard deviation of 1.96, skewness of -19.18 which is negatively skewed and its leptokurtic as the value of kurtosis of 411.75 is >3 which implies that the series has more values which are higher than the mean.

The positive kurtosis for all the firm characteristic measures implies that all distribution of firm characteristic measures is leptokurtic. The skewness for all the firm characteristics measures are negative implying that the distribution is asymmetrical with a long tail to the left.

4.4 Diagnostic Tests of Statistical Assumptions

Linear regression analysis has certain assumptions that might create problems that lead to inefficient and misleading results. Therefore, there are assumptions and tests that must be conducted to check that no problems exist and to prove that linear regression model findings are reliable. This study checked for multicollinearity problem, the existence of autocorrelation, stationarity of data series and homoscedasticity of data. The aspect of normality of the data was done using descriptive statistics of each individual variable.

4.4.1 Random and Fixed Effect Test

Since the study methodology was panel data analysis, we determined whether the data exhibits random or fixed effects using Hausman Test. The hypothesis for this test is as follows: null hypothesis state that random effects model is suitable while alternate hypothesis state that fixed effects model is suitable. The first step was to determine fixed effect on multiple regression model that incorporated all variables: corporate governance, executive

compensation, firm characteristics and earnings management Fixed test results are given in Table 4.4 (a)

Table 4.4 (a): Estimation of Fixed Effect on the Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.307203	0.254638	-1.206430	0.2283
BCOM	-0.040346	0.088555	-0.455609	0.6489
BREM	0.095605	0.068843	1.388755	0.1656
BSIZE	-0.168984	0.120386	-1.403680	0.1611
BDIV	-0.087010	0.089454	-0.972674	0.3312
EC	-0.034947	0.013878	-2.518135	0.0121
FS	0.080772	0.033076	2.441969	0.0150
FLEV	8.61E-06	0.000103	0.083550	0.9335
FP	0.004195	0.002818	1.488605	0.1373

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.188997	Mean dependent var	-0.002492
Adjusted R-squared	0.076208	S.D. dependent var	0.126882
S.E. of regression	0.121951	Akaike info criterion	-1.254957
Sum squared resid	6.737077	Schwarz criterion	-0.729088
Log likelihood	388.4065	Hannan-Quinn criter.	-1.048903
F-statistic	1.675675	Durbin-Watson stat	2.215991
Prob(F-statistic)	0.001649		

Dependent Variable: DA

Method: Panel Least Squares

Sample: 2008 2017

Periods included: 10

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019)

The second step was to determine the random effects of the regression model. Results of random effect test are given in Table 4.4 (b).

Table 4.4 (b): Estimation of Random Effect on the Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.128744	0.063004	2.043444	0.0415
BCOM	-0.036253	0.040070	-0.904741	0.3660
BREM	0.036183	0.027992	1.292640	0.1967
BSIZE	-0.068233	0.063588	-1.073040	0.2838
BDIV	-0.015903	0.053874	-0.295186	0.7680
EC	-0.000739	0.008096	-0.091254	0.9273
FS	-0.009099	0.011349	-0.801780	0.4231
FLEV	2.48E-05	0.000103	0.241728	0.8091
FP	0.004253	0.002764	1.538630	0.1245

Effects Specification		
	S.D.	Rho
Cross-section random	0.027094	0.0470
Idiosyncratic random	0.121951	0.9530

Weighted Statistics			
R-squared	0.026021	Mean dependent var	-0.001884

Adjusted R-squared	0.010682	S.D. dependent var	0.123753
S.E. of regression	0.123093	Sum squared resid	7.697203
F-statistic	1.696457	Durbin-Watson stat	1.983102
Prob(F-statistic)	0.096599		

Unweighted Statistics			
R-squared	0.032887	Mean dependent var	-0.002492
Sum squared resid	8.033897	Durbin-Watson stat	1.899992

Dependent Variable: DA

Method: Panel EGLS (Cross-section random effects)

Sample: 2008 -2017

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Swamy and Arora estimator of component variances

Source: Author (2019)

After the estimation of fixed and random effect next step was to determine which model to adopt by performing the Hausman test on the multiple regression model. The outcome is summarized in Table 4.4 (c):

Table 4.4 (c): Selection of Fixed or Random Effect Model Using Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	17.106166	8	0.0290

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var (Diff.)	Prob.
BCOM	-0.040346	-0.036253	0.006236	0.9587
BREM	0.095605	0.036183	0.003956	0.3448
BSIZE	-0.168984	-0.068233	0.010449	0.3243
BDIV	-0.087010	-0.015903	0.005100	0.3194

EC	-0.034947	-0.000739	0.000127	0.0024
FS	0.080772	-0.009099	0.000965	0.0038
FLEV	0.000009	0.000025	0.000000	0.0735
FP	0.004195	0.004253	0.000000	0.9153

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Source: Author (2019)

As per Table 4.4 (c), p value for Hausman Test is 0.0290 which is less than 0.05 meaning null hypothesis which states random effect is appropriate model is rejected. Therefore, fixed effect model is appropriate. The unbalanced data was due to the use of periods in which data were available. It is important to note that not all firms that were trading at NSE as at 31st December 2017 had been trading since 2008. The study therefore utilised only the periods for each firm in which the data was available.

4.4.2 Serial Correlation Test

Linear regression analysis requires data variables to have little or no autocorrelation. In order to test for autocorrelation, Durbin Watson test and Breush-Godfrey serial correlation LM test was employed. Auto correlations happens when the residuals are not independent from each other. Table 4.5 summarizes the auto correlation test of earnings management, corporate governance, firm characteristics and executive compensation variables.

Table 4.5 (a): Serial Correlation Using Durbin Watson Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.135519	0.054552	2.484206	0.0133
BREM	0.034552	0.024958	1.384373	0.1669

BCOM	-0.039608	0.035410	-1.118555	0.2639
BSIZE	-0.058363	0.058085	-1.004781	0.3155
BDIV	-0.021822	0.049306	-0.442581	0.6583
EC	0.002598	0.007439	0.349206	0.7271
FS	-0.012754	0.010059	-1.267954	0.2054
FLEV	2.92E-05	0.000106	0.276625	0.7822
FP	0.004322	0.002829	1.527895	0.1272

R-squared	0.033435	Mean dependent var	-0.002492
Adjusted R-squared	0.018214	S.D. dependent var	0.126882
S.E. of regression	0.125721	Akaike info criterion	-1.292247
Sum squared resid	8.029342	Schwarz criterion	-1.218297
Log likelihood	343.0458	Hannan-Quinn criter.	-1.263271
F-statistic	2.196579	Durbin-Watson stat	1.902807
Prob(F-statistic)	0.026413		

Dependent Variable: DA

Method: Panel Least Squares

Sample: 2008 - 2017

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019)

The Durbin Watson was used to test for first order correlation. Table 4.5 (a) reveals result of the test for regression model including all the study variables as 1.903 which lies within two vital values of $1.5 < d < 2.5$ as proposed by Montgomery (2001) that implies no correlation exists among the variables. This implies at first order linear auto-correlation among study variables was not present.

Table 4.5 (b): Summary of Auto Correlation Tests

Variable	Indicators	Durbin Watson Statistics (d)
Earnings Management	Discretionary accruals	2.032755
Corporate Governance	Board Composition	2.05415
	Board Remuneration	2.165132
	Board Size	1.991220
	Board Diversity	1.985352
Executive Compensation	Total directors' compensation	2.032755
Firm Characteristics	Firm Size	1.940889
	Firm Leverage	2.037
	Firm Profitability	2.0085

Source: Author (2019)

The value for Durbin Watson Test for each individual variable as shown in Table 4.5(b) reveal that the d values of each variable for the tests lies within the two vital values of $1.5 < d < 2.5$ indicating auto correlation does not exist. Since Durbin Watson test indicates first order serial correlation the LM test was also utilised to test if data variables had serial correlation. The results of LM test for serial correlation is given in Table 4.6. The null hypothesis of LM test indicate serial correlation does not exist while alternate hypothesis states there is serial correlation. When the value of p is less than 0.05, reject the null hypothesis and if its more than 0.05, accept null hypothesis. As per Table 4.6 the p value for LM test was 0.0597 this led to acceptance of null hypothesis implying that at highest order the data variables have no serial/auto correlation.

Table 4.6: Serial Correlation Using Breusch-Godfrey LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.789217	Prob. F (2,506)	0.0624
Obs*R-squared	5.637552	Prob. Chi-Square (2)	0.0597

Test Equation:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.006691	0.054439	-0.122910	0.9022
BCOM	0.006867	0.035422	0.193850	0.8464
BREM	-0.003765	0.024951	-0.150878	0.8801
BSIZE	0.009133	0.058164	0.157029	0.8753
BDIV	-0.005626	0.049209	-0.114334	0.9090
EC	-0.001681	0.007452	-0.225538	0.8217
FS	0.000646	0.010029	0.064391	0.9487
FLEV	-5.82E-06	0.000105	-0.055295	0.9559
FP	0.000120	0.002819	0.042722	0.9659
RESID (-1)	0.048669	0.045203	1.076687	0.2821
RESID (-2)	0.092689	0.045156	2.052621	0.0406

Dependent Variable: RESID

Method: Least Squares

Sample: 2008 - 2017

Included observations: 517

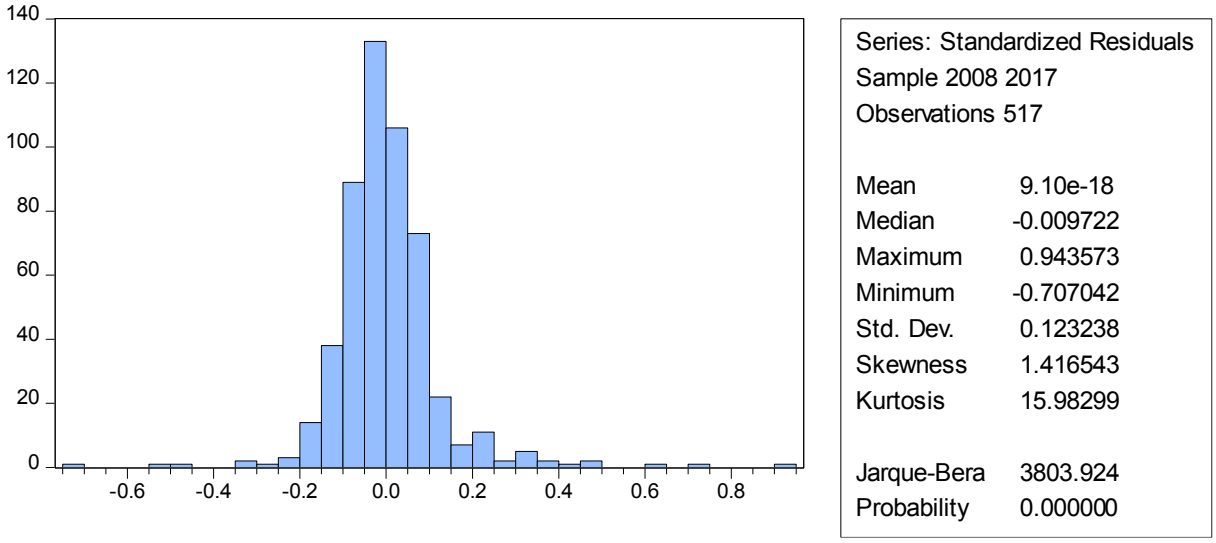
Source: Author (2019)

4.4.3 Normality Test

Normality refers to appearance of data spread for a single quantitative data variable and its comparability to normal dispersion. Normality was tested using Jacque Bera tests and its results is summarized in Figure 4.1. The tests hypotheses were as follows: null hypothesis (H_0) states that sample is drawn from normally distributed population while alternate

hypothesis (H_A) states that samples are drawn from population that is not normally distributed. Since $p < 0.05$ null hypothesis was rejected and conclusion made that samples were drawn from non-normally distributed population. Since the research data was examined from a large sample of 517 observations data, this condition did not distort the results of the study. This agrees with Hair, Black, Babin and Anderson (2010) who stated that remarkable deviation from non-normality is insignificant when sample size is 200 or more.

Figure 4.1: Normality Test using Jacque- Bera Test



Source: Author (2019)

4.4.4 Unit Root Test

In order to tests for stationarity, a comparison was done between Augmented Dicker Fuller test and Levin Lin and Chu tests. The null hypothesis of this tests indicate data series has unit root i.e. non-stationary while alternate hypothesis states that data series has no unit root and its stationary. When the $P < 0.05$ do not accept null hypothesis and when $P > 0.05$ accept null hypothesis. The results of test statistics for statistical samples is given in Table 4.7.

Table 4.7: Summary of Unit Root Tests

Variable	Indicators	Levin, Lin and Chu test		Augmented Dicker Fuller Test	
		Statistics	Prob	Statistics	Prob
Earnings Management	Discretionary accruals	-16.11	0.000	264.48	0.000
Corporate Governance	Board Composition	-10.54	0.000	159.29	0.000
	Board Remuneration	-4.66	0.000	52.65	0.036
	Board Size	-7.31	0.000	105.08	0.043
	Board Diversity	-1.06	0.146	68.31	0.775
Executive Compensation	Executive compensation	-17.20	0.000	180.36	0.000
Firm Characteristics	Firm Size	-21.75	0.000	167.55	0.000
	Firm Leverage	-6.88	0.000	174.59	0.000
	Firm Profitability	-13.46	0.000	146.43	0.011

Source: Author (2019)

As per Table 4.7, p value of unit root test using Levin, Lin and Chu Test and Augmented Dicker Fuller Test for discretionary accruals, board composition, board size, board remuneration, firm size, profitability, leverage and executive compensation were less than 5%. Null hypothesis was rejected hence the data of the mentioned variables are stationary. For board diversity both tests of unit root had $p > 0.05$ implying that the board diversity data series had unit root. Inorder to make the data series of board diversity stationary differencing approach was used.

Kwiatkowski et al. (1992) states that when the data series is non-stationary ($p > 0.05$) it should be transformed to become stationary through differencing approach so as to obtain reliable results. 1st differencing was done on the data series of board diversity and the results are shown in Table 4.8 which reveals that after the 1st differencing the data series became stationary as p values were lower than 0.05 ($p < 0.05$) for both Augmented Dicker Fuller Test and Levin, Lin and Chu Test

Table 4.8: Stationarity Test after 1st Differencing

Variable	Indicators	Levin, Lin and Chu test		Augmented Dicker Fuller Test	
		Statistics	Prob	Statistics	Prob
Corporate Governance	Board Diversity	-14.428	0.000	104.353	0.000

Source: Author (2019)

4.4.5 Multi-collinearity Test

Correlation analysis that focus at determining the relationship between variables is a technique that can be utilized to test for multi-collinearity problem. When using correlation analysis Pearson matrix correlation is what guides one in knowing if the problem exists or not. This problem of multicollinearity can also be tested using Variance Inflation factor technique. Soliman (2013) outlines that value of Pearson's correlation matrix between variables must be lower than 0.8 when problem of multicollinearity among variables is not present. A Pearson matrix value that's greater than 0.8 is an indication of multicollinearity problem. Yan and Su (2009) state that variance inflation factor of 1 means correlation does not exist between independent variables while presence of multicollinearity problem is evident when variance inflation factor is greater than 10. This study tested for the problem of multicollinearity among variables using VIF technique and its results are given in Table 4.9.

Table 4.9: Test of Multicollinearity Using Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.002976	97.34117	NA
BCOM	0.001254	25.28440	1.179851
BREM	0.000623	14.55342	1.247083
BSIZE	0.003374	92.33269	2.113150
BDIV	0.002431	2.767751	1.196569
EC	5.53E-05	38.10639	1.901228
FS	0.000101	172.7926	2.405436
FLEV	1.12E-08	1.007919	1.007652
FP	8.00E-06	1.005514	1.005241

Variance Inflation Factors

Sample: 1 517

Included observations: 517

Source: Author (2019)

As per Table 4.9 the values of centred VIF for every variable range from 1.00 to 2.40 which is less than 10 implying that multicollinearity problem among the variables does not exist.

4.4.6 Homogeneity Test

Homogeneity test was done to determine whether there are equal variances of errors across samples of the data. We used Levene test to determine homogeneity of the variances across the samples. The proposition of Levene test is that reject null hypothesis when resulting p value is lower than critical value ($P < 0.05$). This means there is presence of heteroscedastic problem. When p value is more than critical values ($P > 0.05$) fail to reject null hypothesis,

which implies data series have equal variances hence homogenous. The summary of the Levene test on the data sample is shown in Table 4.10. As per the results of Table 4.10 p value is lower than 0.05 therefore, null hypothesis was rejected implying that problem of heteroscedasticity exists.

Table 4.10: Test for Equality of Variances between Series

Method	N	df	R. Squared	Probability
Levene test	517	4	42.89313	0.000

Source: Author (2019)

The Heteroscedasticity problem was solved using reciprocal method of transformation by transforming the dependent variable (discretionary accruals). After the transformation of this variable using the reciprocal method which was computed as inverse of DA, the transformed data was used in the test to check for homoscedasticity using Breusch-pagan-Godfrey Test. Test results are shown in Table 4.11.

Table 4.11: Test of Homoscedasticity

Test statistics	R-squared	Prob.
Breusch-Pagan-Godfrey	2.353395	0.6711

Source: Author (2019)

As per Table 4.11 p value was 0.6711 this is greater than 0.05 therefore fail to reject null hypothesis hence after transformation of dependent variable data series became homoscedastic.

4.5 Correlation Analysis

Correlation analysis of study variables was done using Pearson's correlation coefficient. This was utilized to analyse degree of relationship between corporate governance and earnings management, between corporate goverannce, executive compensation and earnings management and between corporate governance, firm characteristics and earnings management. The pearson correlation coefficient (*r*) value ranges from +1 to -1. When association is not present between two variables *r* value is zero (0). When association is positive *r* value will be greater than zero (0) this implies, when value of one variables increases it results to an increase in value of another variable. Negative association is depicted by *r* value of less than zero (0), meaning an incrase in value of one variable leads to a decrease in value of the other variable (Cooper & Schindler, 2014).

4.5.1 Correlation between Corporate Governance and Earnings Management

The degree of relationship between corporate governance (composition, board diversity, remuneration committee independence and board size) and earnings management (measured as discretionary accrual) was determined by computing the Pearson product coefficient value. The correlation of the variables is given in Table 4.12.

Table 4.12: Correlation between Corporate Governance and Earnings Management

	DA	BCOM	BDIV	BREM	BSIZE
DA	1.000	(0.076)	(0.068)	0.061	(0.125)
BCOM		1.000	0.014	0.178	0.275
BDIV			1.000	(0.075)	0.325
BREM				1.000	0.121

BSIZE	1.000

Source: Author (2019)

Table 4.12 reveals, there was negative correlation between earnings management and board composition (r = -0.076). Similarly, negative correlation exists between earnings management and board diversity (r = -0.068). Negative correlation also exists between board size and earnings management (r = -0.125). This means if board composition, board size and board diversity increase discretionary accruals decreases. Contrary, there was positive correlation between earnings management and remuneration committee independence (r = 0.061) meaning an increase in remuneration committee independence results to a rise in discretionary accruals.

4.5.2 Correlation between Corporate Governance, Executive Compensation and Earnings Management

Strength of relationship between corporate governance, executive compensation and earnings management was determined using Pearson product correlation. The values of the coefficient are given in Table 4.13.

Table 4.13: Correlation between Corporate Governance, Executive Compensation and Earnings Management

	DA	BCOM	BDIV	BREM	BSIZE	EC
DA	1.000	(0.078)	(0.068)	0.061	(0.125)	(0.101)
BCOM		1.000	0.014	0.178	0.275	0.240
BDIV			1.000	(0.075)	0.326	0.350
BREM				1.000	0.122	(0.207)
BSIZE					1.000	0.517

EC	1.000

Source: Author (2019)

As per Table 4.13, there was negative correlation between earnings management and executive compensation (r = -0.101) this means as executive compensation increases discretionary accruals decreases. A negative correlation exists between executive compensation and board remuneration (r = -0.207) meaning as independence of remuneration committee increases it influences executive compensation negatively. The correlation between executive compensation and board size is positive (r = 0.517) this implies a positive change in board size results to a positive change in executive compensation. The correlation between executive compensation and board composition was positive (r = 0.240). Similarly, a positive correlation also exists between executive compensation and board diversity with r = 0.35 meaning an increase in board diversity results to a rise in executive compensation.

4.5.3 Correlation between Corporate Governance, Firm Characteristics and Earnings Management

The strength of relationship among corporate governance, firm characteristics and earnings management were esatblished using Pearson product moment correlation. The results are summarized in Table 4.14.

Table 4.14: Correlation between Corporate Governance, Firm Characteristics and Earnings Management

	DA	BCOM	BDIV	BREM	BSIZE	FS	FLEV	FP
DA	1.0000	(0.0780)	(0.0690)	0.0615	(0.1250)	(0.1490)	0.0024	0.0758
BCOM		1.0000	0.0137	0.1785	0.2755	0.2784	0.0230	(0.0020)
BDIV			1.0000	(0.0750)	0.3260	0.3008	0.0235	(0.0400)

BREM	1.0000	0.1220	(0.1610)	(0.046)	0.0115
BSIZE		1.0000	0.6598	0.0447	(0.0450)
FS			1.0000	0.0634	(0.0530)
FLEV				1.0000	0.0284
FP					1.0000

Source: Author (2019)

Table 4.14 shows that a negative correlation exists between firm size and earnings management (r = -0.15) this means as size of firm increases earnings management increases. The correlation between earnings management and profitability (r = 0.075) was positive meaning an increase in profitability results to a rise in earnings management.. Firm leverage and earnings management have positive correlation (r = 0.002) this implies an increase in leverage results to a positive change in eanings management. The correlation between board composition, board diversity, board size and firm size was positive while correlation between firm size and board independence remuneration was negative. The correlation between board composition, board diversity, board size and firm leverage was positive while the correlation between firm leverage and board independence remuneration was negative. The correlation between board composition, board diversity, board size and firm profitability was negative while the correlation between firm profitability and board independence remuneration was positive.

4.6 Chapter Summary

The results of descriptive data analysis on all variables of the study, correlation analysis using Pearson product-moment correlations and diagnostic tests of the study variables were presented in this chapter. The Hausman test results revealed fixed effect model as appropriate.

Serial correlation test was done using Durbin Watson test which revealed that the data did not exhibit any correlation hence making the variables good for the regression models. The data were stationary and this was evident from the unit root test results. There was no multicollinearity problem among the study variable and after the first order transformation the data were homogenous.

Computation of earnings management was done by use of modified Jones model. The model inputs were total accruals, change in receivables, lagged total asset, change in net revenue and gross PPE. The average value of discretionary accruals was (0.0035) for all analysed listed firms at NSE. This exhibited a negative discretionary accrual this means on average listed companies participated in income decreasing earnings management practises.

Correlation between components of corporate governance and earnings management was mixed with negative correlation between earnings management and board composition (r = -0.084). Negative relationship also exists between earnings management and board diversity (r = -0.079) and between earnings management and board size (r = -0.123). On the other hand, there is positive correlation between earnings management and remuneration committee independence (r = 0.056). The correlation between earnings management and executive compensation was negative (r = -0.11). In addition, there was negative correlation between firm size and earnings management (r = -0.160). Positive correlation exists between earnings management and firm profitability (r = 0.075) and between earnings management and leverage (r = 0.002).

CHAPTER FIVE: HYPOTHESIS TESTING AND DISCUSSION OF FINDINGS

5.1 Introduction

This chapter present results of the four null hypotheses of the study and their interpretations. First null hypothesis tested impact of corporate governance on earnings management. Second null hypothesis tested mediating effect of executive compensation on relationship between corporate governance and earnings management. Third null hypothesis tested moderating effect of firm characteristics on relationship between corporate governance and earnings management. Fourth null hypothesis tested joint effect of corporate governance, executive compensation and firm characteristics on earnings management of listed companies at NSE. The chapter concludes with discussion of findings on each of the hypotheses tested

5.2 Relationship between Corporate Governance and Earnings Management

First objective was to determine association between corporate governance and earnings management for companies listed at NSE. The study predicted that association between corporate governance and earnings management for companies listed at Nairobi Securities Exchange was not significant as stated by null hypothesis one. Corporate governance comprised of board composition, independence of remuneration committee, board size and diversity. Earnings management was represented by discretionary accruals where modified Jones model was utilized for its computation.

Multiple regression model 5.1 was used to test hypothesis one and determine whether board composition, remuneration committee independence, board size and board diversity

significantly predicted discretionary accruals of companies listed at NSE in Kenya. The first null hypothesis was as follows:

H_{01}: Relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant.

The results of regression model 5.1 is summarized in Table 5.1.

$$DA_{jt} = \beta_{0\,jt} + \beta_1 BCOM_{jt} + \beta_2 RCOM_{jt} + \beta_3 BSIZE_{jt} + \beta_4 BDIV_{jt} + \varepsilon_{jt} \quad \text{----------(5.1)}$$

Note: The variables are defined in section 3.8.2

Table 5.1: Regression Result of Corporate Governance and Earnings Management

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.093015	0.041522	2.240131	0.0255
BCOM	-0.046204	0.034392	-1.343462	0.1797
BDIV	-0.026306	0.048153	-0.546297	0.5851
RCOM	0.043032	0.022929	1.876766	0.0611
BSIZE	-0.100827	0.044393	-2.271246	0.0235

R-squared	0.025473
Adjusted R-squared	0.017860
S.E. of regression	0.125744
Sum squared resid	8.095482
Log likelihood	340.9252
F-statistic	3.345824
Prob(F-statistic)	0.010174

Dependent Variable: DA

Method: Panel Least Squares

Periods included: 10

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019)

As per Table 5.1 the relationship between board composition and discretionary accruals was negative with coefficient of -0.046 but not statistically significant as p value > 0.05. The association between board diversity and earnings management was negative but not statistically significant with coefficient value of -0.026 and p > 0.05. In addition, there was a positive non-significant relationship between independence of remuneration committee and earnings management as p value > 0.05. From the corporate governance components, it is only board size that had significant negative influence on earnings management with p < 0.05. The overall model was statistically significant since p value was 0.01 which is less than 5%. This implies that board composition, board diversity, independence of remuneration committee and board size jointly influences earnings management of listed companies in Kenya. The linear regression model 5.1 was therefore presented as follows: DA_{jt} = 0.093 - 0.04620$BCOM_{jt}$ - 0.0263 $BDIV_{jt}$ + 0.0430$RCOM_{jt}$ – 0.1008$BSIZE_{jt.}$

From the results of Table 5.1 the overall model produced Adjusted R Squared of 0.018, F = 3.44, and p = 0.01. The results of the overall model reveal statistically significant relationship exists between earnings management and corporate governance. The Null hypothesis one (H_{01}) was therefore rejected implying that significant relationship exists between corporate governance and earnings management of companies listed at Nairobi securities Exchange.

5.3 Relationship between Corporate Governance, Executive Compensation and Earnings Management

The second objective established mediating effect of executive compensation on relationship between corporate governance and earnings management of companies listed at NSE. Null hypothesis (H_{02}) was developed:

H_{02}: The mediating role of executive compensation in the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant

For this study four steps of testing proposed by Baron and Kenny (1986) for intervening influence of a variable on relationship between independent and dependent variables was adopted.

In step one of interventions; regression analysis 5.1 was performed to assess association between earnings management and corporate governance (independent variable) while ignoring executive compensation (intervening variable). Regression model 5.1 was utilized and results revealed statistically significant relationship exists between corporate governance and earnings management with p value < 0.05. Results of this analysis are as shown in Table 5.1

The second step of intervening model involved performing multiple regression analysis to establish relationship between executive compensation (intervening variable) and corporate governance (independent variable) while ignoring the dependent variable (earnings management). The regression model 5.2 used is as shown and the results summarised in Table 5.2

$$EC_{jt} = \beta_{0\,jt} + \beta_1 BCOM_{jt} + \beta_2 RCOM_{jt} + \beta_3 BSIZE_{jt} + \beta_4 BDIV_{jt} + \varepsilon_{jt} \quad \text{----------(5.2)}$$

Note: The variables are defined in section 3.8.3

Table 5.2: Regression Result of Corporate Governance and Executive Compensation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.437129	0.265361	5.415746	0.0000

BCOM	0.990502	0.219791	4.506563	0.0000
BDIV	1.518912	0.307738	4.935731	0.0000
RCOM	-1.146817	0.146535	-7.826254	0.0000
BSIZE	3.305841	0.283705	11.65241	0.0000

R-squared	0.391098
Adjusted R-squared	0.386341
S.E. of regression	0.803604
Sum squared resid	330.6388
Log likelihood	-618.0375
F-statistic	82.21453
Prob(F-statistic)	0.000000

Dependent Variable: EC

Method: Panel Least Squares

Sample: 2008- 2017

Periods included: 10

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019)

As per Table 5.2 all the corporate governance indicators (board composition, board diversity, remunetaion committe and board size) were statistically significant in influencing executive compensation ($p < 0.05$). According to the coefficients there was a statistically positive significant relationship between board composition and executive compensation, board diversity and executive compensation, board size and executive compensation while relationship between independence of remuneration committee and executive compensation was significant but negative. The overall model produced Adjusted R-squared of 0.386, $F = 82.21$ and $p < 0.05$ which reveals that jointly all the corporate governance measures significantly influences executive compensation. Linear regession model 5.2 was therefore presented as $EC_{jt}=1.437_{jt} + 0.9905BCOM_{jt} - 1.1468RCOM_{jt} + 3.306BSIZE_{jt} + 1.5189BDIV_{jt}$. This implies that if board composition is enhanced by one unit executive compensation will

increase by 0.99, if board size changes by one unit executive compensation increases by 3.306, if board diversity increases by one unit executive compensation increases by 1.519 while if independence of remuneration committee increases by one unit executive compensation will decrease by 1.14.

The third step of intervention involved performing regression analysis to determine relationship between executive compensation (intervening variable) and earnings management (dependent variable) while ignoring the independent variable (corporate governance). Using regression model 5.3 the summary of the analysis is shown in Table 5.4

$$DA_{jt} = \beta_{0\,jt} + \beta_6 EC_{jt} + \varepsilon_{jt} \text{ ----------(5.3)}$$

Note: The variables are defined in section 3.8.3

Table 5.3: Regression Result of Earnings Management and Executive Compensation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.053583	0.024878	2.153821	0.0317
EC	-0.012538	0.005422	-2.312429	0.0211
R-squared	0.010276			
Adjusted R-squared	0.008355			
S.E. of regression	0.126351			
Sum squared resid	8.221724			
Log likelihood	336.9253			
F-statistic	5.347328			
Prob(F-statistic)	0.021147			

Dependent Variable: DA

Method: Panel Least Squares

Cross-sections included: 56

Source: Author (2019)

Table 5.3, reveal relationship between executive compensation and earnings management is negative but statistically significant since its coefficent is -0.012 and p value 0.02. The model produced Adjusted R-squared = 0.01, F = 5.34 and p = 0.02 which is less than 5% . The regression model 5.3 was presented as $DA_{jt} = 0.05358_{jt} - 0.01254EC_{jt}$. This implies that a unit change in executive compensation will result to a decline in discretionary accruals by 0.0125.

The fourth step was done to establish relationship between earnings management, executive compensation and corporate governance using regression model 5.4. The summary of the model is in Table 5.5.

$$DA_{jt} = \beta_{0\,jt} + \beta_1 BCOM_{jt} + \beta_2 RCOM_{jt} + \beta_3 BSIZE_{jt} + \beta_4 BDIV_{jt} + \beta_5 EC_{jt-1} + \varepsilon_{jt} \text{ ----------(5.4)}$$

Note: The variables are defined in section 3.8.3

Table 5.4: Regression Result of Earnings Management, Corporate Governance and Executive Compensation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.093988	0.042736	2.199253	0.0283
BCOM	-0.045534	0.035101	-1.297209	0.1951
BDIV	-0.025278	0.049333	-0.512389	0.6086
RCOM	0.042256	0.024285	1.739989	0.0825
BSIZE	-0.098589	0.049982	-1.972505	0.0411
EC	-0.000634	0.012695	-1.993932	0.0468
R-squared	0.025492			
Adjusted R-squared	0.015956			
S.E. of regression	0.125866			
Sum squared resid	8.095330			
Log likelihood	340.9301			
F-statistic	2.673394			

Prob(F-statistic)	0.021284

Dependent Variable: DA

Method: Panel Least Squares

Sample: 2008- 2017

Periods included: 10

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019)

Table 5.4 shows the components of corporate governance i.e board composition (p = 0.19), board diversity (p = 0.61) and independence of remuneration committe (p = 0.08) are not statitically significant in the relationship as their p vlaues are greater than 5%. Board size with p of 0.041 is significant. The executive compensation had negative and significant effect in the model (p = 0.0468). The model produced Adjusted R- squared = 0.016, F = 2.67 and p = 0.021 < 0.05. This means that jointly corporate governance and executive compensation influences earnings management. The regression model 5.4 was presented as $DA_{jt} = 0.0940_{jt} - 0.0455BCOM_{jt} + 0.04225RCOM_{jt} - 0.09858BSIZE_{jt} - 0.02527BDIV_{jt} - 0.000634EC_{jt}$.

Step one of mediation analysis showed significant relationship exists between earnings management and corporate governance (p < 0.05). In step two when earnings management was controlled relationship between corporate governance and executive compensation was significant (p < 0.05). In step three when corporate governance was controlled executive compensation had significant effect on earnings management and in step four when executive compensation was introduced in the model there was a decrease in F value from 3.34 (Table 5.1) to 2.67 (Table 5.4) but jointly corporate governance and executive compensation had significant influence on earnings management (p < 0.05). This implies that executive compensation partially mediates the relationship between corporate governance and earnings

management. This is because with the introduction of the mediationg varibale (executive compensation) only one component of dependent variable (board size) remained significant in the model with P value of 0.0411

From these results null hypothesis two (H_{02}) which states the mediating role of executive compensation in the relationship between corporate governance and earnings management of companies listed at NSE is not significant was rejected. The rejection means, executive compensation intervenes the relationship between corporate governance and earnings management of listed companies at Nairobi Securities Exchange.

5.4 Relationship between Corporate Governance, Firm Characteristics and Earnings Management

Third objective assessed moderating effect of firm characteristics on association between corporate governance and earnings management. The study predicted relationship between corporate governance and earnings management was not moderated by firm characteristics. The following null hypothesis three (H_{03}) was formulated:

> ***H_{03}: The moderating influence of firm characteristics on relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant***

In order to test for moderation effect, the technique proposed by Baron and Kenny (1986) was adopted. This technique involved testing how corporate governance (independent variable), firm characteristics (moderating variable) and interaction term of corporate governance and individual firm characteristics components (CG*FC) influences earnings management (dependent variable). The first step in creation of interaction term entailed centering of CG

and individual firm characteristics components i.e., firm size, firm leverage and firm profitability. After centering the two measures were then multiplied to create a single item that represents their product.

The corporate governance composite was determined by getting the geometric mean of the four measures of corporate governance i.e. board composition, independence of remuneration committee, board size and board diversity. For this study the aspects of firm characteristics were three and test of moderation of firm characteristics on relationship between corporate governance and earnings management was done for the individual components of firm characteristics. The three sub hypotheses 3 (a, b and c) were developed and results of moderation regression model are shown in 5.4.1 to 5.4.3.

5.4.1 Relationship between Corporate Governance, Firm Size and Earnings Management

Sub hypothesis (H_{03a}) was used to test moderating effect of firm size on association between corporate governance and earnings management of listed companies at Nairobi Securities Exchange. The null hypothesis tested was as follows:

> ***H_{03a}: The moderating influence of firm size on relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant.***

Inorder to establish moderation effect of firm size on relationship between corporate governance and earnings management regression model 5.5 was utilized. The results are summarized in Table 5.5.

$$DA_{jt} = \beta_{0\,jt} + \beta_1 CG_{jt} + \beta_2 FS_{jt} + \beta_3 (CG \times FS)_{jt} + \varepsilon_{jt} \quad \text{----------(5.5)}$$

Note: The variables are defined in section 3.8.4

Table 5.5: Regression Result of Moderation Effect of Firm Size on Relationship between Corporate Governance and Earnings Management

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.768734	0.272268	2.823444	0.0049
CG	-0.945388	0.415094	-2.277526	0.0232
FS	-0.114006	0.041091	-2.774443	0.0057
CG*FS	0.140890	0.061919	2.275393	0.0233
R-squared	0.032072			
Adjusted R-squared	0.026412			
S.E. of regression	0.125195			
Sum squared resid	8.040666			
Log likelihood	342.6815			
F-statistic	5.666047			
Prob(F-statistic)	0.000800			
Dependent Variable: DA				
Method: Panel Least Squares				
Sample: 2008- 2017				
Periods included: 10				
Cross-sections included: 56				
Total panel (unbalanced) observations: 517				

Source: Author (2019)

As per Table 5.5 corporate governance, firm size and product of corporate governance and firm size had a significant influence on earnings management ($P < 0.05$). The overall model indicated a statistically significant relationship exists between earnings management, corporate governance, firm size and interaction term with $R^{-}2 = .0026$, $F = 5.657$, and $p < 0.05$. The test of slope as reported in Table 5.5 showed corporate governance had regression coefficient (β) value of -0.945 with p-value of 0.0232, firm size regression coefficient (β)

value was -0.11 with p value of 0.0057 while the regression coefficient (β) value of interaction term (CG*FS) was 0.14 with a significance level (p-value) of 0.0233.

The results as Table 5.5 show indicate that composite of corporate governance attributes has statistically significant negative association with earnings management, association between firm size and earnings management is negative and statistically significant while interaction term (CG*FS) has a positive but statistically significant association with earnings management since $p < 0.05$. The regression model 5.5 was presented as follows: $DA_{jt} = 0.7687_{jt} - 0.9454CG_{jt} - 0.11401FS_{jt} + 0.14088\ (CG*FS)_{jt.}$

The product of corporate governance and firm size was positively significant. This implies that the interaction term changed the relationship of the effect of corporate governance and firm size on earnings management from negative to positive. Therefore, firm size has moderation effect on relationship between corporate governance and earnings management. Null hypothesis (H_{03a}) which state moderating influence of firm size on relationship between corporate governance and earnings management of companies listed at NSE is not significant was rejected.

5.4.2 Relationship between Corporate Governance, Firm Leverage and Earnings Management

Second sub hypothesis was to test moderating effect of firm leverage on asscoiation between corporate governance and earnings management. The null hypothesis tested was as follows:

> ***H_{03b}: The moderating influence of firm leverage on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant***

Inorder to determine moderation influence of firm leverage on the relationship between corporate governance and earnings management multiple regression model 5.6 was utilized for analysis and its results is summarised in Table 5.6.

$$DA_{jt} = \beta_{0\,jt} + \beta_1 CG_{jt} + \beta_4 FLEV_{jt} + \beta_5 (CG \times FLEV)_{jt} + \varepsilon_{jt} \text{ ----------(5.6)}$$

Note: The variables are defined in section 3.8.4

Table 5.6: Regression Result of Moderation Effect of Firm Leverage on Relationship between Corporate Governance and Earnings Management.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.042001	0.037127	1.115310	0.2507
CG	-0.067947	0.056088	-1.195301	0.2184
FLEV	0.000696	0.005928	0.117411	0.9827
CG* FLEV	-0.001059	0.009096	-0.116415	0.9074

R-squared	0.003021
Adjusted R-squared	-0.002809
S.E. of regression	0.127060
Sum squared resid	8.281994
Log likelihood	335.0372
F-statistic	0.518200
Prob(F-statistic)	0.669919

Dependent Variable: DA

Method: Panel Least Squares

Sample: 2008 - 2017

Periods included: 10

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019).

