EFFECT OF INTERNAL CONTROLS ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

I pronounce to have personally developed this Research Project Report and is not a copy of any other work submitted to any institution for assessment. All references are dully acknowledged.

Signature …….. Date ……

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D61/7257/2017

As the University Supervisor, I approve the submission of this Research Project Report for examination.

Signature…… Date.....……

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DEDICATION

To:

My dear mum, Lucy Wanyiri and loving dad, Simon Wanyiri

(you are the reason I have come this far);

and

My beloved siblings,

Cate Wanjira

And

Veroh Wangui

(for your prayers and constant re-assurance of success)

And finally,

My best friend, Elly Kimani

(Your unrelenting motivation and support throughout the Research Project)

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All others who supported me, space doesn't allow me to mention your names. Please receive my most earnest and heartfelt appreciation.

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LIST OF ABBREVIATIONS

CAMEL	-	Capital adequacy, Asset quality, Management quality, Earnings and Liquidity
CBK	-	Central Bank of Kenya
CMA	-	Capital Markets Authority
COSO	-	Committee of Sponsoring Organizations
FLSTAP	-	Financial and Legal Sector Technical Assistance Project
IAs	-	Internal Auditors
IC	-	Internal Control
ICS	-	Internal Control System
ROA	-	Return on Assets
ROE	-	Return on Equity
SPSS	-	Statistical Package for the Social Sciences
VIF	-	Variance Inflation Factor

ABSTRACT

Internal controls remain a major factor even with the growth of Kenyan banking sector performance. Effective internal controls ensure disclosures are made by the business entities as desired by the stakeholders, shareholders' rights are protected and monitoring of management decisions is effective. Internal controls enhance independent investigation on the level of performance by the management in performing the allocated roles aimed at improved financial performance of the firm This investigation tries to address the influence of internal controls on profitability of commercial banks in Kenya. CBK database and financial statements published between 2014 to 2018of the 40commercial banks were key information sources for the researcher with a focus on net profit, assets, deposits, liabilities, Equity among other pertinent information in the notes to the accounts and proportion of expenditure allocated to each internal control component. Descriptive statistics and correlations between the factors were done. ANOVA and F-Statistic at a significance of 5%level was utilized to decide the regression model significance while modified R-square, was utilized in establishing the extent of variability in financial performance showed by variables which are independent. The study results revealed that how commercial banks perform is contributed by internal controls. Therefore, the management should ensure effective and efficient internal systems are enacted including risk assessment and control activities and risk assessment in form of procedures and regulations are in place. Regular assessment of the two components that involves internal controls should be undertaken to ensure they are effective and adequate to maximize risk detection.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Commercial banks significantly contribute to the economic development of a country as financial intermediaries (Chevers et al., 2016). Commercial banks are however very vulnerable to many fraudulent activities which affect their financial performance hence the need for sound internal controls (Sabry, 2018). Effective internal controls ensure disclosures are made by the business entities as desired by the stakeholders, shareholders' rights are protected and monitoring of management decisions is effective (Adams, 2003). An effective internal control system minimizes fraud cases, errors and resource wastage. Presence of clear record of company assets reduces unnecessary suspicion among the board of directors, guarantees adequacy and reliability of accounting reports leading to improved financial performance (Amudo and Inanga, 2009).It is therefore the responsibility of every corporation to ensure at all times there are effective internal controls since they are associated with high stakeholders returns.

Jensen and Meckling (1976) in their agency theory resolved that there may be an agency loss measured by extent to which the owners' returns drop below what they would be if they exercised direct control on the firm rather than delegating their authority to the agents. In Agency theory, shareholders are the principals while managers are the agents. On the other hand, Stewardship theory developed by Donaldson (1991) states that, the managers (agents) are believed to be stewards who are required to ensure that the business entities are always run as per the wishes of the principals. The Stakeholders theory developed by Freeman (1984) proposes that for any business entity to achieve

success, it must create value for all its stakeholders including suppliers, customers, employees, community, investors and owners.

The quality of internal controls adopted by firms significantly influence the accuracy of decision making by the board of directors (Feng&McVay, 2009). Further, Feng&McVay (2009)posits that firms which adopt ineffective ICSs have experienced low returns on assets, high cases of corruption and fraud than those which have adopted effective ICSs. This is evidenced by the fall of two commercial banks, Dubai bank and Imperial bank, in 2015. Dubai bank faced huge capital deficiencies and high liquidity making it unable to timely meet financial obligations. In the case of Imperial bank, the CBK cited ineffective banking practices, unsound internal control mechanisms and poor business conditions as the key causes of its fall. This in turn led to severe shortage of bank reserves leading to bank runs and huge debts from creditors. It is therefore imperative for commercial banks to establish water tight controls if at all it is to achieve improved financial performance.

1.1.1 Internal Controls

Internal control system entails the whole management of operations established by management so as to proceed with the business of the firms in an organized and competent manner (Abiola&Oyewole, 2013).In line with Committee of Sponsoring Organizations (COSO), internal control has five elements which entails control environment, evaluation of risk, control activities, monitoring, communication and information.

The control environment institute standards for organization by impacting awareness of control among its employees which help in attainment of the set goals (Pinho, 2015). In

this study, control environment will be conceptualized by assessing the number of trained employees in compliance department. Risk assessment considers both internal and external threats and fundamentally institutes an early warning system to identify remote risks or risks with minimal probability, and take necessary actions to eliminate and reduce such risks (Okonkwo&Ezegba, 2016). In this study, risk assessment will be conceptualized by number of key risks mitigated (Pinho, 2015).

Control activities are carried out at different phases in business processes, at all levels and over the technology environment (Abiola&Oyewole, 2013). These are either aimed to prevent or detect and may be a combination of manual and computerized activities that entails verifications, endorsements and approvals, business performance reviews and reconciliations. In this study the control activities will be conceptualized by determining the number of primary controls automated (Oduro& Cromwell, 2018).

Monitoring activities entails step by step monitoring of internal controls with the aim of reducing inconsistencies relating to the outcome (Haladu, 2018). Monitoring ensures that important control discrepancies are identified timely and rectified and will be conceptualized by frequency of internal audits (Saleh, 2016). Management ability of an organization to make appropriate decisions in controlling the company's activities is contributed by effectiveness of information and communication system (Hamdani&Riski, 2016). Number of communication audits within the organization will be used in conceptualization of information and communication (Haladu, 2018).

1.1.2 Financial Performance

This portrays how efficient an organization uses its resources for creation of income. One way to calculate performance is by use of ratios compared from one year to the next which helps identify strengths and weakness of a firm. According to Padachi (2006) a firm's value highly depends on how well it designs and implements its financial framework. Efficiency and effectiveness of a firm's operations, financing and investing activities is clearly depicted in its high performance (Mokhtar, 2004).

Financial statements provide information to management, investors and creditors on the available assets, how they are financed and how the company uses the assets to generate revenue. Financial statements give the quantitative information related to operation which highlights profitability and performance of a firm. This information is always subject to analysis and interpretation. The analysis assesses the firm's profitability, liquidity, operation and risk. Financial performance is measured using absolute and relative measures such as earnings without inclusion of tax, returns on investments, return on assets, profits and return on equity. Measures frequently used include ROE and ROA Mokhtar (2004). ROA will be applied in measuring financial performance in this study.

1.1.3 Internal Controls and Financial Performance

Jensen (2003) clearly indicates that internal control components such as internal audits are essentially made to improve accountability of financial records of an organization. However, internal control not only controls risks associated with poor financial performance but also explores the association between inconclusive reports and fraud, revenue as well as management (Doyle et al., 2005). Internal controls improve

examination on the degree of execution by the management in performing the allocated roles aimed at improved financial performance of the firm(Doyle et al., 2005).

As per Fadzil et al. (2005), sound internal control framework is significantly linked with firm performance in achieving the set target levels. In regard to financial performance, sound internal control involves; conclusive and transparent financial reports, water tight asset controls and evaluation of employee compliance with management guidelines, evaluation of the management performance in regard to target achievements (Ittner et al., 2003). Majority of the firms however hardly adopt sound effective control systems despite being an administrative prerequisite for ensuring that administrative duties are sufficiently performed (Kenyon and Tilton, 2006). However, some firms have invested in training, educating and capacity building for their workers for optimal adoption of internal control systems put in place, since its effectiveness depends on individual competency and reliability.

Control activities enhance financial performance by ensuring all the organization's objectives are timely and sufficiently achieved across all departments. Singleton *et al.*, (2006) presents the three categories of control activities which include detective, corrective and preventive controls. Preventive controls identify likely issues prior to their occurrence, make changes, and avert errors, exclusion or noxious acts. The investigator controls are used to recognize and report the occasion of an oversight, error or malignant act. Remedial controls constrain the risk impact magnitude, perceive the explanation behind the issue and the errors prompting the issue. The corrective controls realign issues identified at the detection stage adjusting the system to limit the likelihood of a future similar event.

1.1.4 Commercial Banks in Kenya

Financial institutions such as commercial banks have significantly influenced the country's gross domestic product through value addition by facilitating completion of goods and services transactions as a monetary intermediary (Arasa&Ottichilo, 2015). According to CBK (2018) Kenyan banking industry consisted of the CBK, 40 institutions of banking; 1 mortgage finance company, 39 commercial banks (Onyuka&Otinga, 2019). Kenyan Banks are regulated by Companies Act, Banking Act and the Central Bank of Kenya. CBK continually issues and conducts all-inclusive assessment of the Prudential and Management of Risk Guidelines with the aim of proactively strengthening the framework of regulation belonging to banks and other related institutions which are licensed in agreement with the Banking Act (Makori, Nyagol&Ajowi, 2016).

The Kenyan banking sector has experienced continually increasing growth in assets, deposits, products offered and profitability over the last few years. This growth is as a result of computerization of services and networking; locally and regionally. In order to maintain high competition, more resources have been directed to finding new markets and meeting various customers' needs (Mwirigi, 2018). However, there has been an increase in operational risks in the sector has, which have affected their performance. The ever- increasing cases of fraud has consequently led to the operational risks which in a way involve banking staff (Mwithi&Kamau, 2015).

CBK issues prudential guidelines aimed at minimizing the magnitude of risks exposed to the bank creditors. Bank supervision involves implementation of guidelines and regulations as well as evaluation involving the sufficiency of resources, its capital adequacy and the executives. Thus, it is important for the commercial banks to

understand that sound supervision leads to healthy banking industry and economic growth (Soludo, 2007). The change program is additionally expected to cause a diversified, solid and dependable banking sector in the country. Studies have demonstrated that the goals of financial sector reforms are extensively similar in many nations of Sub-Saharan Africa (Balogun, 2007)

1.2 Research Problem

Despite Central Bank of Kenya providing guidelines according to the Banking Act Cap requirements, several incidences of banks collapsing due to fraud, inadequate internal controls and non-compliance of internal and external regulations within the industry have been reported (FLSTAP, 2011). For instance, between the year 2015 and 2016, three banks were declared insolvent by the CBK within 9 months' period. Imperial bank of Kenya, which is among the top 20 largest commercial banks in Kenya, was declared bankrupt due to inappropriate banking practices according to the regulator (Kuo, 2015).Dubai Bank of Kenya was similarly announced insolvent for flouting guidelines of banking for a spate of years. Later Chase Bank was dissolved, in what the regulator termed as unsafe financial conditions thus; leaving the question within financial area because of such numerous ruptures without significant activity been undertaken (Ngigi, 2015).

Commercial banks have been flouting internal control systems hence prompting the CMA to act tough to safeguard the shareholders from the financial losses by jailing the managers who are involved in the unethical practices. For example, the management of Chase bank was suspended and the directors were prosecuted for malpractices (Ngigi, 2015). However, those commercial banks which have continually adopted proper internal

control mechanisms which are geared towards realizing the objectives of the business entities of profit maximization and cost minimization have always reported improved financial performance. Therefore, in attempts to enhance financial performance, adoption and the implementation of proper internal control mechanisms by all the commercial banks is paramount (CMA, 2017).

From an empirical viewpoint, a range of researchers have studied internal controls and financial performance. Gnabry (2018) examined how internal auditors influence financial performance of insurance firms in Germany and concluded that monitoring and risk assessment to a great extent influenced the firm's financial performance while internal environment showed an indirect association with financial performance. The study failed to incorporate internal audit as well as information and communication. Louz (2016) studied ICS and financial performance of Hellenic Open University in Greece. He concluded that assessment of risks and control environment contributed significantly to financial performance. However, the conclusions were based on only one University. Collins (2017) examined the internal controls role on how commercial banks performs in South Africa, a case of Absa Group Limited, using control activities, internal audit and monitoring. Results established that internal controls connected to monetary **s**uccess of commercial banks. The study results were however insufficient since risk assessment and internal environment were not incorporated.

In the Kenyan perspective, Kioko&Wambugu (2017) did internal controls and firm value of companies included in the list of NSE. The research focused on only internal environment and risk assessment and concluded that internal controls positively affect the firm value. Kaunda & Aura (2017) explored how internal controls result in increase of

fraudulence and its detection among banks in Kenya. It was evident that financial internal control negatively impacted the fraud detection. Hamadi&Juma (2016) investigated how effective internal controls contribute in preventing vices in finance administration among investment firms in Kenya. The study also documented that lack of control activities enhance fraud among the investment firms in Kenya. The key observation from the reviewed studies is that internal controls have exhibited influence on performance of firms across different sectors. However, financial institutions have been mostly affected by unethical practices and banking fraud yet there is scanty evidence on how the internal controls are linked to the way in which commercial banks performs in Kenya. Therefore, the research aims to answer the research question; how internal controls affect financial performance commercial banks in Kenya?

1.3 Research Objectives

i. To investigate the contribution of control activities on financial performance of commercial banks in Kenya
ii. To examine how risk assessment influences financial performance of commercial banks in Kenya
iii. To investigate the effect of control environment on financial performance of commercial banks in Kenya
iv. To investigate the contribution of information and communication on financial performance of commercial banks in Kenya
v. To examine the role monitoring on financial performance of institutions of commercial banks in Kenya

1.4 Value of the Study

For the case of employees and management team of financial institutions, the project findings assist in understanding the changes occurring in banks' financial performance which is attributed to internal controls. The study will help the management in finding the most effective interior controls so as to foster overall performance of the banks. Therefore, the study discoveries will serve as a blue-print for best internal controls.

Second, the paper results are of assistance to the policy-making institutions in Kenya to develop strategic policies, which will encourage adoption of sound internal controls. Various policy makers in the industry including CBK, CMA and relevant government bodies overseeing the operations of the banking sector may use the study recommendations to develop strategies on internal control systems adoption.

To finish with, the study adds on to the existing theoretical evidence on the theory of agency, stakeholder theory and stewardship theory developed to address the correlation between internal controls and financial performance of firms. Further, the research will add on to the empirical evidence on internal controls, financial performance in the banking sector as well as shedding more light to the scholars interested in similar subject.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The section entails an assessment of the theories guiding the study and the various determinants of financial performance. The section further presents the earlier studies conducted on internal systems and performance of firms in various sectors, conceptual framework and ultimately a synopsis of the considered studies as well as the identified gaps in the research.

2.2 Theoretical Review

The hypotheses anchoring the study will include; agency theory Jensen and Meckling (1976), stewardship theory Donaldson (1991) and Stakeholders Theory Freeman (1984).

2.2.1 Agency Theory

The hypothesis posits the principals-investors linkage where principals are the investors and the specialists are the corporate officials(Jensen &Meckling, 1976). Sometimes, management does not really care about the welfare of the shareholders which is wealth maximization. In most cases, the management award themselves huge salaries than what investors would consider to be defended and they probably would not work productively to amplify investors' riches in the event that they feel that they will not have a share in the fruits of their work. In any business organizations, normally, the issue of ownership of the business organization and the control of the business organization is critical in decision making which ultimately affects its value.

One of the common strategies by the shareholders is to agree on the deciding rules for managers to implement the business policies in the business entities. It is the responsibility of the shareholders to monitor the activities of the managers to ensure their actions are for the benefit of the shareholders. Managers of the business entities push for corporate governance because they will benefit from the deal and not to maximize the value of the shareholders (Mueller, 1969). Shareholders of any business entity are always optimistic that the managers will always perform to their expectations. However, in most cases that does not happen because they lack that capacity to closely monitor the managers for accountability because of the costs involved.

Ross, (1985) criticized the agency theory by arguing that an agent can choose, an action which might negatively affect the business in the long run. Therefore, in order to eliminate the agency problem, the principal must monitor the actions of the agent well and some time it is costly because of the costs incurred in the process (Jensen &Meckling, 1976). This theory is of great use since it helps us to understand the importance of putting in place strong corporate governance mechanisms in our firms since they have a direct impact on the overall value.

2.2.2 Stakeholder Theory

Freeman (1984) in his hypothesis centers around corporate responsibility which focuses on great business morals and virtues in the firm and the administration of the firms across all sectors. All key partners in business entities such as stakeholders, suppliers, customers, stakeholders, employees among others contribute to improvement of financial performance and hence the need to be considered. These players need to be considered

since the actions and decisions made by the management on their behalf directly affect the stakeholders (David& Sabine, 2006).As per this theory, the connection between the substance and the partners is vital to the achievement and administration of the organizations. This hypothesis affirms that all partners are equal based on their equal contribution and therefore deserve fair representation by the executive directors of the firms.

The hypothesis suggests that organizations protect the assets for present and future ages since these assets are drawn from nature. This hypothesis is key since it underscores on the significance of internal controls systems since they directly affect every one of the partners of the organizations. The hypothesis puts more accentuation on the interests of the partners of the organizations making it significant to this examination. Internal control systems (ICSs) ought to be gone for guaranteeing the wants of the proprietors specifically the boost of their riches is met (Godin, 2016). This hypothesis focuses on the essentialness of including the undertakings of partners in the business entities so as to increase their values.

2.2.3 Stewardship Theory

According to Donaldson (1991), control and ownership of the business entities should be separated to enhance optimization of both firm's financial performance and shareholders' wealth (Donaldson, 1991). The theory emphasizes that the stewards who are board of directors for the company and managers should work for and maximize on the profits for the shareholders. Therefore, the managers should be committed to the long-lived goals of the business entities. The managers and stakeholders should work together and should not

bear any conflicting interests. This will ensure high collaboration and co-operation between their steward's roles are maximized by maximizing and protecting shareholders' wealth. These executives therefore protect their reputations by using all applicable internal control systems to maximize shareholders' wealth as well as improve the firm's long-term performance.