As per Table 5.6 the test of slope as reported shows that regression coefficient (β) value of corporate governance was -0.067, significance level (p-value) 0.2184, regression coefficient (β) value of firm leverage was -0.0006, significance level (p-value) 0.9827 while the regression coefficient (β) value of interaction term (CG*FLEV) was -0.0011, significance level (p-value) of 0.9074. All coefficients of the variables were not significant in influencing earnings management since $p > 0.05$. The regression model 5.6 was presented as follows: $DA_{jt} = 0.042001_{jt} - 0.06794CG_{jt} + 0.000696FLEV_{jt} - 0.001058\ (CG*FLEV)_{jt.}$

Corporate governance components have negative but not statistically significant relationship with earnings management, firm leverage had positive but not significant relationship with earnings management while the interaction term (CG*FLEV) had negative but non-statistically significant relationship with earnings management. The overall model revealed coefficient of corporate governance, firm leverage and interaction term were insignificant as p value was 66.9% which is greater than 5%. This indicates that firm leverage has no moderation effect on the relationship between corporate governance and earnings management. Therefore, null hypothesis three b (H_{03b}) which states that moderating influence of firm leverage on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant was not rejected.

5.4.3 Relationship between Corporate Governance, Firm Profitability and Earnings Management

Third sub hypothesis (H_{03c}) was to test moderating effect of firm profitability on relationship between corporate governance and earnings management. Null hypothesis tested was as follows:

H_{03c}: The moderating influence of firm profitability on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant

When establishing the moderation effect of firm profitability on relationship between corporate governance and earnings management regression model 5.7 was utilized. The results of this analysis are summarized in Table 5.7

$$DA_{jt} = \beta_{0\,jt} + \beta_1 CG_{jt} + \beta_6 FP_{jt} + \beta_7 (CG \times FP)_{jt} + \varepsilon_{jt} \text{ ----------(5.7)}$$

Note: The variables are defined in section 3.8.4

Table 5.7: Regression Result of Moderation Effect of Firm Profitability on Relationship between Corporate Governance and Earnings Management

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.006001	0.038900	-0.154258	0.8775
CG	-0.000657	0.058146	-0.011302	0.9910
FP	0.032173	0.009017	3.568138	0.0004
CG*FP	-0.702462	0.220093	-3.191663	0.0015

R-squared	0.027876
Adjusted R-squared	0.022191
S.E. of regression	0.125466
Sum squared resid	8.075523
Log likelihood	341.5633
F-statistic	4.903492
Prob(F-statistic)	0.002279

Dependent Variable: DA

Method: Panel Least Squares

Sample: 2008 2017

Periods included: 10

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019)

As per Table 5.7 the results of overall model showed a statistically significant relationship exists among earnings management, corporate governance, firm profitability and interaction term (CG*FP) as p value was 0.002. Tests of the slope was also performed. Regression coefficient (β) value of corporate governance was -0.0006, significance level (p-value) 0.99, the regression coefficient (β) value of firm profitability was 0.032, significance level (p-value) 0.0004 while the regression coefficient (β) value of interaction term (CG*FP) was -0.702, significance level (p-value) 0.0015. The relationship of corporate governance and earnings management was not significant. The relationship between firm profitability and interaction term (CG*FP) on earnings management was significant. The regression model 5.7 was presented as $DA_{jt} = -0.0060006_{jt} - 0.00065716CG_{jt} + 0.032172669FP_{jt} - 0.702461982028 (CG*FP)_{jt.}$

The regression coefficient for corporate governance was insignificant (β=-0.0006, $p > 0.05$) but the ones of firm profitability (β= 0.032, $p < 0.05$) and product of corporate governance and firm profitability (β=-0.702, $p < 0.05$) were significant implying that firm profitability moderates the relationship between corporate governance and earnings management. The Null sub hypothesis three c ($H_{03}c$) which state moderating influence of firm profitability on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant was rejected.

Null hypothesis (H03) was rejected since at least two of the firm characteristics elements (size and profitability) had moderation effect on relationship between corporate governance and earnings management. Therefore, moderating influence of firm characteristics on relationship

between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is significant.

5.5 Relationship between Corporate Governance, Executive Compensation, Firm Characteristics and Earnings Management

The fourth objective was to establish joint effect of corporate governance, executive compensation, firm characteristics and earnings management on companies listed at NSE. The study predicted that joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at Nairobi Securities Exchange is not significant. The following null hypothesis was formulated:

H_{04}: The joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at Nairobi Securities Exchange is not significant

Inorder to determine the joint effect, multiple regression model 5.8 was used and its results are summaried in Table 5.8

$$DA_{jt} = \beta_{0\,jt} + \beta_1 BCOM_{jt} + \beta_2 RCOM_{jt} + \beta_3 BSIZE_{jt} + \beta_4 BDIV_{jt} + \beta_5 EC_{jt-1} +$$

$$\beta_6 FS_{jt} + \beta_7 FLEV_{jt} + \beta_8 FP_{jt} + \varepsilon_{jt} \text{----------(5.8)}$$

Note: The variables are defined in section 3.8.5

Table 5.8: Regression Result of Corporate Governance, Executive Compensation, Firm Characteristics and Earnings Management

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.135519	0.054552	2.484206	0.0133
BCOM	-0.039608	0.035410	-1.118555	0.2639

RCOM	0.034552	0.024958	1.384373	0.1669
BDIV	-0.021822	0.049306	-0.442581	0.6583
BSIZE	-0.058363	0.058085	-1.004781	0.3155
EC	0.002598	0.007439	0.349206	0.7271
FS	-0.012754	0.010059	-1.267954	0.2054
FP	0.004322	0.002829	1.527895	0.1272
FLEV	2.92E-05	0.000106	0.276625	0.7822

R-squared	0.033435
Adjusted R-squared	0.018214
S.E. of regression	0.125721
Sum squared resid	8.029342
Log likelihood	343.0458
F-statistic	2.196579
Prob(F-statistic)	0.026413

Dependent Variable: DA

Method: Panel Least Squares

Sample: 2008- 2017

Periods included: 10

Cross-sections included: 56

Total panel (unbalanced) observations: 517

Source: Author (2019)

Results as documented in Table 5.8 reveals that regression coefficient (β) value of board composition was -0.039, significance level (p-value) 0.26, regression coefficient (β) value of independence of remuneration committee composition was 0.03, significance level (p-value) 0.167, regression coefficient (β) value of board size was -0.005, significance level (p-value) 0.35 while regression coefficient (β) of board diversity was -0.02, significance level (p value) 0.66, regression coefficient of executive compensation was -0.002, p value = 0.72 regression coefficient (β) value of firm size was 0.012, significance level (p-value) 0.205, regression coefficient (β) value of firm leverage was 0.00002, significance level (p-value) 0.78 while

the regression coefficient (β) value of firm profitability was 0.004 , significance level (p-value) 0.127.

From Table 5.8 the regression model 5.8 was presented as DA_{jt} = 0.135518_{jt} - $0.0396082BCOM_{jt}$ + $0.03455RCOM_{jt}$ - 0.0583627BSIZEjt - $0.0218217BDIV_{jt}$ + $0.002597EC_{jt}$ - $0.012754236FS_{jt}$ + $0.000005FLEV_{jt}$ + $0.004322FP_{jt.}$ Table 5.8 shows that individually all the variables did not have statistically significant impact on earnings management as their p values were more than 0.05 although f statistics of the overall model ($\bar{R}2$ = 0.018, F = 2.196, and p = 0.026) revealed that the model was statistically significant because p value of 0.0026 was less than 0.05. This implies that jointly corporate governance, executive compensation and firm characteristics influences earnings management. Hypothesis four was therefore rejected and it was concluded that joint relationship among corporate governance, executive compensation and firm characteristic on earnings management of companies listed at the Nairobi Securities Exchange is significant.

5.6 Discussion of Findings

The general objective of study was to determine relationships among corporate governance, executive compensation, firm characteristics and earnings management of companies listed at Nairobi Securities Exchange. This section outlines discussion of results of hypotheiss tests.

5.6.1 Corporate Governance and Earnings Management

The first specific objective of study was to determine relationship between corporate governance and earnings management for companies listed at Nairobi Securities Exchange. The study hypothesized that relationship between corporate governance and earnings management was not significant.

The statistically non-significant effect of board composition on earnings management is consistent with studies by Gulzar and Wang (2011); Nugroho and Eko (2011), Buniamin et al. (2012), Abed et al. (2012), Yang et al. (2009), Kapoor and Goel (2017) whose findings revealed that there is no significant relationship between board independence and earnings management. These results contradict studies by Bekiris and Doukakis (2011) who looked into impact of corporate governance on earnings management and concluded that companies with high degree of corporate governance principles engaged less in earnings management practises. Iraya et al. (2015), Waweru and Riro (2013) who analysed how corporate governance influenced earnings management concluded that high number of independent board members lowers earnings management practises, Enofe et al. (2017) whose finding revealed that when independence of board members is high earnings management is reduced. In Kenya, this study result could imply that as more emphasis has been placed on board independence, more companies have adhered to this requirement which has led to reduction in earnings management.

The negative statistically significant relationship between board size and earnings management results is harmonious with studies by Iraya et al. (2015) who analysed how corporate governance influenced earnings management and concluded that when board size is large earnings management is low, Epps and Ismail (2009) whose findings indicated that firms with small board size engage in more earning management practises, Abed et al. (2012) who analysed relationship between corporate governance and earnings management and concluded that concluded that board size influences earnings management negatively. The results are contrary to studies by Okougbo and Okike (2015); Enofe et al. (2017), Kapoor and Goel (2017) whose results revealed that there is significant positive relationship between

board size and earnings management. It also differs with results by Buniamin et al. (2012), Gulzar and Wang (2011); Rauf et al. (2012) whose studies stated there is no significant relationship between board size and earnings management. From this study it was evident that board size has significant negative influence on earnings management implying that a large board size is good.

The non-significant negative relationship between board diversity and earnings management agrees with study by Hili and Affess (2012) who indicated women representation on board has no significant influence on earnings management. However, the results contradict findings by Arun et al. (2015) whose study on presence of women directors on board influences earnings management revealed that higher number of women leads to decrease in earnings management. Gavious et al. (2012) who analysed relationship between female directors and earnings managements found that higher number of women on the board led to decrease in earnings management practises, Lakhal et al. (2015) who investigated the impact of women on earnings management and concluded that when women are chairs of the board or their number on the board is higher than men there is decrease in earnings management. Buniamin et al. (2012) whose study on effect of board diversity on discretionary accruals concluded that higher number of female members on board led to increase in earnings management practices.

The non-statistically significance relationship of board diversity and earnings management can be due to low number of women as compared to men on board in most of listed companies in Kenya and, in some cases, it was zero. The results of this study and other empirical results reveal that there is need to put more emphasis in firms to appoint women on the board and more specific in Kenya to fulfil the two third gender rule in the board of directors.

The relationship between independence of remuneration committee on earnings management was not significant. These results are different from findings of studies by Epps and Ismail (2009) whose finding revealed that higher percentage of independence of remuneration committee results to an increase in earnings management practices. Liu et al. (2013) whose study revealed that influence of board and subcommittee on earnings management revealed that nominating/remunerating committee is negatively associated with earnings management.

According to findings of Table 5.1 the relationship between corporate governance and earnings management reveal that board size is the only element that significantly influences earnings management. From this result it is important to have a standard on the appropriate size of board that will ensure quality of earnings since the current standard as given by CMA is general on the size of board (CMA, 2015a). In Kenya as per the mean average of board composition (76.7%) as shown in Table 4.2 it is evident that most firms have adhered to the corporate governance guidelines that requires the board to consist of a minimum of 33% (1/3) of members who are independent (CMA, 2015a).

The f statistics of the overall model as shown in Table 5.1 shows that its p value is significant. The first hypothesis was therefore rejected implying that relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is significant. This result is consistent with studies by Gulzar and Wang (2011) who concluded that corporate governance has an inverse relationship with earnings management.

These findings that corporate governance has significant impact on earnings management concurs with proposition of information asymmetry theory and agency theory. The information asymmetry theory outlines that through corporate governance the aspects of

information asymmetry are eliminated hence managers do not have an advantage over shareholders when it comes to information and this limits their involvement in earnings management practise. The agency theory also supports that when effective corporate governance is in place managers are monitored hence, they do not engage in earnings manipulation.

5.6.2 Corporate Governance, Executive Compensation and Earnings Management

The second specific objective of study was to evaluate mediating role of executive compensation in relationship between corporate governance and earning management of companies listed at Nairobi Securities Exchange. The null hypothesis held that the relationship between corporate governance and earnings management of companies listed on NSE in Kenya is not intervened by the executive compensation. In order to test for the hypothesis a four-step model was used to test for the intervening effect.

The results of step one of the analysis model revealed that there is a statistically significant relationship between corporate governance and earnings management, this is consistent with studies by Cornett et al. (2008) who analysed the relationship between corporate governance and CEO compensation on earnings management and concluded that good corporate governance reduces earnings management practises.

The second step results revealed that there is a statistically significant relationship between executive compensation and corporate governance ($p < 0.05$). The relationship between executive compensation and corporate governance was positively statistically significant for all components of corporate governance, except remuneration committee independence that

had statistically negative significant relationship. This implies that independence of remuneration committee influences executive compensation negatively which shows that as the number of independent members increase on remuneration committee setting of executive compensation is well monitored. This result is consistent with studies by Laux and Laux (2009), Chhaochhria and Grinstein (2009), Chang et al. (2011); whose studies concluded that independence of board and remuneration committee influences the nature of compensation given to executives whether equity or cash bonuses.

The third step of the analysis revealed negative statistically significant relationship exists between executive compensation and earnings management ($p < 0.05$). This is consistent with studies by Chu and Song (2012) who indicated that there is negative relationship between executive compensation and earnings management but contradicts studies by Bergstresser and Philippon (2006); Cheng and Warfald (2005); Cornett et al. (2008) whose studies concluded that when compensation is linked to stocks and options there is an increase in earnings management practises. The negative relationship implies that when executive compensation increases the practises of earnings management reduces. The fourth step revealed that the relationship between corporate governance, executive compensation and earnings management was statistically significant.

As Table 5.4 show executive compensation has a partial mediation effect on relationship between corporate governance and earnings management. This is because with the introduction of executive compensation there was still a significant relationship between board size (component of corporate governance) with earnings management. The second hypothesis was rejected implying that mediating role of executive compensation on the

relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is significant.

For Kenyan listed companies, results of this hypothesis show that when number of independent members on remuneration committee is high, the higher the regulation on the compensation set for executive hence the lower their engagement in earnings management. This is consistent with results by Laux and Laux (2009) who studied on the association between board committee, executive compensation and earnings management and concluded that the presence of remuneration committee influences compensation of executives and in turn influences earnings management.

Although previous studies have looked at pairwise relationship between corporate governance and earnings management (Mansor et al., 2013; Epps & Ismail, 2009; Cornett et al., 2008), executive compensation and earnings management (Cheng & Warfald, 2005; Bergstresser & Philippon, 2006; Cornett et al., 2008) and others assessed the relationship between corporate governance and executive compensation (Chhaochharia & Grinstein, 2009). It is important to note that none of the studies considered executive compensation as a mediating variable in the relationship between corporate governance and earnings management. This study has therefore provided evidence that the relationship between corporate governance and earnings management is mediated by executive compensation.

This finding that executive compensation mediates the relationship between corporate governance and earnings management supports the proposition of agency theory which outlines when managers are well paid, they will not have self-interest and this will result in earnings management reduction (Hill & Jones, 1992). It also backs up the bonus plan

hypothesis of positive accounting theory which indicates that when compensation is linked to firms' earnings it motivates managers to engage in earnings management practices (Watts and Zimmerman, 1986).

5.6.3 Corporate Governance, Firm Characteristics and Earnings Management

The third objective of this study was to assess moderating effect of firm characteristics on relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange. Firm size, leverage and profitability were the attributes of firm characteristics. The moderation effect of each component was done on the relationship between corporate governance and earnings management.

Results of Table 5.5 showed that firm size had negative statistically significant effect on earnings management as its coefficient was significant ($p < 0.05$). This means when firm size is large practices of earnings management is minimal. The results are consistent with studies by Abbadi et al. (2016) which concluded that larger firms had lower practices of earnings management but contradicts studies by Enofe et al. (2017) whose results stated when size of a firm is large the practises of earnings management is high, Rauf et al. (2012); Uwuigbe et al. (2015); Bassiouny et al. (2016); Nalarreason et al. (2019) whose study's findings revealed that firm size positively relates to earnings management. The results also contradict with studies by Veronica (2015); Waweru and Riro (2013) whose study's findings revealed that firm size had no significant effect on earnings management. Although firm size had a negative significant effect on earnings management, when its moderation effect was tested through interaction term (CG*FS) the results as shown by Table 5.5 indicated that firm size moderates the relationship between corporate governance and earnings management as the coefficient of

the interaction term was significant. Since all variables were significant the best predicting equation was: $DA_{jt} = 0.7687_{jt} - 0.9454CG_{jt} - 0.11401FS_{jt} + 0.14088\ (CG*FS)_{jt.} + \varepsilon$. From this results H_{03a} was rejected implying that firm size moderates the relationship between corporate governance and earnings management.

The results of Table 5.6 reveal that firm leverage had a positive non-significant effect on earnings management. This result was consistent to the studies by Veronica (2015); Uwuigbe et al. (2015); Ardison et al. (2012) whose studies concluded that firm leverage had no significant effect on earnings management but contradicts studies by Nalarreason et al. (2019), Bassiouny et al. (2016) and Abbadi et al. (2016) whose findings show that financial leverage had a positive significant relationship with earnings management. As per Table 5.6 firm leverage had no significant moderation effect on the relationship between corporate governance and earnings management hence H_{03b} was rejected. This implies presence of good corporate governance ensures effective monitoring of managers activities among them debt financing decisions hence limiting managers engagement in debt covenants that could result in earnings manipulation.

As shown by Table 5.7 firm profitability had a positive significant relationship with earnings management. The findings are consistent with results of studies by Trisnawati et al. (2015) whose results indicate companies with high profits engage in earnings management but contradicts studies by Abbadi et al. (2016), Latridis and Kadorinis (2009) whose results show that when firms have low profits they tend to engage in earnings management. This result also differs with findings by Waweru and Riro (2013) whose study concluded that firm profitability does not affect earnings management. The moderation effect of firm profitability on the relationship between corporate governance and earnings management results is

summarised in Table 5.7. The results reveal that when interaction term (CG*FP) was included in the model the relationship was significant. This implies that firm profitability moderates the relationship between corporate governance and earnings management. This is consistent with results by Kapoor and Goel (2017) who concluded that firm profitability moderate's relationship between audit committee independence and earnings management. From this results H_{03c} was rejected implying that firm profitability moderates the relationship between corporate governance and earnings management.

Firm characteristics was represented by profitability, size and leverage. Two of the attributes which are firm size and profitability had a moderation effect on the relationship between corporate governance and earnings management. This therefore led to rejection of Hypothesis 3 implying that moderating influence of firm characteristics on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is significant. These results reveal that relationship between corporate governance and earnings management is moderated by firm size and firm profitability.

The moderation effect of firm size on relationship between corporate governance and earnings management supports the proposition of size hypothesis in positive accounting theory which state that firm size influences the practices of earnings management.

5.6.4 Corporate Governance, Executive Compensation, Firm Characteristics, and Earnings Management

The fourth objective of study was to determine joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at Nairobi Securities Exchange. Results of the study as per Table 5.12 revealed that combined effect of

corporate governance, executive compensation, firm characteristics and earnings management was statistically significant.

Hypothesis four was rejected implying that joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at Nairobi Securities Exchange was significant. Concepts of corporate governance, executive compensation, firm characteristics and earnings management have previously not been considered together as done in this study. The researchers such as Latif and Abdullah (2015), Kapoor and Goel (2017), Enofe et al. (2012), Waweru and Riro (2013), Chang et al. (2011), Laux and Laux (2009) attempted to analyze the relationship of atleast two or three variables used in this study while ignoring joint effect of all variables considered together. The results of this study show that jointly corporate governance, executive compensation and firm characteristics influences earnings management

5.7 Summary of Hypothesis Testing Results

This section summarises the results of the four-hypothesis tested in this study to attain the study objectives. The hypothesis results are summarised in Table 5.9.

Table 5.9: Summary of Hypothesis Testing Results.

Study Objective	Hypothesis	Results	Implications
Objective 1: To determine the relationship between corporate governance and earnings management of	**Hypothesis 1:** The relationship between corporate governance and earnings management of companies listed at Nairobi	Reject null hypothesis	The relationship between corporate governance and earnings management of companies listed at

Study Objective	Hypothesis	Results	Implications
companies listed at Nairobi Securities Exchange.	Securities Exchange is not significant		Nairobi Securities Exchange is significant.
Objective 2: To evaluate mediating role of executive compensation in relationship between corporate governance and earning management of companies listed at Nairobi Securities Exchange.	**Hypothesis 2:** The mediating role of executive compensation in the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant	Reject null hypothesis	The mediating role of executive compensation in the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is significant
Objective 3: To examine influence of firm characteristics in relationship between corporate governance and earnings management of companies listed at Nairobi Securities	**Hypothesis 3:** The moderating influence of firm characteristics on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not	Reject null hypothesis	The moderating influence of firm characteristics on the relationship between corporate governance and earnings management of companies listed at

Study Objective	Hypothesis	Results	Implications
Exchange.	significant		Nairobi Securities Exchange is significant
	Hypothesis 3a: The moderating influence of firm size on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant	Reject null hypothesis	The moderating influence of firm size on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is significant
	Hypothesis 3b: The moderating influence of firm leverage on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant	Fail to reject null hypothesis	The moderating influence of firm leverage on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities

Study Objective	Hypothesis	Results	Implications
			Exchange is not significant
	Hypothesis 3c: The moderating influence of firm profitability on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is not significant	Reject null hypothesis	The moderating influence of firm profitability on the relationship between corporate governance and earnings management of companies listed at Nairobi Securities Exchange is significant
Objective 4: To determine joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at Nairobi Securities Exchange.	**Hypothesis 4:** The joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at Nairobi Securities Exchange is not significant	Reject null hypothesis	The joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at

Study Objective	Hypothesis	Results	Implications
			Nairobi Securities Exchange is significant

Source: Author (2019)

5.8 Empirical Framework

The analysis and findings of this study revealed the following: Board size has negative significant effect on earnings management, executive compensation partially mediates the relationship between CG and EM, size of firm moderates the relationship between CG and EM, firm profitability moderates the relationship between CG and EM and there is a significant joint association between corporate governance, executive compensation, firm characteristics and earnings management. The empirical model with only significant variables is outlined in Figure 5.1

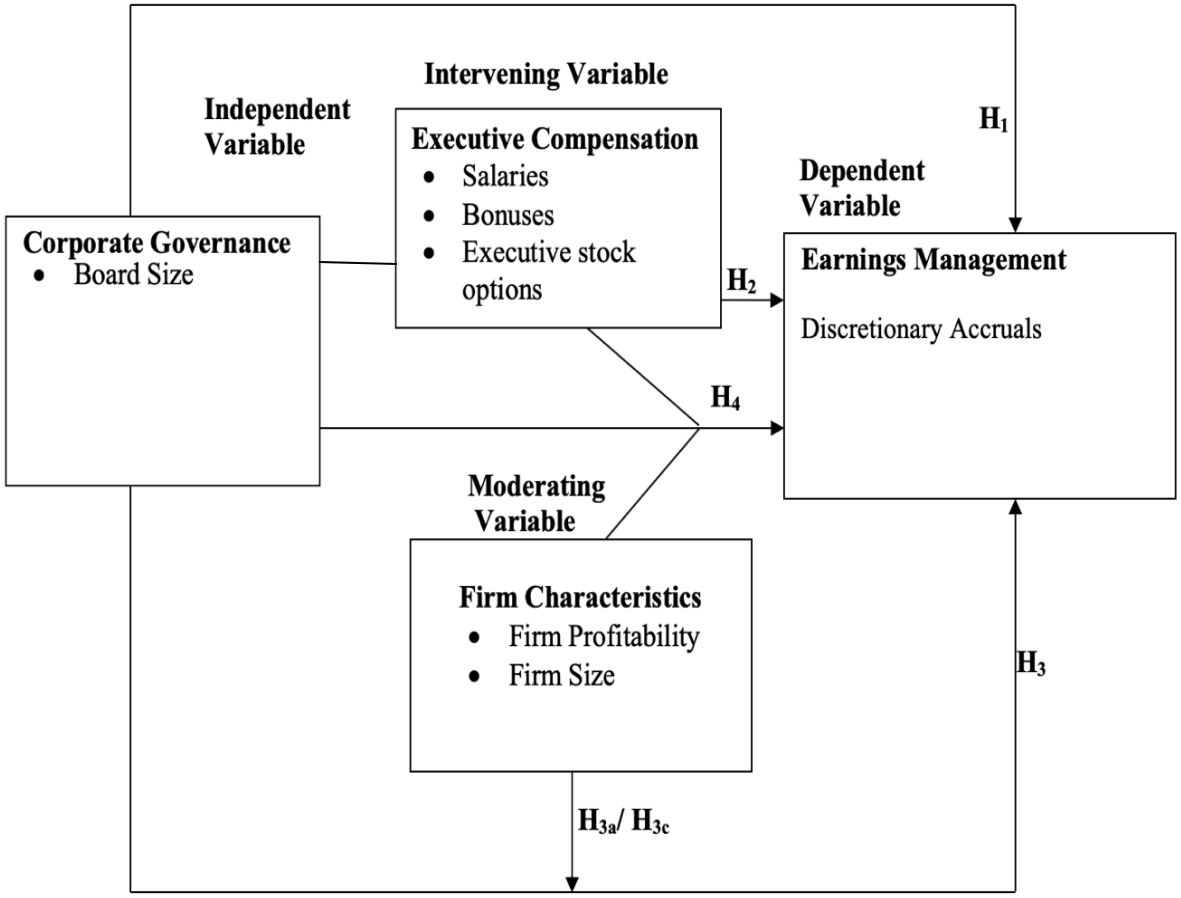


Figure 5.1: Empirical Model **Source: Author (2019)**

CHAPTER SIX: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter highlights summary of findings from four hypothesis testing, conclusion from the findings and contributions this study has made to theory, knowledge, policy and practice. It also identifies constraints of the study and future areas of research. This is a crucial chapter since the contributions of study are key to different stakeholders in determining the extent that corporate governance plays in influencing earnings management practices, role executive compensation has in influencing association of corporate governance and earnings management practise and extent that firm size, leverage and profitability impacts relationship between corporate governance and earnings management.

6.2 Summary of Findings

The main objective was to establish association among corporate governance, executive compensation and firm characteristics on earnings management of companies listed in Kenya. To attain these objectives, this study had the following variables: corporate governance, executive compensation, firm characteristics and earnings management. Corporate governance components were board size, board composition, board diversity and remuneration committee independence. Firm characteristics components were firm size, firm leverage and firm profitability. Executive compensation was measured as cash and equity incentives of executives while the earnings management was represented as discretionary accruals computed by modified Jones Model.

Hypothesis one (H_{01}) determined association between corporate governance and earnings management of companies listed at NSE. Results of multiple regression model revealed negative significant relationship exists between board size and earnings management, relationship between board composition and earnings management is negative but not significant, negative but not statistically significant relationship exists between board diversity and earnings management while association between remuneration committee independence and earnings management was positive but not statistically significant. The overall model revealed a statistically significant ($p < 0.05$) relationship between corporate governance and earnings management hence null hypothesis one was rejected.

Hypothesis Two (H_{02}) explored influence of executive compensation on relationship between corporate governance and earnings management of companies listed at NSE. Hypothesis testing was done using four step mediation analysis. The results showed corporate governance predicts earnings management, corporate governance predicts executive compensation when earnings management is controlled, executive compensation significantly predicts earnings management when there is control of corporate governance. The overall model where all the three variables were analyzed confirmed that executive compensation mediation in association between corporate governance and earnings management was statistically significant ($p < 0.05$). This led to rejection of hypothesis two.

Hypothesis three (H_{03}) was divided into three sub hypotheses that examined moderating impact of firm characteristics (size, leverage and profitability) on association between corporate governance and earnings management of listed companies at NSE. From results of multiple regression models 5.5 to 5.7 null hypothesis three a (H_{03a}) was rejected implying firm size has moderation influence on association between corporate governance and earnings

management, null hypothesis three b (H_{03b}) was not rejected implying firm leverage moderation on relationship between corporate governance and earnings management is not significant while hypotheses three c (H_{03c}) was rejected implying firm profitability moderation effect on relationship between corporate governance and earnings management was significant. Since atleast two elements of firm characteristics were significant in their moderation influence null hypothesis three (H_{03}) was rejected implying that firm characteristics significantly moderates relationship between corporate governance and earnings management. Null hypothesis three was therefore rejected.

Hypothesis Four (H_{04}) analyzed joint effect of corporate governance, executive compensation and firm characteristics on earnings management of companies listed at NSE. From overall regression model 5.8 for this hypothesis testing, the p value of f statistics was significant ($p < 0.05$). This means corporate governance, executive compensation and firm characteristics combined have significant influence on earnings management for companies listed at NSE. Null hypothesis four was therefore rejected.

6.3 Conclusions of the Study

This study set out to analyse relationship among corporate governance, executive compensation, firm characteristics and earnings management of companies listed in Kenya. It was anchored on agency and positive accounting theories. Positivistic philosophy was adopted as the study entailed testing four quantitative hypotheses. Secondary data of listed companies was collected from the company's financial reports.

Rejection of Hypothesis one (H_{01}) implies that significant relationship exists between corporate governance and earnings management. On average listed companies have 76% of

their board members being independent, 81% of the remuneration committee members being independent and board size number on averages was 8. In addition, proportion of women on BOD is still very low averaging at 14% which is way lower than the proposed gender rule of 2/3. The negative significant relationship between board size and earnings management implies when board size is large, practises of earnings management is low. The significant association between corporate governance and earnings management therefore implies regulators of listed companies should emphasise the need to have large board sizes as a means of ensuring reduction in practices of earnings management.

Rejection of hypothesis two (H_{02}) reveal that executive compensation has partial intervening effect on association between corporate governance and earnings management. Since setting of executive compensation depends on remuneration committee which is a component of corporate governance structure, it is crucial for this committee to constitute of only independent members who will reward the executives with packages that will make them not be motivated to participate in self-interest gains practices of earnings management.

Rejection of hypothesis three (H_{03a}) and (H_{03c}) implies that relationship between corporate governance and earnings management is moderated by firm size and profitability but not firm leverage. The findings revealed firm size had negative significant association with earnings management while firm profitability had positive significant effect on earnings management This implies that when firm size is large, earnings management practises is low while a small firm engages in high practises of earnings management. Alternatively, high profitability encourages earnings management practices.

The results of hypothesis three (H_{03a}) and (H_{03c}) revealed that firm size moderates the relationship between corporate governance and earnings management. Moderation of firm profitability on association between corporate governance and earnings management shows that it is important for directors to be keen during preparation of financial statement so as to ensure that managers are not using accounting policies that will increase its profitability with the intention of misleading the stakeholders. BOD mandate is to observe managers practices during financial reporting inorder to ensure they don't manipulate earnings just to show that firm is being profitable. This can be achieved through a good corporate governance system.

Finally, rejection of Hypothesis four (H_{04}) reveals corporate governance, executive compensation and firm characteristics combined influences earnings management of listed companies in Kenya. This implies that listed companies that adhere to good corporate governance practises, ensures that executives are well rewarded hence engage less in practices of earnings management. It also implies that firm size and profitability level influences practices of earnings management in a firm. The regulators of listed companies should also look keenly into firm leverage to clearly understand its impact on association of corporate governance and earnings management.

6.4 Contributions of the Study

The findings from study contribute to research in areas of corporate governance, executive compensation, firm characteristics and earnings management of companies listed at NSE. This section highlights how this study contributes to knowledge, theory, policy and practice.

6.4.1 Contribution to Knowledge

The findings add to current body of knowledge on corporate governance, executive compensation, firm characteristics and earnings management. The contribution of the study is corporate governance, executive compensation and firm characteristics jointly influences earnings management. No documentation for combined effect of these variables is present. Results of this study therefore, will be benchmark for theoretical and empirical foundation of future studies in the aforementioned areas. The study showed that board size, executive compensation, firm size and profitability influences earnings management.

The findings on executive compensation being a mediating variable in association between corporate governance and earnings management has confirmed that the relationship between corporate governance and earnings management is not direct. The partial mediation of executive compensation in the relationship will add to the empirical discussions in research areas of earnings management, executive compensation and corporate governance.

Since one aim for the study was to determine moderating impact of firm characteristics on association between corporate governance and earnings management. This study gave additional knowledge in this fields of research by assessing how firm size, profitability and leverage impacted corporate governance and earnings management relationship. Findings revealed profitability and firm size moderate's association of corporate governance and earnings management. This study has expanded relationship of CG and EM by determining that size and profitability play a key role in determining corporate governance influence on earnings management.

Finally, this study has provided proof which explains the contradictory findings on previous studies done on relationships between corporate governance and earnings management. Some studies found positive association between corporate governances and earnings management (Okougbo & Okike, 2015; Enofe et al., 2017, Kapoor & Goel, 2017) while others found negative association exists between the two variables (Abed et al., 2012; Iraya et al., 2015). The relationship between the two variables may not be direct but could either be intervened by executive compensation or moderated by firm size and profitability. This current study has revealed that in Kenya corporate governances has statistically significant relationship with earnings management. The contradictory results can be linked to different aspects that have been used to measure corporate governance, this will therefore guide future researchers on which items to incorporate as components of corporate governance.

6.4.2 Contribution to Policy and Practice

The study will assist corporate managers to appreciate the linkages between board activities, management function, firm characteristics and earnings management. The fact that executive compensation intervenes association between corporate governance and earnings management indicates how remuneration committees have significant impact of setting executive's compensation. This will reinforce the need to have remuneration committee with majority of independent members who are responsible to determine compensations of executives.

Regulators like Capital Market Authority (CMA) will benefit from this study especially when undertaking the process of issuance of prudent rules on corporate governance. The amendment on this guideline should be strengthened to ensure that components which influence board effectiveness such as executive compensation and size are included in such rules.

The investors will also benefit from this research in relation to ensuring that they have information on companies' corporate governance practises before investing in a company. It's the investors who bear risks when companies collapse due to poor management and non-adherence to corporate governance policies. Since study findings shows association between corporate governance and earnings management is not direct but other elements like executive compensation and firm characteristics also influences it. These findings will help regulators of the listed company to develop policies that will ensure investors interest are protected.

The study findings on board diversity add to existing literature on gender by providing new evidence to support the current gender literature which indicates women are cautious, risk averse and ethical as compared to men (Gavious et al., 2012; Lakhal et al., 2015). Secondly, aspect of board diversity is significant to policy makers as it highlights the need of having women as part of the board members since the results revealed that ratio of women to men on board is still very low and in some companies' board there were no women. By including the need to have women on board the policy makers will contribute to the current debate of 2/3 gender rule in organizations.

The components of discretionary accruals used in the study will enable the International Accounting Standards Board (IASB) that deals with development of accounting standards look into accounting choices that managers have discretion over like choice of accounting methods for items such an inventory, depreciation among others but has an impact on firms' earnings hence make it non-discretionary inorder to limit the opportunity for managers to engage into illegal earnings management practices.

6.4.3 Contribution to Theory

This study adds to agency literature by analysing board of directors as a monitoring measure that is effective in mitigating problem of agency that results from separation of control and ownership in an emerging market. Findings on negative effect of board size on earnings management supports the importance of having sufficient size of BOD this will be effective in monitoring the activities of directors hence limit earnings management practices. The aspect of executive compensation being a mediating variable in this study supports the claims by agency theorists that when managers are well paid, they will not have self-interest and this will result in earnings management reduction.

The study results contribute to literature on positive accounting theory. The theory states that opportunistic behaviours of managers to participate in earnings management can be monitored when company adheres to effective corporate governance practises. The findings that board size (corporate governance) has significant negative effect on earnings management supports this proposition. Additionally, findings on mediating role of executive compensation in the relationship adds to the bonus plan hypothesis of PAT that indicates when compensation is linked to earnings it motivates managers to take part in earnings management for their self-gain. Finally, the moderating effect of firm size supports the political size hypothesis that states firm size influences level of earnings management.

The study findings in relation to corporate governance influence on earnings management adds to information asymmetry theory as it supports assertion by Lasdi (2013) that problem of information asymmetry in organization can be resolved by having relevant and reliable financial statements presented to stakeholders. When an organization has an effective board of

directors it eliminates problem of information asymmetry. Presence of BOD also ensures that compensation of executives is controlled and this ensures that managers work for the benefit of shareholders.

6.5 Limitations of the Study

Although there were some challenges every effort was made to ensure that these limitations did not significantly affect outcome of the study.

The study only used secondary data sourced from the CMA website on financial reports. There are some data which were missing which resulted to the reduction of sample size from the earlier intended. Only 56 firms had data as compared to 66 listed companies. For the firms with data, we only utilized years of the firms with data resulting to 517 observations hence the usage of panel data technique in this study.

This research analysed the relationship of only four variables which are board composition, size, diversity and remuneration committee independence as the variables constituting corporate governance. Those are most commonly used characteristics in the previous studies. This could be a limitation as there might be other attributes that can explain earnings management practises.

6.6 Suggestions for Future Research

Future research could consider other items as intervening variables. Other components of corporate governance can be considered since this study only focused on four attributes of board of directors that is composition, size, diversity and remuneration committee independence.

The current study utilised modified Jones model for computing discretionary accruals. Future research could consider other models of computing discretionary accruals as this could give different results on earnings management practises. The researcher could also develop a model that has high precision of determining discretionary accruals in developing countries like Kenya.

This study used companies listed at Nairobi Securities exchange as its context. Future studies could concentrate on companies that are not listed at securities market. This may be important especially because as per Kenyan guidelines on corporate governance it is a requirement for all companies whether listed or non-listed to comply to the guidelines.

The study only focused on three items as elements of firm characteristics that is firm size, firm leverage and profitability as moderating variables. Future research can be done to include other variables as moderators in the relationship such as industry peculiarities and sectorial analysis of firms.

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APPENDICES

APPENDIX I: Data Collection Form

Name of the company_____

VARIABLES	Year 1 (2008)	Year 2 (2009)	Year 3 (2010)	Year 4 (2011)	Year 5 (2012)	Year 6 (2013)	Year 7 (2014)	Year 8 (2015)	Year 9 (2016)	Year 10 (2017)
Earnings management i) Net Income ii) Operating cash flow iii) Total assets iv) Revenues v) Receivables vi) Plant, Property and Equipment										
Corporate Governance i) Board composition: • Number of non-executive directors on board • Number of executive directors on board directors ii) Remuneration committee composition • Number of Independent members on the committee • Total number of committee members iii) Board size: • Total number of board members iv) Board diversity: • Number of women on the board										

Executive compensation i) Total executive's salary ii) Bonuses and other cash benefits iii) Executives share ownership iv) Executives annual option grants										
Firm Characteristics i) Firm size • Total asset ii) Firm leverage • Total debt • Total equity iii) Firm profitability • Earnings before interest and taxes										

Source: Author (2019)

APPENDIX II: Companies Listed at the NSE as at 31st December 2017

AGRICULTURAL SECTOR

1) Eaagads Ltd
2) Kakuzi Ltd
3) Kapchorua Tea Co Ltd
4) The Limuru Tea Co Ltd
5) Rea Vipingo Plantations Ltd
6) Sasini Ltd
7) Williamson Tea Kenya Ltd

AUTOMOBILES & ACCESSORIES

8) Car & General (K) Ltd
9) Marshalls (E.A.) Ltd
10) Sameer Africa Ltd

BANKING

11) Barclays Bank of Kenya Ltd
12) CFC Stanbic of Kenya Holdings Ltd
13) Diamond Trust Bank Kenya Ltd
14) Equity Bank Ltd
15) Housing Finance Co. Kenya Ltd
16) I & M Holdings Ltd
17) Kenya Commercial Bank Ltd
18) National Bank of Kenya Ltd
19) NIC Bank Ltd
20) Standard Chartered Bank Kenya Ltd
21) The Cooperative Bank of Kenya Ltd

COMMERCIAL AND SERVICES

22) Atlas Development & Support Services
23) Express Kenya Ltd
24) Hutchings Biemer Ltd
25) Kenya Airways Ltd
26) Longhorn Kenya Ltd
27) Nation Media Group Ltd
28) Scangropup Ltd
29) Standard Group Ltd
30) TPS Eastern Africa Ltd
31) Uchumi Supermarket Ltd
32) WPP Scan Group Ltd

REAL ESTATE INVESTMENT TRUST

33) Stanlib Fahari I-Reit

CONSTRUCTION AND ALLIED

34) ARM Cement Ltd
35) Bamburi Cement Ltd
36) Crown Paints Kenya Ltd
37) E. A. Cables Ltd
38) E. A. Portland Cement Co. Ltd

INVESTMENT SERVICES

39) Nairobi Securities Exchange Ltd

INVESTMENT

40) Centum Investment Co. Ltd
41) Olympia Capital Holdings Ltd
42) Trans-Century Ltd
43) Home Afrika

ENERGY AND PETROLEUM

44) KenGen Co Ltd
45) Kenol Kobil Ltd
46) Kenya Power & Lighting Co Ltd
47) Total Kenya Ltd
48) Umeme Ltd

INSURANCE

49) British American Investments Co. (Kenya) Ltd
50) CIC Insurance Group Ltd
51) Jubilee Holdings Ltd
52) Kenya Re-Insurance Corporation Ltd
53) Liberty Holdings Ltd
54) Pan Africa Insurance Holdings Ltd

MANUFACTURING AND ALLIED

55) Flame Tree Group Holdings Ltd
56) A. Baumann and Co. Ltd
57) B.O.C Kenya Ltd
58) British American tobacco Kenya Ltd
59) Carbacid Investments Ltd
60) East African Breweries Ltd
61) Eveready East Africa Ltd
62) Kenya Orchards Ltd
63) Mumias Sugar Co. Ltd
64) Unga group Ltd

TELECOMMUNICATION AND TECHNOLOGY

65) Safaricom Ltd

Source: NSE (2017)

APPENDIX III: Total Accruals, Non-Discretionary Accruals and Discretionary Accruals Measures

FIRMS	YEARS	NI_{jt}	OCF_{jt}	TA_{jt}	$\frac{TA_{jt}}{A_{jt-1}}$	β0	$\frac{1}{A_{jt-1}}$	$\beta_0\left(\frac{1}{A_{jt-1}}\right)$	B1	$\frac{\Delta REV_{it}-\Delta REC_{it}}{A_{jt-1}}$	$\beta_1\left(\frac{\Delta REV_{it}-\Delta REC_{it}}{A_{jt-1}}\right)$	B2	$\frac{PPE_{jt}}{A_{jt-1}}$	$\beta_2\left(\frac{PPE_{jt}}{A_{jt-1}}\right)$	$\frac{NDA_{jt}}{A_{jt-1}}$	DA_{jt}
1) Kakuzi Ltd	2008	282,918	225,571	57,347	0.0242	0.2933	0.1569	0.0460	0.0283	(0.0933)	(0.0026)	(0.0812)	0.5573	(0.0453)	(0.0019)	0.0261
1) Kakuzi Ltd	2009	390,295	660,730	(270,435)	(0.1016)	0.2973	0.1556	0.0463	0.0283	0.1870	0.0053	(0.0812)	0.4269	(0.0347)	0.0169	(0.1185)
1) Kakuzi Ltd	2010	388,666	509,225	(120,559)	(0.0420)	0.2973	0.1548	0.0460	0.0283	0.0387	0.0011	(0.0812)	0.4836	(0.0393)	0.0078	(0.0498)
1) Kakuzi Ltd	2011	644,397	741,266	(96,869)	(0.0301)	0.2973	0.1537	0.0457	0.0283	0.0895	0.0025	(0.0812)	0.4510	(0.0366)	0.0116	(0.0417)
1) Kakuzi Ltd	2012	408,656	264,612	144,044	0.0377	0.2973	0.1519	0.0452	0.0283	(0.2591)	(0.0073)	(0.0812)	0.3313	(0.0269)	0.0109	0.0268
1) Kakuzi Ltd	2013	165,028	458,472	(293,444)	(0.0822)	0.2973	0.1526	0.0454	0.0283	(0.0221)	(0.0006)	(0.0812)	0.3619	(0.0294)	0.0154	(0.0975)
1) Kakuzi Ltd	2014	160,205	492,762	(332,557)	(0.0895)	0.2973	0.1522	0.0453	0.0283	(0.0217)	(0.0006)	(0.0812)	0.3556	(0.0289)	0.0158	(0.1052)
1) Kakuzi Ltd	2015	527,687	873,775	(346,088)	(0.0897)	0.2973	0.1518	0.0451	0.0283	0.1514	0.0043	(0.0812)	0.3902	(0.0317)	0.0177	(0.1074)
1) Kakuzi Ltd	2016	568,361	701,637	(133,276)	(0.0293)	0.2973	0.1502	0.0447	0.0283	0.1472	0.0042	(0.0812)	0.7210	(0.0586)	(0.0098)	(0.0195)
1) Kakuzi Ltd	2017	593,378	923,574	(330,196)	(0.0652)	0.2973	0.1492	0.0443	0.0283	0.0291	0.0008	(0.0812)	0.7029	(0.0571)	(0.0119)	(0.0533)
2) Kapchorua Tea Co Ltd	2008	(69,778)	(11,807)	(57,971)	(0.0522)	0.2973	0.1654	0.0492	0.0283	(0.0553)	(0.0016)	(0.0812)	0.3216	(0.0261)	0.0215	(0.0737)
2) Kapchorua Tea Co Ltd	2009	69,908	66,901	3,007	0.0031	0.2973	0.1669	0.0496	0.0283	0.1637	0.0046	(0.0812)	0.3781	(0.0307)	0.0235	(0.0205)
2) Kapchorua Tea Co Ltd	2010	139,252	61,658	77,594	0.0664	0.2973	0.1648	0.0490	0.0283	0.1186	0.0034	(0.0812)	0.3132	(0.0254)	0.0269	0.0395
2) Kapchorua Tea Co Ltd	2011	187,005	120,219	66,786	0.0446	0.2973	0.1619	0.0481	0.0283	0.1513	0.0043	(0.0812)	0.2527	(0.0205)	0.0319	0.0127
2) Kapchorua Tea Co Ltd	2012	854,740	396,724	458,016	0.2917	0.2973	0.1614	0.0480	0.0283	0.9061						

											0.0256	(0.0812)	0.3390	(0.0275)	0.0461	0.2456
2) Kapchorua Tea Co Ltd	2013	855,659	705,301	150,358	0.0241	0.2973	0.1472	0.0438	0.0283	0.0362	0.0010	(0.0812)	0.0855	(0.0069)	0.0378	(0.0137)
2) Kapchorua Tea Co Ltd	2014	125,991	(100,550)	226,541	0.0311	0.2973	0.1457	0.0433	0.0283	(0.2318)	(0.0066)	(0.0812)	0.0787	(0.0064)	0.0304	0.0007
2) Kapchorua Tea Co Ltd	2015	(22,785)	(10,646)	(12,139)	(0.0063)	0.2973	0.1591	0.0473	0.0283	(0.1310)	(0.0037)	(0.0812)	0.3098	(0.0252)	0.0184	(0.0247)
2) Kapchorua Tea Co Ltd	2016	234,322	146,829	87,493	0.0441	0.2973	0.1588	0.0472	0.0283	0.0347	0.0010	(0.0812)	0.5979	(0.0486)	(0.0004)	0.0445
2) Kapchorua Tea Co Ltd	2017	(51,769)	163,896	(215,665)	(0.1006)	0.2973	0.1579	0.0470	0.0283	0.0559	0.0016	(0.0812)	0.5608	(0.0456)	0.0030	(0.1035)
3) The Limuru Tea Co Ltd	2008	8,466	4,392	4,074	0.0841	0.2973	0.2134	0.0635	0.0283	0.0929	0.0026	(0.0812)	0.1955	(0.0159)	0.0502	0.0339
3) The Limuru Tea Co Ltd	2009	26,969	8,861	18,108	0.3134	0.2973	0.2100	0.0624	0.0283	(0.0131)	(0.0004)	(0.0812)	0.1640	(0.0133)	0.0488	0.2647
3) The Limuru Tea Co Ltd	2010	74,840	6,040	68,800	0.8114	0.2973	0.2029	0.0603	0.0283	0.0703	0.0020	(0.0812)	0.1156	(0.0094)	0.0529	0.7585
3) The Limuru Tea Co Ltd	2011	40,484	8,953	31,531	0.1992	0.2973	0.1923	0.0572	0.0283	(0.1817)	(0.0051)	(0.0812)	0.0628	(0.0051)	0.0469	0.1522
3) The Limuru Tea Co Ltd	2012	101,834	9,875	91,959	0.4809	0.2973	0.1893	0.0563	0.0283	(0.1025)	(0.0029)	(0.0812)	0.0516	(0.0042)	0.0492	0.4316
3) The Limuru Tea Co Ltd	2013	28,513	11,515	16,998	0.0531	0.2973	0.1816	0.0540	0.0283	(0.0496)	(0.0014)	(0.0812)	0.0308	(0.0025)	0.0501	0.0030
3) The Limuru Tea Co Ltd	2014	331	-	331	0.0010	0.2973	0.1807	0.0537	0.0283	(0.0244)	(0.0007)	(0.0812)	0.0288	(0.0023)	0.0507	(0.0497)
3) The Limuru Tea Co Ltd	2015	(2,547)	9,611	(12,158)	(0.0395)	0.2973	0.1822	0.0542	0.0283	(0.0015)	(0.0000)	(0.0812)	0.6912	(0.0562)	(0.0020)	(0.0375)
3) The Limuru Tea Co Ltd	2016	(19,074)	12,238	(31,312)	(0.0998)	0.2973	0.1819	0.0541	0.0283	0.0486	0.0014	(0.0812)	0.7131	(0.0579)	(0.0025)	(0.0973)
3) The Limuru Tea Co Ltd	2017	(17,934)	11,732	(29,666)	(0.1051)	0.2973	0.1835	0.0546	0.0283	(0.0725)	(0.0020)	(0.0812)	0.8327	(0.0676)	(0.0151)	(0.0900)
4) Rea Vipingo Plantations Ltd	2008	168,153	70,772	97,381	0.0835	0.2973	0.1648	0.0490	0.0283	0.0614	0.0017	(0.0812)	0.5978	(0.0486)	0.0022	0.0813
4) Rea Vipingo Plantations Ltd	2009	148,949	214,521	(65,572)	(0.0402)	0.2973	0.1610	0.0479	0.0283	0.0631	0.0018	(0.0812)	0.5156	(0.0419)	0.0078	(0.0479)
4) Rea Vipingo Plantations Ltd	2010	67,355	51,571	15,784	0.0112	0.2973	0.1626	0.0483	0.0283	0.0126						

											0.0004	(0.0812)	0.7453	(0.0605)	(0.0118)	0.0230
4) Rea Vipingo Plantations Ltd	2011	467,196	269,615	197,581	0.1157	0.2973	0.1605	0.0477	0.0283	0.3421	0.0097	(0.0812)	0.7377	(0.0599)	(0.0026)	0.1183
4) Rea Vipingo Plantations Ltd	2012	380,433	332,658	47,775	0.0209	0.2973	0.1572	0.0468	0.0283	0.1767	0.0050	(0.0812)	0.5896	(0.0479)	0.0038	0.0170
4) Rea Vipingo Plantations Ltd	2013	444,811	482,875	(38,064)	(0.0160)	0.2973	0.1568	0.0466	0.0283	0.0025	0.0001	(0.0812)	0.6066	(0.0493)	(0.0026)	(0.0134)
4) Rea Vipingo Plantations Ltd	2014	350,929	158,167	192,762	0.0680	0.2973	0.1550	0.0461	0.0283	(0.0164)	(0.0005)	(0.0812)	0.5409	(0.0439)	0.0017	0.0663
4) Rea Vipingo Plantations Ltd	2015	1,466,681	1,146,394	320,287	0.1000	0.2973	0.1537	0.0457	0.0283	0.2817	0.0080	(0.0812)	0.4966	(0.0403)	0.0133	0.0867
4) Rea Vipingo Plantations Ltd	2016	1,407,729	511,927	895,802	0.1835	0.2973	0.1495	0.0445	0.0283	(0.0179)	(0.0005)	(0.0812)	0.3585	(0.0291)	0.0148	0.1687
4) Rea Vipingo Plantations Ltd	2017	935,887	1,529,772	(593,885)	(0.1418)	0.2973	0.1510	0.0449	0.0283	(0.0513)	(0.0014)	(0.0812)	0.8189	(0.0665)	(0.0231)	(0.1188)
5) Sasini Ltd	2008	885,204	83,285	801,919	0.2096	0.2973	0.1519	0.0452	0.0283	0.0250	0.0007	(0.0812)	0.6700	(0.0544)	(0.0086)	0.2182
5) Sasini Ltd	2009	533,032	353,088	179,944	0.0265	0.2973	0.1464	0.0435	0.0283	0.1087	0.0031	(0.0812)	0.3774	(0.0307)	0.0159	0.0105
5) Sasini Ltd	2010	993,729	404,445	589,284	0.0737	0.2973	0.1449	0.0431	0.0283	0.0085	0.0002	(0.0812)	0.3403	(0.0276)	0.0157	0.0580
5) Sasini Ltd	2011	450,347	497,029	(46,682)	(0.0052)	0.2973	0.1437	0.0427	0.0283	0.0375	0.0011	(0.0812)	0.2962	(0.0241)	0.0197	(0.0249)
5) Sasini Ltd	2012	(124,113)	329,658	(453,771)	(0.0480)	0.2973	0.1433	0.0426	0.0283	0.0055	0.0002	(0.0812)	0.3210	(0.0261)	0.0167	(0.0647)
5) Sasini Ltd	2013	91,689	188,661	(96,972)	(0.0109)	0.2973	0.1439	0.0428	0.0283	(0.0081)	(0.0002)	(0.0812)	0.3557	(0.0289)	0.0137	(0.0245)
5) Sasini Ltd	2014	45,421	315,158	(269,737)	(0.0298)	0.2973	0.1437	0.0427	0.0283	(0.0131)	(0.0004)	(0.0812)	0.9866	(0.0802)	(0.0378)	0.0080
5) Sasini Ltd	2015	1,101,212	128,142	973,070	0.0652	0.2973	0.1394	0.0414	0.0283	0.0064	0.0002	(0.0812)	0.5965	(0.0485)	(0.0068)	0.0720
5) Sasini Ltd	2016	576,985	428,909	148,076	0.0092	0.2973	0.1388	0.0413	0.0283	0.0523	0.0015	(0.0812)	0.6041	(0.0491)	(0.0063)	0.0156
5) Sasini Ltd	2017	339,407	(228,572)	567,979	0.0433	0.2973	0.1405	0.0418	0.0283	0.0068	0.0002	(0.0812)	0.7381	(0.0600)	(0.0180)	0.0613
6) Williamson Tea Kenya Ltd	2008	(95,517)	(44,672)	(50,845)	(0.0135)	0.2973	0.1521	0.0452	0.0283	(0.0409)						

											(0.0012)	(0.0812)	0.3254	(0.0264)	0.0176	(0.0312)
6) Williamson Tea Kenya Ltd	2009	109,870	109,424	446	0.0001	0.2973	0.1526	0.0454	0.0283	0.0672	0.0019	(0.0812)	0.3705	(0.0301)	0.0172	(0.0170)
6) Williamson Tea Kenya Ltd	2010	876,055	456,667	419,388	0.1070	0.2973	0.1517	0.0451	0.0283	0.1873	0.0053	(0.0812)	0.3428	(0.0279)	0.0225	0.0844
6) Williamson Tea Kenya Ltd	2011	884,385	590,563	293,822	0.0551	0.2973	0.1487	0.0442	0.0283	0.1366	0.0039	(0.0812)	0.2660	(0.0216)	0.0265	0.0287
6) Williamson Tea Kenya Ltd	2012	854,740	234,568	620,172	0.1028	0.2973	0.1475	0.0439	0.0283	(0.0103)	(0.0003)	(0.0812)	0.2775	(0.0225)	0.0210	0.0818
6) Williamson Tea Kenya Ltd	2013	855,659	654,572	201,087	0.0278	0.2973	0.1458	0.0433	0.0283	0.0311	0.0009	(0.0812)	0.2966	(0.0241)	0.0201	0.0076
6) Williamson Tea Kenya Ltd	2014	740,721	273,182	467,539	0.0583	0.2973	0.1448	0.0431	0.0283	0.0043	0.0001	(0.0812)	0.2678	(0.0218)	0.0214	0.0368
6) Williamson Tea Kenya Ltd	2015	(227,636)	37,659	(265,295)	(0.0311)	0.2973	0.1443	0.0429	0.0283	(0.1410)	(0.0040)	(0.0812)	0.2895	(0.0235)	0.0154	(0.0465)
6) Williamson Tea Kenya Ltd	2016	482,747	780,593	(297,846)	(0.0348)	0.2973	0.1443	0.0429	0.0283	0.0760	0.0021	(0.0812)	0.5256	(0.0427)	0.0023	(0.0371)
6) Williamson Tea Kenya Ltd	2017	(261,593)	(232,741)	(28,852)	(0.0032)	0.2973	0.1439	0.0428	0.0283	(0.0056)	(0.0002)	(0.0812)	0.5106	(0.0415)	0.0011	(0.0044)
7) Car & General (K) Ltd	2008	214,840	(74,204)	289,044	0.1415	0.2973	0.1585	0.0471	0.0283	0.4183	0.0118	(0.0812)	0.2249	(0.0183)	0.0407	0.1008
7) Car & General (K) Ltd	2009	183,565	(154,690)	338,255	0.1230	0.2973	0.1553	0.0462	0.0283	0.4691	0.0133	(0.0812)	0.1889	(0.0153)	0.0441	0.0789
7) Car & General (K) Ltd	2010	263,031	95,178	167,853	0.0522	0.2973	0.1537	0.0457	0.0283	0.0839	0.0024	(0.0812)	0.1969	(0.0160)	0.0321	0.0202
7) Car & General (K) Ltd	2011	371,891	76,574	295,317	0.0763	0.2973	0.1518	0.0451	0.0283	0.3095	0.0087	(0.0812)	0.2102	(0.0171)	0.0368	0.0395
7) Car & General (K) Ltd	2012	262,543	280,516	(17,973)	(0.0032)	0.2973	0.1483	0.0441	0.0283	(0.0738)	(0.0021)	(0.0812)	0.1566	(0.0127)	0.0293	(0.0325)
7) Car & General (K) Ltd	2013	379,405	95,145	284,260	0.0498	0.2973	0.1480	0.0440	0.0283	0.1592	0.0045	(0.0812)	0.1754	(0.0142)	0.0343	0.0156
7) Car & General (K) Ltd	2014	354,956	(197,154)	552,110	0.0800	0.2973	0.1462	0.0435	0.0283	0.0979	0.0028	(0.0812)	0.1721	(0.0140)	0.0323	0.0477
7) Car & General (K) Ltd	2015	212,777	404,590	(191,813)	(0.0235)	0.2973	0.1447	0.0430	0.0283	0.2051	0.0058	(0.0812)	0.1637	(0.0133)	0.0355	(0.0591)
7) Car & General (K) Ltd	2016	217,426	(223,219)	440,645	0.0490	0.2973	0.1438	0.0428	0.0283	(0.0061)						

											(0.0002)	(0.0812)	0.1952	(0.0159)	0.0267	0.0223
7) Car & General (K) Ltd	2017	119,268	592,573	(473,305)	(0.0488)	0.2973	0.1431	0.0426	0.0283	0.0285	0.0008	(0.0812)	0.1723	(0.0140)	0.0294	(0.0781)
8) Sameer Africa Ltd	2008	158,005	50,706	107,299	0.0339	0.2973	0.1538	0.0457	0.0283	(0.1284)	(0.0036)	(0.0812)	0.9260	(0.0752)	(0.0331)	0.0670
8) Sameer Africa Ltd	2009	150,848	337,656	(186,808)	(0.0825)	0.2973	0.1574	0.0468	0.0283	0.1729	0.0049	(0.0812)	1.3209	(0.1073)	(0.0556)	(0.0269)
8) Sameer Africa Ltd	2010	57,396	78,659	(21,263)	(0.0089)	0.2973	0.1567	0.0466	0.0283	(0.1310)	(0.0037)	(0.0812)	1.1720	(0.0952)	(0.0523)	0.0435
8) Sameer Africa Ltd	2011	96,948	(78,239)	175,187	0.0765	0.2973	0.1572	0.0468	0.0283	0.1775	0.0050	(0.0812)	1.2510	(0.1016)	(0.0499)	0.1263
8) Sameer Africa Ltd	2012	132,603	114,419	18,184	0.0077	0.2973	0.1569	0.0466	0.0283	0.0221	0.0006	(0.0812)	1.2086	(0.0982)	(0.0509)	0.0586
8) Sameer Africa Ltd	2013	508,245	83,120	425,125	0.1250	0.2973	0.1531	0.0455	0.0283	(0.0586)	(0.0017)	(0.0812)	0.8617	(0.0700)	(0.0261)	0.1512
8) Sameer Africa Ltd	2014	(85,317)	148,173	(233,490)	(0.0636)	0.2973	0.1523	0.0453	0.0283	(0.0453)	(0.0013)	(0.0812)	0.8607	(0.0699)	(0.0259)	(0.0377)
8) Sameer Africa Ltd	2015	(15,749)	383,680	(399,429)	(0.1035)	0.2973	0.1518	0.0451	0.0283	(0.0660)	(0.0019)	(0.0812)	0.8440	(0.0686)	(0.0253)	(0.0783)
8) Sameer Africa Ltd	2016	(404,095)	(495,266)	91,171	0.0243	0.2973	0.1521	0.0452	0.0283	(0.1340)	(0.0038)	(0.0812)	0.1985	(0.0161)	0.0253	(0.0010)
9) Barclays Bank of Kenya Ltd	2008	5,525,000	7,525,000	(2,000,000)	(0.0127)	0.2973	0.1220	0.0363	0.0283	0.0137	0.0004	(0.0812)	0.0504	(0.0041)	0.0326	(0.0452)
9) Barclays Bank of Kenya Ltd	2009	6,463,000	8,272,000	(1,809,000)	(0.0107)	0.2973	0.1216	0.0361	0.0283	0.0828	0.0023	(0.0812)	0.0663	(0.0054)	0.0331	(0.0438)
9) Barclays Bank of Kenya Ltd	2010	10,989,000	1,611,000	9,378,000	0.0569	0.2973	0.1217	0.0362	0.0283	0.0437	0.0012	(0.0812)	0.0560	(0.0046)	0.0329	0.0240
9) Barclays Bank of Kenya Ltd	2011	4,128,000	10,219,000	(6,091,000)	(0.0356)	0.2973	0.1215	0.0361	0.0283	(0.0518)	(0.0015)	(0.0812)	0.0574	(0.0047)	0.0300	(0.0656)
9) Barclays Bank of Kenya Ltd	2012	11,283,000	8,969,000	2,314,000	0.0139	0.2973	0.1217	0.0362	0.0283	(0.0138)	(0.0004)	(0.0812)	0.0594	(0.0048)	0.0310	(0.0170)
9) Barclays Bank of Kenya Ltd	2013	7,674,000	3,814,000	3,860,000	0.0209	0.2973	0.1210	0.0360	0.0283	(0.0896)	(0.0025)	(0.0812)	0.0569	(0.0046)	0.0288	(0.0079)
9) Barclays Bank of Kenya Ltd	2014	8,529,000	16,063,000	(7,534,000)	(0.0364)	0.2973	0.1203	0.0358	0.0283	(0.0264)	(0.0007)	(0.0812)	0.0535	(0.0043)	0.0307	(0.0671)
9) Barclays Bank of Kenya Ltd	2015	7,826,000	(3,653,000)	11,479,000	0.0509	0.2973	0.1197	0.0356	0.0283	(0.0762)						

											(0.0022)	(0.0812)	0.0530	(0.0043)	0.0291	0.0217
9) Barclays Bank of Kenya Ltd	2016	8,041,000	(10,919,000)	18,960,000	0.0787	0.2973	0.1193	0.0355	0.0283	(0.0775)	(0.0022)	(0.0812)	0.0504	(0.0041)	0.0292	0.0495
9) Barclays Bank of Kenya Ltd	2017	7,231,000	4,512,000	2,719,000	0.0105	0.2973	0.1188	0.0353	0.0283	(0.0028)	(0.0001)	(0.0812)	0.0471	(0.0038)	0.0314	(0.0210)
10) CFC Stanbic of Kenya Holdings Ltd	2008	846,593	4,910,157	(4,063,564)	(0.0939)	0.2973	0.1310	0.0389	0.0283	(1.0028)	(0.0283)	(0.0812)	0.0834	(0.0068)	0.0038	(0.0978)
10) CFC Stanbic of Kenya Holdings Ltd	2009	1,054,497	(6,423,177)	7,477,674	0.0673	0.2973	0.1243	0.0370	0.0283	(0.0322)	(0.0009)	(0.0812)	0.0408	(0.0033)	0.0327	0.0346
10) CFC Stanbic of Kenya Holdings Ltd	2010	1,787,368	(3,973,954)	5,761,322	0.0451	0.2973	0.1234	0.0367	0.0283	(0.0293)	(0.0008)	(0.0812)	0.0251	(0.0020)	0.0338	0.0113
10) CFC Stanbic of Kenya Holdings Ltd	2011	1,838,992	(2,150,017)	3,989,009	0.0285	0.2973	0.1228	0.0365	0.0283	(0.1215)	(0.0034)	(0.0812)	0.0270	(0.0022)	0.0309	(0.0024)
10) CFC Stanbic of Kenya Holdings Ltd	2012	4,162,480	2,346,665	1,815,815	0.0121	0.2973	0.1223	0.0364	0.0283	0.2221	0.0063	(0.0812)	0.0269	(0.0022)	0.0405	(0.0284)
10) CFC Stanbic of Kenya Holdings Ltd	2013	5,127,156	37,289,957	(32,162,801)	(0.2246)	0.2973	0.1226	0.0365	0.0283	(0.2561)	(0.0072)	(0.0812)	0.0304	(0.0025)	0.0267	(0.2513)
10) CFC Stanbic of Kenya Holdings Ltd	2014	5,686,661	(18,209,678)	23,896,339	0.1324	0.2973	0.1211	0.0360	0.0283	0.0204	0.0006	(0.0812)	0.0217	(0.0018)	0.0348	0.0976
10) CFC Stanbic of Kenya Holdings Ltd	2015	3,707,938	20,771,667	(17,063,729)	(0.0943)	0.2973	0.1211	0.0360	0.0283	(0.1624)	(0.0046)	(0.0812)	0.0225	(0.0018)	0.0296	(0.1239)
10) CFC Stanbic of Kenya Holdings Ltd	2016	4,609,405	(8,486,372)	13,095,777	0.0659	0.2973	0.1205	0.0358	0.0283	0.0156	0.0004	(0.0812)	0.0212	(0.0017)	0.0345	0.0314
10) CFC Stanbic of Kenya Holdings Ltd	2017	4,682,539	3,537,417	1,145,122	0.0053	0.2973	0.1200	0.0357	0.0283	(0.0484)	(0.0014)	(0.0812)	0.0216	(0.0018)	0.0326	(0.0272)
11) Diamond Trust Bank Kenya Ltd	2008	1,188,482	2,158,835	(970,353)	(0.0270)	0.2973	0.1323	0.0393	0.0283	(0.2410)	(0.0068)	(0.0812)	0.0442	(0.0036)	0.0290	(0.0559)
11) Diamond Trust Bank Kenya Ltd	2009	1,296,033	1,805,560	(509,527)	(0.0091)	0.2973	0.1290	0.0384	0.0283	(0.0957)	(0.0027)	(0.0812)	0.0421	(0.0034)	0.0322	(0.0413)
11) Diamond Trust Bank Kenya Ltd	2010	2,324,224	1,252,699	1,071,525	0.0161	0.2973	0.1278	0.0380	0.0283	(0.1127)	(0.0032)	(0.0812)	0.0380	(0.0031)	0.0317	(0.0157)
11) Diamond Trust Bank Kenya Ltd	2011	3,222,727	5,222,906	(2,000,179)	(0.0239)	0.2973	0.1262	0.0375	0.0283	(0.2092)	(0.0059)	(0.0812)	0.0401	(0.0033)	0.0284	(0.0523)
11) Diamond Trust Bank Kenya Ltd	2012	4,172,961	(3,383,112)	7,556,073	0.0701	0.2973	0.1245	0.0370	0.0283	(0.0885)	(0.0025)	(0.0812)	0.0414	(0.0034)	0.0311	0.0390
11) Diamond Trust Bank Kenya Ltd	2013	5,540,763	597,170	4,943,593	0.0365	0.2973	0.1230	0.0366	0.0283	(0.1651)						

											(0.0047)	(0.0812)	0.0518	(0.0042)	0.0277	0.0088
11) Diamond Trust Bank Kenya Ltd	2014	5,480,640	64,654	5,415,986	0.0325	0.2973	0.1216	0.0362	0.0283	(0.1360)	(0.0038)	(0.0812)	0.0477	(0.0039)	0.0284	0.0041
11) Diamond Trust Bank Kenya Ltd	2015	6,436,431	(5,094,118)	11,530,549	0.0545	0.2973	0.1201	0.0357	0.0283	(0.1605)	(0.0045)	(0.0812)	0.0425	(0.0035)	0.0277	0.0268
11) Diamond Trust Bank Kenya Ltd	2016	8,151,468	(3,459,467)	11,610,935	0.0427	0.2973	0.1186	0.0353	0.0283	(0.0082)	(0.0002)	(0.0812)	0.0391	(0.0032)	0.0318	0.0109
11) Diamond Trust Bank Kenya Ltd	2017	7,112,320	2,384,927	4,727,393	0.0144	0.2973	0.1174	0.0349	0.0283	(0.0264)	(0.0007)	(0.0812)	0.0344	(0.0028)	0.0314	(0.0170)
12) Equity Bank Ltd	2008	3,615,000	1,464,000	2,151,000	0.0405	0.2973	0.1295	0.0385	0.0283	(0.2748)	(0.0078)	(0.0812)	0.1205	(0.0098)	0.0209	0.0196
12) Equity Bank Ltd	2009	4,439,000	4,395,000	44,000	0.0006	0.2973	0.1266	0.0377	0.0283	(0.2019)	(0.0057)	(0.0812)	0.1150	(0.0093)	0.0226	(0.0220)
12) Equity Bank Ltd	2010	5,888,000	15,091,000	(9,203,000)	(0.0913)	0.2973	0.1249	0.0372	0.0283	(0.0799)	(0.0023)	(0.0812)	0.1085	(0.0088)	0.0261	(0.1174)
12) Equity Bank Ltd	2011	10,047,000	29,295,000	(19,248,000)	(0.1346)	0.2973	0.1226	0.0365	0.0283	(0.1955)	(0.0055)	(0.0812)	0.0917	(0.0074)	0.0235	(0.1581)
12) Equity Bank Ltd	2012	12,334,000	17,269,000	(4,935,000)	(0.0251)	0.2973	0.1206	0.0359	0.0283	(0.0507)	(0.0014)	(0.0812)	0.0845	(0.0069)	0.0276	(0.0527)
12) Equity Bank Ltd	2013	13,268,000	2,667,000	10,601,000	0.0436	0.2973	0.1192	0.0355	0.0283	(0.1321)	(0.0037)	(0.0812)	0.0800	(0.0065)	0.0252	0.0184
12) Equity Bank Ltd	2014	17,775,000	22,819,000	(5,044,000)	(0.0182)	0.2973	0.1184	0.0352	0.0283	(0.1304)	(0.0037)	(0.0812)	0.0813	(0.0066)	0.0249	(0.0431)
12) Equity Bank Ltd	2015	10,467,000	24,221,000	(13,754,000)	(0.0399)	0.2973	0.1171	0.0348	0.0283	(0.1284)	(0.0036)	(0.0812)	0.0856	(0.0070)	0.0242	(0.0642)
12) Equity Bank Ltd	2016	16,603,000	59,753,000	(43,150,000)	(0.1008)	0.2973	0.1159	0.0344	0.0283	0.0281	0.0008	(0.0812)	0.0784	(0.0064)	0.0289	(0.1297)
12) Equity Bank Ltd	2017	18,713,000	50,972,000	(32,259,000)	(0.0681)	0.2973	0.1153	0.0343	0.0283	(0.0238)	(0.0007)	(0.0812)	0.0701	(0.0057)	0.0279	(0.0960)
13) Housing Finance Co. Kenya Ltd	2008	136,427	(739,715)	876,142	0.0845	0.2973	0.1425	0.0424	0.0283	(0.2212)	(0.0063)	(0.0812)	0.0720	(0.0058)	0.0303	0.0542
13) Housing Finance Co. Kenya Ltd	2009	234,176	(265,520)	499,696	0.0350	0.2973	0.1398	0.0416	0.0283	(0.2506)	(0.0071)	(0.0812)	0.0698	(0.0057)	0.0288	0.0062
13) Housing Finance Co. Kenya Ltd	2010	379,531	6,118,593	(5,739,062)	(0.3147)	0.2973	0.1377	0.0409	0.0283	(0.2363)	(0.0067)	(0.0812)	0.0578	(0.0047)	0.0296	(0.3442)
13) Housing Finance Co. Kenya Ltd	2011	651,407	(2,812,166)	3,463,573	0.1183	0.2973	0.1339	0.0398	0.0283	(0.1603)						

											(0.0045)	(0.0812)	0.0257	(0.0021)	0.0332	0.0851
13) Housing Finance Co. Kenya Ltd	2012	740,831	2,201,041	(1,460,210)	(0.0458)	0.2973	0.1333	0.0396	0.0283	(0.1090)	(0.0031)	(0.0812)	0.0258	(0.0021)	0.0344	(0.0803)
13) Housing Finance Co. Kenya Ltd	2013	1,052,214	1,741,341	(689,127)	(0.0168)	0.2973	0.1314	0.0391	0.0283	(0.0846)	(0.0024)	(0.0812)	0.0273	(0.0022)	0.0345	(0.0513)
13) Housing Finance Co. Kenya Ltd	2014	1,098,813	3,265,259	(2,166,446)	(0.0457)	0.2973	0.1303	0.0387	0.0283	(0.2030)	(0.0057)	(0.0812)	0.0322	(0.0026)	0.0304	(0.0761)
13) Housing Finance Co. Kenya Ltd	2015	1,183,536	(5,806,718)	6,990,254	0.1147	0.2973	0.1285	0.0382	0.0283	(0.0939)	(0.0027)	(0.0812)	0.0276	(0.0022)	0.0333	0.0814
13) Housing Finance Co. Kenya Ltd	2016	888,617	(4,860,535)	5,749,152	0.0802	0.2973	0.1273	0.0379	0.0283	(0.0189)	(0.0005)	(0.0812)	0.0271	(0.0022)	0.0351	0.0451
13) Housing Finance Co. Kenya Ltd	2017	336,460	5,217,834	(4,881,374)	(0.0679)	0.2973	0.1273	0.0378	0.0283	0.0549	0.0016	(0.0812)	0.0297	(0.0024)	0.0370	(0.1048)
14) I & M Holdings Ltd	2008	1,113,678	3,039,323	(1,925,645)	(0.0655)	0.2973	0.1339	0.0398	0.0283	(0.3095)	(0.0087)	(0.0812)	0.0467	(0.0038)	0.0273	(0.0927)
14) I & M Holdings Ltd	2009	1,382,179	3,950,422	(2,568,243)	(0.0599)	0.2973	0.1310	0.0390	0.0283	(0.1017)	(0.0029)	(0.0812)	0.0396	(0.0032)	0.0329	(0.0928)
14) I & M Holdings Ltd	2010	4,010,424	(11,358,912)	15,369,336	0.2823	0.2973	0.1293	0.0384	0.0283	(0.3579)	(0.0101)	(0.0812)	0.0355	(0.0029)	0.0254	0.2569
14) I & M Holdings Ltd	2011	1,769,757	(5,148,081)	6,917,838	0.0796	0.2973	0.1260	0.0375	0.0283	(0.1973)	(0.0056)	(0.0812)	0.0343	(0.0028)	0.0291	0.0505
14) I & M Holdings Ltd	2012	4,237,933	(9,297,899)	13,535,832	0.1253	0.2973	0.1245	0.0370	0.0283	0.0221	0.0006	(0.0812)	0.0334	(0.0027)	0.0349	0.0903
14) I & M Holdings Ltd	2013	5,301,472	(25,726,065)	31,027,537	0.2601	0.2973	0.1238	0.0368	0.0283	(0.1509)	(0.0043)	(0.0812)	0.0355	(0.0029)	0.0297	0.2305
14) I & M Holdings Ltd	2014	4,993,740	(7,107,874)	12,101,614	0.0856	0.2973	0.1227	0.0365	0.0283	(0.0254)	(0.0007)	(0.0812)	0.0243	(0.0020)	0.0338	0.0518
14) I & M Holdings Ltd	2015	5,704,643	13,899,567	(8,194,924)	(0.0532)	0.2973	0.1221	0.0363	0.0283	(0.0711)	(0.0020)	(0.0812)	0.0246	(0.0020)	0.0323	(0.0855)
14) I & M Holdings Ltd	2016	6,833,364	1,740,217	5,093,147	0.0309	0.2973	0.1217	0.0362	0.0283	(0.0235)	(0.0007)	(0.0812)	0.0150	(0.0012)	0.0343	(0.0034)
14) I & M Holdings Ltd	2017	5,757,720	5,617,141	140,579	0.0008	0.2973	0.1211	0.0360	0.0283	(0.0742)	(0.0021)	(0.0812)	0.0156	(0.0013)	0.0326	(0.0319)
15) Kenya Commercial Bank Ltd	2008	4,190,690	8,851,621	(4,660,931)	(0.0387)	0.2973	0.1237	0.0368	0.0283	(0.1877)	(0.0053)	(0.0812)	0.0809	(0.0066)	0.0249	(0.0636)
15) Kenya Commercial Bank Ltd	2009	3,934,751	10,463,200	(6,528,449)	(0.0341)	0.2973	0.1208	0.0359	0.0283	(0.1826)						