According to El-Faitouri (2014), the CEO duties and those for chairman should be consolidated. This is aimed at minimizing the expenses and fostering of greater responsibility as the business firms' stewards and the stewards can only be satisfied and motivated after attaining the organizational success. The theory appreciates the significance of different structures for empowering the stewards which are also able to offer maximum outputs based on trust and minimizes the monitoring costs of the firms; the stewards have a duty in protecting their image and reputations as the major decision makers in the business entities, in this regard it is believed that the performance of the companies is influenced by the performance of the stewards. The incorporation of individual accountability among the stewards is believed to improve their values since it encourages openness in performing the organizational tasks.

2.3Determinants of Financial Performance

2.3.1 Liquidity

Liquidity is the availability of cash or liquid asset in an organization used to meet immediate obligation as and when they fall due. Excessive liquidity leads to building up of idle resources whereas liquidity at low levels lead to exhaustion of available resources and compulsory liquidation of company's asset. Liquidity, Size and investment are

significant determinants of profitability of commercial banks (Chen and Wong, 2004). According to Shiu (2007) firm with liquid assets are less risky as the assets can easily be converted to cash to meet current liability. In cases where a bank has insufficient cash or liquid assets it is forced to sell its investments at losses to settle prompt claims. Firms would not be required to seek external funds if the assets they have are liquid and enough to finance projects. Liquidity is measured by use of current ratio. A high current ratio means a firm is capable of meeting short term obligations and it is healthier than those with low current ratio. Liquidity and financial performance have a positive relationship.

2.3.2 Operational Efficiency

Operational efficiency involves optimal utilization of resources to maximize the output levels (Johnson, 2005). The available resources utilized in delivering products or services in a cost-effective way while ensuring the products produced are of high quality. To improve the operational efficiency, duties in the management team are shared where an executive officer simultaneously acts as chief executive officer and the managing director. This ensures resources are deployed efficiently; operating costs are minimized hence maximizing the profits.

2.3.3Bank Age

Bank age refers to the totality of years a bank has been operating. According to Athanasoglou*et al.,* (2008) newly established banks focus more on increasing their customer base rather than improving their operational efficiency translating to poor financial performance. However, Dietrich and Wanzenrie (2010) study concluded that newly established banks showed a relatively higher profitability compared to the old

ones. Younger banks are believed to easily leverage on the new profitable opportunities as well as the ability to timely adjust to the prevailing market conditions. These varying findings motivate the study to incorporate bank age as a control variable.

2.3.4Bank Size

Bank size is evaluated in consideration of list of factors that entails total assets, total sales and market value of equity. Commonly used measure is log of total assets and large companies have huge asset base. Large firms enjoy economies of scale, average production cost drops and output increase hence efficiency in operations. This results into increase in return on assets. Small firms have a smaller asset base this reduces their credit rating and limits them to internal sources. Larger firms have also diversified investments that generate cash flow and hence can access debt at a lower cost. According to Adam (2009) large firms diversify their investment portfolio which reduces business risk, for example commercial banks in Kenya have actively ventured into bank assurance as a way of diversification. Size and profitability have a positive relationship as indicated by most studies.

2.3.5 Capital Adequacy

The ability of a financial institution to timely address liabilities as well as risks such as credit risk, operational risks among others depicts its capital adequacy. Capital adequacy minimizes the likelihood of bank losses hence protecting the bank depositors' savings and interests of other lenders. Provision of sufficient capital requirements helps in reducing the chance that banks will be declared insolvent if sudden shocks occur.

According to Haron (2004), capital adequacy determines the capacity of a bank to adjust to economic changes.

2.3.6 Asset quality

Asset quality refers to how well a bank can predict the risk attached to its assets and how well it can manage the risks. The main bank assets which require frequent asset quality evaluation include loans and advances. Increase in loan quality improves loan interests reducing the likelihood of bank failure. However, loan quality improvement is provided at in accordance to what the banks can manage (Khalid, 2012).

3.3.7 Earnings

Earnings and profitability are the key determinants of capital base changes and are evaluated with response to interest rate policies and adequacy of provisioning. Earnings enhance the actualization of the current operations as well as future operations. Specifically, changes in earnings and profitability influence the ability of a bank to manage losses pay out dividends, service operation costs and accumulation of capital (Demiurge-Kunt, 1999). The ability of a bank supporting all operation costs and paying dividends to shareholders is an indicator of financial stability.

2.3.8Management Quality

The management is assessed by: specialized skill, authority, and regulatory capacity; consistency with banking guidelines and rules; capacity to plan and react to evolving conditions; adequacy of and adoption of internal controls; and exhibited ability to serve the community needs (Sundarajan and Errico, 2002). Effective management is a key indicator for the quality, profitability and financial performance improvement of firms.

2.4 Empirical Review

Malik (2010) evaluated internal control function and its impact on firm value of insurance firms in the New York. A total of 200 companies was the target population but he used a sample of 67 insurance firms. The study also utilized primary data collected with an aid of a questionnaire from the firms. From the study, he concluded that internal control function contributes to firm value improvement. Only three components of internal controls which included; internal audit, internal environment control and corporate governance and failed to consider the contribution of risk assessment on firm value.

In Egypt, Anecho (2013) did internal control, accountability, operational efficiency and financial institutions' profitability. The population of the study was 115financial institutions; 45 financial institutions were analyzed. Inferential and descriptive statistics were conducted using the primary and secondary data. The study concluded that accountability and corporate governance directly affected the profitability of the financial institutions. Internal control showed insignificant correlation with the financial institutions' performance. The methodology for the study was not well elaborated.

Louz (2016) did ICS and financial performance of Hellenic Open University in Greece. The study gathered information by means of surveys from a sample of 130 respondents utilizing simple random sampling method. Through a regression model, the findings uncovered that internal controls contributed 58.9% on the financial performance of Hellenic Open University. This implied that assessment of risks and control environment contributed significantly to financial performance. However, the study conclusions were

restricted only to Hellenic Open University which might not be a good representative of all Universities in Greece.

Collins (2017) evaluated how internal controls are attributable to financial performance changes of commercial banks in South Africa, using Absa Group Limited as a case study. Questionnaires were administered to 80 respondents who were the top management of Absa Group Limited across several branches. Three components of internal control which included; control activities, internal audit and monitoring were incorporated to measure internal controls. The linear regression model used exhibited that internal controls positively influenced the performance of banks. However, risk assessment and internal environment, key elements of internal controls were omitted in the evaluation and the study made conclusions based on single commercial bank.

Mash (2017) examined the internal and external audit effects on financial performance of Pakistan banks by randomly sampling 115 respondents. Through the regression model, the discoveries uncovered a critical relationship among internal audit, external audit and banks' performance in Pakistan. He recommended on the need for the bank managers and auditors to incorporate internal and external audits in decision making hence improving financial performance. Despite the conclusions being meaningful, his study did not consider all activities involved in internal controls providing avenues for further research.

Gnabry (2018) investigated how internal auditors contribute to changes in performance among insurance companies in Germany. Information was gathered utilizing surveys from 39 insurance firms, which was analyzed utilizing the partial least square techniques. The results showed that monitoring and risk assessment exhibited a critical relationship

with of insurance firms' profitability. The internal environment demonstrated an irrelevantly negative impact on insurance firms' profitability. The example for the investigation was constrained. The study also utilized few components of internal controls leaving out internal audit as well as information and communication.

Hamadi&Juma (2016) investigated internal controls contribution on preventing fraud in financing administration among investment firms in Kenya. Using a case study design, the researchers collected data via observations and semi-structured interviews. The findings documented that weaknesses of the internal controls enhanced fraud and that poor internal controls lead to fraud. The study also documented that lack of control activities enhance fraud among the investment firms in Kenya. Afrigold Investment Company limited was considered as the case study rather than utilizing a representative sample of investment firms in Kenya.

Kioko&Wambugu (2017) did internal controls and firm value of selected companies listed at NSE. Fourteen companies were randomly selected from a pool of 53 listed companies. The study was based on mixed data collection method. Secondary data was used in measuring firm value while primary data captured the internal controls companies adopt. It was concluded that control activities and risk assessment positively affected the firm value. Monitoring and communication and information exhibited insignificant influence on companies' firm value. The study employed a very limited sample and failed to elaborate on the methodology used.

Kaunda & Aura (2017) explored how internal controls contribute to increase of fraud detection among Kenyan commercial banks. The sample consisted of ten branch

managers across various commercial banks. The study involved use of regression model for analysis. The results depicted that financial governance control negatively impacted the fraud detection. The association between reconciliation control and fraud detection was found to be negative and insignificant. It is evident that the researcher utilized a very small sample size and the study geographical scope was not clearly defined.

Njoroge (2017) examined how financial performance changes among pharmaceutical companies in Kenya were attributable to risk assessment for the period between 2013-2015. Secondary data extracted from the company websites employed regression analysis and conclusions were made. From the study it was evident that performance of pharmaceutical companies was significantly affected by risk assessment. The study used a limited period to capture changes in financial performance.