											(0.0052)	(0.0812)	0.0669	(0.0054)	0.0253	(0.0594)
15) Kenya Commercial Bank Ltd	2010	6,777,337	(2,067,962)	8,845,299	0.0454	0.2973	0.1206	0.0359	0.0283	(0.1053)	(0.0030)	(0.0812)	0.0734	(0.0060)	0.0269	0.0185
15) Kenya Commercial Bank Ltd	2011	8,578,878	19,447,305	(10,868,427)	(0.0432)	0.2973	0.1190	0.0354	0.0283	(0.1321)	(0.0037)	(0.0812)	0.0618	(0.0050)	0.0266	(0.0699)
15) Kenya Commercial Bank Ltd	2012	15,032,835	6,009,336	9,023,499	0.0273	0.2973	0.1174	0.0349	0.0283	0.0081	0.0002	(0.0812)	0.0542	(0.0044)	0.0307	(0.0034)
15) Kenya Commercial Bank Ltd	2013	14,035,587	5,205,833	8,829,754	0.0240	0.2973	0.1167	0.0347	0.0283	(0.0452)	(0.0013)	(0.0812)	0.0520	(0.0042)	0.0292	(0.0052)
15) Kenya Commercial Bank Ltd	2014	17,646,146	31,202,576	(13,556,430)	(0.0347)	0.2973	0.1164	0.0346	0.0283	(0.1563)	(0.0044)	(0.0812)	0.0522	(0.0042)	0.0259	(0.0606)
15) Kenya Commercial Bank Ltd	2015	11,670,476	4,426,320	7,244,156	0.0148	0.2973	0.1151	0.0342	0.0283	(0.1202)	(0.0034)	(0.0812)	0.0411	(0.0033)	0.0275	(0.0127)
15) Kenya Commercial Bank Ltd	2016	19,810,000	(9,082,000)	28,892,000	0.0518	0.2973	0.1143	0.0340	0.0283	(0.0537)	(0.0015)	(0.0812)	0.0404	(0.0033)	0.0292	0.0226
15) Kenya Commercial Bank Ltd	2017	21,663,000	20,158,000	1,505,000	0.0025	0.2973	0.1140	0.0339	0.0283	(0.0671)	(0.0019)	(0.0812)	0.0427	(0.0035)	0.0285	(0.0260)
16) National Bank of Kenya Ltd	2008	1,240,610	(2,946,882)	4,187,492	0.1011	0.2973	0.1313	0.0390	0.0283	(0.0217)	(0.0006)	(0.0812)	0.0593	(0.0048)	0.0336	0.0675
16) National Bank of Kenya Ltd	2009	1,699,847	5,163,460	(3,463,613)	(0.0811)	0.2973	0.1311	0.0390	0.0283	(0.0791)	(0.0022)	(0.0812)	0.0711	(0.0058)	0.0310	(0.1121)
16) National Bank of Kenya Ltd	2010	2,021,919	(5,514,500)	7,536,419	0.1466	0.2973	0.1297	0.0386	0.0283	(0.1308)	(0.0037)	(0.0812)	0.0705	(0.0057)	0.0291	0.1175
16) National Bank of Kenya Ltd	2011	1,546,113	4,876,080	(3,329,967)	(0.0555)	0.2973	0.1286	0.0382	0.0283	(0.1017)	(0.0029)	(0.0812)	0.0716	(0.0058)	0.0295	(0.0850)
16) National Bank of Kenya Ltd	2012	729,752	(583,795)	1,313,547	0.0191	0.2973	0.1276	0.0379	0.0283	0.0229	0.0006	(0.0812)	0.0669	(0.0054)	0.0332	(0.0140)
16) National Bank of Kenya Ltd	2013	1,789,348	10,466,402	(8,677,054)	(0.1292)	0.2973	0.1278	0.0380	0.0283	(0.1671)	(0.0047)	(0.0812)	0.0890	(0.0072)	0.0260	(0.1552)
16) National Bank of Kenya Ltd	2014	887,699	(2,213,578)	3,101,277	0.0335	0.2973	0.1255	0.0373	0.0283	(0.2487)	(0.0070)	(0.0812)	0.0741	(0.0060)	0.0243	0.0092
16) National Bank of Kenya Ltd	2015	(1,153,477)	4,420,398	(5,573,875)	(0.0453)	0.2973	0.1236	0.0368	0.0283	(0.0270)	(0.0008)	(0.0812)	0.0552	(0.0045)	0.0315	(0.0768)
16) National Bank of Kenya Ltd	2016	25,453	11,427,777	(11,402,324)	(0.0909)	0.2973	0.1235	0.0367	0.0283	0.1169	0.0033	(0.0812)	0.0568	(0.0046)	0.0354	(0.1263)
16) National Bank of Kenya Ltd	2017	323,456	693,456	(370,000)	(0.0033)	0.2973	0.1242	0.0369	0.0283	0.0045						

											0.0001	(0.0812)	0.0645	(0.0052)	0.0318	(0.0351)
17) NIC Bank Ltd	2008	1,037,681	2,717,881	(1,680,200)	(0.0537)	0.2973	0.1334	0.0397	0.0283	(0.2130)	(0.0060)	(0.0812)	0.0354	(0.0029)	0.0308	(0.0845)
17) NIC Bank Ltd	2009	1,062,366	(799,347)	1,861,713	0.0437	0.2973	0.1311	0.0390	0.0283	(0.0412)	(0.0012)	(0.0812)	0.0319	(0.0026)	0.0352	0.0085
17) NIC Bank Ltd	2010	1,732,885	1,591,000	141,885	0.0030	0.2973	0.1303	0.0387	0.0283	(0.1626)	(0.0046)	(0.0812)	0.0302	(0.0025)	0.0317	(0.0287)
17) NIC Bank Ltd	2011	2,358,197	(328,170)	2,686,367	0.0455	0.2973	0.1287	0.0383	0.0283	(0.2376)	(0.0067)	(0.0812)	0.0306	(0.0025)	0.0291	0.0165
17) NIC Bank Ltd	2012	3,108,161	3,937,226	(829,065)	(0.0105)	0.2973	0.1266	0.0376	0.0283	(0.1249)	(0.0035)	(0.0812)	0.0257	(0.0021)	0.0320	(0.0425)
17) NIC Bank Ltd	2013	2,978,813	(3,217,123)	6,195,936	0.0572	0.2973	0.1245	0.0370	0.0283	(0.0872)	(0.0025)	(0.0812)	0.0214	(0.0017)	0.0328	0.0244
17) NIC Bank Ltd	2014	4,079,854	1,079,381	3,000,473	0.0248	0.2973	0.1237	0.0368	0.0283	(0.1393)	(0.0039)	(0.0812)	0.0209	(0.0017)	0.0312	(0.0064)
17) NIC Bank Ltd	2015	3,826,597	(4,831,081)	8,657,678	0.0594	0.2973	0.1225	0.0364	0.0283	(0.0718)	(0.0020)	(0.0812)	0.0191	(0.0016)	0.0328	0.0265
17) NIC Bank Ltd	2016	4,799,154	829,395	3,969,759	0.0239	0.2973	0.1217	0.0362	0.0283	0.0229	0.0006	(0.0812)	0.0183	(0.0015)	0.0353	(0.0114)
17) NIC Bank Ltd	2017	4,116,403	(813,715)	4,930,118	0.0291	0.2973	0.1215	0.0361	0.0283	(0.0335)	(0.0009)	(0.0812)	0.0202	(0.0016)	0.0335	(0.0044)
18) Standard Chartered Bank Kenya Ltd	2008	3,250,813	6,161,522	(2,910,709)	(0.0319)	0.2973	0.1256	0.0374	0.0283	(0.0439)	(0.0012)	(0.0812)	0.0394	(0.0032)	0.0329	(0.0648)
18) Standard Chartered Bank Kenya Ltd	2009	5,305,976	(17,602,937)	22,908,913	0.2314	0.2973	0.1251	0.0372	0.0283	(0.1146)	(0.0032)	(0.0812)	0.0455	(0.0037)	0.0303	0.2011
18) Standard Chartered Bank Kenya Ltd	2010	5,637,786	16,674,403	(11,036,617)	(0.0892)	0.2973	0.1236	0.0367	0.0283	(0.0392)	(0.0011)	(0.0812)	0.0447	(0.0036)	0.0320	(0.1212)
18) Standard Chartered Bank Kenya Ltd	2011	5,836,821	5,380,864	455,957	0.0032	0.2973	0.1226	0.0365	0.0283	(0.2216)	(0.0063)	(0.0812)	0.0427	(0.0035)	0.0267	(0.0235)
18) Standard Chartered Bank Kenya Ltd	2012	8,069,533	(3,155,156)	11,224,689	0.0684	0.2973	0.1217	0.0362	0.0283	(0.0473)	(0.0013)	(0.0812)	0.0391	(0.0032)	0.0317	0.0367
18) Standard Chartered Bank Kenya Ltd	2013	9,486,260	(3,511,332)	12,997,592	0.0665	0.2973	0.1206	0.0359	0.0283	(0.0738)	(0.0021)	(0.0812)	0.0327	(0.0027)	0.0311	0.0354
18) Standard Chartered Bank Kenya Ltd	2014	10,561,072	15,337,668	(4,776,596)	(0.0217)	0.2973	0.1199	0.0356	0.0283	0.0197	0.0006	(0.0812)	0.0295	(0.0024)	0.0338	(0.0555)
18) Standard Chartered Bank Kenya Ltd	2015	6,055,753	27,718,885	(21,663,132)	(0.0974)	0.2973	0.1198	0.0356	0.0283	0.0451						

											0.0013	(0.0812)	0.0300	(0.0024)	0.0345	(0.1318)
18) Standard Chartered Bank Kenya Ltd	2016	9,442,239	(5,201,267)	14,643,506	0.0626	0.2973	0.1195	0.0355	0.0283	(0.0054)	(0.0002)	(0.0812)	0.0295	(0.0024)	0.0330	0.0296
18) Standard Chartered Bank Kenya Ltd	2017	7,564,637	(2,251,947)	9,816,584	0.0392	0.2973	0.1191	0.0354	0.0283	(0.0267)	(0.0008)	(0.0812)	0.0291	(0.0024)	0.0323	0.0069
19) The Cooperative Bank of Kenya Ltd	2008	2,373,936	(1,051,220)	3,425,156	0.0524	0.2973	0.1280	0.0380	0.0283	(0.2065)	(0.0058)	(0.0812)	0.1020	(0.0083)	0.0239	0.0285
19) The Cooperative Bank of Kenya Ltd	2009	2,967,962	6,520,999	(3,553,037)	(0.0426)	0.2973	0.1262	0.0375	0.0283	(0.0874)	(0.0025)	(0.0812)	0.0940	(0.0076)	0.0274	(0.0700)
19) The Cooperative Bank of Kenya Ltd	2010	4,580,698	6,545,276	(1,964,578)	(0.0178)	0.2973	0.1243	0.0370	0.0283	(0.1842)	(0.0052)	(0.0812)	0.0848	(0.0069)	0.0249	(0.0426)
19) The Cooperative Bank of Kenya Ltd	2011	5,362,602	8,189,579	(2,826,977)	(0.0183)	0.2973	0.1221	0.0363	0.0283	(0.1304)	(0.0037)	(0.0812)	0.0825	(0.0067)	0.0259	(0.0442)
19) The Cooperative Bank of Kenya Ltd	2012	7,723,858	12,313,188	(4,589,330)	(0.0273)	0.2973	0.1216	0.0361	0.0283	(0.0252)	(0.0007)	(0.0812)	0.0832	(0.0068)	0.0287	(0.0559)
19) The Cooperative Bank of Kenya Ltd	2013	9,108,986	9,283,906	(174,920)	(0.0009)	0.2973	0.1204	0.0358	0.0283	(0.0691)	(0.0020)	(0.0812)	0.0885	(0.0072)	0.0267	(0.0275)
19) The Cooperative Bank of Kenya Ltd	2014	8,014,997	10,352,879	(2,337,882)	(0.0101)	0.2973	0.1196	0.0355	0.0283	(0.1652)	(0.0047)	(0.0812)	0.0803	(0.0065)	0.0244	(0.0345)
19) The Cooperative Bank of Kenya Ltd	2015	11,705,559	19,635,154	(7,929,595)	(0.0278)	0.2973	0.1183	0.0352	0.0283	(0.0868)	(0.0025)	(0.0812)	0.0635	(0.0052)	0.0276	(0.0553)
19) The Cooperative Bank of Kenya Ltd	2016	12,676,210	(6,802,884)	19,479,094	0.0569	0.2973	0.1172	0.0348	0.0283	(0.0521)	(0.0015)	(0.0812)	0.0588	(0.0048)	0.0286	0.0283
19) The Cooperative Bank of Kenya Ltd	2017	11,405,065	6,156,618	5,248,447	0.0149	0.2973	0.1170	0.0348	0.0283	(0.0632)	(0.0018)	(0.0812)	0.0559	(0.0045)	0.0285	(0.0135)
20) Express Kenya Ltd	2008	(43,236)	62,879	(106,115)	(0.1288)	0.2973	0.1690	0.0503	0.0283	(0.1000)	(0.0028)	(0.0812)	1.2935	(0.1051)	(0.0576)	(0.0711)
20) Express Kenya Ltd	2009	(19,653)	117,582	(137,235)	(0.1039)	0.2973	0.1634	0.0486	0.0283	0.0837	0.0024	(0.0812)	0.9357	(0.0760)	(0.0251)	(0.0788)
20) Express Kenya Ltd	2010	(28,091)	126,106	(154,197)	(0.1182)	0.2973	0.1635	0.0486	0.0283	(0.0411)	(0.0012)	(0.0812)	1.0046	(0.0816)	(0.0342)	(0.0841)
20) Express Kenya Ltd	2011	(229,088)	(42,389)	(186,699)	(0.1420)	0.2973	0.1634	0.0486	0.0283	(0.2695)	(0.0076)	(0.0812)	0.9144	(0.0743)	(0.0333)	(0.1087)
20) Express Kenya Ltd	2012	13,028	(4,060)	17,088	0.0220	0.2973	0.1698	0.0505	0.0283	(0.1822)	(0.0051)	(0.0812)	1.3725	(0.1115)	(0.0662)	0.0882
20) Express Kenya Ltd	2013	229	16,716	(16,487)	(0.0333)	0.2973	0.1756	0.0522	0.0283	0.2249						

											0.0064	(0.0812)	1.9750	(0.1604)	(0.1019)	0.0686
20) Express Kenya Ltd	2014	(77,352)	(81,552)	4,200	0.0132	0.2973	0.1817	0.0540	0.0283	(0.6053)	(0.0171)	(0.0812)	2.8160	(0.2288)	(0.1918)	0.2050
20) Express Kenya Ltd	2015	(60,089)	(18,196)	(41,893)	(0.0877)	0.2973	0.1761	0.0524	0.0283	(0.1271)	(0.0036)	(0.0812)	1.4937	(0.1213)	(0.0726)	(0.0151)
20) Express Kenya Ltd	2016	(93,939)	(11,322)	(82,617)	(0.1870)	0.2973	0.1771	0.0527	0.0283	(0.0696)	(0.0020)	(0.0812)	1.4918	(0.1212)	(0.0705)	(0.1165)
20) Express Kenya Ltd	2017	(90,349)	(49,683)	(40,666)	(0.1071)	0.2973	0.1792	0.0533	0.0283	(0.0287)	(0.0008)	(0.0812)	1.6754	(0.1361)	(0.0836)	(0.0235)
21) Kenya Airways Ltd	2008	4,578,000	6,650,000	(2,072,000)	(0.0268)	0.2973	0.1268	0.0377	0.0283	0.0171	0.0005	(0.0812)	0.8858	(0.0720)	(0.0338)	0.0070
21) Kenya Airways Ltd	2009	(4,083,000)	3,747,000	(7,830,000)	(0.1006)	0.2973	0.1267	0.0377	0.0283	0.1190	0.0034	(0.0812)	0.9026	(0.0733)	(0.0323)	(0.0683)
21) Kenya Airways Ltd	2010	3,210,000	6,479,000	(3,269,000)	(0.0436)	0.2973	0.1270	0.0378	0.0283	(0.0161)	(0.0005)	(0.0812)	0.9912	(0.0805)	(0.0432)	(0.0004)
21) Kenya Airways Ltd	2011	3,632,000	9,214,000	(5,582,000)	(0.0762)	0.2973	0.1271	0.0378	0.0283	0.1773	0.0050	(0.0812)	1.0565	(0.0858)	(0.0430)	(0.0332)
21) Kenya Airways Ltd	2012	573,000	4,378,000	(3,805,000)	(0.0483)	0.2973	0.1266	0.0377	0.0283	0.2921	0.0083	(0.0812)	1.0158	(0.0825)	(0.0366)	(0.0117)
21) Kenya Airways Ltd	2013	(5,284,000)	(537,000)	(4,747,000)	(0.0613)	0.2973	0.1268	0.0377	0.0283	(0.1192)	(0.0034)	(0.0812)	1.3688	(0.1112)	(0.0769)	0.0156
21) Kenya Airways Ltd	2014	(3,382,000)	2,738,000	(6,120,000)	(0.0499)	0.2973	0.1236	0.0368	0.0283	0.0314	0.0009	(0.0812)	1.0519	(0.0855)	(0.0478)	(0.0021)
21) Kenya Airways Ltd	2015	(25,743,000)	1,214,000	(26,957,000)	(0.1813)	0.2973	0.1224	0.0364	0.0283	0.0204	0.0006	(0.0812)	1.0442	(0.0848)	(0.0479)	(0.1335)
21) Kenya Airways Ltd	2016	(29,704,000)	6,362,000	(36,066,000)	(0.1981)	0.2973	0.1211	0.0360	0.0283	0.0315	0.0009	(0.0812)	0.8662	(0.0704)	(0.0335)	(0.1646)
21) Kenya Airways Ltd	2017	(9,248,000)	5,945,000	(15,193,000)	(0.0976)	0.2973	0.1221	0.0363	0.0283	(0.0525)	(0.0015)	(0.0812)	0.9572	(0.0778)	(0.0430)	(0.0546)
22) Longhorn Kenya Ltd	2013	121,281	110,777	10,504	0.0159	0.2973	0.1718	0.0511	0.0283	0.2990	0.0085	(0.0812)	0.3466	(0.0282)	0.0314	(0.0155)
22) Longhorn Kenya Ltd	2014	95,254	68,977	26,277	0.0384	0.2973	0.1714	0.0510	0.0283	0.4040	0.0114	(0.0812)	0.3373	(0.0274)	0.0350	0.0034
22) Longhorn Kenya Ltd	2015	63,058	5,189	57,869	0.0769	0.2973	0.1702	0.0506	0.0283	(0.7329)	(0.0207)	(0.0812)	0.3469	(0.0282)	0.0017	0.0752
22) Longhorn Kenya Ltd	2016	131,905	(530,455)	662,360	0.9609	0.2973	0.1713	0.0509	0.0283	0.3391						

											0.0096	(0.0812)	0.4689	(0.0381)	0.0224	0.9385
22) Longhorn Kenya Ltd	2017	156,259	243,554	(87,295)	(0.0468)	0.2973	0.1595	0.0474	0.0283	(0.1492)	(0.0042)	(0.0812)	0.1801	(0.0146)	0.0286	(0.0753)
23) Nation Media Group Ltd	2008	1,306,700	909,500	397,200	0.0673	0.2973	0.1477	0.0439	0.0283	0.0118	0.0003	(0.0812)	0.7415	(0.0602)	(0.0160)	0.0833
23) Nation Media Group Ltd	2009	1,119,700	1,519,400	(399,700)	(0.0604)	0.2973	0.1466	0.0436	0.0283	0.0218	0.0006	(0.0812)	0.7243	(0.0588)	(0.0146)	(0.0458)
23) Nation Media Group Ltd	2010	1,514,500	2,449,200	(934,700)	(0.1422)	0.2973	0.1467	0.0436	0.0283	0.1835	0.0052	(0.0812)	0.7790	(0.0633)	(0.0145)	(0.1277)
23) Nation Media Group Ltd	2011	1,957,300	1,713,900	243,400	0.0305	0.2973	0.1449	0.0431	0.0283	0.1896	0.0054	(0.0812)	0.6941	(0.0564)	(0.0079)	0.0385
23) Nation Media Group Ltd	2012	2,615,200	3,276,600	(661,400)	(0.0750)	0.2973	0.1440	0.0428	0.0283	0.0859	0.0024	(0.0812)	0.7086	(0.0576)	(0.0123)	(0.0627)
23) Nation Media Group Ltd	2013	2,625,700	2,244,900	380,800	0.0357	0.2973	0.1423	0.0423	0.0283	0.0723	0.0020	(0.0812)	0.6228	(0.0506)	(0.0062)	0.0419
23) Nation Media Group Ltd	2014	2,410,200	2,545,300	(135,100)	(0.0118)	0.2973	0.1417	0.0421	0.0283	(0.0305)	(0.0009)	(0.0812)	0.6647	(0.0540)	(0.0127)	0.0009
23) Nation Media Group Ltd	2015	2,071,100	2,925,500	(854,400)	(0.0715)	0.2973	0.1413	0.0420	0.0283	(0.0918)	(0.0026)	(0.0812)	0.7541	(0.0613)	(0.0218)	(0.0497)
23) Nation Media Group Ltd	2016	1,634,700	2,152,200	(517,500)	(0.0408)	0.2973	0.1408	0.0419	0.0283	(0.0439)	(0.0012)	(0.0812)	0.7374	(0.0599)	(0.0193)	(0.0215)
23) Nation Media Group Ltd	2017	1,350,900	2,184,000	(833,100)	(0.0684)	0.2973	0.1411	0.0420	0.0283	(0.0396)	(0.0011)	(0.0812)	0.8072	(0.0656)	(0.0247)	(0.0437)
24) Scangropup Ltd	2008	315,396	(147,803)	463,199	0.2641	0.2973	0.1602	0.0476	0.0283	(0.3024)	(0.0085)	(0.0812)	0.1087	(0.0088)	0.0302	0.2339
24) Scangropup Ltd	2009	430,328	306,014	124,314	0.0329	0.2973	0.1520	0.0452	0.0283	0.0244	0.0007	(0.0812)	0.0568	(0.0046)	0.0413	(0.0083)
24) Scangropup Ltd	2010	668,410	1,012,852	(344,442)	(0.0876)	0.2973	0.1516	0.0451	0.0283	(0.4171)	(0.0118)	(0.0812)	0.1186	(0.0096)	0.0237	(0.1112)
24) Scangropup Ltd	2011	916,488	219,223	697,265	0.0871	0.2973	0.1449	0.0431	0.0283	0.1395	0.0039	(0.0812)	0.0753	(0.0061)	0.0409	0.0462
24) Scangropup Ltd	2012	752,009	(451,628)	1,203,637	0.1418	0.2973	0.1443	0.0429	0.0283	(0.0094)	(0.0003)	(0.0812)	0.0993	(0.0081)	0.0346	0.1072
24) Scangropup Ltd	2013	867,358	(823,037)	1,690,395	0.2022	0.2973	0.1445	0.0430	0.0283	(0.2785)	(0.0079)	(0.0812)	0.1275	(0.0104)	0.0247	0.1774
24) Scangropup Ltd	2014	582,060	1,140,623	(558,563)	(0.0431)	0.2973	0.1406	0.0418	0.0283	0.1643						

											0.0046	(0.0812)	0.0878	(0.0071)	0.0393	(0.0825)
24) Scangropup Ltd	2015	275,304	639,437	(364,133)	(0.0274)	0.2973	0.1404	0.0417	0.0283	0.0898	0.0025	(0.0812)	0.0925	(0.0075)	0.0368	(0.0642)
24) Scangropup Ltd	2016	410,727	2,954	407,773	0.0327	0.2973	0.1409	0.0419	0.0283	(0.0837)	(0.0024)	(0.0812)	0.0985	(0.0080)	0.0315	0.0012
25) Standard Group Ltd	2008	286,192	436,998	(150,806)	(0.0684)	0.2973	0.1576	0.0469	0.0283	0.0953	0.0027	(0.0812)	0.9025	(0.0733)	(0.0237)	(0.0447)
25) Standard Group Ltd	2009	263,384	447,236	(183,852)	(0.0684)	0.2973	0.1555	0.0462	0.0283	(0.0605)	(0.0017)	(0.0812)	0.9021	(0.0733)	(0.0287)	(0.0397)
25) Standard Group Ltd	2010	279,784	496,431	(216,647)	(0.0721)	0.2973	0.1544	0.0459	0.0283	0.0809	0.0023	(0.0812)	0.8435	(0.0685)	(0.0203)	(0.0518)
25) Standard Group Ltd	2011	147,345	322,482	(175,137)	(0.0530)	0.2973	0.1534	0.0456	0.0283	0.0352	0.0010	(0.0812)	0.9152	(0.0743)	(0.0277)	(0.0252)
25) Standard Group Ltd	2012	183,307	431,313	(248,006)	(0.0706)	0.2973	0.1528	0.0454	0.0283	0.1296	0.0037	(0.0812)	0.9217	(0.0749)	(0.0258)	(0.0448)
25) Standard Group Ltd	2013	189,493	260,300	(70,807)	(0.0202)	0.2973	0.1528	0.0454	0.0283	0.2341	0.0066	(0.0812)	0.9828	(0.0798)	(0.0278)	0.0076
25) Standard Group Ltd	2014	220,514	484,048	(263,534)	(0.0637)	0.2973	0.1511	0.0449	0.0283	0.0044	0.0001	(0.0812)	0.8910	(0.0724)	(0.0273)	(0.0364)
25) Standard Group Ltd	2015	(289,603)	(112,244)	(177,359)	(0.0432)	0.2973	0.1512	0.0450	0.0283	(0.1332)	(0.0038)	(0.0812)	0.8976	(0.0729)	(0.0317)	(0.0115)
25) Standard Group Ltd	2016	198,521	489,326	(290,805)	(0.0668)	0.2973	0.1506	0.0448	0.0283	0.0039	0.0001	(0.0812)	0.8740	(0.0710)	(0.0261)	(0.0407)
25) Standard Group Ltd	2017	(210,838)	653,225	(864,063)	(0.1962)	0.2973	0.1505	0.0448	0.0283	0.0329	0.0009	(0.0812)	0.9170	(0.0745)	(0.0288)	(0.1673)
26) TPS Eastern Africa Ltd	2008	222,717	468,723	(246,006)	(0.0363)	0.2973	0.1464	0.0435	0.0283	(0.0393)	(0.0011)	(0.0812)	1.0316	(0.0838)	(0.0414)	0.0051
26) TPS Eastern Africa Ltd	2009	445,796	467,110	(21,314)	(0.0033)	0.2973	0.1467	0.0436	0.0283	0.1233	0.0035	(0.0812)	1.1259	(0.0915)	(0.0444)	0.0411
26) TPS Eastern Africa Ltd	2010	2,274,794	1,249,881	1,024,913	0.1460	0.2973	0.1461	0.0434	0.0283	0.0429	0.0012	(0.0812)	1.6615	(0.1350)	(0.0903)	0.2363
26) TPS Eastern Africa Ltd	2011	683,181	242,528	440,653	0.0370	0.2973	0.1413	0.0420	0.0283	0.0297	0.0008	(0.0812)	1.0437	(0.0848)	(0.0419)	0.0789
26) TPS Eastern Africa Ltd	2012	327,360	1,179,752	(852,392)	(0.0649)	0.2973	0.1405	0.0418	0.0283	0.0054	0.0002	(0.0812)	1.0043	(0.0816)	(0.0397)	(0.0252)
26) TPS Eastern Africa Ltd	2013	544,248	953,467	(409,219)	(0.0303)	0.2973	0.1403	0.0417	0.0283	0.1056						

											0.0030	(0.0812)	1.1702	(0.0951)	(0.0504)	0.0200
26) TPS Eastern Africa Ltd	2014	102,349	645,796	(543,447)	(0.0402)	0.2973	0.1402	0.0417	0.0283	(0.0228)	(0.0006)	(0.0812)	1.2016	(0.0976)	(0.0566)	0.0164
26) TPS Eastern Africa Ltd	2015	(481,203)	383,984	(865,187)	(0.0657)	0.2973	0.1405	0.0418	0.0283	0.0002	0.0000	(0.0812)	1.2905	(0.1048)	(0.0631)	(0.0026)
26) TPS Eastern Africa Ltd	2016	(85,010)	774,005	(859,015)	(0.0550)	0.2973	0.1390	0.0413	0.0283	0.0410	0.0012	(0.0812)	1.1410	(0.0927)	(0.0502)	(0.0048)
26) TPS Eastern Africa Ltd	2017	170,190	798,138	(627,948)	(0.0374)	0.2973	0.1384	0.0412	0.0283	(0.0186)	(0.0005)	(0.0812)	1.1755	(0.0955)	(0.0549)	0.0175
27) Uchumi Supermarket Ltd	2008	95,069	22,069	73,000	0.0461	0.2973	0.1613	0.0480	0.0283	1.4388	0.0407	(0.0812)	0.3657	(0.0297)	0.0589	(0.0128)
27) Uchumi Supermarket Ltd	2009	495,931	412,403	83,528	0.0513	0.2973	0.1610	0.0479	0.0283	0.7915	0.0224	(0.0812)	0.4208	(0.0342)	0.0361	0.0152
27) Uchumi Supermarket Ltd	2010	859,848	231,679	628,169	0.2524	0.2973	0.1563	0.0465	0.0283	0.5491	0.0155	(0.0812)	0.7313	(0.0594)	0.0026	0.2498
27) Uchumi Supermarket Ltd	2011	745,546	247,509	498,037	0.1579	0.2973	0.1539	0.0458	0.0283	0.3619	0.0102	(0.0812)	0.8287	(0.0673)	(0.0113)	0.1693
27) Uchumi Supermarket Ltd	2012	378,645	545,554	(166,909)	(0.0417)	0.2973	0.1515	0.0450	0.0283	0.7421	0.0210	(0.0812)	0.8436	(0.0685)	(0.0025)	(0.0392)
27) Uchumi Supermarket Ltd	2013	347,229	332,189	15,040	0.0030	0.2973	0.1494	0.0444	0.0283	0.0852	0.0024	(0.0812)	0.6085	(0.0494)	(0.0026)	0.0056
27) Uchumi Supermarket Ltd	2014	491,557	647,207	(155,650)	(0.0279)	0.2973	0.1482	0.0441	0.0283	0.0282	0.0008	(0.0812)	0.7928	(0.0644)	(0.0195)	(0.0084)
27) Uchumi Supermarket Ltd	2015	(3,297,077)	(1,202,163)	(2,094,914)	(0.3028)	0.2973	0.1462	0.0435	0.0283	(0.2039)	(0.0058)	(0.0812)	0.5338	(0.0434)	(0.0057)	(0.2971)
27) Uchumi Supermarket Ltd	2016	(2,836,732)	608,630	(3,445,362)	(0.5372)	0.2973	0.1469	0.0437	0.0283	(0.9982)	(0.0282)	(0.0812)	0.4293	(0.0349)	(0.0194)	(0.5178)
28) Stanlib Fahari I-Reit	2017	17,126	46,955	(29,829)	(0.0080)	0.2973	0.1522	0.0453	0.0283	(0.0121)	(0.0003)	(0.0812)	0.0015	(0.0001)	0.0448	(0.0528)
29) ARM Cement Ltd	2008	479,378	332,812	146,566	0.0325	0.2973	0.1503	0.0447	0.0283	0.0434	0.0012	(0.0812)	1.2151	(0.0987)	(0.0528)	0.0853
29) ARM Cement Ltd	2009	2,125,206	558,905	1,566,301	0.2466	0.2973	0.1470	0.0437	0.0283	0.0155	0.0004	(0.0812)	1.3921	(0.1131)	(0.0689)	0.3155
29) ARM Cement Ltd	2010	1,062,529	803,586	258,943	0.0213	0.2973	0.1412	0.0420	0.0283	0.0288	0.0008	(0.0812)	1.0427	(0.0847)	(0.0419)	0.0633
29) ARM Cement Ltd	2011	1,266,682	2,038,584	(771,902)	(0.0466)	0.2973	0.1385	0.0412	0.0283	0.1335						

											0.0038	(0.0812)	1.0475	(0.0851)	(0.0401)	(0.0065)
29) ARM Cement Ltd	2012	1,245,638	414,631	831,007	0.0405	0.2973	0.1368	0.0407	0.0283	0.1533	0.0043	(0.0812)	0.9728	(0.0790)	(0.0340)	0.0745
29) ARM Cement Ltd	2013	1,348,803	2,155,125	(806,322)	(0.0299)	0.2973	0.1346	0.0400	0.0283	0.0714	0.0020	(0.0812)	0.9068	(0.0737)	(0.0316)	0.0017
29) ARM Cement Ltd	2014	1,493,393	923,621	569,772	0.0192	0.2973	0.1338	0.0398	0.0283	(0.0470)	(0.0013)	(0.0812)	1.0395	(0.0844)	(0.0460)	0.0652
29) ARM Cement Ltd	2015	(2,890,841)	(190,035)	(2,700,806)	(0.0731)	0.2973	0.1321	0.0393	0.0283	0.0325	0.0009	(0.0812)	1.2246	(0.0995)	(0.0593)	(0.0138)
29) ARM Cement Ltd	2016	(3,197,255)	(1,279,015)	(1,918,240)	(0.0369)	0.2973	0.1296	0.0385	0.0283	(0.0577)	(0.0016)	(0.0812)	0.8750	(0.0711)	(0.0342)	(0.0028)
29) ARM Cement Ltd	2017	(6,979,597)	(522,891)	(6,456,706)	(0.1265)	0.2973	0.1297	0.0386	0.0283	(0.0355)	(0.0010)	(0.0812)	0.8428	(0.0685)	(0.0309)	(0.0956)
30) Bamburi Cement Ltd	2008	3,412,000	4,146,000	(734,000)	(0.0354)	0.2973	0.1367	0.0406	0.0283	0.2772	0.0078	(0.0812)	1.1530	(0.0937)	(0.0452)	0.0098
30) Bamburi Cement Ltd	2009	6,970,000	9,008,000	(2,038,000)	(0.0722)	0.2973	0.1342	0.0399	0.0283	0.1184	0.0033	(0.0812)	0.9310	(0.0756)	(0.0324)	(0.0399)
30) Bamburi Cement Ltd	2010	5,299,000	8,735,000	(3,436,000)	(0.1070)	0.2973	0.1332	0.0396	0.0283	(0.0500)	(0.0014)	(0.0812)	1.0280	(0.0835)	(0.0453)	(0.0617)
30) Bamburi Cement Ltd	2011	5,859,000	5,680,000	179,000	0.0054	0.2973	0.1329	0.0395	0.0283	0.2411	0.0068	(0.0812)	1.0034	(0.0815)	(0.0352)	0.0405
30) Bamburi Cement Ltd	2012	4,882,000	7,461,000	(2,579,000)	(0.0770)	0.2973	0.1329	0.0395	0.0283	0.0406	0.0011	(0.0812)	1.2848	(0.1044)	(0.0637)	(0.0133)
30) Bamburi Cement Ltd	2013	3,673,000	5,182,000	(1,509,000)	(0.0351)	0.2973	0.1310	0.0389	0.0283	(0.0776)	(0.0022)	(0.0812)	1.0435	(0.0848)	(0.0480)	0.0130
30) Bamburi Cement Ltd	2014	3,903,000	5,921,000	(2,018,000)	(0.0469)	0.2973	0.1310	0.0390	0.0283	0.0321	0.0009	(0.0812)	1.0447	(0.0849)	(0.0450)	(0.0019)
30) Bamburi Cement Ltd	2015	5,872,000	6,267,000	(395,000)	(0.0096)	0.2973	0.1314	0.0391	0.0283	0.0594	0.0017	(0.0812)	1.0944	(0.0889)	(0.0482)	0.0385
30) Bamburi Cement Ltd	2016	5,890,000	3,949,000	1,941,000	0.0462	0.2973	0.1312	0.0390	0.0283	(0.0833)	(0.0024)	(0.0812)	1.0190	(0.0828)	(0.0461)	0.0923
30) Bamburi Cement Ltd	2017	1,973,000	4,951,000	(2,978,000)	(0.0730)	0.2973	0.1314	0.0391	0.0283	(0.0336)	(0.0010)	(0.0812)	1.4429	(0.1172)	(0.0791)	0.0061
31) Crown Paints Kenya Ltd	2008	30,777	(215,524)	246,301	0.1614	0.2973	0.1617	0.0481	0.0283	0.0832	0.0024	(0.0812)	0.5710	(0.0464)	0.0041	0.1574
31) Crown Paints Kenya Ltd	2009	86,308	411,082	(324,774)	(0.1667)	0.2973	0.1590	0.0473	0.0283	0.1326						

											0.0037	(0.0812)	0.4677	(0.0380)	0.0130	(0.1797)
31) Crown Paints Kenya Ltd	2010	91,417	263,552	(172,135)	(0.0926)	0.2973	0.1595	0.0474	0.0283	0.2430	0.0069	(0.0812)	0.5132	(0.0417)	0.0126	(0.1052)
31) Crown Paints Kenya Ltd	2011	179,734	118,649	61,085	0.0310	0.2973	0.1589	0.0472	0.0283	0.3561	0.0101	(0.0812)	0.6022	(0.0489)	0.0084	0.0226
31) Crown Paints Kenya Ltd	2012	142,692	267,648	(124,956)	(0.0564)	0.2973	0.1576	0.0469	0.0283	0.2288	0.0065	(0.0812)	0.5781	(0.0470)	0.0064	(0.0628)
31) Crown Paints Kenya Ltd	2013	211,268	(76,586)	287,854	0.1275	0.2973	0.1574	0.0468	0.0283	0.1822	0.0051	(0.0812)	0.6397	(0.0520)	(0.0000)	0.1275
31) Crown Paints Kenya Ltd	2014	22,972	(278,847)	301,819	0.1025	0.2973	0.1546	0.0460	0.0283	0.2383	0.0067	(0.0812)	0.5981	(0.0486)	0.0041	0.0984
31) Crown Paints Kenya Ltd	2015	59,704	339,526	(279,822)	(0.0726)	0.2973	0.1518	0.0451	0.0283	0.1653	0.0047	(0.0812)	0.5546	(0.0451)	0.0048	(0.0774)
31) Crown Paints Kenya Ltd	2016	233,426	330,312	(96,886)	(0.0213)	0.2973	0.1502	0.0447	0.0283	0.0885	0.0025	(0.0812)	0.2957	(0.0240)	0.0231	(0.0445)
31) Crown Paints Kenya Ltd	2017	229,665	(197,317)	426,982	0.0844	0.2973	0.1492	0.0444	0.0283	(0.0577)	(0.0016)	(0.0812)	0.3018	(0.0245)	0.0182	0.0662
32) E. A. Cables Ltd	2008	462,760	992,752	(529,992)	(0.1651)	0.2973	0.1537	0.0457	0.0283	0.1636	0.0046	(0.0812)	0.3308	(0.0269)	0.0234	(0.1886)
32) E. A. Cables Ltd	2009	597,691	429,397	168,294	0.0553	0.2973	0.1542	0.0459	0.0283	(0.3197)	(0.0090)	(0.0812)	0.5694	(0.0463)	(0.0094)	0.0647
32) E. A. Cables Ltd	2010	686,779	356,429	330,350	0.0932	0.2973	0.1527	0.0454	0.0283	0.1922	0.0054	(0.0812)	0.7217	(0.0586)	(0.0078)	0.1010
32) E. A. Cables Ltd	2011	305,961	299,916	6,045	0.0013	0.2973	0.1503	0.0447	0.0283	0.1787	0.0051	(0.0812)	0.5727	(0.0465)	0.0032	(0.0019)
32) E. A. Cables Ltd	2012	879,010	581,274	297,736	0.0596	0.2973	0.1493	0.0444	0.0283	(0.2158)	(0.0061)	(0.0812)	0.5779	(0.0469)	(0.0087)	0.0683
32) E. A. Cables Ltd	2013	394,634	(381,350)	775,984	0.1242	0.2973	0.1472	0.0438	0.0283	(0.0787)	(0.0022)	(0.0812)	0.4891	(0.0397)	0.0018	0.1224
32) E. A. Cables Ltd	2014	303,777	470,390	(166,613)	(0.0244)	0.2973	0.1463	0.0435	0.0283	0.0622	0.0018	(0.0812)	0.5813	(0.0472)	(0.0020)	(0.0224)
32) E. A. Cables Ltd	2015	184,673	144,628	40,045	0.0051	0.2973	0.1450	0.0431	0.0283	(0.0595)	(0.0017)	(0.0812)	0.5204	(0.0423)	(0.0008)	0.0059
32) E. A. Cables Ltd	2016	(593,578)	597,029	(1,190,607)	(0.1420)	0.2973	0.1444	0.0429	0.0283	0.0699	0.0020	(0.0812)	0.5363	(0.0436)	0.0014	(0.1434)
32) E. A. Cables Ltd	2017	(677,607)	120,068	(797,675)	(0.1057)	0.2973	0.1454	0.0432	0.0283	(0.1130)						

											(0.0032)	(0.0812)	0.5914	(0.0480)	(0.0080)	(0.0977)
33) E. A. Portland Cement Co. Ltd	2008	536,652	215,605	321,047	0.0359	0.2973	0.1439	0.0428	0.0283	0.0694	0.0020	(0.0812)	0.8137	(0.0661)	(0.0214)	0.0573
33) E. A. Portland Cement Co. Ltd	2009	1,834,054	1,881,010	(46,956)	(0.0052)	0.2973	0.1437	0.0427	0.0283	0.0829	0.0023	(0.0812)	0.8111	(0.0659)	(0.0208)	0.0156
33) E. A. Portland Cement Co. Ltd	2010	(292,402)	444,839	(737,241)	(0.0613)	0.2973	0.1412	0.0420	0.0283	0.1095	0.0031	(0.0812)	0.5853	(0.0475)	(0.0025)	(0.0588)
33) E. A. Portland Cement Co. Ltd	2011	1,717	603,628	(601,911)	(0.0500)	0.2973	0.1412	0.0420	0.0283	0.0391	0.0011	(0.0812)	0.7080	(0.0575)	(0.0144)	(0.0356)
33) E. A. Portland Cement Co. Ltd	2012	(818,528)	(209,211)	(609,317)	(0.0450)	0.2973	0.1402	0.0417	0.0283	(0.0936)	(0.0026)	(0.0812)	0.6543	(0.0532)	(0.0141)	(0.0309)
33) E. A. Portland Cement Co. Ltd	2013	2,488,834	438,415	2,050,419	0.1455	0.2973	0.1399	0.0416	0.0283	0.0275	0.0008	(0.0812)	0.5688	(0.0462)	(0.0038)	0.1494
33) E. A. Portland Cement Co. Ltd	2014	(385,582)	485,561	(871,143)	(0.0540)	0.2973	0.1387	0.0413	0.0283	(0.0072)	(0.0002)	(0.0812)	0.5006	(0.0407)	0.0004	(0.0544)
33) E. A. Portland Cement Co. Ltd	2015	7,172,418	(397,030)	7,569,448	0.4816	0.2973	0.1390	0.0413	0.0283	(0.0562)	(0.0016)	(0.0812)	0.6147	(0.0499)	(0.0102)	0.4918
33) E. A. Portland Cement Co. Ltd	2016	4,137,167	358,352	3,778,815	0.1635	0.2973	0.1358	0.0404	0.0283	0.0440	0.0012	(0.0812)	0.4378	(0.0356)	0.0061	0.1574
33) E. A. Portland Cement Co. Ltd	2017	(1,055,777)	(565,886)	(489,891)	(0.0176)	0.2973	0.1343	0.0399	0.0283	(0.0653)	(0.0018)	(0.0812)	0.3000	(0.0244)	0.0137	(0.0313)
34) Nairobi Securities Exchange Ltd	2014	320,067	156,860	163,207	0.1420	0.2973	0.1650	0.0491	0.0283	0.1450	0.0041	(0.0812)	0.2340	(0.0190)	0.0342	0.1079
34) Nairobi Securities Exchange Ltd	2015	305,653	(109,051)	414,704	0.2461	0.2973	0.1606	0.0478	0.0283	0.0340	0.0010	(0.0812)	0.1649	(0.0134)	0.0353	0.2108
34) Nairobi Securities Exchange Ltd	2016	183,754	195,931	(12,177)	(0.0063)	0.2973	0.1592	0.0473	0.0283	(0.0446)	(0.0013)	(0.0812)	0.1642	(0.0133)	0.0327	(0.0391)
34) Nairobi Securities Exchange Ltd	2017	218,806	70,180	148,626	0.0738	0.2973	0.1586	0.0472	0.0283	0.0091	0.0003	(0.0812)	0.1835	(0.0149)	0.0325	0.0413
35) Centum Investment Co. Ltd	2008	868,320	114,378	753,942	0.0895	0.2973	0.1444	0.0429	0.0283	(0.0226)	(0.0006)	(0.0812)	0.0020	(0.0002)	0.0421	0.0474
35) Centum Investment Co. Ltd	2009	313,180	349,952	(36,772)	(0.0045)	0.2973	0.1447	0.0430	0.0283	(0.0211)	(0.0006)	(0.0812)	0.0014	(0.0001)	0.0423	(0.0468)
35) Centum Investment Co. Ltd	2010	1,540,134	442,041	1,098,093	0.1671	0.2973	0.1467	0.0436	0.0283	0.0961	0.0027	(0.0812)	0.0030	(0.0002)	0.0461	0.1211
35) Centum Investment Co. Ltd	2011	1,703,210	256,711	1,446,499	0.1758	0.2973	0.1446	0.0430	0.0283	0.1327						

											0.0038	(0.0812)	0.0043	(0.0003)	0.0464	0.1294
35) Centum Investment Co. Ltd	2012	481,865	(125,089)	606,954	0.0493	0.2973	0.1410	0.0419	0.0283	(0.0638)	(0.0018)	(0.0812)	0.0030	(0.0002)	0.0399	0.0095
35) Centum Investment Co. Ltd	2013	3,601,499	(403,991)	4,005,490	0.3463	0.2973	0.1416	0.0421	0.0283	0.2082	0.0059	(0.0812)	0.0052	(0.0004)	0.0476	0.2987
35) Centum Investment Co. Ltd	2014	6,631,055	234,273	6,396,782	0.3374	0.2973	0.1374	0.0409	0.0283	0.0532	0.0015	(0.0812)	0.0046	(0.0004)	0.0420	0.2954
35) Centum Investment Co. Ltd	2015	8,764,151	(631,689)	9,395,840	0.3175	0.2973	0.1338	0.0398	0.0283	0.1801	0.0051	(0.0812)	0.1471	(0.0120)	0.0329	0.2845
35) Centum Investment Co. Ltd	2016	7,600,634	2,489,222	5,111,412	0.0708	0.2973	0.1272	0.0378	0.0283	(0.0520)	(0.0015)	(0.0812)	0.1128	(0.0092)	0.0272	0.0436
35) Centum Investment Co. Ltd	2017	6,439,133	1,873,376	4,565,757	0.0585	0.2973	0.1267	0.0377	0.0283	(0.0168)	(0.0005)	(0.0812)	0.1588	(0.0129)	0.0243	0.0342
36) Olympia Capital Holdings Ltd	2008	20,570	(99,691)	120,261	0.1504	0.2973	0.1694	0.0504	0.0283	0.1635	0.0046	(0.0812)	0.1469	(0.0119)	0.0431	0.1073
36) Olympia Capital Holdings Ltd	2009	(61,361)	(47,970)	(13,391)	(0.0123)	0.2973	0.1656	0.0493	0.0283	(0.6446)	(0.0182)	(0.0812)	0.1933	(0.0157)	0.0153	(0.0276)
36) Olympia Capital Holdings Ltd	2012	24,247	(177,777)	202,024	0.2565	0.2973	0.1696	0.0504	0.0283	0.4963	0.0140	(0.0812)	0.7576	(0.0615)	0.0029	0.2536
36) Olympia Capital Holdings Ltd	2013	4,037	(14,501)	18,538	0.0099	0.2973	0.1595	0.0474	0.0283	0.0294	0.0008	(0.0812)	0.1291	(0.0105)	0.0378	(0.0278)
36) Olympia Capital Holdings Ltd	2014	105,482	(363,339)	468,821	0.2471	0.2973	0.1593	0.0474	0.0283	(0.0599)	(0.0017)	(0.0812)	0.1312	(0.0107)	0.0350	0.2121
36) Olympia Capital Holdings Ltd	2015	36,709	(46,044)	82,753	0.0538	0.2973	0.1616	0.0481	0.0283	0.0164	0.0005	(0.0812)	0.1058	(0.0086)	0.0399	0.0139
36) Olympia Capital Holdings Ltd	2016	(9,330)	152,126	(161,456)	(0.1054)	0.2973	0.1617	0.0481	0.0283	(0.0076)	(0.0002)	(0.0812)	0.5193	(0.0422)	0.0057	(0.1111)
36) Olympia Capital Holdings Ltd	2017	39,337	22,470	16,867	0.0105	0.2973	0.1611	0.0479	0.0283	0.0391	0.0011	(0.0812)	0.5075	(0.0412)	0.0078	0.0027
37) Trans-Century Ltd	2011	460,774	1,852,572	(1,391,798)	(0.1239)	0.2973	0.1418	0.0422	0.0283	0.0775	0.0022	(0.0812)	0.7311	(0.0594)	(0.0150)	(0.1088)
37) Trans-Century Ltd	2012	1,011,274	(1,969,114)	2,980,388	0.1329	0.2973	0.1360	0.0404	0.0283	0.0950	0.0027	(0.0812)	0.4225	(0.0343)	0.0088	0.1241
37) Trans-Century Ltd	2013	792,413	(69,959)	862,372	0.0395	0.2973	0.1363	0.0405	0.0283	(0.1336)	(0.0038)	(0.0812)	0.4546	(0.0369)	(0.0002)	0.0397
37) Trans-Century Ltd	2014	(1,982,573)	(569,059)	(1,413,514)	(0.0593)	0.2973	0.1356	0.0403	0.0283	(0.0252)						

											(0.0007)	(0.0812)	0.4738	(0.0385)	0.0011	(0.0604)
37) Trans-Century Ltd	2015	(1,796,840)	(807,144)	(989,696)	(0.0508)	0.2973	0.1372	0.0408	0.0283	0.0532	0.0015	(0.0812)	0.6293	(0.0511)	(0.0088)	(0.0420)
37) Trans-Century Ltd	2016	(858,440)	667,051	(1,525,491)	(0.0699)	0.2973	0.1363	0.0405	0.0283	(0.0438)	(0.0012)	(0.0812)	0.5764	(0.0468)	(0.0076)	(0.0624)
37) Trans-Century Ltd	2017	(3,909,613)	(1,563,233)	(2,346,380)	(0.1241)	0.2973	0.1374	0.0409	0.0283	(0.1132)	(0.0032)	(0.0812)	0.6984	(0.0567)	(0.0191)	(0.1050)
38) Home Afrika	2012	108,110	558,643	(450,533)	(0.2015)	0.2973	0.1575	0.0468	0.0283	(0.1045)	(0.0030)	(0.0812)	0.0378	(0.0031)	0.0408	(0.2423)
38) Home Afrika	2013	80,630	(292,173)	372,803	0.1504	0.2973	0.1564	0.0465	0.0283	0.0823	0.0023	(0.0812)	0.0391	(0.0032)	0.0457	0.1047
38) Home Afrika	2014	8,956	(269,791)	278,747	0.0910	0.2973	0.1542	0.0458	0.0283	0.0228	0.0006	(0.0812)	0.0261	(0.0021)	0.0444	0.0466
38) Home Afrika	2015	(390,091)	(551,409)	161,318	0.0434	0.2973	0.1522	0.0453	0.0283	(0.0899)	(0.0025)	(0.0812)	0.0269	(0.0022)	0.0405	0.0029
38) Home Afrika	2016	(168,458)	(14,754)	(153,704)	(0.0398)	0.2973	0.1518	0.0451	0.0283	(0.0048)	(0.0001)	(0.0812)	0.0259	(0.0021)	0.0429	(0.0827)
38) Home Afrika	2017	(181,435)	33,533	(214,968)	(0.0547)	0.2973	0.1516	0.0451	0.0283	0.0067	0.0002	(0.0812)	0.0264	(0.0021)	0.0431	(0.0978)
39) KenGen Co Ltd	2008	5,896,879	6,411,855	(514,976)	(0.0051)	0.2973	0.1249	0.0371	0.0283	0.0102	0.0003	(0.0812)	1.1026	(0.0896)	(0.0522)	0.0471
39) KenGen Co Ltd	2009	2,070,913	4,619,532	(2,548,619)	(0.0238)	0.2973	0.1245	0.0370	0.0283	0.0176	0.0005	(0.0812)	1.0949	(0.0889)	(0.0514)	0.0276
39) KenGen Co Ltd	2010	3,286,487	2,125,123	1,161,364	0.0107	0.2973	0.1244	0.0370	0.0283	(0.0520)	(0.0015)	(0.0812)	1.2016	(0.0976)	(0.0621)	0.0728
39) KenGen Co Ltd	2011	2,080,121	4,512,526	(2,432,405)	(0.0169)	0.2973	0.1226	0.0365	0.0283	0.0434	0.0012	(0.0812)	1.0422	(0.0847)	(0.0470)	0.0301
39) KenGen Co Ltd	2012	2,822,600	3,050,306	(227,706)	(0.0014)	0.2973	0.1219	0.0362	0.0283	(0.0238)	(0.0007)	(0.0812)	0.9839	(0.0799)	(0.0444)	0.0430
39) KenGen Co Ltd	2013	5,250,136	22,962,649	(17,712,513)	(0.1086)	0.2973	0.1218	0.0362	0.0283	0.0046	0.0001	(0.0812)	1.1999	(0.0975)	(0.0611)	(0.0474)
39) KenGen Co Ltd	2014	2,826,323	12,107,019	(9,280,696)	(0.0492)	0.2973	0.1208	0.0359	0.0283	0.0193	0.0005	(0.0812)	1.3613	(0.1106)	(0.0741)	0.0249
39) KenGen Co Ltd	2015	11,517,327	12,525,691	(1,008,364)	(0.0040)	0.2973	0.1191	0.0354	0.0283	0.0282	0.0008	(0.0812)	1.2358	(0.1004)	(0.0642)	0.0602
39) KenGen Co Ltd	2016	6,743,492	29,256,013	(22,512,521)	(0.0657)	0.2973	0.1172	0.0348	0.0283	0.0214						

											0.0006	(0.0812)	0.9792	(0.0795)	(0.0441)	(0.0216)
39) KenGen Co Ltd	2017	9,057,131	9,299,480	(242,349)	(0.0007)	0.2973	0.1168	0.0347	0.0283	(0.0266)	(0.0008)	(0.0812)	0.9478	(0.0770)	(0.0430)	0.0424
40) Kenol Kobil Ltd	2008	1,155,319	1,100,925	54,394	0.0041	0.2973	0.1404	0.0417	0.0283	5.8970	0.1667	(0.0812)	0.4134	(0.0336)	0.1748	(0.1707)
40) Kenol Kobil Ltd	2009	1,091,162	4,149,750	(3,058,588)	(0.1104)	0.2973	0.1344	0.0400	0.0283	(1.3602)	(0.0384)	(0.0812)	0.1946	(0.0158)	(0.0143)	(0.0961)
40) Kenol Kobil Ltd	2010	1,781,613	(9,697,489)	11,479,102	0.3900	0.2973	0.1339	0.0398	0.0283	0.0577	0.0016	(0.0812)	0.1424	(0.0116)	0.0299	0.3601
40) Kenol Kobil Ltd	2011	1,754,189	(851,521)	2,605,710	0.0858	0.2973	0.1336	0.0397	0.0283	3.9249	0.1109	(0.0812)	0.1724	(0.0140)	0.1367	(0.0509)
40) Kenol Kobil Ltd	2012	(4,928,899)	2,956,065	(7,884,964)	(0.1715)	0.2973	0.1305	0.0388	0.0283	(0.6518)	(0.0184)	(0.0812)	0.1282	(0.0104)	0.0100	(0.1815)
40) Kenol Kobil Ltd	2013	478,009	1,297,340	(819,331)	(0.0251)	0.2973	0.1331	0.0396	0.0283	(2.4352)	(0.0688)	(0.0812)	0.2004	(0.0163)	(0.0455)	0.0205
40) Kenol Kobil Ltd	2014	866,840	5,454,957	(4,588,117)	(0.1632)	0.2973	0.1342	0.0399	0.0283	(0.6756)	(0.0191)	(0.0812)	0.2393	(0.0194)	0.0014	(0.1645)
40) Kenol Kobil Ltd	2015	1,717,415	5,224,416	(3,507,001)	(0.1466)	0.2973	0.1355	0.0403	0.0283	(0.0197)	(0.0006)	(0.0812)	0.2360	(0.0192)	0.0206	(0.1672)
40) Kenol Kobil Ltd	2016	2,284,365	2,510,258	(225,893)	(0.0130)	0.2973	0.1381	0.0411	0.0283	0.8817	0.0249	(0.0812)	0.3547	(0.0288)	0.0372	(0.0502)
40) Kenol Kobil Ltd	2017	2,232,740	712,939	1,519,801	0.0628	0.2973	0.1354	0.0403	0.0283	2.2474	0.0635	(0.0812)	0.2643	(0.0215)	0.0823	(0.0195)
41) Kenya Power & Lighting Co Ltd	2008	1,764,870	3,454,314	(1,689,444)	(0.0357)	0.2973	0.1303	0.0387	0.0283	0.0092	0.0003	(0.0812)	0.8513	(0.0692)	(0.0302)	(0.0055)
41) Kenya Power & Lighting Co Ltd	2009	3,225,094	15,180,427	(11,955,333)	(0.1999)	0.2973	0.1286	0.0382	0.0283	0.4642	0.0131	(0.0812)	0.8660	(0.0704)	(0.0190)	(0.1809)
41) Kenya Power & Lighting Co Ltd	2010	3,716,370	11,861,409	(8,145,039)	(0.1138)	0.2973	0.1273	0.0379	0.0283	0.1154	0.0033	(0.0812)	0.9474	(0.0770)	(0.0358)	(0.0780)
41) Kenya Power & Lighting Co Ltd	2011	4,219,566	14,633,250	(10,413,684)	(0.1298)	0.2973	0.1265	0.0376	0.0283	(0.0981)	(0.0028)	(0.0812)	1.3236	(0.1075)	(0.0727)	(0.0571)
41) Kenya Power & Lighting Co Ltd	2012	4,489,719	13,174,166	(8,684,447)	(0.0717)	0.2973	0.1237	0.0368	0.0283	0.2028	0.0057	(0.0812)	1.1055	(0.0898)	(0.0473)	(0.0244)
41) Kenya Power & Lighting Co Ltd	2013	4,479,562	16,843,270	(12,363,708)	(0.0922)	0.2973	0.1230	0.0366	0.0283	(0.0710)	(0.0020)	(0.0812)	1.2950	(0.1052)	(0.0706)	(0.0215)
41) Kenya Power & Lighting Co Ltd	2014	7,984,308	19,272,530	(11,288,222)	(0.0637)	0.2973	0.1212	0.0360	0.0283	0.0463						

											0.0013	(0.0812)	1.1313	(0.0919)	(0.0545)	(0.0092)
41) Kenya Power & Lighting Co Ltd	2015	7,680,939	27,610,077	(19,929,138)	(0.0902)	0.2973	0.1198	0.0356	0.0283	0.0036	0.0001	(0.0812)	1.0927	(0.0888)	(0.0530)	(0.0372)
41) Kenya Power & Lighting Co Ltd	2016	7,027,890	35,677,042	(28,649,152)	(0.1052)	0.2973	0.1186	0.0352	0.0283	(0.0188)	(0.0005)	(0.0812)	1.0613	(0.0862)	(0.0515)	(0.0537)
41) Kenya Power & Lighting Co Ltd	2017	6,525,282	27,359,824	(20,834,542)	(0.0700)	0.2973	0.1180	0.0351	0.0283	(0.0213)	(0.0006)	(0.0812)	1.1060	(0.0898)	(0.0554)	(0.0147)
42) Total Kenya Ltd	2008	703,894	(453,448)	1,157,342	0.0797	0.2973	0.1396	0.0415	0.0283	0.7017	0.0198	(0.0812)	0.2942	(0.0239)	0.0374	0.0422
42) Total Kenya Ltd	2009	482,585	377,494	105,091	0.0072	0.2973	0.1396	0.0415	0.0283	(1.3396)	(0.0379)	(0.0812)	0.2361	(0.0192)	(0.0155)	0.0227
42) Total Kenya Ltd	2010	916,205	6,011,317	(5,095,112)	(0.1616)	0.2973	0.1334	0.0397	0.0283	1.2818	0.0362	(0.0812)	0.3058	(0.0248)	0.0510	(0.2126)
42) Total Kenya Ltd	2011	(71,436)	(2,005,741)	1,934,305	0.0637	0.2973	0.1336	0.0397	0.0283	0.8036	0.0227	(0.0812)	0.4909	(0.0399)	0.0226	0.0411
42) Total Kenya Ltd	2012	(202,142)	6,700,983	(6,903,125)	(0.1961)	0.2973	0.1325	0.0394	0.0283	0.5281	0.0149	(0.0812)	0.4329	(0.0352)	0.0192	(0.2153)
42) Total Kenya Ltd	2013	1,312,277	7,857,234	(6,544,957)	(0.1984)	0.2973	0.1330	0.0395	0.0283	1.0225	0.0289	(0.0812)	0.4941	(0.0401)	0.0283	(0.2268)
42) Total Kenya Ltd	2014	1,424,088	(7,083,439)	8,507,527	0.2128	0.2973	0.1315	0.0391	0.0283	0.3914	0.0111	(0.0812)	0.4368	(0.0355)	0.0147	0.1981
42) Total Kenya Ltd	2015	1,615,003	7,827,491	(6,212,488)	(0.1909)	0.2973	0.1331	0.0396	0.0283	(1.0211)	(0.0289)	(0.0812)	0.5812	(0.0472)	(0.0365)	(0.1544)
42) Total Kenya Ltd	2016	2,234,292	3,600,991	(1,366,699)	(0.0399)	0.2973	0.1327	0.0395	0.0283	(0.7756)	(0.0219)	(0.0812)	0.5814	(0.0472)	(0.0297)	(0.0102)
42) Total Kenya Ltd	2017	2,738,216	381,135	2,357,081	0.0651	0.2973	0.1323	0.0393	0.0283	0.7075	0.0200	(0.0812)	0.6009	(0.0488)	0.0105	0.0546
43) British American Investments Co. Ltd	2011	(1,957,305)	2,225,315	(4,182,620)	(0.1649)	0.2973	0.1351	0.0402	0.0283	(0.2366)	(0.0067)	(0.0812)	0.0394	(0.0032)	0.0303	(0.1952)
43) British American Investments Co. Ltd	2012	2,519,461	2,258,490	260,971	0.0415	0.2973	0.1471	0.0437	0.0283	1.3892	0.0393	(0.0812)	0.2182	(0.0177)	0.0653	(0.0237)
43) British American Investments Co. Ltd	2013	2,653,789	1,954,513	699,276	0.0914	0.2973	0.1453	0.0432	0.0283	0.2922	0.0083	(0.0812)	0.2229	(0.0181)	0.0333	0.0581
43) British American Investments Co. Ltd	2014	2,497,878	3,356,771	(858,893)	(0.0183)	0.2973	0.1304	0.0388	0.0283	0.0625	0.0018	(0.0812)	0.0476	(0.0039)	0.0367	(0.0550)
43) British American Investments Co. Ltd	2015	(1,009,458)	3,758,895	(4,768,353)	(0.0658)	0.2973	0.1272	0.0378	0.0283	0.0335						

											0.0009	(0.0812)	0.0389	(0.0032)	0.0356	(0.1014)
43) British American Investments Co. Ltd	2016	2,480,204	5,017,387	(2,537,183)	(0.0327)	0.2973	0.1267	0.0377	0.0283	(0.0216)	(0.0006)	(0.0812)	0.0374	(0.0030)	0.0340	(0.0667)
44) CIC Insurance Group Ltd	2008	184,924	296,707	(111,783)	(0.0458)	0.2973	0.1566	0.0466	0.0283	0.0687	0.0019	(0.0812)	0.1226	(0.0100)	0.0385	(0.0844)
44) CIC Insurance Group Ltd	2009	245,631	344,894	(99,263)	(0.0328)	0.2973	0.1543	0.0459	0.0283	0.1299	0.0037	(0.0812)	0.1127	(0.0092)	0.0404	(0.0732)
44) CIC Insurance Group Ltd	2010	512,084	831,720	(319,636)	(0.0916)	0.2973	0.1528	0.0454	0.0283	0.2060	0.0058	(0.0812)	0.0985	(0.0080)	0.0433	(0.1348)
44) CIC Insurance Group Ltd	2011	597,765	1,510,655	(912,890)	(0.1218)	0.2973	0.1455	0.0432	0.0283	0.4130	0.0117	(0.0812)	0.0574	(0.0047)	0.0503	(0.1720)
44) CIC Insurance Group Ltd	2012	1,402,983	1,815,111	(412,128)	(0.0371)	0.2973	0.1419	0.0422	0.0283	0.1618	0.0046	(0.0812)	0.0452	(0.0037)	0.0431	(0.0802)
44) CIC Insurance Group Ltd	2013	1,463,907	1,976,562	(512,655)	(0.0364)	0.2973	0.1399	0.0416	0.0283	0.1034	0.0029	(0.0812)	0.0964	(0.0078)	0.0367	(0.0731)
44) CIC Insurance Group Ltd	2014	203,119	859,033	(655,914)	(0.0385)	0.2973	0.1383	0.0411	0.0283	(0.3144)	(0.0089)	(0.0812)	0.0273	(0.0022)	0.0300	(0.0685)
44) CIC Insurance Group Ltd	2015	99,903	281,324	(181,421)	(0.0271)	0.2973	0.1465	0.0436	0.0283	(0.1000)	(0.0028)	(0.0812)	0.0474	(0.0038)	0.0369	(0.0639)
44) CIC Insurance Group Ltd	2016	(41,372)	455,474	(496,846)	(0.0666)	0.2973	0.1455	0.0433	0.0283	0.8964	0.0253	(0.0812)	0.2403	(0.0195)	0.0491	(0.1157)
44) CIC Insurance Group Ltd	2017	353,070	2,090,521	(1,737,451)	(0.0648)	0.2973	0.1346	0.0400	0.0283	0.0917	0.0026	(0.0812)	0.0696	(0.0057)	0.0370	(0.1017)
45) Jubilee Holdings Ltd	2008	713,235	1,204,798	(491,563)	(0.0274)	0.2973	0.1379	0.0410	0.0283	0.0711	0.0020	(0.0812)	0.0179	(0.0015)	0.0415	(0.0689)
45) Jubilee Holdings Ltd	2009	780,761	14,419,053	(13,638,292)	(0.6751)	0.2973	0.1369	0.0407	0.0283	0.0297	0.0008	(0.0812)	0.0172	(0.0014)	0.0401	(0.7152)
45) Jubilee Holdings Ltd	2010	1,990,260	1,368,839	621,421	0.0250	0.2973	0.1352	0.0402	0.0283	0.0603	0.0017	(0.0812)	0.0153	(0.0012)	0.0407	(0.0157)
45) Jubilee Holdings Ltd	2011	1,411,488	2,544,170	(1,132,682)	(0.0358)	0.2973	0.1333	0.0396	0.0283	0.0724	0.0020	(0.0812)	0.0136	(0.0011)	0.0406	(0.0764)
45) Jubilee Holdings Ltd	2012	2,292,958	2,420,890	(127,932)	(0.0034)	0.2973	0.1319	0.0392	0.0283	0.0735	0.0021	(0.0812)	0.0138	(0.0011)	0.0402	(0.0435)
45) Jubilee Holdings Ltd	2013	3,319,158	3,315,917	3,241	0.0001	0.2973	0.1303	0.0387	0.0283	0.0243	0.0007	(0.0812)	0.0131	(0.0011)	0.0384	(0.0383)
45) Jubilee Holdings Ltd	2014	3,340,378	6,220,863	(2,880,485)	(0.0471)	0.2973	0.1284	0.0382	0.0283	0.1109						

											0.0031	(0.0812)	0.0116	(0.0009)	0.0404	(0.0875)
45) Jubilee Holdings Ltd	2015	2,966,524	2,694,683	271,841	0.0036	0.2973	0.1270	0.0378	0.0283	(0.0372)	(0.0011)	(0.0812)	0.0111	(0.0009)	0.0358	(0.0322)
45) Jubilee Holdings Ltd	2016	2,749,863	1,674,592	1,075,271	0.0131	0.2973	0.1263	0.0376	0.0283	0.0434	0.0012	(0.0812)	0.0108	(0.0009)	0.0379	(0.0249)
45) Jubilee Holdings Ltd	2017	4,482,556	4,015,064	467,492	0.0052	0.2973	0.1257	0.0374	0.0283	(0.0062)	(0.0002)	(0.0812)	0.0117	(0.0010)	0.0362	(0.0311)
46) Kenya Re-Insurance Corporation Ltd	2008	1,004,643	700,741	303,902	0.0234	0.2973	0.1406	0.0418	0.0283	0.0333	0.0009	(0.0812)	0.0020	(0.0002)	0.0426	(0.0191)
46) Kenya Re-Insurance Corporation Ltd	2009	1,120,529	663,452	457,077	0.0328	0.2973	0.1400	0.0416	0.0283	0.0121	0.0003	(0.0812)	0.0025	(0.0002)	0.0418	(0.0090)
46) Kenya Re-Insurance Corporation Ltd	2010	1,541,391	1,581,378	(39,987)	(0.0027)	0.2973	0.1394	0.0414	0.0283	0.1255	0.0035	(0.0812)	0.0069	(0.0006)	0.0444	(0.0471)
46) Kenya Re-Insurance Corporation Ltd	2011	1,914,584	1,138,943	775,641	0.0450	0.2973	0.1382	0.0411	0.0283	0.0926	0.0026	(0.0812)	0.0063	(0.0005)	0.0432	0.0018
46) Kenya Re-Insurance Corporation Ltd	2012	2,801,892	839,270	1,962,622	0.1028	0.2973	0.1373	0.0408	0.0283	0.1154	0.0033	(0.0812)	0.0063	(0.0005)	0.0436	0.0592
46) Kenya Re-Insurance Corporation Ltd	2013	3,000,431	398,408	2,602,023	0.1123	0.2973	0.1358	0.0404	0.0283	0.0249	0.0007	(0.0812)	0.0076	(0.0006)	0.0405	0.0718
46) Kenya Re-Insurance Corporation Ltd	2014	3,417,735	2,774,228	643,507	0.0233	0.2973	0.1344	0.0400	0.0283	0.0780	0.0022	(0.0812)	0.0068	(0.0006)	0.0416	(0.0183)
46) Kenya Re-Insurance Corporation Ltd	2015	2,431,425	2,651,959	(220,534)	(0.0069)	0.2973	0.1332	0.0396	0.0283	0.0434	0.0012	(0.0812)	0.0059	(0.0005)	0.0404	(0.0472)
46) Kenya Re-Insurance Corporation Ltd	2016	2,725,394	1,554,747	1,170,647	0.0326	0.2973	0.1323	0.0394	0.0283	0.0066	0.0002	(0.0812)	0.0067	(0.0005)	0.0390	(0.0064)
46) Kenya Re-Insurance Corporation Ltd	2017	3,631,746	2,098,138	1,533,608	0.0398	0.2973	0.1318	0.0392	0.0283	0.0110	0.0003	(0.0812)	0.0069	(0.0006)	0.0389	0.0009
47) Flame Tree Group Holdings Ltd	2014	160,154	(11,211)	171,365	0.1957	0.2973	0.1683	0.0500	0.0283	0.1074	0.0030	(0.0812)	0.5211	(0.0423)	0.0107	0.1849
47) Flame Tree Group Holdings Ltd	2015	219,834	130,974	88,860	0.0880	0.2973	0.1666	0.0495	0.0283	0.3456	0.0098	(0.0812)	0.5314	(0.0432)	0.0161	0.0719
47) Flame Tree Group Holdings Ltd	2016	137,245	39,909	97,336	0.0734	0.2973	0.1633	0.0486	0.0283	0.1847	0.0052	(0.0812)	0.4446	(0.0361)	0.0177	0.0557
47) Flame Tree Group Holdings Ltd	2017	10,144	142,944	(132,800)	(0.0873)	0.2973	0.1618	0.0481	0.0283	(0.0763)	(0.0022)	(0.0812)	0.4293	(0.0349)	0.0111	(0.0984)
48) BRITISH AMERICAN TOBACCO	2008	1,700,395	2,386,887	(686,492)	(0.0741)	0.2973	0.1435	0.0427	0.0283	0.0727						

											0.0021	(0.0812)	0.8293	(0.0674)	(0.0226)	(0.0514)
48) BRITISH AMERICAN TOBACCO	2009	1,478,431	1,577,821	(99,390)	(0.0096)	0.2973	0.1426	0.0424	0.0283	0.0989	0.0028	(0.0812)	0.8348	(0.0678)	(0.0226)	0.0130
48) BRITISH AMERICAN TOBACCO	2010	1,767,236	2,213,612	(446,376)	(0.0423)	0.2973	0.1424	0.0423	0.0283	0.2248	0.0064	(0.0812)	0.8672	(0.0705)	(0.0218)	(0.0206)
48) BRITISH AMERICAN TOBACCO	2011	3,097,755	3,868,818	(771,063)	(0.0693)	0.2973	0.1419	0.0422	0.0283	0.5891	0.0166	(0.0812)	0.9786	(0.0795)	(0.0206)	(0.0487)
48) BRITISH AMERICAN TOBACCO	2012	3,270,852	4,004,450	(733,598)	(0.0534)	0.2973	0.1401	0.0417	0.0283	(0.0805)	(0.0023)	(0.0812)	0.8980	(0.0730)	(0.0336)	(0.0198)
48) BRITISH AMERICAN TOBACCO	2013	3,723,691	3,420,729	302,962	0.0200	0.2973	0.1393	0.0414	0.0283	(0.0814)	(0.0023)	(0.0812)	0.8750	(0.0711)	(0.0320)	0.0519
48) BRITISH AMERICAN TOBACCO	2014	4,255,314	4,730,110	(474,796)	(0.0254)	0.2973	0.1375	0.0409	0.0283	0.1210	0.0034	(0.0812)	0.7869	(0.0639)	(0.0196)	(0.0058)
48) BRITISH AMERICAN TOBACCO	2015	4,976,256	3,930,350	1,045,906	0.0573	0.2973	0.1377	0.0409	0.0283	0.0740	0.0021	(0.0812)	0.8350	(0.0678)	(0.0248)	0.0821
48) BRITISH AMERICAN TOBACCO	2016	4,234,334	5,161,435	(927,101)	(0.0496)	0.2973	0.1375	0.0409	0.0283	(0.1312)	(0.0037)	(0.0812)	0.8634	(0.0701)	(0.0330)	(0.0167)
48) BRITISH AMERICAN TOBACCO	2017	3,336,006	4,713,472	(1,377,466)	(0.0745)	0.2973	0.1376	0.0409	0.0283	(0.0777)	(0.0022)	(0.0812)	0.8901	(0.0723)	(0.0336)	(0.0409)
49) B.O.C Kenya Ltd	2008	215,060	299,488	(84,428)	(0.0454)	0.2973	0.1595	0.0474	0.0283	0.0742	0.0021	(0.0812)	0.7428	(0.0603)	(0.0108)	(0.0346)
49) B.O.C Kenya Ltd	2009	212,459	(20,744)	233,203	0.1134	0.2973	0.1584	0.0471	0.0283	(0.0026)	(0.0001)	(0.0812)	0.6984	(0.0567)	(0.0097)	0.1231
49) B.O.C Kenya Ltd	2010	116,060	254,792	(138,732)	(0.0740)	0.2973	0.1594	0.0474	0.0283	(0.0651)	(0.0018)	(0.0812)	0.7050	(0.0573)	(0.0117)	(0.0623)
49) B.O.C Kenya Ltd	2011	105,521	223,734	(118,213)	(0.0621)	0.2973	0.1592	0.0473	0.0283	0.0285	0.0008	(0.0812)	0.7404	(0.0601)	(0.0120)	(0.0501)
49) B.O.C Kenya Ltd	2012	259,033	348,679	(89,646)	(0.0493)	0.2973	0.1598	0.0475	0.0283	0.1058	0.0030	(0.0812)	0.7672	(0.0623)	(0.0118)	(0.0375)
49) B.O.C Kenya Ltd	2013	731,568	139,192	592,376	0.2970	0.2973	0.1587	0.0472	0.0283	(0.0699)	(0.0020)	(0.0812)	0.7175	(0.0583)	(0.0131)	0.3100
49) B.O.C Kenya Ltd	2014	(235,150)	103,325	(338,475)	(0.1285)	0.2973	0.1558	0.0463	0.0283	0.0258	0.0007	(0.0812)	0.6101	(0.0496)	(0.0025)	(0.1260)
49) B.O.C Kenya Ltd	2015	68,450	207,104	(138,654)	(0.0603)	0.2973	0.1572	0.0467	0.0283	(0.0648)	(0.0018)	(0.0812)	0.7585	(0.0616)	(0.0167)	(0.0436)
49) B.O.C Kenya Ltd	2016	76,875	84,602	(7,727)	(0.0033)	0.2973	0.1571	0.0467	0.0283	(0.0302)						