Kyale&Mutua (2018) did a study on internal control contribution to profitability of financial institutions in Nairobi County. 345 financial institutions were targeted but 115 financial institutions were analyzed. Risk assessment, control activities and internal audit were used by the researchers as the main internal controls measures. Primary data was utilized in this study and was analyzed by inferential and descriptive statistics. They concluded that both internal audit and control activities significantly affected the profitability of the financial institutions in Nairobi County. They used a 5 point likert scale to measure the profitability of financial institutions which is not a good measure for profitability.

2.5 Conceptual Framework

This study has financial performance, indicated by return on assets (ROA) as its dependent variable and internal controls as the independent variable. Bank size and bank age will comprise the control variables. The conceptual framework which is presented in figure 2.1 below gives the expected association between the variables.

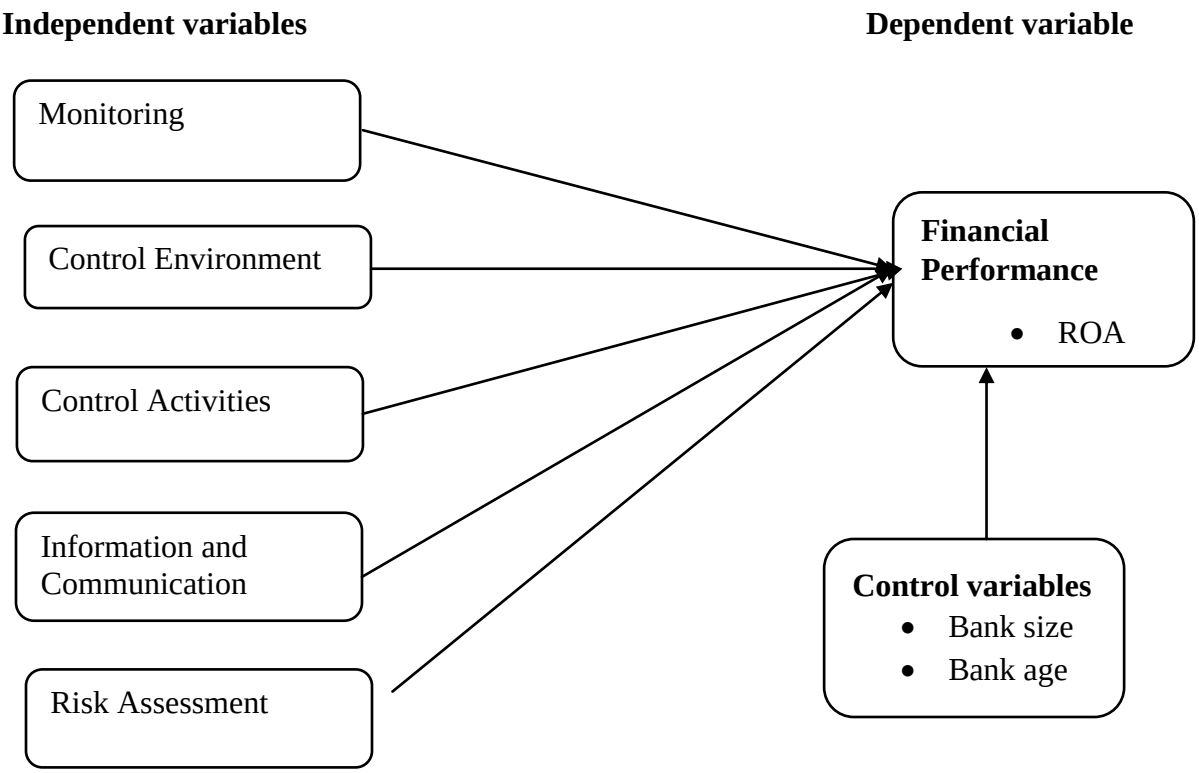

Figure 2.1 Conceptual Framework

Source: Researcher (2019)

2.6 Summary of Literature Review

This section reviewed various studies among them Malik (2010) who researched on the internal control function and firm value of insurance firms in the New York while Mash (2017) focused on internal and external audit impact on profitability of banks in Pakistan. Gnabry (2018) investigated how internal auditors influence insurance firms' financial

performance in Germany; Louz (2016) evaluated the impact of ICS on financial performance of Hellenic Open University in Greece; Collins (2017) examined the changes in firm value of banks in South Africa attributable to internal controls, a case of Absa Group Limited while Anecho (2013) evaluated the association between internal control, accountability, corporate governance and profitability of financial institutions in Egypt. The available global studies reviewed utilized limited components of internal controls and different methodologies leading to varied results.

Locally, Kyale and Mutua (2018) evaluated the link between internal control and profitability of financial institutions in Nairobi County; Kioko&Wambugu (2017) focused on how internal controls contribute to the changes in firm value of selected companies listed at NSE; Kaunda & Aura (2017) explored how internal controls increase fraud detection among Kenyan banks; Hamadi&Juma (2016) investigated how effective internal controls are on preventing fraud in financing administration for investment firms in Kenya while Njoroge (2017) focused on risk assessment and profitability of pharmaceutical companies in Kenya. It is clear that, from the fore referenced investigations, a large portion of the accessible examinations in Kenya concentrated more on internal controls and fraud discovery, internal controls and performance crosswise over firms in various segments. All the studies used few components of internal controls and different measures of financial performance leading to varying conclusions hence creating a research gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The section involves the study approach highlighted section 3.2, the study population under section 3.3 and the procedure of collection of data under section 3.4., Section 3.5 makes discussions relating to the study validity and reliability and finally under section 3.6, the approaches of analyzing data.

3.2 Research Design

Upagade&Shende (2012) posits a research plan presents the plan for information gathering together with analysis outlay. It also explains the manner in which questions in a questionnaire should be answered as well as the key respondents for the questionnaire. This design gives quantitative data from a representative sample of population under study. This type of design describes the variables of interest and in so doing gives further understanding of the research problem design provides. The researcher therefore preferred the descriptive research approach.

3.3 Study Population

Population is sum total of elements that an investigator is interested in researching and analyzing (Upagade&Shende, 2012). The study was centered on forty (40) commercial banks operating in Kenya as at 31st December 2018. A census survey was undertaken.

3.4 Data Collection

Collection of data involves extraction of relevant information concerning the key variables under study with an aim of obtaining the answers for research questions and the hypotheses (Sekaran&Bougie, 2011). The compliance department accounts of the forty (40) banks included in the study formed the data sources. CBK database and published financial statements between years 2014 to 2018of the 40commercial banks were the data sources for the dependent variable with a focus on net profit, assets, deposits, liabilities, equity among other pertinent information in the notes to the accounts.

3.5 Reliability and Validity

The instrument's reliability provides information about how free it is from random errors or to what extent it provides consistent results on repeated measurements (Kombo& Tromp, 2009). To address the reliability of the data, the Cronbach alpha coefficient was used with an alpha coefficient higher than the recommended threshold of 0.7 as a reliability indicator.

3.6 Data Analysis

Classification and tabulation of the raw data was carried out in order to summarize the results using minimum values, maximum values, means and standard deviations. Tables were used in presenting data outcomes using SPSS software. The connection between the eight variables both independent and the dependent variables, was determined using a multi-linear regression model. Inferential statistics and correlation testing, was also be carried out.

3.6.1 Diagnostic test

The tests were done on the secondary data in order to ensure that assumptions are not violated as well as test for normality and multi-collinearity. Before data is analyzed, a normality test was conducted using skewness and kurtosis to determine the normality of distribution of data in each of the variables used in the study. A multi-collinearity test was established to find the existence of any similarity among the model determinants. Variance Inflation Factor (VIF) assessed existence of correlation among the exogenous variables. A strong correlation would signify great similarity among the exogenous factors. Likewise, absence of multi-collinearity was an indicator of a good regression model.

3.6.2 Conceptual model

The model took the form:

$Y = f(Xi)$

Where;

$X =$ Independent variable

$i = 1 \ldots \ldots \ldots n$;

n = 7

3.6.3 Analytical Model

The analytical model was:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon$$

Where,

Y = Financial Performance (ROA)

X_1 = Control environment

X_2 = Risk assessment

X_3 = Control activities

X_4 = Monitoring

X_5 = Information and communication

X_6 = Bank size

X_7 = Bank age

$\alpha \& \varepsilon$ = constant and the error term

β_1 - β_7= Coefficients of the model

The model will be of great importance in showing the direct correlation which exists in both the endogenous variable and exogenous variables as outlined in the conceptual framework.

3.6.4 Operationalization of Variables

The table below presents details of the variable indicators, method of measurement and the variable type.

Table 3.1: Operationalization of study variables

Variable	Variable Indicators	Measurement	Variable Type	Source
Financial performance	Ratio of Net income to Total Assets	Percentage	Dependent variable	Balsam, Jiang & Lu (2014)
Control environment	Adherence to governance practices, competence of entity's personnel, effective assignment of authority and directives.	Ratio of control environment cost operations to total expenses	Independent Variable	Saleh, 2016
Risk assessment	New product lines and activities, changes in the operating environment, corporate restructuring and foreign operations.	Ratio of risk assessment cost operations to total expenses	Independent Variable	Ahmed &Muhammed , 2018
Control activities	Physical controls, independent checks, authorization procedures, segregation of duties.	Ratio of control activities cost operations total expenses	Independent Variable	Pinho, 2015
Monitoring	Frequent internal audits, regulatory inspections, transaction monitoring	Ratio of monitoring cost operations to total expenses	Independent Variable	Ahmed &Muhammed , 2018
Information and communication	Information needs, communication within management, upstream communication.	Ratio of information &communication cost operations to total expenses	Independent Variable	Saleh, 2016
Bank size	Bank's total assets	Absolute value (LN of total assets)	Control variable	Amato &Burson (2007)
Bank age	Number of years in operation	Absolute value (LN of number of years)	Control variable	Dietrich &Wanzenrie (2010)

3.6.5 Test of Significance

ANOVA tested the importance of both the model and exogenous factors where appropriate. T-test will examine the significance of the explanatory variables whereas the F-test will test regression equation significance.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATIONS

4.1 Introduction

This part covers presentation of analysis of results retrieved from the gathered data aimed to achieve the study objectives. Descriptive analysis and inferential insights which included regression analysis, correlation and Analysis of Variance (ANOVA) are also presented.

4.2 Descriptive Statistics

Control environment, risk assessment, control activities, monitoring, information &communication, bank size and bank age were the independent variables considered in the study while the dependent variable was return on assets. The descriptive statistics of both the exogenous and endogenous variables were carried out.

Table 4.1 Descriptive Analysis Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Control environment	200	.0000	.7794	.206230	.1165596
Risk assessment	200	.0000	.5313	.084893	.0682915
Control activities	200	.0000	.7875	.154351	.0980824
Monitoring	200	.0000	.5313	.077986	.0692571
Information &communication	200	.0000	.5313	.067556	.0631128
Bank size	200	.0000	27.1570	23.392605	5.2526913
Bank Age	200	.0000	4.81	3.0039	1.09224
Return on assets	200	-.3160	4.3550	.032457	.3094715
Valid N (listwise)	200				

The minimum figures for all exogenous variables were zero. This was as a result of a number of commercial banks inexistence within the first two years of the study period (2014-2018) hence no costs allocated for each of the internal controls. The maximum, mean and standard deviation of control environment was 0.7794, 0.206230 and 0.1165596 respectively. Since the standard deviation was less than 1, it implied very small deviations in control environment costs for various commercial banks. Risk assessment had a highest value as 0.5313, average as 0.084893 and a standard deviation of .0682915 indicating minimal variability. The maximum value of control activities was 0.7875; the average was 0.154351and 0.0980824as standard deviation implying a very low variability.

The maximum value of monitoring was 0.5313, 0.077986 as averagewith0.0692571 as standard deviation which meant low variability. Information and communication maximum and mean values were 0.5313 and 0.067556 with 0.0631128as the standard deviation value indicating a low variability. For bank size, the maximum, mean and standard deviation values was found to be 27.1570, 23.392605 and 5.2526913 respectively. Standard deviation for bank size was more than one indicating high variability in bank size. The maximum, mean and standard deviations for bank age were 4.81,3.0039 and 1.09224 respectively with the standard deviation value indicating high variability. The minimum value for return on assets was -0.3160, maximum value, 4.3550 mean, 0.032457 and a standard deviation of 0.3094715, which is less than 1 hence indication of low variability.

4.3 Correlation Analysis

This demonstrates how strongly pairs of variables are related.

Table 4.2 Correlation Analysis

	Contr-Env	Risk Asss	Control activities	Mon:	Info-Com	Bank size	BA	ROA
Contr-Env	1							
Risk Asss	.255**	1						
Control activities	.946**	.276**	1					
Monitoring	.336**	.850**	.367**	1				
Info-Com	.420**	.786**	.450**	.857**	1			
Bank size	.280**	.302**	.235**	.262**	.189**	1		
Bank Age	.017	.013	.008	-.008	-.092	.668**	1	
Return on assets	**-.131**	**-.007**	**-.124**	**-.115**	**-.128**	**.044**	**.128**	**1**

Key: *. Correlation is significant at the 0.05 level (2-tailed), **. Correlation is significant at the 0.01 level (2-tailed).Info-Com -Information &communication; Mon-Monitoring; Risk Asss - Risk Assessment; Contr-Env- Control environment; ROA- Return On Assets; BA - Bank Age

The study outcomes prove, there exists a negative and insignificant control environment and returns on assets association since correlation coefficient and p-value were -0.131 and 0.063respectively. Further, there was a negative association of risk assessment and ROA with a correlation coefficient of -0.007 and 0.924 as the p-value indicating the relationship was not significant. It was further confirmed that negative association existed between control activities and ROA since the correlation coefficient was -0.124. However, the relationship was insignificant because the P-value was 0.081, not less than 0.05. Monitoring had a negative but insignificant association with ROA. This was from -0.115 as the correlation coefficient and a p-value of 0.105. Information and communication correlation coefficient was -0.128and a P-value of 0.070. Finally, bank size and bank age correlation coefficients were 0.044 and 0.128 respectively showing an insignificant positive correlation with return on assets.

4.4 Regression Analysis

Table 4.3: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.265[a]	.070	.036	.3038269

The value of (R=0.265) represents the correlation coefficient implying positive association for the variables. The adjusted R square was 0.036 indicates 3.6% of control environment, risk assessment, control activities, monitoring, information &communication, bank size and bank age influence was captured in the model.

Table 4.4: Summary of One Way ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.335	7	.191	2.066	.049[b]
	Residual	17.724	192	.092		
	Total	19.059	199			

F statistic value at 5% significance level was 2.066with a significance of 0.049 which is lower than 0.05 hence statistically significant.

Table 4.5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.008	.100		.082	.935
	Control environment	-.391	.589	-.147	-.664	.508
	Risk assessment	1.572	.635	.347	2.476	.014
	Control activities	.260	.698	.082	.372	.710
	Monitoring	-1.250	.728	-.280	-1.718	.087
	Information & Comm.	-.575	.726	-.117	-.792	.429
	Bank size	-.002	.006	-.035	-.323	.747
	Bank Age	.039	.028	.136	1.362	.175
a. Dependent Variable: Return on assets						

From the regression results, the established regression equation took the form;

$$Y = 0.008 - 0.391X_1 + 1.572X_2 + 0.260X_3 - 1.250X_4 - 0.575X_5 - 0.002X_6 + 0.039X_7$$

The regression analysis shows how exogenous variables affect the dependent variable. The constant variable indicates that, with zero change of other factors, the value of financial performance value would be 0.008. The study exhibited that control environment negatively connects with financial performance. It implies increase by a unit of control environment pushes financial performance downwards by 0.391 units. Risk assessment had a direct relationship with financial performance which translates to increase by one unit of risk assessment will push financial performance upwards by 1.572 units.

Further the study confirmed that control activities was positively related to financial performance and increase in control activities by a unit pushes financial performance upwards by 0.260 units. Monitoring single unit increase pushes financial performance downwards by 1.250. Information &communication were found to have an indirect relationship with financial performance. Increase in information &communication diminishes financial performance by 0.575 units. Bank size had a negative contribution to financial performance and hence a single unit increase in bank size would reduce financial performance by 0.002 units. Bank age influence the financial performance positively. This indicated that single unit increase in bank age increases the financial performance by 0.039 units

It was further found that, control environment had a standardized beta coefficient of -0.147 implying that control environment weakly contributes to financial performance

changes. The standardized beta coefficient of risk assessment and monitoring were 0.347and -0.280 which implies that both risk assessment and monitoring exhibited a moderate influence on financial performance. The standardized beta coefficient of control activities was 0.082 meaning a weak control activities contribution on financial performance. The standardized beta coefficient of information and communication was -0.117which implies that information and communication has a weak effect on success of commercial banks. Bank size and bank age standardized beta coefficients were -0.035 and 0.136 indicating both had weak contribution to financial performance improvement of the commercial banks.

4.5 Interpretation of the Findings

According to the descriptive statistics, the bank size steadily increased over the study period recording the lowest value as zero, for the banks which had not existed within the first years of study period, and 27.1570 as the highest. Over the same studied period, the ROA of the commercial banks showed a great variation where some companies reported high returns on assets while others showed low returns on assets. This was significantly contributed by internal control systems adopted by commercial banks. The risk assessment fluctuated throughout the years understudy with the highest value of 0.5313 and mean value of 0.084893.

From the regression analysis, it was discovered that all the variables studied contributed to changes in returns on assets of the commercial banks. Risk assessment had a positive and significant linkage with returns on assets since the significance was 0.014 which is less than 0.05. The research also established control activities and bank age affects return

on assets positively. However, the association for the two independent variable and financial performance showed not critical at 5%significance level. This study further discovered control environment, monitoring, information &communication and bank size were observed to negatively influence financial performance which suggests that as the four variables increase, financial performance decreases.

The adjusted R square was 0.036. This infers the seven independent factors input 3.6% on the financial performance and the remainder of 96.4% is due to extra variables not examined. Generally, all internal control variables studied proved to contribute to changes in money related execution of banks in Kenya. This assessment concurs with the examination by Kioko and Wambugu (2017) who did internal controls and profitability of organizations included at NSE and inferred that control exercises and risk evaluation emphatically influenced profitability

CHAPTER FIVE

SUMMARY, CONCLUSIONs AND RECOMMENDATIONS

5.1 Introduction

This part shows a synopsis of findings of research, its conclusions, limitations and areas for further researches in regard to the conclusions.