											(0.0009)	(0.0812)	0.7651	(0.0622)	(0.0163)	0.0130
49) B.O.C Kenya Ltd	2017	23,165	175,540	(152,375)	(0.0685)	0.2973	0.1576	0.0468	0.0283	(0.0218)	(0.0006)	(0.0812)	0.8353	(0.0679)	(0.0216)	(0.0469)
50) Carbacid Investments Ltd	2008	166,760	143,750	23,010	0.0211	0.2973	0.1656	0.0492	0.0283	(0.0092)	(0.0003)	(0.0812)	0.4831	(0.0392)	0.0097	0.0114
50) Carbacid Investments Ltd	2009	256,377	305,976	(49,599)	(0.0360)	0.2973	0.1629	0.0484	0.0283	0.0984	0.0028	(0.0812)	0.4210	(0.0342)	0.0170	(0.0530)
50) Carbacid Investments Ltd	2010	307,392	334,738	(27,346)	(0.0226)	0.2973	0.1644	0.0489	0.0283	0.0800	0.0023	(0.0812)	0.6764	(0.0549)	(0.0038)	(0.0188)
50) Carbacid Investments Ltd	2011	343,510	303,630	39,880	0.0264	0.2973	0.1618	0.0481	0.0283	(0.0558)	(0.0016)	(0.0812)	0.5738	(0.0466)	(0.0001)	0.0265
50) Carbacid Investments Ltd	2012	389,287	572,224	(182,937)	(0.1051)	0.2973	0.1602	0.0476	0.0283	0.1775	0.0050	(0.0812)	0.5568	(0.0452)	0.0074	(0.1126)
50) Carbacid Investments Ltd	2013	475,541	456,918	18,623	0.0093	0.2973	0.1586	0.0472	0.0283	0.0328	0.0009	(0.0812)	0.4862	(0.0395)	0.0086	0.0007
50) Carbacid Investments Ltd	2014	220,050	113,399	106,651	0.0484	0.2973	0.1576	0.0469	0.0283	0.0727	0.0021	(0.0812)	0.7287	(0.0592)	(0.0103)	0.0587
50) Carbacid Investments Ltd	2015	393,316	162,303	231,013	0.1122	0.2973	0.1584	0.0471	0.0283	(0.0940)	(0.0027)	(0.0812)	0.8476	(0.0689)	(0.0244)	0.1366
50) Carbacid Investments Ltd	2016	375,568	374,074	1,494	0.0007	0.2973	0.1581	0.0470	0.0283	(0.0552)	(0.0016)	(0.0812)	0.5270	(0.0428)	0.0026	(0.0019)
50) Carbacid Investments Ltd	2017	352,300	326,574	25,726	0.0083	0.2973	0.1541	0.0458	0.0283	(0.0687)	(0.0019)	(0.0812)	0.3172	(0.0258)	0.0181	(0.0098)
51) East African Brerweries Ltd	2008	9,184,385	9,308,635	(124,250)	(0.0040)	0.2973	0.1335	0.0397	0.0283	0.2229	0.0063	(0.0812)	0.6141	(0.0499)	(0.0039)	(0.0001)
51) East African Brerweries Ltd	2009	8,609,185	9,588,686	(979,501)	(0.0295)	0.2973	0.1329	0.0395	0.0283	0.0798	0.0023	(0.0812)	0.6417	(0.0521)	(0.0103)	(0.0191)
51) East African Brerweries Ltd	2010	8,837,560	12,202,701	(3,365,141)	(0.1340)	0.2973	0.1351	0.0402	0.0283	0.0819	0.0023	(0.0812)	1.0972	(0.0891)	(0.0466)	(0.0874)
51) East African Brerweries Ltd	2011	9,203,126	8,877,695	325,431	0.0122	0.2973	0.1346	0.0400	0.0283	0.1774	0.0050	(0.0812)	1.6279	(0.1322)	(0.0872)	0.0994
51) East African Brerweries Ltd	2012	10,823,242	6,834,555	3,988,687	0.0805	0.2973	0.1300	0.0386	0.0283	0.1919	0.0054	(0.0812)	0.9789	(0.0795)	(0.0355)	0.1160
51) East African Brerweries Ltd	2013	6,775,075	9,730,145	(2,955,070)	(0.0541)	0.2973	0.1292	0.0384	0.0283	0.0497	0.0014	(0.0812)	0.9516	(0.0773)	(0.0375)	(0.0167)
51) East African Brerweries Ltd	2014	6,833,549	6,193,290	640,259	0.0109	0.2973	0.1287	0.0383	0.0283	0.0510						

											0.0014	(0.0812)	0.9889	(0.0803)	(0.0406)	0.0515
51) East African Brerweries Ltd	2015	9,423,275	14,526,842	(5,103,567)	(0.0812)	0.2973	0.1282	0.0381	0.0283	0.0362	0.0010	(0.0812)	0.8967	(0.0728)	(0.0337)	(0.0475)
51) East African Brerweries Ltd	2016	8,093,787	18,577,235	(10,483,448)	(0.1566)	0.2973	0.1278	0.0380	0.0283	(0.0382)	(0.0011)	(0.0812)	0.9114	(0.0740)	(0.0371)	(0.1195)
51) East African Brerweries Ltd	2017	7,725,956	13,914,471	(6,188,515)	(0.1832)	0.2973	0.1328	0.0395	0.0283	0.2241	0.0063	(0.0812)	1.9091	(0.1551)	(0.1093)	(0.0740)
52) Eveready East Africa Ltd	2008	17,840	376,108	(358,268)	(0.3012)	0.2973	0.1646	0.0489	0.0283	(0.3967)	(0.0112)	(0.0812)	0.1521	(0.0124)	0.0254	(0.3266)
52) Eveready East Africa Ltd	2009	28,271	(108,523)	136,794	0.1634	0.2973	0.1688	0.0502	0.0283	(0.1953)	(0.0055)	(0.0812)	0.2373	(0.0193)	0.0254	0.1380
52) Eveready East Africa Ltd	2010	8,703	(73,829)	82,532	0.0827	0.2973	0.1667	0.0496	0.0283	(0.0307)	(0.0009)	(0.0812)	0.5457	(0.0443)	0.0044	0.0784
52) Eveready East Africa Ltd	2011	(123,994)	31,780	(155,774)	(0.1303)	0.2973	0.1645	0.0489	0.0283	(0.1713)	(0.0048)	(0.0812)	0.4546	(0.0369)	0.0071	(0.1374)
52) Eveready East Africa Ltd	2012	70,084	(54,064)	124,148	0.1221	0.2973	0.1665	0.0495	0.0283	0.0114	0.0003	(0.0812)	0.5395	(0.0438)	0.0060	0.1161
52) Eveready East Africa Ltd	2013	45,092	191,384	(146,292)	(0.1271)	0.2973	0.1650	0.0491	0.0283	0.0134	0.0004	(0.0812)	0.4947	(0.0402)	0.0093	(0.1364)
52) Eveready East Africa Ltd	2014	(177,589)	(146,233)	(31,356)	(0.0333)	0.2973	0.1674	0.0498	0.0283	(0.2542)	(0.0072)	(0.0812)	0.4486	(0.0364)	0.0061	(0.0394)
52) Eveready East Africa Ltd	2015	587,823	1,196	586,627	0.6307	0.2973	0.1675	0.0498	0.0283	(0.0707)	(0.0020)	(0.0812)	0.4442	(0.0361)	0.0117	0.6190
52) Eveready East Africa Ltd	2016	(195,911)	(107,475)	(88,436)	(0.0585)	0.2973	0.1618	0.0481	0.0283	(0.2976)	(0.0084)	(0.0812)	0.2392	(0.0194)	0.0203	(0.0788)
52) Eveready East Africa Ltd	2017	272,792	(253,632)	526,424	0.4862	0.2973	0.1657	0.0493	0.0283	(0.2483)	(0.0070)	(0.0812)	0.0813	(0.0066)	0.0357	0.4505
53) Kenya Orchards Ltd	2009	562	(122)	684	0.0075	0.2973	0.2016	0.0599	0.0283	-	-	(0.0812)	0.2865	(0.0233)	0.0367	(0.0292)
53) Kenya Orchards Ltd	2010	(2,876)	(85)	(2,791)	(0.0355)	0.2973	0.2042	0.0607	0.0283	0.0388	0.0011	(0.0812)	0.3140	(0.0255)	0.0363	(0.0718)
53) Kenya Orchards Ltd	2011	712	211	501	0.0067	0.2973	0.2053	0.0610	0.0283	0.0641	0.0018	(0.0812)	0.3156	(0.0256)	0.0372	(0.0305)
53) Kenya Orchards Ltd	2012	244	387	(143)	(0.0020)	0.2973	0.2063	0.0613	0.0283	0.0090	0.0003	(0.0812)	0.3189	(0.0259)	0.0357	(0.0377)
53) Kenya Orchards Ltd	2013	2,415	(317)	2,732	0.0396	0.2973	0.2067	0.0615	0.0283	0.1977						

											0.0056	(0.0812)	0.3121	(0.0254)	0.0417	(0.0021)
53) Kenya Orchards Ltd	2014	(25,262)	(283)	(24,979)	(0.3538)	0.2973	0.2062	0.0613	0.0283	0.0398	0.0011	(0.0812)	0.2933	(0.0238)	0.0386	(0.3924)
53) Kenya Orchards Ltd	2015	28,915	(272)	29,187	0.5814	0.2973	0.2127	0.0633	0.0283	(0.1110)	(0.0031)	(0.0812)	0.3989	(0.0324)	0.0277	0.5537
53) Kenya Orchards Ltd	2016	3,763	(1,974)	5,737	0.0729	0.2973	0.2042	0.0607	0.0283	(0.1228)	(0.0035)	(0.0812)	0.2465	(0.0200)	0.0372	0.0356
53) Kenya Orchards Ltd	2017	5,735	4,056	1,679	0.0188	0.2973	0.2020	0.0601	0.0283	(0.0562)	(0.0016)	(0.0812)	0.2749	(0.0223)	0.0361	(0.0173)
54) Mumias Sugar Co. Ltd	2008	1,213,837	1,455,193	(241,356)	(0.0203)	0.2973	0.1413	0.0420	0.0283	0.0900	0.0025	(0.0812)	0.9213	(0.0748)	(0.0303)	0.0100
54) Mumias Sugar Co. Ltd	2009	1,609,972	1,563,224	46,748	0.0033	0.2973	0.1398	0.0416	0.0283	(0.0564)	(0.0016)	(0.0812)	1.0107	(0.0821)	(0.0421)	0.0454
54) Mumias Sugar Co. Ltd	2010	1,572,383	3,004,318	(1,431,935)	(0.0819)	0.2973	0.1381	0.0411	0.0283	0.2146	0.0061	(0.0812)	0.8378	(0.0681)	(0.0209)	(0.0610)
54) Mumias Sugar Co. Ltd	2011	1,933,225	2,300,182	(366,957)	(0.0200)	0.2973	0.1377	0.0409	0.0283	(0.0196)	(0.0006)	(0.0812)	0.9372	(0.0761)	(0.0358)	0.0157
54) Mumias Sugar Co. Ltd	2012	2,012,679	2,114,552	(101,873)	(0.0044)	0.2973	0.1358	0.0404	0.0283	(0.0420)	(0.0012)	(0.0812)	0.9222	(0.0749)	(0.0357)	0.0313
54) Mumias Sugar Co. Ltd	2013	(1,669,716)	932,444	(2,602,160)	(0.0950)	0.2973	0.1344	0.0400	0.0283	(0.1010)	(0.0029)	(0.0812)	0.8132	(0.0661)	(0.0289)	(0.0660)
54) Mumias Sugar Co. Ltd	2014	(2,740,685)	694,974	(3,435,659)	(0.1266)	0.2973	0.1345	0.0400	0.0283	0.0859	0.0024	(0.0812)	0.8393	(0.0682)	(0.0258)	(0.1008)
54) Mumias Sugar Co. Ltd	2015	(4,709,761)	(662,594)	(4,047,167)	(0.1718)	0.2973	0.1356	0.0403	0.0283	(0.2769)	(0.0078)	(0.0812)	0.9689	(0.0787)	(0.0462)	(0.1256)
54) Mumias Sugar Co. Ltd	2016	1,488,383	(2,675,076)	4,163,459	0.2041	0.2973	0.1368	0.0407	0.0283	0.0606	0.0017	(0.0812)	1.3353	(0.1085)	(0.0661)	0.2701
54) Mumias Sugar Co. Ltd	2017	(6,803,384)	(2,359,580)	(4,443,804)	(0.1658)	0.2973	0.1346	0.0400	0.0283	(0.1619)	(0.0046)	(0.0812)	1.0173	(0.0826)	(0.0472)	(0.1186)
55) Unga group Ltd	2008	373,661	573,233	(199,572)	(0.0537)	0.2973	0.1522	0.0453	0.0283	0.3722	0.0105	(0.0812)	0.5694	(0.0463)	0.0095	(0.0632)
55) Unga group Ltd	2009	192,261	(122,096)	314,357	0.0660	0.2973	0.1498	0.0445	0.0283	0.4695	0.0133	(0.0812)	0.4421	(0.0359)	0.0219	0.0441
55) Unga group Ltd	2010	229,341	162,392	66,949	0.0120	0.2973	0.1482	0.0441	0.0283	0.0100	0.0003	(0.0812)	0.3828	(0.0311)	0.0133	(0.0012)
55) Unga group Ltd	2011	438,484	595,735	(157,251)	(0.0311)	0.2973	0.1492	0.0443	0.0283	0.2759						

											0.0078	(0.0812)	0.4394	(0.0357)	0.0164	(0.0475)
55) Unga group Ltd	2012	331,621	(56,889)	388,510	0.0681	0.2973	0.1480	0.0440	0.0283	0.3685	0.0104	(0.0812)	0.4155	(0.0338)	0.0207	0.0474
55) Unga group Ltd	2013	754,483	411,617	342,866	0.0535	0.2973	0.1469	0.0437	0.0283	(0.0730)	(0.0021)	(0.0812)	0.3875	(0.0315)	0.0101	0.0433
55) Unga group Ltd	2014	497,996	469,489	28,507	0.0034	0.2973	0.1445	0.0430	0.0283	0.1833	0.0052	(0.0812)	0.3465	(0.0282)	0.0200	(0.0166)
55) Unga group Ltd	2015	611,885	505,450	106,435	0.0133	0.2973	0.1448	0.0431	0.0283	0.1757	0.0050	(0.0812)	0.4377	(0.0356)	0.0125	0.0008
55) Unga group Ltd	2016	(31,302)	666,294	(697,596)	(0.0804)	0.2973	0.1441	0.0429	0.0283	0.0208	0.0006	(0.0812)	0.4348	(0.0353)	0.0081	(0.0886)
55) Unga group Ltd	2017	494,581	1,595,319	(1,100,738)	(0.1196)	0.2973	0.1436	0.0427	0.0283	0.0231	0.0007	(0.0812)	0.4933	(0.0401)	0.0033	(0.1229)
56) Safaricom Ltd	2008	13,853,286	29,553,212	(15,699,926)	(0.2783)	0.2973	0.1290	0.0384	0.0283	0.2252	0.0064	(0.0812)	1.5745	(0.1279)	(0.0832)	(0.1951)
56) Safaricom Ltd	2009	10,536,760	22,930,515	(12,393,755)	(0.1667)	0.2973	0.1270	0.0378	0.0283	0.0774	0.0022	(0.0812)	1.5127	(0.1229)	(0.0829)	(0.0837)
56) Safaricom Ltd	2010	15,148,038	24,045,619	(8,897,581)	(0.0970)	0.2973	0.1256	0.0373	0.0283	0.1482	0.0042	(0.0812)	1.4134	(0.1148)	(0.0733)	(0.0238)
56) Safaricom Ltd	2011	13,158,973	31,001,872	(17,842,899)	(0.1707)	0.2973	0.1247	0.0371	0.0283	0.0985	0.0028	(0.0812)	1.4147	(0.1149)	(0.0751)	(0.0956)
56) Safaricom Ltd	2012	12,627,607	33,236,074	(20,608,467)	(0.1800)	0.2973	0.1241	0.0369	0.0283	0.1052	0.0030	(0.0812)	1.5144	(0.1230)	(0.0832)	(0.0968)
56) Safaricom Ltd	2013	17,539,810	39,130,745	(21,590,935)	(0.1771)	0.2973	0.1237	0.0368	0.0283	0.1424	0.0040	(0.0812)	1.6246	(0.1320)	(0.0912)	(0.0859)
56) Safaricom Ltd	2014	23,017,540	51,133,189	(28,115,649)	(0.2182)	0.2973	0.1233	0.0367	0.0283	0.1611	0.0046	(0.0812)	1.7521	(0.1423)	(0.1011)	(0.1171)
56) Safaricom Ltd	2015	31,871,303	61,699,534	(29,828,231)	(0.2216)	0.2973	0.1230	0.0366	0.0283	0.1199	0.0034	(0.0812)	1.9319	(0.1569)	(0.1170)	(0.1046)
56) Safaricom Ltd	2016	38,104,290	64,612,608	(26,508,318)	(0.1689)	0.2973	0.1220	0.0363	0.0283	0.1402	0.0040	(0.0812)	1.8607	(0.1512)	(0.1109)	(0.0580)
56) Safaricom Ltd	2017	48,444,418	79,527,138	(31,082,720)	(0.1953)	0.2973	0.1219	0.0363	0.0283	0.1256	0.0035	(0.3201)	2.0549	(0.6578)	(0.6180)	0.4227

APPENDIX IV: Corporate Governance, Executive Compensation, Firm Characteristics and Earnings Management Measures

FIRMS														
FIRMS	**YEARS**	**DA**	**BCOM**	**BREM**	**BSIZE**	**BDIV**	**CG**	**FS**	**FFLEV**	**FP**	**CG*FS**	**CG*FLEV**	**CG*FP**	**EC**
1) Kakuzi Ltd	2008	0.02606	1.000	0.286	0.845098	0.000	-0.122	6.425	0.6984	0.1659	0.0917	0.0191	(0.0163)	3.3454
1) Kakuzi Ltd	2009	-0.11845	1.000	0.286	0.845098	0.000	-0.122	6.458	0.4625	0.2013	0.0876	0.0480	(0.0207)	2.9494
1) Kakuzi Ltd	2010	-0.04981	1.000	0.333	0.778151	0.000	-0.127	6.508	0.4560	0.1689	0.0848	0.0507	(0.0174)	2.9400
1) Kakuzi Ltd	2011	-0.04168	1.000	0.333	0.778151	0.000	-0.127	6.582	0.3847	0.2285	0.0754	0.0598	(0.0249)	3.1396
1) Kakuzi Ltd	2012	0.02680	0.714	1.500	0.845098	0.000	0.110	6.553	0.2750	0.1080	(0.0683)	(0.0637)	0.0083	3.1867
1) Kakuzi Ltd	2013	-0.09751	0.625	0.375	0.90309	0.000	-0.179	6.570	0.2801	0.0434	0.1084	0.1030	(0.0020)	3.2196
1) Kakuzi Ltd	2014	-0.10521	0.750	0.375	0.90309	0.000	-0.148	6.586	0.2924	0.0404	0.0871	0.0833	(0.0012)	3.2292
1) Kakuzi Ltd	2015	-0.10745	0.714	0.429	0.845098	0.000	-0.158	6.659	0.3227	0.1487	0.0816	0.0841	(0.0184)	3.5130
1) Kakuzi Ltd	2016	-0.01950	0.750	0.375	0.90309	0.000	-0.148	6.705	0.3167	0.1348	0.0696	0.0797	(0.0152)	3.5222
1) Kakuzi Ltd	2017	-0.05327	0.750	0.380	0.90309	0.000	-0.147	6.759	0.3295	0.1300	0.0610	0.0771	(0.0143)	3.6103
2) Kapchorua Tea Co Ltd	2008	-0.07373	0.833	1.000	0.778151	0.000	-0.002	5.992	0.5806	(0.0855)	0.0025	0.0006	0.0003	2.5514
2) Kapchorua Tea Co Ltd	2009	-0.02047	0.833	1.000	0.778151	0.000	-0.002	6.067	0.6943	0.0899	0.0024	0.0003	(0.0001)	2.5514
2) Kapchorua Tea Co Ltd	2010	0.03953	0.857	1.000	0.845098	0.000	0.021	6.176	0.8308	0.1341	(0.0205)	(0.0005)	0.0021	2.5514
2) Kapchorua Tea Co Ltd	2011	0.01266	0.833	1.000	0.778151	0.000	-0.002	6.196	0.6082	0.1716	0.0021	0.0005	(0.0003)	2.5514
2) Kapchorua Tea Co Ltd	2012	0.24564	0.833	1.000	0.778151	0.000	-0.002	6.794	0.2590	0.1951	0.0008	0.0013	(0.0003)	2.5514
2) Kapchorua Tea Co Ltd	2013	-0.01369	0.833	1.000	0.778151	0.000	-0.002	6.862	0.2436	0.1602	0.0007	0.0013	(0.0003)	3.0748
2) Kapchorua Tea Co Ltd	2014	0.00071	0.714	1.000	0.845098	0.000	-0.015	6.285	0.3973	0.0922	0.0135	0.0069	(0.0009)	3.2440
2) Kapchorua Tea Co Ltd	2015	-0.02473	0.714	1.000	0.845098	0.000	-0.015	6.297	0.3891	(0.0123)	0.0133	0.0071	0.0007	3.2531
2) Kapchorua Tea Co Ltd	2016	0.04449	0.714	1.000	0.845098	0.000	-0.015	6.331	0.4163	0.1546	0.0128	0.0066	(0.0019)	4.0146
2) Kapchorua Tea Co Ltd	2017	-0.10355	0.714	1.000	0.845098	0.000	-0.015	6.308	0.4343	(0.0375)	0.0131	0.0064	0.0011	3.9729
3) The Limuru Tea Co Ltd	2008	0.03387	0.333	0.500	0.477121	0.000	-0.327	4.762	0.5997	0.2637	0.7901	0.0836	(0.0758)	-
3) The Limuru Tea Co Ltd	2009	0.26467	0.333	0.500	0.477121	0.000	-0.327	4.928	0.5152	0.4568	0.7355	0.1113	(0.1390)	-

3) The Limuru Tea Co Ltd	2010	0.75845	0.333	0.500	0.477121	0.000	-0.327	5.199	0.3266	0.6590	0.6468	0.1730	(0.2052)	-
3) The Limuru Tea Co Ltd	2011	0.15223	0.333	0.500	0.477121	0.000	-0.327	5.282	0.2774	0.3129	0.6199	0.1891	(0.0919)	2.8055
3) The Limuru Tea Co Ltd	2012	0.43164	0.333	0.500	0.477121	0.000	-0.327	5.505	0.3211	0.4582	0.5467	0.1748	(0.1394)	2.6107
3) The Limuru Tea Co Ltd	2013	0.00301	0.250	0.500	0.60206	0.000	-0.317	5.535	0.3175	0.1212	0.5198	0.1704	(0.0282)	2.6107
3) The Limuru Tea Co Ltd	2014	-0.04972	0.250	0.500	0.60206	0.000	-0.317	5.488	0.3504	-	0.5347	0.1599	0.0102	2.6107
3) The Limuru Tea Co Ltd	2015	-0.03750	0.250	0.500	0.60206	0.000	-0.317	5.497	0.3650	(0.0194)	0.5320	0.1553	0.0164	2.6128
3) The Limuru Tea Co Ltd	2016	-0.09733	0.250	0.500	0.60206	0.000	-0.317	5.451	0.3883	(0.1363)	0.5466	0.1480	0.0534	2.7604
3) The Limuru Tea Co Ltd	2017	-0.08999	0.400	0.500	0.69897	0.000	-0.255	5.418	0.4000	(0.1500)	0.4484	0.1161	0.0465	2.9149
4) Rea Vipingo Plantations Ltd	2008	0.08129	0.800	1.000	0.69897	0.000	-0.030	6.213	0.8647	0.1517	0.0291	(0.0003)	(0.0036)	4.5018
4) Rea Vipingo Plantations Ltd	2009	-0.04793	0.800	1.000	0.69897	0.000	-0.030	6.150	0.4497	0.1625	0.0310	0.0123	(0.0039)	4.6361
4) Rea Vipingo Plantations Ltd	2010	0.02301	0.800	1.000	0.69897	0.000	-0.030	6.232	0.7258	0.0720	0.0285	0.0039	(0.0012)	4.6506
4) Rea Vipingo Plantations Ltd	2011	0.11830	0.800	1.000	0.69897	0.000	-0.030	6.360	0.5582	0.3074	0.0247	0.0090	(0.0083)	4.6002
4) Rea Vipingo Plantations Ltd	2012	0.01703	0.800	1.000	0.69897	0.000	-0.030	6.376	0.3800	0.2451	0.0242	0.0144	(0.0064)	4.6447
4) Rea Vipingo Plantations Ltd	2013	-0.01344	0.800	1.000	0.69897	0.000	-0.030	6.452	(0.0921)	0.2316	0.0219	0.0287	(0.0060)	4.6683
4) Rea Vipingo Plantations Ltd	2014	0.06634	0.800	1.000	0.69897	0.000	-0.030	6.506	0.2895	0.1611	0.0203	0.0171	(0.0039)	4.7169
4) Rea Vipingo Plantations Ltd	2015	0.08667	0.800	1.000	0.69897	0.000	-0.030	6.689	0.2828	0.4226	0.0147	0.0173	(0.0118)	4.7226
4) Rea Vipingo Plantations Ltd	2016	0.16869	0.800	1.000	0.69897	0.000	-0.030	6.622	0.2071	0.3980	0.0167	0.0196	(0.0111)	4.7694
4) Rea Vipingo Plantations Ltd	2017	-0.11877	0.800	1.000	0.69897	0.000	-0.030	6.664	0.2724	0.2829	0.0155	0.0176	(0.0076)	4.7908
5) Sasini Ltd	2008	0.21820	0.889	1.000	0.954243	0.111	0.056	6.832	0.4407	0.1948	(0.0191)	(0.0231)	0.0091	4.0096
5) Sasini Ltd	2009	0.01055	0.889	1.000	0.954243	0.111	0.084	6.903	0.4127	1.0038	(0.0227)	(0.0370)	0.0812	4.0122
5) Sasini Ltd	2010	0.05801	0.889	1.000	0.954243	0.111	0.084	6.957	0.3960	0.1575	(0.0182)	(0.0384)	0.0105	3.9988
5) Sasini Ltd	2011	-0.02488	0.889	1.000	0.954243	0.111	0.084	6.976	0.3993	0.1092	(0.0166)	(0.0381)	0.0064	4.1523
5) Sasini Ltd	2012	-0.06466	0.889	1.000	0.954243	0.111	0.084	6.951	0.3884	(0.0107)	(0.0188)	(0.0390)	(0.0036)	4.6539
5) Sasini Ltd	2013	-0.02452	0.875	1.000	0.90309	0.125	0.067	6.957	0.4185	0.0160	(0.0147)	(0.0294)	(0.0011)	4.2082
5) Sasini Ltd	2014	0.00799	0.875	1.000	0.90309	0.125	0.071	7.174	0.2317	0.0058	(0.0001)	(0.0441)	(0.0019)	4.6455
5) Sasini Ltd	2015	0.07201	0.875	1.000	0.90309	0.125	0.071	7.205	0.1834	0.0601	0.0021	(0.0475)	0.0020	4.2537
5) Sasini Ltd	2016	0.01556	0.875	1.000	0.90309	0.125	0.071	7.117	0.1535	0.0501	(0.0041)	(0.0496)	0.0013	4.2979

5) Sasini Ltd	2017	0.06133	0.875	1.000	0.90309	0.125	0.071	7.120	0.1662	0.0283	(0.0039)	(0.0488)	(0.0003)	4.5320
6) Williamson Tea Kenya Ltd	2008	-0.03117	0.857	1.000	0.845098	0.000	0.052	6.554	0.4185	(0.0402)	(0.0322)	(0.0226)	(0.0038)	4.0352
6) Williamson Tea Kenya Ltd	2009	-0.01704	0.857	1.000	0.845098	0.000	0.021	6.593	0.4912	0.0371	(0.0120)	(0.0075)	0.0001	4.0653
6) Williamson Tea Kenya Ltd	2010	0.08442	0.857	1.000	0.845098	0.000	0.021	6.727	0.5354	0.2312	(0.0092)	(0.0066)	0.0041	4.3338
6) Williamson Tea Kenya Ltd	2011	0.02869	0.857	1.000	0.845098	0.000	0.021	6.781	0.4124	0.2160	(0.0081)	(0.0091)	0.0038	4.2390
6) Williamson Tea Kenya Ltd	2012	0.08178	0.857	1.000	0.845098	0.000	0.021	6.860	0.4647	0.1612	(0.0065)	(0.0080)	0.0027	4.2573
6) Williamson Tea Kenya Ltd	2013	0.00764	0.714	1.000	0.845098	0.000	-0.015	6.904	0.3697	0.1444	0.0041	0.0074	(0.0017)	4.2756
6) Williamson Tea Kenya Ltd	2014	0.03683	0.714	1.000	0.845098	0.000	-0.015	6.931	0.2976	0.1232	0.0037	0.0084	(0.0014)	4.2756
6) Williamson Tea Kenya Ltd	2015	-0.04646	0.714	1.000	0.845098	0.000	-0.015	6.932	0.3001	(0.0326)	0.0037	0.0084	0.0010	4.4426
6) Williamson Tea Kenya Ltd	2016	-0.03714	0.714	1.000	0.845098	0.000	-0.015	6.951	0.3302	0.0565	0.0034	0.0080	(0.0004)	4.5946
6) Williamson Tea Kenya Ltd	2017	-0.00437	0.714	1.000	0.845098	0.000	-0.015	6.922	0.3725	(0.4423)	0.0038	0.0073	0.0072	4.6729
7) Car & General (K) Ltd	2008	0.10085	0.750	0.800	0.90309	0.000	-0.042	6.439	1.4366	0.1370	0.0307	(0.0243)	(0.0044)	4.2940
7) Car & General (K) Ltd	2009	0.07889	0.714	0.800	0.845098	0.000	-0.065	6.507	1.4577	0.1183	0.0435	(0.0393)	(0.0056)	4.3519
7) Car & General (K) Ltd	2010	0.02016	0.714	0.800	0.845098	0.000	-0.065	6.588	1.4881	0.1225	0.0383	(0.0413)	(0.0059)	4.3657
7) Car & General (K) Ltd	2011	0.03948	0.714	0.800	0.845098	0.000	-0.065	6.745	1.8965	0.1114	0.0280	(0.0679)	(0.0052)	4.4204
7) Car & General (K) Ltd	2012	-0.03250	0.714	0.800	0.845098	0.000	-0.065	6.756	1.6622	0.1063	0.0273	(0.0526)	(0.0048)	4.4477
7) Car & General (K) Ltd	2013	0.01556	0.714	0.800	0.845098	0.000	-0.065	6.839	1.7560	0.0963	0.0219	(0.0587)	(0.0042)	4.4589
7) Car & General (K) Ltd	2014	0.04774	0.714	0.800	0.845098	0.000	-0.065	6.911	1.8784	0.0850	0.0172	(0.0667)	(0.0034)	4.5021
7) Car & General (K) Ltd	2015	-0.05905	0.714	0.800	0.845098	0.000	-0.065	6.954	1.9751	0.0824	0.0144	(0.0730)	(0.0033)	4.5147
7) Car & General (K) Ltd	2016	0.02230	0.714	0.800	0.845098	0.000	-0.065	6.987	1.9968	0.0550	0.0122	(0.0744)	(0.0015)	4.5447
7) Car & General (K) Ltd	2017	-0.07813	0.857	0.800	0.845098	0.000	-0.029	6.973	1.7994	0.0612	0.0059	(0.0278)	(0.0008)	4.3176
8) Sameer Africa Ltd	2008	0.06705	0.857	1.000	0.845098	0.000	0.021	6.355	0.0602	0.0731	(0.0169)	(0.0163)	0.0008	4.4473
8) Sameer Africa Ltd	2009	-0.02688	0.857	1.000	0.845098	0.000	0.021	6.380	0.0513	0.0923	(0.0163)	(0.0165)	0.0012	4.2838
8) Sameer Africa Ltd	2010	0.04345	0.857	1.000	0.845098	0.000	0.021	6.360	0.0566	0.0648	(0.0168)	(0.0164)	0.0007	4.2690
8) Sameer Africa Ltd	2011	0.12634	0.857	1.000	0.845098	0.000	0.021	6.375	0.0538	0.0262	(0.0164)	(0.0165)	(0.0001)	4.2884
8) Sameer Africa Ltd	2012	0.05859	0.857	1.000	0.845098	0.000	0.021	6.531	0.4611	0.1007	(0.0132)	(0.0081)	0.0014	4.4075
8) Sameer Africa Ltd	2013	0.15119	0.833	1.000	0.778151	0.000	-0.002	6.564	0.3690	0.1456	0.0013	0.0010	(0.0002)	4.4322

8) Sameer Africa Ltd	2014	-0.03774	0.833	1.000	0.778151	0.000	-0.002	6.586	0.5208	(0.0277)	0.0013	0.0007	0.0001	4.5407
8) Sameer Africa Ltd	2015	-0.07826	0.833	1.000	0.778151	0.000	-0.002	6.574	0.5050	0.0021	0.0013	0.0007	0.0001	4.4881
8) Sameer Africa Ltd	2016	-0.00101	0.833	1.000	0.778151	0.000	-0.002	6.517	0.7932	(0.1928)	0.0014	0.0001	0.0005	4.4920
9) Barclays Bank of Kenya Ltd	2008	-0.04525	0.778	0.800	0.954243	0.222	-0.022	8.227	7.2349	0.0476	(0.0231)	(0.1403)	(0.0003)	4.8388
9) Barclays Bank of Kenya Ltd	2009	-0.04383	0.778	0.800	0.954243	0.222	0.034	8.217	5.8102	0.0546	0.0350	0.1663	0.0007	4.8751
9) Barclays Bank of Kenya Ltd	2010	0.02401	0.625	0.667	0.90309	0.250	-0.051	8.233	4.6333	0.0793	(0.0537)	(0.1918)	(0.0024)	4.9345
9) Barclays Bank of Kenya Ltd	2011	-0.06563	0.700	0.667	1	0.200	-0.001	8.220	5.1495	0.0727	(0.0009)	(0.0036)	(0.0000)	5.1239
9) Barclays Bank of Kenya Ltd	2012	-0.01702	0.600	0.667	1	0.200	-0.038	8.267	5.2470	0.0704	(0.0419)	(0.1684)	(0.0015)	5.1399
9) Barclays Bank of Kenya Ltd	2013	-0.00793	0.714	0.750	0.845098	0.286	-0.028	8.315	5.3864	0.0539	(0.0315)	(0.1253)	(0.0006)	5.1703
9) Barclays Bank of Kenya Ltd	2014	-0.06711	0.800	0.750	1	0.500	0.054	8.354	4.8856	0.0545	0.0636	0.2174	0.0012	5.2122
9) Barclays Bank of Kenya Ltd	2015	0.02171	0.750	0.800	0.90309	0.375	0.083	8.382	5.0650	0.0501	0.1005	0.3506	0.0015	5.1139
9) Barclays Bank of Kenya Ltd	2016	0.04953	0.750	0.800	0.90309	0.375	0.052	8.415	5.1272	0.0418	0.0645	0.2222	0.0005	5.1584
9) Barclays Bank of Kenya Ltd	2017	-0.02096	0.750	0.800	0.90309	0.375	0.052	8.434	5.1584	0.0382	0.0655	0.2239	0.0003	5.0531
10) CFC Stanbic of Kenya Holdings Ltd	2008	-0.09775	0.857	0.667	0.845098	0.286	0.031	8.046	4.7654	0.0119	0.0270	0.1211	(0.0006)	4.8488
10) CFC Stanbic of Kenya Holdings Ltd	2009	0.03456	0.857	0.667	0.845098	0.286	0.009	8.106	5.2773	0.0056	0.0081	0.0383	(0.0002)	4.5911
10) CFC Stanbic of Kenya Holdings Ltd	2010	0.01130	0.857	0.667	0.845098	0.286	0.009	8.146	4.6556	0.0143	0.0084	0.0329	(0.0002)	4.8549
10) CFC Stanbic of Kenya Holdings Ltd	2011	-0.00240	0.857	0.667	0.845098	0.286	0.009	8.177	6.7692	0.0186	0.0087	0.0512	(0.0001)	4.8222
10) CFC Stanbic of Kenya Holdings Ltd	2012	-0.02837	0.800	0.667	1	0.300	0.033	8.156	4.2572	0.0320	0.0325	0.1126	(0.0000)	4.9165
10) CFC Stanbic of Kenya Holdings Ltd	2013	-0.25133	0.857	0.667	0.845098	0.286	0.012	8.257	4.5669	0.0400	0.0132	0.0454	0.0001	4.9571
10) CFC Stanbic of Kenya Holdings Ltd	2014	0.09755	0.750	0.667	1.079181	0.250	0.040	8.258	3.9058	0.0425	0.0437	0.1232	0.0004	4.9815
10) CFC Stanbic of Kenya Holdings Ltd	2015	-0.12387	0.857	0.667	0.845098	0.286	0.000	8.298	4.1760	0.0356	(0.0003)	(0.0009)	(0.0000)	5.1178
10) CFC Stanbic of Kenya Holdings Ltd	2016	0.03140	0.700	0.667	1	0.200	0.008	8.332	4.3482	0.0282	0.0094	0.0283	(0.0000)	5.2587
10) CFC Stanbic of Kenya Holdings Ltd	2017	-0.02723	0.900	0.667	1	0.300	0.037	8.396	4.7906	0.0217	0.0448	0.1443	(0.0004)	5.1575
11) Diamond Trust Bank Kenya Ltd	2008	-0.05591	0.889	1.000	0.954243	0.111	0.131	7.749	6.9975	0.0290	0.0751	0.8033	(0.0004)	4.4726
11) Diamond Trust Bank Kenya Ltd	2009	-0.04132	0.917	1.000	1.079181	0.083	0.122	7.824	7.2440	0.0301	0.0790	0.7778	(0.0003)	4.4777
11) Diamond Trust Bank Kenya Ltd	2010	-0.01566	0.900	1.000	1	0.100	0.091	7.922	7.1484	0.0422	0.0679	0.5717	0.0009	4.7765
11) Diamond Trust Bank Kenya Ltd	2011	-0.05229	0.900	1.000	1	0.100	0.095	8.032	7.1339	0.0408	0.0815	0.5965	0.0008	4.7934

11) Diamond Trust Bank Kenya Ltd	2012	0.03897	0.889	1.000	0.954243	0.111	0.081	8.132	6.2723	0.0454	0.0773	0.4376	0.0011	4.8190
11) Diamond Trust Bank Kenya Ltd	2013	0.00880	0.900	1.000	1	0.200	0.098	8.221	6.0131	0.0443	0.1023	0.5043	0.0012	4.9230
11) Diamond Trust Bank Kenya Ltd	2014	0.00408	0.909	1.000	1.041393	0.182	0.133	8.325	5.5566	0.0414	0.1526	0.6235	0.0012	4.9500
11) Diamond Trust Bank Kenya Ltd	2015	0.02678	0.909	1.000	1.041393	0.182	0.128	8.434	6.0906	0.0379	0.1612	0.6706	0.0007	5.0393
11) Diamond Trust Bank Kenya Ltd	2016	0.01090	0.909	1.000	1.041393	0.182	0.128	8.516	6.1506	0.0368	0.1717	0.6782	0.0006	5.0669
11) Diamond Trust Bank Kenya Ltd	2017	-0.01697	0.909	1.000	1.041393	0.182	0.128	8.560	5.7756	0.0304	0.1774	0.6302	(0.0002)	5.0834
12) Equity Bank Ltd	2008	0.01959	0.900	0.600	1	0.100	0.015	7.897	3.0285	0.0637	0.0112	0.0336	0.0005	5.5752
12) Equity Bank Ltd	2009	-0.02204	0.857	0.600	1.146128	0.071	0.021	8.004	3.4007	0.0524	0.0172	0.0530	0.0004	5.6955
12) Equity Bank Ltd	2010	-0.11737	0.769	0.600	1.113943	0.154	-0.016	8.155	4.2572	0.0632	(0.0160)	(0.0556)	(0.0005)	5.6503
12) Equity Bank Ltd	2011	-0.15807	0.846	0.600	1.113943	0.154	0.023	8.293	4.7254	0.0654	0.0263	0.0909	0.0008	5.6749
12) Equity Bank Ltd	2012	-0.05270	0.769	0.600	1.113943	0.308	0.004	8.386	4.6662	0.0716	0.0052	0.0162	0.0002	5.7973
12) Equity Bank Ltd	2013	0.01837	0.727	0.600	1.041393	0.182	0.014	8.444	4.3870	0.0684	0.0179	0.0498	0.0005	6.3808
12) Equity Bank Ltd	2014	-0.04309	0.700	0.600	1	0.200	-0.035	8.537	4.4028	0.0649	(0.0471)	(0.1226)	(0.0011)	5.6712
12) Equity Bank Ltd	2015	-0.06416	0.667	0.600	0.954243	0.222	-0.050	8.632	4.9341	0.0560	(0.0725)	(0.2030)	(0.0012)	5.7868
12) Equity Bank Ltd	2016	-0.12968	0.750	0.600	0.90309	0.250	-0.036	8.676	4.7787	0.0526	(0.0543)	(0.1419)	(0.0007)	5.2148
12) Equity Bank Ltd	2017	-0.09601	0.800	0.667	1	0.300	0.024	8.720	4.6308	0.0513	0.0373	0.0912	0.0005	5.1165
13) Housing Finance Co. Kenya Ltd	2008	0.05421	0.889	0.667	0.954243	0.333	0.047	7.155	2.9137	0.0142	(0.0009)	0.0977	(0.0009)	4.4308
13) Housing Finance Co. Kenya Ltd	2009	0.00616	0.889	0.667	0.954243	0.333	0.056	7.261	3.4777	0.0193	0.0048	0.1463	(0.0007)	4.4381
13) Housing Finance Co. Kenya Ltd	2010	-0.34423	0.889	0.667	0.954243	0.333	0.056	7.467	5.8770	0.0192	0.0163	0.2801	(0.0007)	4.5401
13) Housing Finance Co. Kenya Ltd	2011	0.08509	0.857	0.667	0.845098	0.000	0.021	7.503	5.7561	0.0306	0.0068	0.1008	(0.0000)	4.6602
13) Housing Finance Co. Kenya Ltd	2012	-0.08026	0.857	0.667	0.845098	0.000	-0.063	7.612	6.9725	0.0222	(0.0275)	(0.3840)	0.0006	4.7377
13) Housing Finance Co. Kenya Ltd	2013	-0.05128	0.875	0.667	0.90309	0.375	-0.044	7.676	7.4783	0.0312	(0.0219)	(0.2902)	0.0000	4.7885
13) Housing Finance Co. Kenya Ltd	2014	-0.07610	0.875	0.667	0.90309	0.125	0.050	7.785	8.2945	0.0230	0.0305	0.3715	(0.0005)	4.9325
13) Housing Finance Co. Kenya Ltd	2015	0.08137	0.857	0.750	0.845098	0.143	-0.011	7.855	5.7459	0.0245	(0.0073)	(0.0523)	0.0001	5.1133
13) Housing Finance Co. Kenya Ltd	2016	0.04511	0.889	0.750	0.954243	0.222	0.029	7.857	5.3716	0.0190	0.0198	0.1310	(0.0004)	5.1207
13) Housing Finance Co. Kenya Ltd	2017	-0.10484	0.889	0.750	0.954243	0.333	0.049	7.830	4.8990	0.0046	0.0320	0.1975	(0.0014)	4.8644
14) I & M Holdings Ltd	2008	-0.09273	0.900	0.667	1	0.100	0.070	7.632	7.2761	0.0371	0.0320	0.4495	0.0003	-

14) I & M Holdings Ltd	2009	-0.09279	0.900	0.667	1	0.100	0.012	7.736	6.2911	0.0330	0.0065	0.0634	0.0000	4.2327
14) I & M Holdings Ltd	2010	0.25690	0.900	0.667	1	0.100	0.012	7.939	5.2729	0.0406	0.0089	0.0515	0.0001	4.3341
14) I & M Holdings Ltd	2011	0.05053	0.889	0.667	0.954243	0.111	-0.003	8.034	6.1251	0.0458	(0.0022)	(0.0134)	(0.0000)	4.5200
14) I & M Holdings Ltd	2012	0.09034	0.889	0.667	0.954243	0.111	0.000	8.077	5.1450	0.0478	0.0002	0.0010	0.0000	4.8652
14) I & M Holdings Ltd	2013	0.23046	0.750	0.667	0.90309	0.125	-0.047	8.150	4.9257	0.0514	(0.0461)	(0.1925)	(0.0009)	4.7098
14) I & M Holdings Ltd	2014	0.05182	0.750	0.667	0.90309	0.125	-0.044	8.188	5.8700	0.0486	(0.0444)	(0.2197)	(0.0007)	4.7048
14) I & M Holdings Ltd	2015	-0.08550	0.857	0.667	0.845098	0.143	-0.032	8.217	5.1464	0.0531	(0.0328)	(0.1353)	(0.0007)	4.8366
14) I & M Holdings Ltd	2016	-0.00340	0.857	0.667	0.845098	0.143	-0.027	8.260	4.6771	0.0495	(0.0294)	(0.1034)	(0.0005)	4.9703
14) I & M Holdings Ltd	2017	-0.03186	0.875	0.667	0.90309	0.125	-0.008	8.307	4.6496	0.0388	(0.0092)	(0.0307)	(0.0001)	5.0420
15) Kenya Commercial Bank Ltd	2008	-0.06360	0.818	0.857	1.041393	0.273	0.055	8.282	8.0678	0.0314	0.0613	0.3998	(0.0000)	5.0343
15) Kenya Commercial Bank Ltd	2009	-0.05945	0.818	0.800	1.041393	0.273	0.078	8.290	7.6299	0.0323	0.0870	0.5290	0.0000	5.0176
15) Kenya Commercial Bank Ltd	2010	0.01848	0.818	0.800	1.041393	0.273	0.078	8.400	5.4237	0.0390	0.0957	0.3567	0.0005	5.0017
15) Kenya Commercial Bank Ltd	2011	-0.06988	0.818	0.800	1.041393	0.273	0.078	8.519	6.4533	0.0458	0.1050	0.4371	0.0011	5.1631
15) Kenya Commercial Bank Ltd	2012	-0.00344	0.818	0.800	1.041393	0.182	0.078	8.566	5.7781	0.0468	0.1086	0.3844	0.0011	5.2344
15) Kenya Commercial Bank Ltd	2013	-0.00522	0.818	0.800	1.041393	0.182	0.055	8.592	5.1692	0.0515	0.0784	0.2388	0.0011	5.2953
15) Kenya Commercial Bank Ltd	2014	-0.06063	0.818	0.800	1.041393	0.182	0.055	8.690	5.4831	0.0485	0.0839	0.2562	0.0009	5.4727
15) Kenya Commercial Bank Ltd	2015	-0.01270	0.818	0.800	1.041393	0.182	0.055	8.747	5.8685	0.0476	0.0870	0.2775	0.0008	5.4196
15) Kenya Commercial Bank Ltd	2016	0.02258	0.800	0.800	1	0.300	0.040	8.775	5.1641	0.0489	0.0647	0.1743	0.0007	5.5403
15) Kenya Commercial Bank Ltd	2017	-0.02599	0.778	0.800	0.954243	0.333	0.053	8.811	5.1027	0.0450	0.0867	0.2251	0.0007	5.6021
16) National Bank of Kenya Ltd	2008	0.06751	0.700	0.800	1	0.100	0.053	7.630	5.8777	0.0421	0.0243	0.2679	0.0005	4.6972
16) National Bank of Kenya Ltd	2009	-0.11208	0.700	0.800	1	0.100	-0.005	7.711	5.5006	0.0420	(0.0027)	(0.0232)	(0.0000)	4.6964
16) National Bank of Kenya Ltd	2010	0.11748	0.700	0.800	1	0.100	-0.005	7.778	5.0452	0.0449	(0.0030)	(0.0210)	(0.0001)	4.7691
16) National Bank of Kenya Ltd	2011	-0.08501	0.700	0.800	1	0.100	-0.005	7.837	5.5667	0.0356	(0.0033)	(0.0236)	(0.0000)	4.8776
16) National Bank of Kenya Ltd	2012	-0.01402	0.700	0.800	1	0.200	-0.005	7.827	5.4263	0.0171	(0.0033)	(0.0229)	0.0001	5.0162
16) National Bank of Kenya Ltd	2013	-0.15525	0.700	0.800	1	0.200	0.020	7.966	6.7854	0.0196	0.0158	0.1186	(0.0003)	5.1390
16) National Bank of Kenya Ltd	2014	0.00923	0.778	0.800	0.954243	0.222	0.028	8.090	9.0697	0.0106	0.0256	0.2301	(0.0006)	4.8871
16) National Bank of Kenya Ltd	2015	-0.07679	0.778	0.800	0.954243	0.111	0.034	8.098	10.3484	(0.0131)	0.0310	0.3186	(0.0015)	4.9358

16) National Bank of Kenya Ltd	2016	-0.12630	0.889	0.667	0.954243	0.111	0.000	8.050	15.2198	0.0007	0.0002	0.0033	(0.0000)	4.9949
16) National Bank of Kenya Ltd	2017	-0.03513	0.889	0.500	0.954243	0.222	-0.041	8.041	14.1886	0.0071	(0.0359)	(0.5525)	0.0010	4.8971
17) NIC Bank Ltd	2008	-0.08449	0.800	0.600	1	0.100	0.001	7.630	6.6574	0.0348	0.0003	0.0032	0.0000	4.8526
17) NIC Bank Ltd	2009	0.00847	0.800	0.600	1	0.100	-0.030	7.677	6.0018	0.0321	(0.0151)	(0.1544)	0.0000	4.9600
17) NIC Bank Ltd	2010	-0.02870	0.800	0.667	1	0.100	-0.013	7.771	6.0648	0.0442	(0.0079)	(0.0695)	(0.0002)	5.0247
17) NIC Bank Ltd	2011	0.01646	0.800	0.667	1	0.100	-0.013	7.898	6.5059	0.0456	(0.0096)	(0.0753)	(0.0002)	5.0703
17) NIC Bank Ltd	2012	-0.04253	0.800	0.667	1	0.100	-0.013	8.035	5.9985	0.0417	(0.0115)	(0.0686)	(0.0001)	5.2145
17) NIC Bank Ltd	2013	0.02438	0.818	0.600	1.041393	0.091	-0.015	8.083	5.8907	0.0414	(0.0137)	(0.0761)	(0.0001)	5.3357
17) NIC Bank Ltd	2014	-0.00637	0.800	0.667	1	0.100	-0.016	8.164	5.2431	0.0427	(0.0154)	(0.0685)	(0.0002)	5.3432
17) NIC Bank Ltd	2015	0.02655	0.833	1.000	1.079181	0.167	0.098	8.220	5.2927	0.0386	0.1025	0.4355	0.0006	5.3928
17) NIC Bank Ltd	2016	-0.01139	0.818	1.000	1.041393	0.182	0.102	8.229	4.5843	0.0364	0.1071	0.3788	0.0004	5.3720
17) NIC Bank Ltd	2017	-0.00445	0.818	0.600	1.041393	0.273	0.005	8.314	4.9388	0.0272	0.0061	0.0218	(0.0000)	5.3730
18) Standard Chartered Bank Kenya Ltd	2008	-0.06481	0.667	0.667	1.079181	0.083	0.016	7.996	7.6113	0.0477	0.0134	0.1102	0.0003	4.9413
18) Standard Chartered Bank Kenya Ltd	2009	0.20110	0.600	0.667	1	0.100	-0.068	8.093	7.8463	0.0544	(0.0619)	(0.4719)	(0.0015)	5.0299
18) Standard Chartered Bank Kenya Ltd	2010	-0.12116	0.600	0.667	1	0.100	-0.063	8.155	6.0211	0.0538	(0.0620)	(0.3272)	(0.0014)	4.9446
18) Standard Chartered Bank Kenya Ltd	2011	-0.02354	0.600	0.667	1	0.100	-0.063	8.215	6.9271	0.0503	(0.0659)	(0.3846)	(0.0011)	5.0925
18) Standard Chartered Bank Kenya Ltd	2012	0.03675	0.556	0.667	0.954243	0.222	-0.086	8.291	5.3524	0.0592	(0.0958)	(0.3862)	(0.0023)	5.0939
18) Standard Chartered Bank Kenya Ltd	2013	0.03541	0.667	0.667	0.954243	0.222	-0.028	8.343	5.0871	0.0606	(0.0322)	(0.1166)	(0.0008)	5.2205
18) Standard Chartered Bank Kenya Ltd	2014	-0.05547	0.625	0.667	0.90309	0.250	-0.051	8.347	4.4724	0.0645	(0.0595)	(0.1836)	(0.0016)	5.1534
18) Standard Chartered Bank Kenya Ltd	2015	-0.13182	0.625	0.750	0.90309	0.250	-0.023	8.369	4.6716	0.0391	(0.0274)	(0.0877)	(0.0002)	5.1224
18) Standard Chartered Bank Kenya Ltd	2016	0.02961	0.636	0.667	1.041393	0.273	-0.006	8.399	4.6157	0.0531	(0.0078)	(0.0240)	(0.0001)	5.2108
18) Standard Chartered Bank Kenya Ltd	2017	0.00691	0.636	0.667	1.041393	0.270	-0.001	8.456	5.2600	0.0400	(0.0009)	(0.0031)	(0.0000)	5.4874
19) The Cooperative Bank of Kenya Ltd	2008	0.02851	0.917	0.833	1.079181	0.083	0.120	7.922	5.1345	0.0402	0.0894	0.5127	0.0010	4.8120
19) The Cooperative Bank of Kenya Ltd	2009	-0.06999	0.917	0.833	1.079181	0.083	0.073	8.044	5.7936	0.0338	0.0636	0.3612	0.0001	4.8780
19) The Cooperative Bank of Kenya Ltd	2010	-0.04262	0.917	0.833	1.079181	0.083	0.073	8.188	6.7245	0.0366	0.0741	0.4292	0.0003	4.9537
19) The Cooperative Bank of Kenya Ltd	2011	-0.04424	0.917	0.833	1.079181	0.083	0.073	8.226	7.0334	0.0369	0.0769	0.4518	0.0003	5.0020
19) The Cooperative Bank of Kenya Ltd	2012	-0.05594	0.917	0.833	1.079181	0.083	0.073	8.303	5.8405	0.0478	0.0825	0.3646	0.0011	4.9284

19) The Cooperative Bank of Kenya Ltd	2013	-0.02754	0.917	0.833	1.079181	0.167	0.073	8.364	5.3201	0.0454	0.0870	0.3265	0.0010	5.1197
19) The Cooperative Bank of Kenya Ltd	2014	-0.03447	0.917	0.833	1.079181	0.167	0.094	8.455	5.6561	0.0373	0.1203	0.4511	0.0005	5.2072
19) The Cooperative Bank of Kenya Ltd	2015	-0.05533	0.917	0.833	1.079181	0.250	0.094	8.535	5.9468	0.0438	0.1278	0.4784	0.0011	5.1710
19) The Cooperative Bank of Kenya Ltd	2016	0.02828	0.917	0.833	1.079181	0.250	0.115	8.546	4.8038	0.0501	0.1574	0.4533	0.0020	5.2142
19) The Cooperative Bank of Kenya Ltd	2017	-0.01354	0.917	0.833	1.079181	0.333	0.115	8.588	4.5414	0.0421	0.1622	0.4232	0.0011	5.2572
20) Express Kenya Ltd	2008	-0.07112	0.600	0.750	0.69897	0.200	-0.059	6.121	2.0563	(0.0400)	0.0626	(0.0714)	0.0043	4.2553
20) Express Kenya Ltd	2009	-0.07885	0.600	0.750	0.69897	0.200	-0.093	6.115	2.1620	0.0199	0.0983	(0.1212)	0.0012	4.2553
20) Express Kenya Ltd	2010	-0.08409	0.750	0.750	0.60206	0.250	-0.079	6.119	2.4205	0.0648	0.0839	(0.1244)	(0.0026)	4.2553
20) Express Kenya Ltd	2011	-0.10870	0.750	0.750	0.60206	0.250	-0.067	5.890	4.0027	(0.0867)	0.0861	(0.2108)	0.0080	4.2665
20) Express Kenya Ltd	2012	0.08817	0.750	0.750	0.60206	0.250	-0.067	5.695	1.4995	0.0333	0.0991	(0.0432)	(0.0001)	4.2683
20) Express Kenya Ltd	2013	0.06861	0.600	0.750	0.69897	0.200	-0.080	5.504	1.6430	0.0053	0.1341	(0.0632)	0.0022	4.2553
20) Express Kenya Ltd	2014	0.20500	0.600	0.750	0.69897	0.200	-0.093	5.679	1.6521	0.1599	0.1387	(0.0739)	(0.0118)	4.2601
20) Express Kenya Ltd	2015	-0.01508	0.600	0.750	0.69897	0.200	-0.093	5.645	2.3961	0.1714	0.1419	(0.1429)	(0.0129)	4.2553
20) Express Kenya Ltd	2016	-0.11647	0.600	0.750	0.69897	0.200	-0.093	5.579	15.3752	0.2507	0.1480	(1.3469)	(0.0203)	4.2553
20) Express Kenya Ltd	2017	-0.02351	0.750	0.750	0.60206	0.250	-0.079	5.556	(6.3586)	0.2285	0.1287	0.5734	(0.0156)	4.2553
21) Kenya Airways Ltd	2008	0.00697	0.818	0.750	1.041393	0.000	0.060	7.891	2.0085	2.6780	0.0429	0.0691	0.1585	4.9777
21) Kenya Airways Ltd	2009	-0.06831	0.750	0.750	1.079181	0.000	-0.010	7.875	3.3625	4.4834	(0.0071)	(0.0256)	(0.0454)	4.9590
21) Kenya Airways Ltd	2010	-0.00041	0.750	0.750	1.079181	0.000	-0.010	7.865	2.6681	3.5575	(0.0070)	(0.0185)	(0.0360)	4.8921
21) Kenya Airways Ltd	2011	-0.03318	0.750	0.750	1.079181	0.083	-0.010	7.896	2.4025	3.2033	(0.0074)	(0.0158)	(0.0324)	4.9191
21) Kenya Airways Ltd	2012	-0.01171	0.818	0.750	1.041393	0.091	0.018	7.889	2.3632	3.1510	0.0130	0.0275	0.0568	5.0043
21) Kenya Airways Ltd	2013	0.01557	0.692	0.750	1.113943	0.077	0.007	8.089	2.9306	3.9075	0.0062	0.0141	0.0263	4.9823
21) Kenya Airways Ltd	2014	-0.00208	0.769	0.750	1.113943	0.154	0.023	8.172	4.2661	5.6881	0.0225	0.0768	0.1274	5.0828
21) Kenya Airways Ltd	2015	-0.13347	0.769	0.750	1.113943	0.154	0.042	8.260	########	(42.0428)	0.0453	(1.3523)	(1.7568)	5.0569
21) Kenya Airways Ltd	2016	-0.16461	0.727	0.750	1.041393	0.182	0.013	8.192	(5.3650)	(7.1533)	0.0134	(0.0817)	(0.0943)	5.1303
21) Kenya Airways Ltd	2017	-0.05464	0.727	0.750	1.041393	0.182	0.020	8.165	(4.2538)	(5.6717)	0.0199	(0.1028)	(0.1148)	5.1367
22) Longhorn Kenya Ltd	2013	-0.01552	0.857	0.750	0.845098	0.286	0.004	5.836	0.7753	0.2380	(0.0047)	(0.0003)	0.0007	3.5551
22) Longhorn Kenya Ltd	2014	0.00339	0.778	0.750	0.954243	0.222	0.037	5.877	0.7327	0.2226	(0.0480)	(0.0045)	0.0070	3.5660

22) Longhorn Kenya Ltd	2015	0.07519	0.889	0.750	0.954243	0.333	0.049	5.838	0.8122	0.1528	(0.0653)	(0.0021)	0.0059	3.6802
22) Longhorn Kenya Ltd	2016	0.93847	0.889	0.750	0.954243	0.333	0.077	6.271	1.0307	0.1049	(0.0693)	0.0135	0.0056	3.7804
22) Longhorn Kenya Ltd	2017	-0.07533	0.889	0.833	0.954243	0.333	0.097	6.269	0.9654	0.1335	(0.0883)	0.0108	0.0099	3.8101
23) Nation Media Group Ltd	2008	0.08332	0.833	0.667	1.079181	0.250	0.073	6.821	0.5340	0.2927	(0.0259)	(0.0235)	0.0190	4.8463
23) Nation Media Group Ltd	2009	-0.04576	0.833	0.667	1.079181	0.250	0.052	6.818	0.3943	0.2538	(0.0187)	(0.0241)	0.0116	4.8082
23) Nation Media Group Ltd	2010	-0.12773	0.867	1.000	1.176091	0.200	0.168	6.902	0.4709	0.2694	(0.0460)	(0.0646)	0.0399	4.8457
23) Nation Media Group Ltd	2011	0.03847	0.867	1.000	1.176091	0.200	0.156	6.945	0.4400	0.3202	(0.0358)	(0.0646)	0.0448	4.9518
23) Nation Media Group Ltd	2012	-0.06269	0.867	1.000	1.176091	0.200	0.156	7.028	0.4580	0.2867	(0.0228)	(0.0618)	0.0396	5.0120
23) Nation Media Group Ltd	2013	0.04191	0.867	1.000	1.176091	0.200	0.156	7.059	0.3883	0.2843	(0.0181)	(0.0727)	0.0392	5.0508
23) Nation Media Group Ltd	2014	0.00093	0.867	1.000	1.176091	0.200	0.156	7.077	0.3622	0.2625	(0.0152)	(0.0767)	0.0358	5.0048
23) Nation Media Group Ltd	2015	-0.04969	0.867	1.000	1.176091	0.200	0.156	7.104	0.4180	0.1876	(0.0111)	(0.0680)	0.0242	5.0892
23) Nation Media Group Ltd	2016	-0.02147	0.857	1.000	1.146128	0.143	0.146	7.085	0.3989	0.1669	(0.0131)	(0.0665)	0.0196	5.1471
23) Nation Media Group Ltd	2017	-0.04371	0.867	1.000	1.176091	0.133	0.141	7.054	0.3862	0.1362	(0.0171)	(0.0663)	0.0147	5.1784
24) Scangropup Ltd	2008	0.23389	0.714	0.800	0.845098	0.000	-0.032	6.577	0.8149	0.1210	0.0190	0.0013	(0.0028)	4.7633
24) Scangropup Ltd	2009	-0.00835	0.714	0.800	0.845098	0.000	-0.065	6.595	0.6622	0.1386	0.0378	0.0126	(0.0069)	4.8331
24) Scangropup Ltd	2010	-0.11124	0.625	0.800	0.90309	0.000	-0.073	6.904	1.2386	0.1047	0.0198	(0.0280)	(0.0053)	4.8995
24) Scangropup Ltd	2011	0.04616	0.625	0.800	0.90309	0.000	-0.073	6.929	0.9495	0.1508	0.0180	(0.0069)	(0.0086)	4.9379
24) Scangropup Ltd	2012	0.10719	0.714	0.800	0.845098	0.000	-0.065	6.922	0.7066	0.1079	0.0165	0.0097	(0.0049)	4.9194
24) Scangropup Ltd	2013	0.17744	0.714	0.800	0.845098	0.000	-0.065	7.112	0.5693	0.0771	0.0041	0.0186	(0.0029)	4.9904
24) Scangropup Ltd	2014	-0.08245	0.833	0.800	0.778151	0.000	-0.052	7.123	0.5550	0.0500	0.0027	0.0156	(0.0009)	4.8904
24) Scangropup Ltd	2015	-0.06418	0.714	0.750	0.845098	0.000	-0.078	7.096	0.4491	0.0352	0.0061	0.0315	(0.0002)	5.0043
24) Scangropup Ltd	2016	0.00117	0.714	0.750	0.845098	0.000	-0.078	7.130	0.5310	0.0237	0.0035	0.0252	0.0007	5.0180
25) Standard Group Ltd	2008	-0.04467	0.500	0.667	0.90309	0.125	-0.138	6.429	1.6915	0.1913	0.1026	(0.1151)	(0.0219)	4.8234
25) Standard Group Ltd	2009	-0.03970	0.500	0.667	0.90309	0.125	-0.106	6.478	1.3814	0.1591	0.0741	(0.0560)	(0.0135)	4.9442
25) Standard Group Ltd	2010	-0.05179	0.571	0.667	0.845098	0.143	-0.103	6.519	1.1527	0.1689	0.0675	(0.0306)	(0.0141)	4.7279
25) Standard Group Ltd	2011	-0.02523	0.571	0.667	0.845098	0.143	-0.098	6.546	1.1234	0.0995	0.0620	(0.0264)	(0.0066)	4.6604
25) Standard Group Ltd	2012	-0.04483	0.571	0.667	0.845098	0.143	-0.098	6.544	0.9042	0.1209	0.0621	(0.0048)	(0.0087)	4.7804

25) Standard Group Ltd	2013	0.00757	0.571	1.000	0.845098	0.143	-0.015	6.617	1.0394	0.1015	0.0085	(0.0028)	(0.0010)	4.8549
25) Standard Group Ltd	2014	-0.03639	0.625	1.000	0.90309	0.125	0.013	6.613	0.8576	0.1084	(0.0072)	0.0000	0.0010	5.0688
25) Standard Group Ltd	2015	-0.01152	0.625	1.000	0.90309	0.125	0.008	6.639	1.3198	(0.0533)	(0.0044)	0.0038	(0.0007)	4.8468
25) Standard Group Ltd	2016	-0.04066	0.625	1.000	0.90309	0.125	0.008	6.644	1.1217	0.1142	(0.0044)	0.0022	0.0007	4.8962
25) Standard Group Ltd	2017	-0.16734	0.889	1.000	0.954243	0.111	0.087	6.649	1.3909	(0.0227)	(0.0458)	0.0466	(0.0048)	4.8870
26) TPS Eastern Africa Ltd	2008	0.00511	0.833	1.000	1.079181	0.000	0.101	6.815	0.7300	0.0728	(0.0363)	(0.0126)	0.0041	4.6632
26) TPS Eastern Africa Ltd	2009	0.04109	0.800	1.000	1	0.000	0.045	6.846	0.7171	0.0918	(0.0148)	(0.0062)	0.0027	4.7197
26) TPS Eastern Africa Ltd	2010	0.23632	0.800	1.000	1	0.000	0.045	7.076	0.5905	0.0713	(0.0044)	(0.0119)	0.0018	4.7786
26) TPS Eastern Africa Ltd	2011	0.07889	0.800	1.000	1	0.000	0.045	7.118	0.6319	0.0714	(0.0026)	(0.0100)	0.0018	4.8527
26) TPS Eastern Africa Ltd	2012	-0.02525	0.800	1.000	1	0.000	0.045	7.130	0.6481	0.0639	(0.0020)	(0.0093)	0.0014	4.8919
26) TPS Eastern Africa Ltd	2013	0.02003	0.800	1.000	1	0.000	0.045	7.131	0.2806	0.0654	(0.0020)	(0.0258)	0.0015	4.8799
26) TPS Eastern Africa Ltd	2014	0.01636	0.800	1.000	1	0.100	0.045	7.120	0.2647	0.0298	(0.0025)	(0.0266)	(0.0001)	4.8812
26) TPS Eastern Africa Ltd	2015	-0.00263	0.818	1.000	1.041393	0.091	0.085	7.194	0.6454	0.0086	0.0016	(0.0178)	(0.0020)	4.8801
26) TPS Eastern Africa Ltd	2016	-0.00476	0.800	1.000	1	0.100	0.068	7.225	0.7918	0.0260	0.0034	(0.0043)	(0.0004)	4.8754
26) TPS Eastern Africa Ltd	2017	0.01745	0.778	1.000	0.954243	0.111	0.053	7.243	0.9081	0.0226	0.0036	0.0028	(0.0005)	4.9358
27) Uchumi Supermarket Ltd	2008	-0.01282	0.833	0.800	0.778151	0.000	-0.024	6.212	(2.6227)	0.1813	0.0235	0.0847	(0.0036)	-
27) Uchumi Supermarket Ltd	2009	0.01522	0.833	0.800	0.778151	0.000	-0.052	6.396	(14.7879)	0.1328	0.0406	0.8154	(0.0052)	-
27) Uchumi Supermarket Ltd	2010	0.24981	0.833	0.800	0.778151	0.167	-0.052	6.499	1.0492	0.1048	0.0352	(0.0101)	(0.0038)	-
27) Uchumi Supermarket Ltd	2011	0.16927	0.857	0.800	0.845098	0.143	0.012	6.603	0.7571	0.1340	(0.0070)	(0.0012)	0.0012	4.2709
27) Uchumi Supermarket Ltd	2012	-0.03915	0.400	0.800	0.69897	0.400	-0.145	6.694	0.8594	0.1049	0.0695	(0.0006)	(0.0105)	4.3041
27) Uchumi Supermarket Ltd	2013	0.00565	0.429	0.833	0.845098	0.429	-0.028	6.746	0.9052	0.0769	0.0121	(0.0014)	(0.0013)	4.3856
27) Uchumi Supermarket Ltd	2014	-0.00840	0.833	0.750	0.778151	0.500	0.043	6.840	1.0732	(0.0322)	(0.0142)	0.0093	(0.0027)	4.4739
27) Uchumi Supermarket Ltd	2015	-0.29713	0.833	0.750	0.778151	0.500	0.060	6.807	7.6738	(3.4661)	(0.0222)	0.4117	(0.2112)	4.4739
27) Uchumi Supermarket Ltd	2016	-0.51784	0.889	0.750	0.954243	0.333	0.118	6.699	(3.3850)	(0.3959)	(0.0563)	(0.5015)	(0.0506)	4.4952
28) Stanlib Fahari I-Reit	2017	-0.05282	0.444	0.000	0.954243	0.000	-0.222	6.575	0.0260	0.0455	0.1331	0.1840	(0.0029)	-
29) ARM Cement Ltd	2008	0.08534	0.714	1.000	0.845098	0.000	-0.015	6.803	1.9858	0.1525	0.0056	(0.0171)	(0.0018)	4.7470
29) ARM Cement Ltd	2009	0.31551	0.714	1.000	0.845098	0.000	-0.015	7.084	1.9405	0.0836	0.0014	(0.0164)	(0.0008)	5.0088

29) ARM Cement Ltd	2010	0.06325	0.714	1.000	0.845098	0.000	-0.015	7.219	2.3622	0.0809	(0.0007)	(0.0228)	(0.0007)	5.0419
29) ARM Cement Ltd	2011	-0.00646	0.667	1.000	0.954243	0.111	0.000	7.312	2.3619	0.0797	0.0000	0.0003	0.0000	5.0492
29) ARM Cement Ltd	2012	0.07454	0.667	1.000	0.954243	0.111	0.028	7.431	2.7853	0.0831	0.0072	0.0541	0.0014	5.0209
29) ARM Cement Ltd	2013	0.00172	0.667	1.000	0.954243	0.111	0.028	7.473	2.6121	0.0791	0.0083	0.0492	0.0013	5.1534
29) ARM Cement Ltd	2014	0.06517	0.667	1.000	0.954243	0.000	0.028	7.568	2.9243	0.0499	0.0110	0.0580	0.0005	5.2106
29) ARM Cement Ltd	2015	-0.01378	0.667	1.000	0.954243	0.000	0.000	7.715	2.0831	(0.0233)	0.0001	0.0003	(0.0000)	5.2638
29) ARM Cement Ltd	2016	-0.00276	0.800	1.000	1	0.000	0.045	7.708	0.8370	(0.0190)	0.0240	(0.0008)	(0.0023)	5.2799
29) ARM Cement Ltd	2017	-0.09556	0.778	1.000	0.954243	0.222	0.028	7.630	1.0513	(0.1356)	0.0128	0.0055	(0.0047)	5.3425
30) Bamburi Cement Ltd	2008	0.00977	0.700	1.000	1	0.100	0.076	7.450	0.6995	0.1759	0.0208	(0.0117)	0.0108	5.0086
30) Bamburi Cement Ltd	2009	-0.03985	0.700	1.000	1	0.100	0.045	7.507	0.5335	0.2993	0.0149	(0.0145)	0.0120	5.0492
30) Bamburi Cement Ltd	2010	-0.06169	0.700	0.667	1	0.100	-0.038	7.523	0.5401	0.2298	(0.0133)	0.0121	(0.0076)	5.1038
30) Bamburi Cement Ltd	2011	0.04055	0.667	0.667	0.954243	0.111	-0.058	7.525	0.3859	0.2639	(0.0203)	0.0273	(0.0135)	5.1673
30) Bamburi Cement Ltd	2012	-0.01327	0.727	0.667	1.041393	0.182	-0.018	7.634	0.3946	0.1726	(0.0084)	0.0085	(0.0026)	5.0719
30) Bamburi Cement Ltd	2013	0.01295	0.700	0.750	1	0.200	0.003	7.634	0.3652	0.1310	0.0014	(0.0014)	0.0003	5.0492
30) Bamburi Cement Ltd	2014	-0.00190	0.700	0.750	1	0.200	0.008	7.613	0.4077	0.1434	0.0033	(0.0034)	0.0008	5.0294
30) Bamburi Cement Ltd	2015	0.03854	0.667	0.750	0.954243	0.222	-0.012	7.624	0.4149	0.2012	(0.0055)	0.0054	(0.0021)	5.0212
30) Bamburi Cement Ltd	2016	0.09231	0.875	0.750	0.90309	0.000	0.033	7.611	0.3686	0.1959	0.0142	(0.0158)	0.0053	5.0531
30) Bamburi Cement Ltd	2017	0.00613	0.875	0.833	0.90309	0.375	-0.002	7.674	0.4218	0.0896	(0.0011)	0.0009	(0.0001)	5.0453
31) Crown Paints Kenya Ltd	2008	0.15736	0.400	0.000	0.69897	0.000	-0.287	6.290	0.8909	0.0626	0.2537	(0.0103)	(0.0087)	4.5533
31) Crown Paints Kenya Ltd	2009	-0.17973	0.400	0.000	0.69897	0.000	-0.380	6.269	1.0121	0.1012	0.3445	(0.0597)	(0.0262)	4.7915
31) Crown Paints Kenya Ltd	2010	-0.10523	0.400	0.000	0.69897	0.000	-0.380	6.295	1.1858	0.1000	0.3346	(0.1258)	(0.0257)	4.6592
31) Crown Paints Kenya Ltd	2011	0.02259	0.400	0.000	0.69897	0.000	-0.380	6.345	1.1050	0.1076	0.3154	(0.0951)	(0.0286)	4.8642
31) Crown Paints Kenya Ltd	2012	-0.06276	0.400	0.000	0.69897	0.000	-0.380	6.354	0.9200	0.1246	0.3123	(0.0247)	(0.0351)	4.9103
31) Crown Paints Kenya Ltd	2013	0.12749	0.500	0.000	0.778151	0.167	-0.335	6.469	1.1630	0.1234	0.2368	(0.1033)	(0.0306)	5.0276
31) Crown Paints Kenya Ltd	2014	0.09836	0.500	0.000	0.778151	0.000	-0.294	6.586	1.8596	0.0621	0.1731	(0.2951)	(0.0088)	5.0024
31) Crown Paints Kenya Ltd	2015	-0.07739	0.571	0.000	0.845098	0.143	-0.301	6.657	2.3554	0.0820	0.1559	(0.4514)	(0.0150)	5.0434
31) Crown Paints Kenya Ltd	2016	-0.04449	0.571	0.000	0.845098	0.143	-0.265	6.704	2.2386	0.0952	0.1249	(0.3669)	(0.0167)	5.0749

31) Crown Paints Kenya Ltd	2017	0.06620	0.500	0.250	0.778151	0.000	-0.237	6.769	2.3407	0.1034	0.0964	(0.3525)	(0.0169)	5.1396
32) E. A. Cables Ltd	2008	-0.18857	0.857	1.000	0.845098	0.000	0.021	6.483	1.2267	0.2553	(0.0142)	0.0076	0.0046	4.0790
32) E. A. Cables Ltd	2009	0.06472	0.857	1.000	0.845098	0.000	0.021	6.549	1.1336	0.1535	(0.0129)	0.0057	0.0025	4.2704
32) E. A. Cables Ltd	2010	0.10103	0.857	1.000	0.845098	0.000	0.021	6.655	1.0115	0.0670	(0.0107)	0.0032	0.0007	4.3041
32) E. A. Cables Ltd	2011	-0.00187	0.833	1.000	0.778151	0.000	-0.002	6.698	1.1959	0.1155	0.0010	(0.0007)	(0.0002)	4.2353
32) E. A. Cables Ltd	2012	0.06829	0.833	1.000	0.778151	0.000	-0.002	6.796	1.1363	0.1241	0.0008	(0.0006)	(0.0002)	4.2821
32) E. A. Cables Ltd	2013	0.12239	0.857	0.750	0.845098	0.000	-0.042	6.835	1.2305	0.0871	0.0143	(0.0158)	(0.0023)	4.2379
32) E. A. Cables Ltd	2014	-0.02239	0.857	0.750	0.845098	0.000	-0.042	6.897	1.5517	0.0732	0.0117	(0.0292)	(0.0017)	4.2263
32) E. A. Cables Ltd	2015	0.00592	0.857	0.750	0.845098	0.000	-0.042	6.923	1.6616	(0.0775)	0.0105	(0.0338)	0.0046	4.3276
32) E. A. Cables Ltd	2016	-0.14336	0.857	0.750	0.845098	0.000	-0.042	6.878	1.9527	(0.0704)	0.0125	(0.0460)	0.0043	4.3005
32) E. A. Cables Ltd	2017	-0.09767	0.833	0.750	0.778151	0.000	-0.065	6.847	2.7462	(0.0535)	0.0212	(0.1222)	0.0055	4.2582
33) E. A. Portland Cement Co. Ltd	2008	0.05728	0.857	0.800	0.845098	0.000	-0.029	6.958	0.1490	0.1246	0.0064	0.0208	(0.0027)	4.3658
33) E. A. Portland Cement Co. Ltd	2009	0.01564	0.857	0.800	0.845098	0.000	-0.029	7.080	0.9724	0.1036	0.0028	(0.0035)	(0.0021)	4.4482
33) E. A. Portland Cement Co. Ltd	2010	-0.05879	0.857	0.833	0.845098	0.000	-0.021	7.081	1.1114	0.0075	0.0020	(0.0054)	0.0005	4.5831
33) E. A. Portland Cement Co. Ltd	2011	-0.03559	0.857	0.750	0.845098	0.000	-0.042	7.131	1.3726	0.0483	0.0018	(0.0217)	(0.0007)	4.6033
33) E. A. Portland Cement Co. Ltd	2012	-0.03093	0.857	0.750	0.845098	0.000	-0.042	7.149	1.9117	(0.0433)	0.0011	(0.0443)	0.0032	4.6033
33) E. A. Portland Cement Co. Ltd	2013	0.14936	0.857	0.667	0.845098	0.000	-0.063	7.208	1.2755	0.0211	(0.0021)	(0.0264)	0.0007	4.7386
33) E. A. Portland Cement Co. Ltd	2014	-0.05438	0.833	0.667	0.778151	0.000	-0.085	7.196	1.3442	(0.0059)	(0.0018)	(0.0418)	0.0033	4.7985
33) E. A. Portland Cement Co. Ltd	2015	0.49181	0.857	0.667	0.845098	0.000	-0.063	7.364	0.6737	(0.0250)	(0.0119)	0.0114	0.0036	3.8585
33) E. A. Portland Cement Co. Ltd	2016	0.15744	0.857	0.750	0.845098	0.000	-0.042	7.445	0.5514	(0.0569)	(0.0113)	0.0127	0.0037	4.3750
33) E. A. Portland Cement Co. Ltd	2017	-0.03132	0.833	0.750	0.778151	0.000	-0.065	7.437	0.6196	(0.0481)	(0.0169)	0.0152	0.0052	4.6841
34) Nairobi Securities Exchange Ltd	2014	0.10787	0.875	1.000	0.90309	0.250	0.040	6.227	0.0921	0.2566	(0.0375)	(0.0302)	0.0089	4.3993
34) Nairobi Securities Exchange Ltd	2015	0.21079	0.909	0.875	1.041393	0.273	0.114	6.283	0.0808	0.1876	(0.1016)	(0.0882)	0.0177	4.5022
34) Nairobi Securities Exchange Ltd	2016	-0.03908	0.909	0.875	1.041393	0.273	0.120	6.304	0.0808	0.1158	(0.1041)	(0.0926)	0.0100	4.5114
34) Nairobi Securities Exchange Ltd	2017	0.04129	0.909	1.000	1.041393	0.273	0.151	6.324	0.0479	0.1277	(0.1283)	(0.1217)	0.0144	4.4803
35) Centum Investment Co. Ltd	2008	0.04739	0.889	1.000	0.954243	0.111	0.124	6.911	0.0084	0.1232	(0.0327)	(0.1050)	0.0113	4.1773
35) Centum Investment Co. Ltd	2009	-0.04683	0.889	1.000	0.954243	0.111	0.084	6.818	0.0402	0.0744	(0.0299)	(0.0681)	0.0035	4.3235