5.2 Summary of the Findings

The researcher evaluated the internal controls and how they are attributable to changes in performance of Kenyan banks. CBK database and compliance reports between 2014 to 2018 of the 40 banks formed the data sources. The variables were investigated through analysis of regression. The value 3.6% for the adjusted R-square, implied that the internal control components (control of environment, assessment of risks, control exercises, monitoring, data &communication, bank size and bank age) contributed 3.6% to performance increase of banks in Kenya.

Correlation analysis showed all the internal control components studied had a negative correlation with assets return although the relationship was not critical at degree of 5% significance. Bank age and bank size exhibited positive but not critical association with return on assets at 5% significance level. Further, the following regression equation was established in investigating the contribution of internal controls on financial performance of commercial banks in Kenya;

$$Y = 0.008 - 0.391X_1 + 1.572X_2 + 0.260X_3 - 1.250X_4 - 0.575X_5 - 0.002X_6 + 0.039X_7$$

The regression equation exhibits that risk assessment, control activities and bank age contribute positively to financial performance of commercial banks. These results were found to be consistent with study by Kioko&Wambugu (2017) who did internal controls and financial output of banks and concluded that control activities and risk assessment positively affected the financial performance.

Risk assessment considers both internal and external threats and fundamentally institutes an early warning system to identify remote risks and take necessary actions to eliminate and reduce such risks thus increasing the financial performance of the commercial banks. The control activities in the banking sector involves preventive and detective measures and may consist of a combination of manual and computerized operations including verifications, endorsements and approvals, business performance reviews and reconciliations. Effective control activities improve the financial performance of the commercial banks. Control environment, monitoring, information &communication and bank size were observed to inversely contribute to changes in financial performance. This was contributed by low allocation of funds to cater for these components of internal controls which the banks felt were relatively ineffective.

The study also established that the organization size and returns on assets had a negative link. The firm's size can influence the financial performance of the firm negatively or positively. Large business entities can access most services at reduced costs due to their purchasing power for example finance, production and distribution compared to smaller companies who cannot afford the bulkiness of services. However, according to the small firm effect, smaller firms exhibit higher returns on assets due to their high-growth potential. Bank age positively influenced the financial performance of commercial banks

in Kenya. This was inconsistent with Dietrich and Wanzenrie (2010) conclusions that newly established banks depicted a relatively higher financial performance compared to the old ones.

5.3 Conclusions

From the correlation analysis, a weak negative correlation exists for control environment and financial performance with correlation coefficient of -0.131 and P-value 0.063>0.05. Risk assessment and ROA were negatively associated with a correlation coefficient of -0.007 and 0.924 as the p-value indicating the relationship was not significant. It was further confirmed that negative insignificant association existed between control activities and financial performance because the P-value of 0.081 > 0.05. Monitoring had a negative but insignificant relationship with ROA and P-value of 0.105. Information and communication correlation coefficient was -0.128and a P-value of 0.070. Finally, bank size and bank age positively correlated with financial performance. However, their relationship with ROA was insignificant because their P-values were higher than 0.05.

Following the regression examination result of this exploration, it infers that internal controls fundamentally add to the progressions in performance of banks in Kenya. This depends on the way that the regression model was significant at 5% criticalness. This was bolstered from the examination which affirmed that the internal control components which demonstrated the presence of the connection between internal controls and financial performance. This is in concurrence with Kioko and Wambugu (2017) who did internal controls and financial performance of organizations included at NSE and inferred

that internal controls, for example, control exercises and assessment of risks emphatically influenced the financial performance.

5.4 Recommendations

The researcher utilized control environment, risk assessment, control activities, monitoring, information &communication, bank size and bank age. The study found risk assessment, control activities and bank age to positively affect returns on assets of commercial banks. Bank managers should ensure early warning system are instituted to identify remote risks or risks with high probability of occurrence, and take necessary actions to eliminate and reduce such risks hence improving their financial performance.

Control activities had a positive influence on returns on assets. Increase in control activities' expenditure implies increased verifications systems, endorsements and approvals, business performance reviews and reconciliations. This in long run leads to increased return of firms which have adopted appropriate control activities to address the associated risks.

The management should therefore ensure effective and efficient internal controls are in place such as risk assessment and control activities in form of procedures and regulations are in place. Regular evaluation of the two components of internal controls should be undertaken to ensure they are effective and adequate to maximize risk detection.

5.5 Limitations of the Study

Aspects which are qualitative in nature were not captured by the secondary data which are also able to have an effect on the financial performance of commercial banks. Such

qualitative aspects include good corporate governance practices and good customer relations.

There was time limitation due to amount of work involved in the entire research process. In any research, time is of essence since it guarantees conclusive results.

The entire exercise needed more financing from the data gathering and analysis, writing materials and printing of the research work which called for total sacrifice to achieve the objectives. Despite the limited financial resources, the entire research process was successful.

5.6 Suggestions for Further Research

Study ought to be carried out for list of companies at NSE to understand the influence of internal controls on their financial performance and capture data on more independent variables. Primary data should also be utilized since it helps in capturing attitudes of employees towards implementation of key financial decisions.

A survey can be conducted to investigate how return on assets of investment firms is impacted by internal systems. This will help in the comparison of the profitability of the investment firms and commercial banks.

The research limitations also provide possibility for detailed research in future which include a similar study in future whose objective would be to reaffirm these findings for comparison purposes. Opportunity for further study is also available, which include carrying out a comparative study by focusing on SACCOs, commercial banks and investment firms on contribution of internal controls on their changes in performance.

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Appendix II: Commercial Banks in Kenya

1. ABC Bank (Kenya)Limited
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya
6. Chase Bank Kenya (In Receivership)
7. Citibank
8. Commercial Bank of Africa (currently NCBA Bank Kenya PLC)
9. Consolidated Bank of Kenya
10. Co-operative Bank of Kenya
11. Credit Bank
12. Development Bank of Kenya
13. Diamond Trust Bank
14. Dubai Islamic Bank
15. Ecobank Kenya
16. Equity Bank of (Kenya) Limited
17. Family Bank
18. First Community Bank
19. Guaranty Trust Bank Kenya
20. Guardian Bank Limited
21. Gulf African Bank
22. Habib Bank AG Zurich
23. HFC Bank Limited
24. I&M Bank
25. Jamii Bora Bank
26. KCB Bank Limited
27. Mayfair Bank
28. Middle East Bank Kenya
29. M Oriental Bank
30. National Bank of Kenya
31. NIC Bank Limited (currently NCBA Bank Kenya PLC)
32. Paramount Universal Bank
33. Prime Bank (Kenya)
34. SBM Bank Kenya Limited
35. Sidian Bank
36. Spire Bank
37. Stanbic Bank Kenya
38. Standard Chartered Kenya
39. Trans National Bank Kenya
40. Victoria Commercial Bank

APPENDIX II: RESEARCH DATA

Bank Name/Year	Control Environment	Risk assessment	Control activities	Monitoring	Information communication	Bank size(LN Size)	Bank age(LN age)	ROA
KCB2014	0.2253	0.1477	0.1690	0.1657	0.0563	26.6554	4.78	0.0593
2015	0.1970	0.1243	0.1477	0.1647	0.0492	26.8785	4.79	0.0452
2016	0.1657	0.1235	0.1243	0.1563	0.0414	26.9553	4.80	0.0494
2017	0.1647	0.1172	0.1235	0.1576	0.0412	27.0523	4.80	0.0423
2018	0.1563	0.1182	0.1172	0.1487	0.0391	27.1570	4.81	0.0425
Equity Bank2014	0.1576	0.1116	0.1182	0.1410	0.0394	26.3477	2.40	0.0726
2015	0.1487	0.1057	0.1116	0.1471	0.1477	26.5627	2.48	0.0559
2016	0.1410	0.1103	0.1057	0.1516	0.1243	26.6705	2.56	0.0528
2017	0.1471	0.1137	0.1103	0.1832	0.1235	26.7399	2.64	0.0490
2018	0.1516	0.1374	0.1137	0.1696	0.1172	26.8096	2.71	0.0450
The Co-operative Bank of Kenya Ltd 2014	0.1832	0.1272	0.1374	0.1407	0.1182	26.3676	3.85	0.0443
2015	0.1696	0.1056	0.1272	0.1930	0.1116	26.5549	3.87	0.0375
2016	0.1407	0.1447	0.1056	0.1764	0.1057	26.5863	3.89	0.0475
2017	0.1930	0.1323	0.1447	0.2158	0.1103	26.7043	3.91	0.0375
2018	0.1764	0.1619	0.1323	0.1696	0.1137	26.7576	3.93	0.0380
Barclays Bank of Kenya 2014	0.2158	0.1272	0.1619	0.1823	0.1374	26.1440	4.60	0.0544
2015	0.1696	0.1657	0.1272	0.1874	0.1272	26.2230	4.61	0.0393
2016	0.1823	0.1647	0.1368	0.1867	0.1056	26.2973	4.62	0.0331
2017	0.1874	0.1563	0.1405	0.1343	0.1447	26.3489	4.62	0.0275
2018	0.1867	0.1576	0.1400	0.1532	0.1323	26.5180	4.63	0.0208

Standard Chartered Bank (K) Ltd 2014	0.1343	0.1487	0.1007	0.0336	0.1619	26.1376	4.65	0.0417
2015	0.1532	0.1410	0.1149	0.0383	0.1272	26.1896	4.66	0.0258
2016	0.1574	0.1471	0.1180	0.1447	0.1368	26.2574	4.67	0.0339
2017	0.1675	0.1516	0.1256	0.1323	0.1405	26.3880	4.68	0.0205
2018	0.1868	0.1832	0.1401	0.1619	0.0467	26.3870	4.69	0.0247
Stanbic Bank Kenya Ltd 2014	0.1746	0.1696	0.1310	0.1272	0.0437	25.8670	1.95	0.0307
2015	0.1739	0.1407	0.1305	0.1368	0.0435	26.0222	2.08	0.0209
2016	0.1657	0.1930	0.1317	0.1405	0.0439	26.0538	2.20	0.0207
2017	0.1647	0.1764	0.1350	0.1400	0.0450	26.2092	2.30	0.0137
2018	0.1563	0.2158	0.1475	0.1007	0.0492	26.3884	2.40	0.0166
Diamond Trust Bank Kenya Limited 2014	0.1576	0.1696	0.0903	0.1149	0.0301	25.6733	3.04	0.0447
2015	0.1487	0.1823	0.0845	0.1180	0.0282	25.9786	3.09	0.0279
2016	0.1410	0.1874	0.0727	0.1256	0.0272	26.2243	3.14	0.0310
2017	0.1471	0.1867	0.0896	0.1401	0.0368	26.3251	3.18	0.0260
2018	0.1516	0.1343	0.0843	0.1310	0.0405	26.3683	3.22	0.0264
Commercial Bank of Africa Limited 2014	0.1832	0.1532	0.1147	0.1305	0.1400	25.8927	3.87	0.0257
2015	0.1696	0.0334	0.1001	0.1317	0.1007	26.0210	3.89	0.0269
2016	0.1407	0.0300	0.0901	0.1350	0.1149	26.0826	3.91	0.0308
2017	0.1930	0.0377	0.1130	0.1475	0.0180	26.1686	3.93	0.0273

2018	0.1764	0.0387	0.1160	0.0387	0.1256	26.1813	3.95	0.0273
I & M Bank Ltd 2014	0.2158	0.1477	0.0706	0.0235	0.1401	25.6454	2.94	0.0564
2015	0.1696	0.1243	0.0783	0.0261	0.0310	25.7237	3.00	0.0399
2016	0.1823	0.1235	0.0729	0.0243	0.0243	25.8281	3.04	0.0381
2017	0.1874	0.1172	0.0727	0.0242	0.0242	25.9424	3.09	0.0293
2018	0.1867	0.1182	0.0776	0.0259	0.0259	26.1596	3.14	0.0288
NIC Bank 2014	0.1343	0.1116	0.0928	0.0309	0.0309	25.6439	3.00	0.0444
2015	0.1532	0.1057	0.0912	0.0304	0.0304	25.7833	3.04	0.0307
2016	0.0336	0.1103	0.0875	0.0292	0.0292	25.8163	3.09	0.0288
2017	0.1265	0.1137	0.0949	0.0316	0.0316	25.9913	3.14	0.0242
2018	0.1452	0.1374	0.1089	0.0363	0.0363	25.9975	3.18	0.0248
Bank of Baroda (Kenya) Limited 2014	0.0743	0.1272	0.0557	0.0186	0.0186	24.8495	4.13	4.3550
2015	0.0754	0.1056	0.0565	0.0188	0.0188	24.9454	4.14	0.0316
2016	0.0641	0.1447	0.0481	0.0160	0.0160	25.1409	4.16	0.0408
2017	0.0572	0.1323	0.0429	0.0143	0.0143	25.2890	4.17	0.0467
2018	0.0626	0.1619	0.0470	0.0157	0.0157	25.5436	4.19	0.0362
National Bank of Kenya Ltd 2014	0.1626	0.1272	0.1219	0.0406	0.0406	25.5344	3.85	0.0190
2015	0.1652	0.0413	0.1239	0.0413	0.0413	25.5645	3.87	-0.0119
2016	0.2501	0.0625	0.1875	0.0625	0.0625	25.4841	3.89	0.0012
2017	0.2655	0.0664	0.1991	0.0664	0.0664	25.4446	3.91	0.0055
2018	0.2870	0.0718	0.2153	0.0718	0.0718	25.4967	3.93	0.0085
Prime Bank Ltd 2014	0.1272	0.0318	0.0954	0.0318	0.0318	24.7291	3.14	0.0418

2015	0.1286	0.0322	0.0965	0.0322	0.0322	24.9012	3.18	0.0289
2016	0.1407	0.0352	0.1056	0.0352	0.0352	24.9074	3.22	0.0271
2017	0.1597	0.0399	0.1198	0.0399	0.0399	25.0647	3.26	0.0201
2018	0.1620	0.0405	0.1215	0.0405	0.0405	25.3173	3.30	0.0179
Citibank N.A. Kenya 2014	0.1621	0.0405	0.1216	0.0405	0.0405	25.0977	3.93	0.0522
2015	0.1195	0.0299	0.0896	0.0299	0.0299	25.2023	3.95	0.0401
2016	0.1278	0.0320	0.0959	0.0320	0.0320	25.3611	3.97	0.0403
2017	0.1225	0.0306	0.0919	0.0306	0.0306	25.3106	3.99	0.0480
2018	0.1389	0.0347	0.1042	0.0347	0.0347	25.1790	4.01	0.0482
SBM Bank Kenya Ltd 2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2017.00	0.5667	0.1417	0.4250	0.1417	0.1417	23.2008	0.00	-0.0245
2018	0.1515	0.0379	0.1136	0.0379	0.0379	25.0049	0.69	0.0223
Family Bank Ltd 2014	0.1964	0.0491	0.1473	0.0491	0.0491	24.8474	2.08	0.0424
2015	0.2062	0.0515	0.1546	0.0515	0.0515	25.1264	2.20	0.0329
2016	0.2631	0.0658	0.1973	0.0658	0.0658	24.9726	2.30	0.0082
2017	0.3218	0.0805	0.2414	0.0805	0.0805	24.9692	2.40	-0.0171
2018	0.2435	0.0609	0.1826	0.0609	0.0609	24.9398	2.48	0.0054
Bank of India 2014	0.0931	0.0233	0.0698	0.0233	0.0233	24.2604	4.13	0.0374
2015	0.0899	0.0225	0.0674	0.0225	0.0225	24.4650	4.14	0.0307
2016	0.0678	0.0169	0.0508	0.0169	0.0169	24.5905	4.16	0.0419
2017	0.0678	0.0169	0.0508	0.0169	0.0169	24.7598	4.17	0.0437

2018	0.0661	0.0165	0.0496	0.0165	0.0165	24.8578	4.19	0.0378
HFC Ltd 2014	0.1766	0.0441	0.1324	0.0441	0.0441	24.8258	3.91	0.0212
2015	0.1662	0.0416	0.1247	0.0416	0.0416	24.9566	3.93	0.0244
2016	0.1607	0.0402	0.1205	0.0402	0.0402	24.9485	3.95	0.0200
2017	0.2280	0.0570	0.1710	0.0570	0.0570	24.8577	3.97	0.0059
2018	0.3314	0.0829	0.2486	0.0829	0.0829	24.7773	3.99	-0.0067
Ecobank Kenya Ltd 2014	0.4047	0.1012	0.3036	0.1012	0.1012	23.5320	1.95	-0.0278
2015	0.3095	0.0774	0.2321	0.0774	0.0774	24.6930	2.08	0.0012
2016	0.7462	0.1866	0.5597	0.1866	0.1866	24.5885	2.20	-0.0386
2017	0.1946	0.0486	0.1459	0.0486	0.0486	24.7102	2.30	-0.0184
2018.00	0.2032	0.0508	0.1524	0.0508	0.0508	24.7352	2.40	0.0025
Bank of Africa Ltd 2014	0.2606	0.0652	0.1955	0.0652	0.0652	24.8538	2.40	0.0033
2015	0.2549	0.0637	0.1912	0.0637	0.0637	24.9706	2.48	-0.0156
2016	0.2502	0.0625	0.1876	0.0625	0.0625	24.8347	2.56	-0.0002
2017	0.0566	0.0142	0.0425	0.0142	0.0142	24.7357	2.64	0.0005
2018	0.0661	0.0165	0.0496	0.0165	0.0165	24.6608	2.71	0.0014
Gulf African Bank 2014	0.2220	0.0555	0.1665	0.0555	0.0555	23.7155	2.08	0.0143
2015	0.1802	0.0451	0.1352	0.0451	0.0451	23.9381	2.20	0.0250
2016	0.2193	0.0548	0.1645	0.0548	0.0548	24.0322	2.30	0.0249
2017	0.2149	0.0537	0.1612	0.0537	0.0537	24.1743	2.40	0.0067
2018.00	0.2136	0.0534	0.1602	0.0534	0.0534	24.2661	2.48	0.0075
Victoria Commercial Bank Limited2014	0.1182	0.0296	0.0887	0.0296	0.0296	23.5743	2.94	0.0311