35) Centum Investment Co. Ltd	2010	0.12105	0.889	1.000	0.954243	0.111	0.084	6.915	0.0471	0.1371	(0.0217)	(0.0675)	0.0088	4.3618
35) Centum Investment Co. Ltd	2011	0.12944	0.889	1.000	0.954243	0.111	0.084	7.090	0.2869	0.1991	(0.0071)	(0.0475)	0.0139	4.6548
35) Centum Investment Co. Ltd	2012	0.00945	0.889	1.000	0.954243	0.111	0.084	7.063	0.1520	0.1380	(0.0093)	(0.0587)	0.0088	4.7153
35) Centum Investment Co. Ltd	2013	0.29871	0.889	1.000	0.954243	0.111	0.084	7.278	0.3899	0.1924	0.0086	(0.0389)	0.0134	4.9840
35) Centum Investment Co. Ltd	2014	0.29537	0.889	1.000	0.954243	0.111	0.084	7.471	0.4599	0.1455	0.0248	(0.0330)	0.0095	4.9907
35) Centum Investment Co. Ltd	2015	0.28452	0.889	1.000	0.954243	0.222	0.084	7.859	0.8735	0.1297	0.0571	0.0015	0.0081	5.2868
35) Centum Investment Co. Ltd	2016	0.04356	0.889	1.000	0.954243	0.222	0.111	7.892	0.8044	0.1647	0.0799	(0.0056)	0.0147	5.4573
35) Centum Investment Co. Ltd	2017	0.03419	0.909	1.000	1.041393	0.182	0.138	7.946	0.7865	0.1130	0.1066	(0.0095)	0.0112	5.6500
36) Olympia Capital Holdings Ltd	2008	0.10733	0.714	1.000	0.845098	0.000	0.030	6.037	0.9928	0.0632	(0.0345)	0.0042	0.0009	2.9015
36) Olympia Capital Holdings Ltd	2009	-0.02762	0.714	1.000	0.845098	0.000	-0.015	5.896	0.7007	0.0784	0.0194	0.0023	(0.0007)	3.6972
36) Olympia Capital Holdings Ltd	2012	0.25361	0.667	1.000	0.778151	0.000	-0.044	6.271	0.7493	0.0373	0.0396	0.0046	(0.0002)	3.6972
36) Olympia Capital Holdings Ltd	2013	-0.02782	0.667	1.000	0.778151	0.000	-0.044	6.278	0.7661	0.0141	0.0393	0.0039	0.0008	3.6972
36) Olympia Capital Holdings Ltd	2014	0.21208	0.667	1.000	0.778151	0.000	-0.044	6.187	0.3591	0.0358	0.0433	0.0217	(0.0002)	3.6170
36) Olympia Capital Holdings Ltd	2015	0.01387	0.500	1.000	0.778151	0.167	-0.085	6.185	0.3105	0.0163	0.0846	0.0465	0.0014	3.4326
36) Olympia Capital Holdings Ltd	2016	-0.11110	0.500	1.000	0.778151	0.167	-0.044	6.206	0.3101	0.0268	0.0424	0.0239	0.0002	3.2000
36) Olympia Capital Holdings Ltd	2017	0.00271	0.400	1.000	0.69897	0.200	-0.089	6.208	0.2746	0.0480	0.0857	0.0514	(0.0014)	3.2418
37) Trans-Century Ltd	2011	-0.10883	0.875	0.750	0.90309	0.125	0.027	7.351	1.0229	0.0722	0.0047	0.0045	0.0011	4.5987
37) Trans-Century Ltd	2012	0.12410	0.875	0.750	0.90309	0.125	0.008	7.339	0.8101	0.0902	0.0014	(0.0004)	0.0005	4.5748
37) Trans-Century Ltd	2013	0.03967	0.875	0.750	0.90309	0.125	0.008	7.377	0.8036	0.0644	0.0017	(0.0004)	0.0003	4.4853
37) Trans-Century Ltd	2014	-0.06039	0.875	0.750	0.90309	0.125	0.008	7.289	0.6952	(0.0722)	0.0009	(0.0013)	(0.0009)	4.5935
37) Trans-Century Ltd	2015	-0.04202	0.889	0.750	0.954243	0.111	0.025	7.339	5.1532	(0.0480)	0.0040	0.1054	(0.0020)	4.6554
37) Trans-Century Ltd	2016	-0.06237	0.875	0.750	0.90309	0.125	0.005	7.277	3.9379	(0.0477)	0.0005	0.0148	(0.0004)	4.8127
37) Trans-Century Ltd	2017	-0.10499	0.857	0.750	0.845098	0.143	-0.011	7.273	(168.2807)	(0.1944)	(0.0010)	1.8080	0.0024	4.8613
38) Home Afrika	2012	-0.24231	0.700	0.800	1	0.200	0.006	6.394	7.9014	0.1180	(0.0045)	0.0403	0.0005	3.8797
38) Home Afrika	2013	0.10473	0.700	0.800	1	0.200	0.020	6.486	8.0283	0.0631	(0.0138)	0.1435	0.0006	4.3042
38) Home Afrika	2014	0.04660	0.917	1.000	1.079181	0.167	0.144	6.570	9.6740	0.0162	(0.0870)	1.2696	(0.0023)	3.4613
38) Home Afrika	2015	0.00285	0.889	1.000	0.954243	0.222	0.097	6.587	(93.6015)	(0.0720)	(0.0573)	(9.2047)	(0.0102)	4.6614

38) Home Afrika	2016	-0.08269	0.857	0.750	0.845098	0.286	0.014	6.594	(19.6995)	(0.0218)	(0.0079)	(0.2799)	(0.0007)	4.3989
38) Home Afrika	2017	-0.09784	0.857	1.000	0.845098	0.286	0.092	6.651	(12.4346)	(0.0296)	(0.0482)	(1.2225)	(0.0057)	4.3710
39) KenGen Co Ltd	2008	0.04711	0.909	0.667	1.041393	0.182	0.071	8.029	2.4508	0.0362	0.0604	0.1128	0.0003	4.9104
39) KenGen Co Ltd	2009	0.02759	0.909	0.667	1.041393	0.182	0.045	8.036	1.7548	0.0489	0.0385	0.0403	0.0007	5.0102
39) KenGen Co Ltd	2010	0.07278	0.909	0.667	1.041393	0.182	0.045	8.157	0.7943	0.0220	0.0439	(0.0027)	(0.0005)	4.9338
39) KenGen Co Ltd	2011	0.03005	0.909	0.667	1.041393	0.182	0.045	8.207	0.7581	0.0351	0.0462	(0.0043)	0.0001	4.9802
39) KenGen Co Ltd	2012	0.04295	0.727	0.667	1.041393	0.273	-0.001	8.213	0.7549	0.0430	(0.0007)	0.0001	(0.0000)	5.1231
39) KenGen Co Ltd	2013	-0.04743	0.727	0.667	1.041393	0.273	0.022	8.276	0.6472	0.0376	0.0242	(0.0046)	0.0001	5.0871
39) KenGen Co Ltd	2014	0.02492	0.727	0.667	1.041393	0.273	0.022	8.398	0.4421	0.0270	0.0269	(0.0091)	(0.0001)	5.1358
39) KenGen Co Ltd	2015	0.06017	0.727	0.667	1.041393	0.273	0.022	8.535	1.4190	0.0342	0.0299	0.0124	0.0000	5.1161
39) KenGen Co Ltd	2016	-0.02162	0.727	0.667	1.041393	0.273	0.022	8.565	1.1260	0.0392	0.0306	0.0060	0.0002	5.0785
39) KenGen Co Ltd	2017	0.04237	0.727	0.667	1.041393	0.364	0.022	8.577	0.9440	0.0396	0.0309	0.0020	0.0002	5.1213
40) Kenol Kobil Ltd	2008	-0.17072	0.714	0.750	0.845098	0.143	0.013	7.443	1.5384	0.1242	0.0035	0.0091	0.0012	4.6205
40) Kenol Kobil Ltd	2009	-0.09608	0.714	0.750	0.845098	0.143	-0.042	7.469	1.9980	0.0811	(0.0123)	(0.0479)	(0.0020)	4.6788
40) Kenol Kobil Ltd	2010	0.36010	0.667	0.750	0.778151	0.167	-0.071	7.482	1.7096	0.1065	(0.0217)	(0.0603)	(0.0052)	4.8323
40) Kenol Kobil Ltd	2011	-0.05086	0.667	0.750	0.778151	0.167	-0.065	7.663	2.9461	0.1323	(0.0315)	(0.1351)	(0.0065)	4.9480
40) Kenol Kobil Ltd	2012	-0.18148	0.667	0.750	0.778151	0.167	-0.065	7.514	4.0707	(0.2047)	(0.0219)	(0.2078)	0.0153	4.8283
40) Kenol Kobil Ltd	2013	0.02046	0.667	0.750	0.778151	0.167	-0.065	7.449	3.2185	0.0779	(0.0177)	(0.1527)	(0.0029)	4.8689
40) Kenol Kobil Ltd	2014	-0.16454	0.667	0.750	0.778151	0.167	-0.065	7.379	2.2624	0.1433	(0.0132)	(0.0910)	(0.0072)	4.8682
40) Kenol Kobil Ltd	2015	-0.16721	0.667	0.750	0.778151	0.167	-0.065	7.240	1.0311	0.2061	(0.0042)	(0.0114)	(0.0112)	4.9251
40) Kenol Kobil Ltd	2016	-0.05017	0.750	0.750	0.60206	0.000	-0.088	7.384	1.4533	0.1569	(0.0183)	(0.0525)	(0.0109)	5.1966
40) Kenol Kobil Ltd	2017	-0.01951	0.800	0.800	0.69897	0.400	-0.080	7.382	1.1489	0.1608	(0.0166)	(0.0236)	(0.0103)	5.2686
41) Kenya Power & Lighting Co Ltd	2008	-0.00555	0.900	0.750	1	0.000	0.108	7.777	1.5045	0.0589	0.0647	0.0698	0.0029	4.3531
41) Kenya Power & Lighting Co Ltd	2009	-0.18088	0.900	0.857	1	0.200	0.034	7.855	1.6655	0.0793	0.0233	0.0278	0.0016	4.4913
41) Kenya Power & Lighting Co Ltd	2010	-0.07797	0.900	0.857	1	0.200	0.084	7.904	1.7909	0.0742	0.0615	0.0789	0.0035	4.4630
41) Kenya Power & Lighting Co Ltd	2011	-0.05715	0.900	0.857	1	0.200	0.084	8.083	2.0594	0.0584	0.0766	0.1015	0.0022	4.6459
41) Kenya Power & Lighting Co Ltd	2012	-0.02438	0.900	0.857	1	0.200	0.084	8.128	2.0827	0.0582	0.0803	0.1035	0.0022	4.5977

41) Kenya Power & Lighting Co Ltd	2013	-0.02155	0.900	0.857	1	0.200	0.084	8.248	2.7371	0.0496	0.0905	0.1586	0.0015	4.6782
41) Kenya Power & Lighting Co Ltd	2014	-0.00917	0.889	0.833	0.954243	0.222	0.064	8.344	3.0356	0.0675	0.0750	0.1398	0.0023	4.8632
41) Kenya Power & Lighting Co Ltd	2015	-0.03718	0.889	0.833	0.954243	0.222	0.070	8.435	3.6970	0.0582	0.0878	0.1980	0.0018	4.7851
41) Kenya Power & Lighting Co Ltd	2016	-0.05372	0.889	0.800	0.954243	0.111	0.061	8.474	3.6475	0.0569	0.0797	0.1713	0.0015	4.5639
41) Kenya Power & Lighting Co Ltd	2017	-0.01466	0.889	0.800	0.954243	0.111	0.034	8.534	3.8834	0.0483	0.0456	0.1016	0.0005	4.5467
42) Total Kenya Ltd	2008	0.04223	0.800	0.000	0.69897	0.200	-0.252	7.164	1.9070	0.0955	0.0028	(0.2656)	(0.0160)	4.4010
42) Total Kenya Ltd	2009	0.02274	0.800	0.000	0.69897	0.200	-0.230	7.499	2.5179	0.0415	(0.0745)	(0.3829)	(0.0021)	4.4535
42) Total Kenya Ltd	2010	-0.21264	0.800	0.000	0.69897	0.200	-0.230	7.483	2.1708	0.0457	(0.0708)	(0.3030)	(0.0031)	4.4535
42) Total Kenya Ltd	2011	0.04111	0.800	0.000	0.69897	0.200	-0.230	7.547	2.8280	0.0395	(0.0855)	(0.4543)	(0.0017)	4.9435
42) Total Kenya Ltd	2012	-0.21528	0.800	0.000	0.69897	0.200	-0.230	7.518	1.3238	0.0462	(0.0790)	(0.1079)	(0.0032)	5.0029
42) Total Kenya Ltd	2013	-0.22676	0.800	0.000	0.69897	0.200	-0.230	7.602	1.5999	0.0620	(0.0983)	(0.1715)	(0.0068)	5.0688
42) Total Kenya Ltd	2014	0.19808	0.833	0.000	0.69897	0.167	-0.222	7.512	0.9812	0.0826	(0.0749)	(0.0280)	(0.0112)	5.0826
42) Total Kenya Ltd	2015	-0.15442	0.833	0.000	0.69897	0.167	-0.230	7.534	0.9446	0.0833	(0.0827)	(0.0206)	(0.0117)	4.9995
42) Total Kenya Ltd	2016	-0.01025	0.818	0.000	0.69897	0.091	-0.234	7.559	0.8701	0.1056	(0.0898)	(0.0035)	(0.0171)	4.8370
42) Total Kenya Ltd	2017	0.05462	0.857	0.000	0.69897	0.143	-0.243	7.580	0.7748	0.1035	(0.0985)	0.0195	(0.0173)	4.9024
43) British American Investments Co. Ltd	2011	-0.19519	0.875	1.000	0.90309	0.125	0.075	6.798	0.1147	(0.2744)	(0.0284)	(0.0557)	(0.0231)	4.8342
43) British American Investments Co. Ltd	2012	-0.02373	0.889	1.000	0.954243	0.111	0.087	6.884	0.0537	0.3725	(0.0254)	(0.0697)	0.0296	4.7429
43) British American Investments Co. Ltd	2013	0.05807	0.875	1.000	0.90309	0.125	0.067	7.671	1.7696	0.0681	0.0334	0.0616	0.0024	4.9877
43) British American Investments Co. Ltd	2014	-0.05497	0.889	0.667	0.954243	0.111	0.004	7.860	2.3793	0.0443	0.0025	0.0056	0.0000	5.0832
43) British American Investments Co. Ltd	2015	-0.10143	0.889	0.667	0.954243	0.111	0.000	7.890	3.3923	(0.0154)	0.0002	0.0006	(0.0000)	5.5704
43) British American Investments Co. Ltd	2016	-0.06672	0.750	0.667	0.90309	0.125	-0.047	7.922	3.6786	0.0507	(0.0353)	(0.1335)	(0.0009)	4.7889
44) CIC Insurance Group Ltd	2008	-0.08438	0.909	0.800	1.041393	0.000	0.064	6.481	2.9980	0.0725	(0.0443)	0.1369	0.0026	4.2684
44) CIC Insurance Group Ltd	2009	-0.07316	0.917	0.800	1.079181	0.000	0.044	6.543	2.5254	0.0796	(0.0278)	0.0734	0.0021	4.4635
44) CIC Insurance Group Ltd	2010	-0.13483	0.846	0.800	1.113943	0.154	0.035	6.875	1.8729	0.0808	(0.0105)	0.0356	0.0017	4.7023
44) CIC Insurance Group Ltd	2011	-0.17205	0.929	0.800	1.146128	0.143	0.102	7.046	1.5898	0.0708	(0.0132)	0.0750	0.0039	4.7376
44) CIC Insurance Group Ltd	2012	-0.08016	0.923	0.800	1.113943	0.154	0.090	7.148	1.5717	0.1172	(0.0024)	0.0645	0.0076	4.8972
44) CIC Insurance Group Ltd	2013	-0.07313	0.917	0.833	1.079181	0.333	0.091	7.231	1.5476	0.0981	0.0051	0.0629	0.0060	4.8029

44) CIC Insurance Group Ltd	2014	-0.06851	0.917	0.800	1.079181	0.250	0.127	6.827	2.4675	0.0453	(0.0444)	0.2053	0.0017	4.5143
44) CIC Insurance Group Ltd	2015	-0.06393	0.714	0.800	0.845098	0.429	-0.003	6.873	2.8564	0.0317	0.0008	(0.0053)	0.0000	4.1149
44) CIC Insurance Group Ltd	2016	-0.11569	0.714	0.800	0.845098	0.429	0.042	7.429	2.5867	0.0282	0.0106	0.0727	(0.0002)	4.7967
44) CIC Insurance Group Ltd	2017	-0.10173	0.917	0.800	1.079181	0.250	0.151	7.484	2.9944	0.0383	0.0467	0.3233	0.0009	5.0280
45) Jubilee Holdings Ltd	2008	-0.06894	1.000	1.000	0.90309	0.000	0.133	7.305	5.3043	0.0369	0.0174	0.5930	0.0006	3.0558
45) Jubilee Holdings Ltd	2009	-0.71521	1.000	1.000	0.90309	0.000	0.071	7.396	5.5559	0.0370	0.0156	0.3327	0.0003	3.1059
45) Jubilee Holdings Ltd	2010	-0.01568	1.000	1.000	0.90309	0.000	0.071	7.500	4.6751	0.0535	0.0230	0.2704	0.0015	3.0022
45) Jubilee Holdings Ltd	2011	-0.07637	1.000	1.000	0.90309	0.000	0.071	7.580	4.6677	0.0281	0.0287	0.2698	(0.0003)	3.3817
45) Jubilee Holdings Ltd	2012	-0.04354	1.000	1.000	0.90309	0.000	0.071	7.674	4.4321	0.0327	0.0353	0.2532	0.0000	3.4940
45) Jubilee Holdings Ltd	2013	-0.03830	1.000	1.000	0.90309	0.000	0.071	7.786	4.2725	0.0364	0.0433	0.2419	0.0003	3.5047
45) Jubilee Holdings Ltd	2014	-0.08747	0.727	1.000	1.041393	0.091	0.037	7.872	3.5212	0.0338	0.0259	0.0991	0.0001	3.6726
45) Jubilee Holdings Ltd	2015	-0.03217	0.727	1.000	1.041393	0.091	0.060	7.916	3.0419	0.0380	0.0444	0.1310	0.0003	3.8155
45) Jubilee Holdings Ltd	2016	-0.02486	1.000	1.000	0.954243	0.111	0.106	7.957	3.2279	0.0346	0.0831	0.2522	0.0002	3.7622
45) Jubilee Holdings Ltd	2017	-0.03108	1.000	1.000	0.954243	0.111	0.111	8.021	3.1603	0.0379	0.0942	0.2567	0.0006	3.7443
46) Kenya Re-Insurance Corporation Ltd	2008	-0.01914	0.091	0.800	1.041393	0.182	-0.144	7.144	0.6838	0.1275	0.0044	0.0247	(0.0137)	4.1691
46) Kenya Re-Insurance Corporation Ltd	2009	-0.00898	0.125	0.800	0.90309	0.250	-0.153	7.176	0.6484	0.0976	(0.0002)	0.0315	(0.0100)	4.2030
46) Kenya Re-Insurance Corporation Ltd	2010	-0.04709	0.100	0.800	1	0.200	-0.118	7.237	0.6306	0.0963	(0.0072)	0.0264	(0.0075)	4.1432
46) Kenya Re-Insurance Corporation Ltd	2011	0.00179	0.100	0.800	1	0.200	-0.130	7.281	0.6567	0.1067	(0.0138)	0.0258	(0.0097)	4.1233
46) Kenya Re-Insurance Corporation Ltd	2012	0.05919	0.091	1.000	1.041393	0.273	-0.072	7.365	0.6594	0.1271	(0.0137)	0.0141	(0.0068)	4.2467
46) Kenya Re-Insurance Corporation Ltd	2013	0.07182	0.091	1.000	1.041393	0.273	-0.054	7.441	0.6258	0.1183	(0.0143)	0.0123	(0.0046)	4.2251
46) Kenya Re-Insurance Corporation Ltd	2014	-0.01832	0.091	1.000	1.041393	0.273	-0.054	7.508	0.6094	0.1218	(0.0179)	0.0132	(0.0048)	4.2744
46) Kenya Re-Insurance Corporation Ltd	2015	-0.04721	0.091	1.000	1.041393	0.273	-0.054	7.556	0.6393	0.1256	(0.0205)	0.0116	(0.0050)	4.2605
46) Kenya Re-Insurance Corporation Ltd	2016	-0.00644	0.091	1.000	1.041393	0.273	-0.054	7.585	0.5951	0.1096	(0.0221)	0.0140	(0.0042)	4.3306
46) Kenya Re-Insurance Corporation Ltd	2017	0.00089	0.091	1.000	1.041393	0.273	-0.054	7.631	0.5708	0.1067	(0.0245)	0.0153	(0.0040)	4.4368
47) Flame Tree Group Holdings Ltd	2014	0.18493	0.400	0.250	0.69897	0.200	-0.250	6.004	1.7882	0.1988	0.2922	(0.2329)	(0.0416)	4.9650
47) Flame Tree Group Holdings Ltd	2015	0.07190	0.400	0.250	0.69897	0.200	-0.268	6.123	1.2796	0.1968	0.2818	(0.1137)	(0.0441)	5.0572
47) Flame Tree Group Holdings Ltd	2016	0.05571	0.400	0.250	0.69897	0.200	-0.268	6.182	1.1152	0.1569	0.2658	(0.0697)	(0.0334)	5.0257

47) Flame Tree Group Holdings Ltd	2017	-0.09837	0.400	0.250	0.69897	0.200	-0.268	6.226	1.2978	0.0609	0.2542	(0.1186)	(0.0077)	5.0636
48) BRITISH AMERICAN TOBACCO	2008	-0.05142	0.636	0.833	1.041393	0.182	0.023	7.013	1.1063	0.2485	(0.0037)	0.0057	0.0049	5.2284
48) BRITISH AMERICAN TOBACCO	2009	0.01298	0.636	0.833	1.041393	0.182	0.018	7.023	1.2568	0.2107	(0.0028)	0.0073	0.0033	5.1626
48) BRITISH AMERICAN TOBACCO	2010	-0.02057	0.778	0.833	0.954243	0.222	0.032	7.046	1.1746	0.2643	(0.0041)	0.0102	0.0074	5.1498
48) BRITISH AMERICAN TOBACCO	2011	-0.04868	0.778	0.833	0.954243	0.222	0.042	7.138	1.1445	0.3391	(0.0015)	0.0121	0.0129	4.9845
48) BRITISH AMERICAN TOBACCO	2012	-0.01978	0.800	0.750	1	0.200	0.038	7.181	1.1382	0.3363	0.0002	0.0108	0.0116	4.9858
48) BRITISH AMERICAN TOBACCO	2013	0.05194	0.778	1.000	0.954243	0.222	0.078	7.271	1.4661	0.3091	0.0075	0.0477	0.0216	5.0417
48) BRITISH AMERICAN TOBACCO	2014	-0.00582	0.778	1.000	0.954243	0.222	0.084	7.261	1.2461	0.3491	0.0072	0.0327	0.0265	5.0323
48) BRITISH AMERICAN TOBACCO	2015	0.08209	0.778	1.000	0.954243	0.222	0.084	7.271	1.1101	0.4107	0.0081	0.0213	0.0316	5.1674
48) BRITISH AMERICAN TOBACCO	2016	-0.01667	0.778	0.800	0.954243	0.222	0.034	7.267	1.1030	0.3355	0.0031	0.0083	0.0102	4.9194
48) BRITISH AMERICAN TOBACCO	2017	-0.04087	0.778	0.800	0.954243	0.222	0.034	7.257	1.3055	0.2966	0.0028	0.0151	0.0089	5.0944
49) B.O.C Kenya Ltd	2008	-0.03459	0.857	0.750	0.845098	0.286	0.014	6.313	0.4148	0.1283	(0.0117)	(0.0060)	0.0013	4.1848
49) B.O.C Kenya Ltd	2009	0.12308	0.857	0.750	0.845098	0.286	0.029	6.273	0.3204	0.1061	(0.0266)	(0.0158)	0.0022	4.2757
49) B.O.C Kenya Ltd	2010	-0.06233	0.714	0.750	0.845098	0.143	-0.006	6.280	0.3544	0.0327	0.0056	0.0031	(0.0000)	4.3118
49) B.O.C Kenya Ltd	2011	-0.05006	0.714	0.750	0.845098	0.143	-0.042	6.259	0.3675	0.1043	0.0384	0.0204	(0.0030)	4.4639
49) B.O.C Kenya Ltd	2012	-0.03751	0.750	0.750	0.90309	0.250	-0.019	6.300	0.3712	0.1153	0.0162	0.0090	(0.0015)	4.5110
49) B.O.C Kenya Ltd	2013	0.31001	0.778	0.750	0.954243	0.222	0.028	6.420	0.2683	0.0880	(0.0211)	(0.0164)	0.0016	4.5794
49) B.O.C Kenya Ltd	2014	-0.12602	0.750	0.750	0.90309	0.375	0.001	6.362	0.3166	0.0873	(0.0011)	(0.0007)	0.0001	4.6128
49) B.O.C Kenya Ltd	2015	-0.04357	0.750	0.750	0.90309	0.375	0.040	6.366	0.3540	0.0954	(0.0320)	(0.0198)	0.0025	4.5996
49) B.O.C Kenya Ltd	2016	0.01297	0.750	0.750	0.90309	0.375	0.040	6.347	0.3163	0.0595	(0.0327)	(0.0213)	0.0011	4.6890
49) B.O.C Kenya Ltd	2017	-0.04689	0.750	0.750	0.90309	0.375	0.040	6.348	0.3833	0.0133	(0.0327)	(0.0186)	(0.0008)	4.7451
50) Carbacid Investments Ltd	2008	0.01135	1.000	1.000	0.60206	0.000	0.089	6.139	0.1791	0.1757	(0.0925)	(0.0603)	0.0128	3.6607
50) Carbacid Investments Ltd	2009	-0.05304	1.000	1.000	0.60206	0.000	-0.004	6.083	0.1806	0.2805	0.0049	0.0030	(0.0011)	3.6911
50) Carbacid Investments Ltd	2010	-0.01880	1.000	1.000	0.60206	0.000	-0.004	6.180	0.1688	0.2613	0.0045	0.0031	(0.0010)	3.9364
50) Carbacid Investments Ltd	2011	0.02645	1.000	1.000	0.60206	0.000	-0.004	6.241	0.1858	0.1936	0.0042	0.0030	(0.0007)	3.9629
50) Carbacid Investments Ltd	2012	-0.11257	1.000	1.000	0.60206	0.000	-0.004	6.304	0.2178	0.2660	0.0039	0.0029	(0.0010)	4.0999
50) Carbacid Investments Ltd	2013	0.00066	1.000	1.000	0.60206	0.000	-0.004	6.343	0.1455	0.2879	0.0037	0.0032	(0.0011)	4.1023

50) Carbacid Investments Ltd	2014	0.05865	1.000	1.000	0.69897	0.000	0.020	6.314	0.3197	1.9592	(0.0170)	(0.0106)	0.0380	4.1658
50) Carbacid Investments Ltd	2015	0.13664	1.000	1.000	0.69897	0.000	0.020	6.324	0.3392	0.1872	(0.0168)	(0.0102)	0.0031	4.2128
50) Carbacid Investments Ltd	2016	-0.00194	1.000	1.000	0.69897	0.000	0.020	6.489	0.1533	0.1777	(0.0135)	(0.0139)	0.0029	4.2282
50) Carbacid Investments Ltd	2017	-0.00977	1.000	1.000	0.69897	0.000	0.020	6.519	0.1309	0.1381	(0.0129)	(0.0143)	0.0021	4.1906
51) East African Brerweries Ltd	2008	-0.00009	0.818	1.000	1.041393	0.091	0.060	7.522	0.5036	0.3273	0.0208	(0.0210)	0.0177	5.3258
51) East African Brerweries Ltd	2009	-0.01911	0.818	1.000	1.041393	0.091	0.083	7.400	0.1188	0.4395	0.0186	(0.0608)	0.0336	5.3509
51) East African Brerweries Ltd	2010	-0.08736	0.818	1.000	1.041393	0.182	0.083	7.427	0.1229	0.4210	0.0208	(0.0605)	0.0321	5.2344
51) East African Brerweries Ltd	2011	0.09937	0.818	1.000	1.041393	0.182	0.105	7.695	0.8508	0.2508	0.0548	(0.0004)	0.0230	5.2632
51) East African Brerweries Ltd	2012	0.11601	0.818	1.000	1.041393	0.273	0.105	7.737	5.2626	0.3412	0.0592	0.4643	0.0325	5.2974
51) East African Brerweries Ltd	2013	-0.01667	0.818	0.750	1.041393	0.364	0.066	7.768	5.9427	0.2562	0.0389	0.3336	0.0147	5.3495
51) East African Brerweries Ltd	2014	0.05155	0.818	1.000	1.041393	0.364	0.151	7.798	5.9077	0.2330	0.0940	0.7620	0.0303	5.4179
51) East African Brerweries Ltd	2015	-0.04749	0.800	1.000	1	0.200	0.136	7.826	4.0130	0.2723	0.0884	0.4292	0.0326	5.4414
51) East African Brerweries Ltd	2016	-0.11949	0.727	1.000	1.041393	0.182	0.087	7.529	2.1081	0.4999	0.0308	0.1092	0.0408	5.3412
51) East African Brerweries Ltd	2017	-0.07396	0.727	0.750	1.041393	0.182	0.020	7.650	2.7272	0.3688	0.0096	0.0377	0.0068	5.2451
52) Eveready East Africa Ltd	2008	-0.32662	0.889	1.000	0.954243	0.222	0.101	5.923	1.2851	0.0896	(0.1268)	0.0435	0.0058	4.5327
52) Eveready East Africa Ltd	2009	0.13796	0.889	1.000	0.954243	0.222	0.111	5.999	1.5277	0.0684	(0.1309)	0.0749	0.0040	4.5051
52) Eveready East Africa Ltd	2010	0.07836	0.889	1.000	0.954243	0.222	0.111	6.078	1.9644	0.0607	(0.1222)	0.1235	0.0032	4.5392
52) Eveready East Africa Ltd	2011	-0.13741	0.857	1.000	0.845098	0.286	0.076	6.007	2.6395	(0.0430)	(0.0889)	0.1358	(0.0057)	4.4508
52) Eveready East Africa Ltd	2012	0.11610	0.875	1.000	0.90309	0.500	0.111	6.061	2.2926	0.0592	(0.1236)	0.1595	0.0030	4.7701
52) Eveready East Africa Ltd	2013	-0.13638	0.875	1.000	0.90309	0.500	0.165	5.974	1.3788	0.1084	(0.1976)	0.0862	0.0125	4.7489
52) Eveready East Africa Ltd	2014	-0.03944	0.875	1.000	0.90309	0.500	0.165	5.969	3.2573	0.0589	(0.1985)	0.3952	0.0044	4.8028
52) Eveready East Africa Ltd	2015	0.61901	0.714	1.000	0.845098	0.571	0.110	6.179	0.8748	0.0079	(0.1094)	0.0022	(0.0027)	4.7489
52) Eveready East Africa Ltd	2016	-0.07877	0.833	1.000	0.778151	0.667	0.141	6.035	1.2253	(0.1354)	(0.1605)	0.0521	(0.0236)	4.3410
52) Eveready East Africa Ltd	2017	0.45051	0.625	1.000	0.90309	0.500	0.144	5.888	0.4064	0.3350	(0.1849)	(0.0645)	0.0435	4.3494
53) Kenya Orchards Ltd	2009	-0.02917	0.500	1.500	0.60206	0.000	0.121	4.896	(64.8313)	0.0032	(0.2747)	(7.9162)	(0.0035)	-
53) Kenya Orchards Ltd	2010	-0.07178	0.500	1.500	0.60206	0.000	-0.004	4.872	101.6047	0.0087	0.0103	(0.4519)	0.0001	-
53) Kenya Orchards Ltd	2011	-0.03048	0.500	1.500	0.60206	0.000	-0.004	4.847	(1020.88)	0.0200	0.0104	4.5825	0.0001	-

53) Kenya Orchards Ltd	2012	-0.03772	0.500	1.500	0.60206	0.000	-0.004	4.838	568.7190	0.0113	0.0105	(2.5469)	0.0001	-
53) Kenya Orchards Ltd	2013	-0.00206	0.500	1.500	0.60206	0.000	-0.004	4.849	27.4551	0.0141	0.0104	(0.1193)	0.0001	-
53) Kenya Orchards Ltd	2014	-0.39244	0.500	1.500	0.60206	0.000	-0.004	4.701	(3.1985)	0.0304	0.0111	0.0182	0.0000	-
53) Kenya Orchards Ltd	2015	0.55368	0.500	1.500	0.60206	0.000	-0.004	4.896	12.0652	0.0575	0.0102	(0.0503)	(0.0001)	-
53) Kenya Orchards Ltd	2016	0.03564	0.500	1.500	0.60206	0.000	-0.004	4.951	8.1681	0.0640	0.0100	(0.0328)	(0.0001)	-
53) Kenya Orchards Ltd	2017	-0.01733	0.500	1.500	0.60206	0.000	-0.004	5.035	6.0251	0.0748	0.0096	(0.0232)	(0.0002)	-
54) Mumias Sugar Co. Ltd	2008	0.01003	0.917	0.833	1.079181	0.167	0.052	7.151	0.5653	0.1177	(0.0013)	(0.0152)	0.0045	4.7448
54) Mumias Sugar Co. Ltd	2009	0.04542	0.917	0.833	1.079181	0.083	0.094	7.242	0.7407	0.0621	0.0063	(0.0107)	0.0028	4.7781
54) Mumias Sugar Co. Ltd	2010	-0.06100	0.917	0.833	1.079181	0.167	0.073	7.263	0.6668	0.1170	0.0065	(0.0138)	0.0062	4.7396
54) Mumias Sugar Co. Ltd	2011	0.01574	0.917	0.833	1.079181	0.167	0.094	7.365	0.6010	0.1142	0.0179	(0.0239)	0.0077	4.7855
54) Mumias Sugar Co. Ltd	2012	0.03134	0.917	0.833	1.079181	0.167	0.094	7.438	0.7426	0.0644	0.0247	(0.0106)	0.0030	4.9244
54) Mumias Sugar Co. Ltd	2013	-0.06603	0.917	0.833	1.079181	0.167	0.094	7.434	1.0429	(0.0824)	0.0243	0.0177	(0.0108)	4.7312
54) Mumias Sugar Co. Ltd	2014	-0.10080	0.917	0.833	1.079181	0.167	0.094	7.372	1.2142	(0.1190)	0.0185	0.0338	(0.0142)	4.8121
54) Mumias Sugar Co. Ltd	2015	-0.12556	0.875	0.833	0.90309	0.250	0.040	7.310	2.4396	(0.2482)	0.0053	0.0626	(0.0111)	4.8948
54) Mumias Sugar Co. Ltd	2016	0.27014	1.000	1.000	1.041393	0.182	0.168	7.428	2.5451	(0.1939)	0.0425	0.2837	(0.0380)	5.4770
54) Mumias Sugar Co. Ltd	2017	-0.11862	1.000	0.833	1.041393	0.364	0.109	7.382	30.8421	(0.3334)	0.0226	3.2727	(0.0399)	4.5673
55) Unga group Ltd	2008	-0.06320	0.875	1.000	0.90309	0.125	0.130	6.678	0.6064	0.1404	(0.0649)	(0.0324)	0.0141	4.0371
55) Unga group Ltd	2009	0.04414	0.875	1.000	0.90309	0.125	0.071	6.746	0.7689	0.0794	(0.0304)	(0.0061)	0.0033	4.1595
55) Unga group Ltd	2010	-0.00124	0.875	1.000	0.90309	0.125	0.071	6.705	0.5052	0.0847	(0.0333)	(0.0248)	0.0037	4.1817
55) Unga group Ltd	2011	-0.04750	0.875	1.000	0.90309	0.125	0.071	6.757	0.5200	0.1448	(0.0296)	(0.0237)	0.0080	4.1941
55) Unga group Ltd	2012	0.04739	0.833	1.000	0.778151	0.167	0.029	6.807	0.6069	0.0599	(0.0107)	(0.0072)	0.0008	4.2407
55) Unga group Ltd	2013	0.04335	0.778	1.000	0.954243	0.222	0.070	6.920	0.8466	0.0838	(0.0178)	(0.0006)	0.0036	4.2206
55) Unga group Ltd	2014	-0.01657	0.778	1.000	0.954243	0.222	0.084	6.905	0.7124	0.0703	(0.0226)	(0.0119)	0.0032	4.2668
55) Unga group Ltd	2015	0.00079	0.875	1.000	0.90309	0.250	0.095	6.938	0.6193	0.0905	(0.0225)	(0.0224)	0.0055	4.1722
55) Unga group Ltd	2016	-0.08856	0.875	1.000	0.90309	0.250	0.102	6.964	0.6149	0.0776	(0.0215)	(0.0245)	0.0046	4.3312
55) Unga group Ltd	2017	-0.12293	0.875	1.000	0.90309	0.250	0.102	7.011	0.8740	0.0197	(0.0167)	0.0019	(0.0013)	4.5054
56) Safaricom Ltd	2008	-0.19514	0.538	0.750	1.113943	0.154	0.008	7.871	0.7439	0.2469	0.0056	(0.0009)	0.0017	3.0697

56) Safaricom Ltd	2009	-0.08373	0.889	0.750	0.954243	0.333	0.032	7.962	0.7925	0.1764	0.0250	(0.0020)	0.0046	5.0569
56) Safaricom Ltd	2010	-0.02375	0.800	0.750	1	0.300	0.066	8.019	0.6646	0.2163	0.0556	(0.0125)	0.0121	5.5106
56) Safaricom Ltd	2011	-0.09565	0.800	0.750	1	0.300	0.057	8.059	0.6788	0.1694	0.0508	(0.0101)	0.0079	5.6239
56) Safaricom Ltd	2012	-0.09683	0.667	0.800	1.079181	0.250	0.056	8.086	0.6911	0.1653	0.0514	(0.0093)	0.0075	5.3101
56) Safaricom Ltd	2013	-0.08594	0.818	1.000	1.041393	0.182	0.122	8.110	0.6054	0.2103	0.1145	(0.0306)	0.0218	5.5884
56) Safaricom Ltd	2014	-0.11707	0.750	1.000	1.079181	0.250	0.098	8.129	0.4753	0.2612	0.0933	(0.0371)	0.0224	5.3540
56) Safaricom Ltd	2015	-0.10463	0.750	1.000	1.079181	0.167	0.115	8.196	0.5052	0.2907	0.1172	(0.0402)	0.0297	5.4537
56) Safaricom Ltd	2016	-0.05797	0.889	1.000	0.954243	0.333	0.097	8.202	0.3636	0.3463	0.1001	(0.0479)	0.0306	5.4459
56) Safaricom Ltd	2017	0.42269	0.900	1.000	1	0.300	0.153	8.209	0.5042	0.4353	0.1585	(0.0538)	0.0618	5.4860