2015	0.1292	0.0323	0.0969	0.0323	0.0323	23.7242	3.00	0.0272
2016	0.1239	0.0310	0.0929	0.0310	0.0310	23.8373	3.04	0.0297
2017	0.1239	0.0310	0.0929	0.0310	0.0310	23.9852	3.09	0.0268
2018	0.1399	0.0350	0.1049	0.0350	0.0350	24.2045	3.14	0.0167
African Banking Corporation Ltd 2014	0.2486	0.0621	0.1864	0.0621	0.0621	23.7885	3.04	0.0149
2015	0.2396	0.0599	0.1797	0.0599	0.0599	23.8207	3.09	0.0139
2016	0.2601	0.0650	0.1951	0.0650	0.0650	23.8378	3.14	0.0088
2017	0.2690	0.0673	0.2018	0.0673	0.0673	23.9390	3.18	0.0073
2018	0.2687	0.0672	0.2015	0.0672	0.0672	23.9956	3.22	0.0059
Guaranty Trust Bank2014	0.1926	0.0482	0.1445	0.0482	0.0482	24.2213	3.00	0.0191
2015	0.2083	0.0521	0.1563	0.0521	0.0521	24.1064	3.04	0.0147
2016	0.2037	0.0509	0.1528	0.0509	0.0509	24.1160	3.09	0.0183
2017	0.2140	0.0535	0.1605	0.0535	0.0535	24.0478	3.14	0.0074
2018	0.2258	0.0565	0.1694	0.0565	0.0565	23.9621	3.18	0.0101
Sidian Bank Ltd 2014	0.1885	0.0471	0.1413	0.0471	0.0471	23.4984	2.77	0.0432
2015	0.2037	0.0509	0.1528	0.0509	0.0509	23.6884	2.83	0.0256
2016	0.2661	0.0665	0.1996	0.0665	0.0665	23.7719	2.89	0.0026
2017	0.3336	0.0834	0.2502	0.0834	0.0834	23.6987	2.94	-0.0216
2018	0.2755	0.0689	0.2066	0.0689	0.0689	23.9658	3.00	-0.0103
Habib Bank AG Zurich2014	0.1331	0.0333	0.0999	0.0333	0.0333	23.2203	3.61	0.0458
2015	0.1662	0.0415	0.1246	0.0415	0.0415	23.3933	3.64	0.0313

2016	0.1600	0.0400	0.1200	0.0400	0.0400	23.5584	3.66	0.0329
2017	0.1984	0.0496	0.1488	0.0496	0.0496	23.6522	3.69	0.0198
2018	0.2346	0.0587	0.1760	0.0587	0.0587	23.7911	3.71	0.0146
Credit Bank Ltd2014	0.2719	0.0680	0.2039	0.0680	0.0680	22.9054	3.04	-0.0102
2015	0.2737	0.0684	0.2053	0.0684	0.0684	23.0692	3.09	-0.0129
2016	0.2250	0.0562	0.1687	0.0562	0.0562	23.2418	3.14	0.0086
2017	0.2309	0.0577	0.1732	0.0577	0.0577	23.4125	3.18	0.0064
2018	0.2313	0.0578	0.1734	0.0578	0.0578	23.6185	3.22	0.0125
UBA Kenya Bank Ltd2014	0.6160	0.1540	0.4620	0.1540	0.1540	22.2856	1.79	-0.0653
2015	0.5925	0.1481	0.4444	0.1481	0.1481	22.7776	1.95	-0.0370
2016	0.2977	0.0744	0.2233	0.0744	0.0744	22.4508	2.08	0.0074
2017	0.3040	0.0760	0.2280	0.0760	0.0760	22.6005	2.20	0.0019
2018	0.3155	0.0789	0.2367	0.0789	0.0789	23.4529	2.30	0.0029
Guardian Bank Limited2014	0.1758	0.0440	0.1319	0.0440	0.0440	23.4023	3.00	0.0259
2015	0.1999	0.0500	0.1499	0.0500	0.0500	23.4063	3.04	0.0200
2016	0.1808	0.0452	0.1356	0.0452	0.0452	23.4129	3.09	0.0184
2017	0.2312	0.0578	0.1734	0.0578	0.0578	23.4849	3.14	0.0130
2018	0.2077	0.0519	0.1557	0.0519	0.0519	23.4991	3.18	0.0140
First Community Bank Ltd2014	0.2946	0.0737	0.2210	0.0737	0.0737	23.4637	1.95	0.0068
2015	0.2829	0.0707	0.2122	0.0707	0.0707	23.4208	2.08	0.0007
2016	0.2918	0.0730	0.2189	0.0730	0.0730	23.4453	2.20	-0.0025
2017	0.2236	0.0559	0.1677	0.0559	0.0559	23.5930	2.30	0.0111
2018	0.3361	0.0840	0.2521	0.0840	0.0840	23.5535	2.40	-0.0168

Development Bank of Kenya Ltd2014	0.1515	0.0379	0.1136	0.0379	0.0379	23.5538	2.94	0.0188
2015	0.2164	0.0541	0.1623	0.0541	0.0541	23.5531	3.00	0.0096
2016	0.2337	0.0584	0.1752	0.0584	0.0584	23.5217	3.04	0.0052
2017	0.2821	0.0705	0.2116	0.0705	0.0705	23.5157	3.09	0.0032
2018	0.2458	0.0615	0.1844	0.0615	0.0615	23.4526	3.14	0.0088
Consolidated Bank of Kenya Limited2014	0.2880	0.0720	0.2160	0.0720	0.0720	23.4364	3.26	-0.0182
2015	0.2232	0.0558	0.1674	0.0558	0.0558	23.3827	3.30	0.0032
2016	0.3196	0.0799	0.2397	0.0799	0.0799	23.3725	3.33	-0.0183
2017	0.3372	0.0843	0.2529	0.0843	0.0843	23.3449	3.37	-0.0237
2018	0.3299	0.0825	0.2475	0.0825	0.0825	23.2878	3.40	-0.0349
Trans-National Bank Limited2014	0.2311	0.0578	0.1733	0.0578	0.0578	23.0562	3.43	0.0166
2015	0.2225	0.0556	0.1669	0.0556	0.0556	23.0869	3.47	0.0217
2016	0.2287	0.0572	0.1715	0.0572	0.0572	23.0869	3.50	0.0138
2017	0.2803	0.0701	0.2102	0.0701	0.0701	23.1192	3.53	0.0042
2018.00	0.3242	0.0810	0.2431	0.0810	0.0810	23.0752	3.56	-0.0037
Jamii Bora Bank Ltd 2014	0.2607	0.0652	0.1955	0.0652	0.0652	23.2973	1.61	0.0073
2015	0.2321	0.0580	0.1741	0.0580	0.0580	23.5500	1.79	0.0020
2016	0.3698	0.0924	0.2773	0.0924	0.0924	23.4864	1.95	-0.0272
2017	0.5923	0.1481	0.4442	0.1481	0.1481	23.2911	2.08	-0.0474
2018	0.3411	0.0853	0.2558	0.0853	0.0853	22.9980	2.20	-0.0606
M-Oriental Commercial	0.1988	0.0497	0.1491	0.0497	0.0497	22.7848	3.18	0.0107

Bank Ltd2014								
2015	0.2287	0.0572	0.1716	0.0572	0.0572	22.8629	3.22	0.0049
2016	0.1940	0.0485	0.1455	0.0485	0.0485	23.0188	3.26	0.0031
2017	0.2139	0.0535	0.1604	0.0535	0.0535	23.0830	3.30	0.0097
2018	0.2046	0.0511	0.1534	0.0511	0.0511	23.0801	3.33	0.0086
Paramount Bank Ltd2014	0.0937	0.0234	0.0703	0.0234	0.0234	23.0653	3.04	0.0132
2015	0.1880	0.0470	0.1410	0.0470	0.0470	23.0797	3.09	0.0143
2016	0.1894	0.0474	0.1421	0.0474	0.0474	22.9699	3.14	0.0101
2017	0.2197	0.0549	0.1648	0.0549	0.0549	22.9823	3.18	0.0090
2018	0.2132	0.0533	0.1599	0.0533	0.0533	23.0114	3.22	0.0077
Spire Bank Limited - formerly Equitorial2014	0.2152	0.0538	0.1614	0.0538	0.0538	23.5352	3.00	-0.0262
2015	0.4111	0.1028	0.3083	0.1028	0.1028	23.3995	3.04	-0.0387
2016	0.3951	0.0988	0.2963	0.0988	0.0988	23.3547	3.09	-0.0637
2017	0.7794	0.1948	0.5845	0.1948	0.1948	23.1452	3.14	-0.1193
2018	0.4998	0.2625	0.7875	0.2625	0.2625	23.1077	3.18	-0.0511
Mayfair Bank Ltd2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	21.9946	0.00	-0.0831
2018	0.1525	0.3811	0.1434	0.3811	0.3811	22.6600	0.69	-0.0358
Middle East Bank (K) Ltd2014	0.2340	0.0585	0.1755	0.0585	0.0585	22.5045	3.56	0.0128
2015	0.2565	0.0641	0.1924	0.0641	0.0641	22.4675	3.58	0.0052

2016	0.3847	0.0962	0.2885	0.0962	0.0962	22.3867	3.61	-0.0144
2017	0.3452	0.0863	0.2589	0.0863	0.0863	22.3659	3.64	-0.0063
2018	0.3349	0.0837	0.2512	0.0837	0.0837	22.4056	3.66	-0.0083
DIB Bank Kenya Ltd2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000
2017	0.1782	0.4547	0.1336	0.4547	0.4547	21.6960	0.00	-0.3160
2018	0.2125	0.5313	0.1594	0.5313	0.5313	22.3527	0.69	-0.1682