

**RELATIONSHIP BETWEEN ASSET SECURITIZATION AND FINANCIAL
PERFORMANCE OF LISTED COMMERCIAL BANKS IN KENYA**

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DECLARATION AND RECOMMENDATION

Declaration by Student

I declare that this thesis is my original work and has not been presented for a degree or any other award in any other university.

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Recommendation

We confirm that the work reported in this thesis was carried out by the candidate under our supervision.

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DEDICATION

This work is dedicated to Grace Njeri and everyone who desires to see positive change in the Kenyan banking system.

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ABSTRACT

The economic aspect of any nation is strengthened by a well-regulated and managed banking sector. Most commercial banks in Kenya are faced with low financial performance because of capital deficiency, liquidity deficiency and non-performing loans due to defaulted loans. This study examined the relationship between asset securitization and financial performance of listed commercial banks in Kenya. The objectives of the study assessed the influence of asset-based securities, mortgage backed securities and collateralized debt obligation on financial performance of listed commercial banks in Kenya. It adopted three theories which were: regulatory arbitrage theory, convenience yield theory and credit creation theory. Application of descriptive survey research design when collecting data using closed-ended questionnaires from 11 listed commercial banks in Kenya was applied. The required information was provided by risk managers, finance managers, compliance managers and operations managers. All the listed commercial banks were included since the population was small. To ensure validity and reliability, pre-testing of questionnaires was done by eight respondents who were selected by simple random technique. The collected data was then coded using the SPSS 24.0 computer program. The coded data was analyzed quantitatively using the descriptive statistics where mean, percentage and standard deviation were computed. Inferential statistics was used. Linear regression was used to test hypothesis while multiple regression was used to test the overall model. Results were presented using tables, graphs and detailed explanations. The study established that asset backed securities, mortgage backed securities and collateralized debt obligations positively and significantly influence financial performance of listed commercial banks in Kenya. However, collateralized loan obligations' influence is weak. There was hence a weak positive relationship between collateralized debt obligations and financial performance in listed commercial banks in Kenya. The study concluded that asset backed securities improve financial performance; mortgage backed securities on average improve financial performance; and collateralized debt obligations do not improve financial performance of the listed commercial banks. The study recommended that commercial banks should expand their horizon by incorporating bancassurance products to improve asset backed securities. The commercial banks ought to finance mortgages that have adopted new technology such as fabrication of shipment containers. Government of Kenya should develop policies to guide commercial banks from going bankrupt due to default by mortgage borrowers. The banks should raise awareness and educate the public on what CDOs entail and how they are operated. This study was valuable to commercial banks as they are able to realize the essence of asset securitization and its implication on financial performance of banks. Through this study, commercial banks would learn to incorporate more diverse assets that have tied their capital so as to back securities that once sold, generates new source of revenue.

TABLE OF CONTENTS

DECLARATION AND RECOMMENDATION	ii
COPYRIGHT	iii
DEDICATION.....	iv
ACKNOWLEDGEMENT.....	v
ABSTRACT.....	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
ABBREVIATIONS AND ACRONYMS.....	xii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the study	1
1.2 Statement of the problem	10
1.3 Purpose of the study	12
1.4 Research objectives	12
1.5 Research hypothesis	12
1.6 Significance of the study	13
1.7 Scope of study	15
1.8 Limitations of the study.....	15
1.9 Assumptions of the study	16
1.10 Definition of operational terms	17
CHAPTER TWO	19
LITERATURE REVIEW	19
2.1 Introduction	19
2.2 Theoretical literature	19
2.3 Mortgage-backed security and financial performance of commercial banks	29
2.4 Collateralized debt obligations and financial performance of commercial banks ..	36

2.5 Theoretical Review	44
2.6 Conceptual frame work	49
2.7 Operationalized framework.....	50
CHAPTER THREE	52
RESEARCH METHODOLOGY	52
3.1 Introduction	52
3.2 Research design.....	52
3.3 Location of the study.....	52
3.4 Target population	53
3.5 Sampling techniques and sample size	54
3.6 Research instrumentation	55
3.7 Data collection procedure.....	57
3.8 Data analysis and presentation	58
3.9 Measurement of variables	59
3.10 Ethical consideration	61
CHAPTER FOUR.....	62
RESULTS AND DISCUSSION	62
4.1 Introduction	62
4.2 Response rate.....	62
4.3 Test of reliability	63
4.4 Background Information	63
4.5 Diagnostic Tests	65
4.6 Descriptive Statistics on Financial Performance.....	69
4.7 Influence of Asset Backed Securities (ABS) on financial performance	72
4.8 Influence of Mortgage Backed Securities (MBS) on Financial Performance.....	87
4.9 Influence of Collateralized Debt Obligations (CDOs) on financial performance...	97
4.10 Hypothesis Testing	106
4.11 Inferential statistics	109

CHAPTER FIVE	113
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	113
5.1 Introduction	113
5.2 Summary of Findings	113
5.3 Conclusion of the study.....	115
5.4 Recommendations of the study	116
5.5 Suggestions for future research	117
REFERENCES.....	119
APPENDICES	149

LIST OF TABLES

Table 3.1: Target population	54
Table 4.1: Reliability test statistics	63
Table 4.2: Work duration.	64
Table 4.3: Multicollinearity test.....	66
Table 4.4: Test of Heteroskedasticity.....	68
Table 4.5: Asset securitization descriptive statistics.....	70
Table 4.6: Financial performance.....	71
Table 4.7: Descriptive Analysis of Automobile Securities.....	73
Table 4.8: Credit card securities descriptive analysis.....	75
Table 4.9: Royalty securities descriptive analysis.....	78
Table 4.10: Corporate debt securities descriptive analysis.....	81
Table 4.11: Insurance receivables / securities descriptive analysis.....	83
Table 4.12: Asset backed securities model summary.....	85
Table 4.13: Asset backed securities coefficients.....	86
Table 4.14: Residential mortgage backed securities descriptive analysis.....	88
Table 4.15: Commercial mortgage backed securities descriptive analysis.....	90
Table 4.16: Collateralized mortgage backed securities descriptive analysis.....	93
Table 4.17: Mortgage backed securities model summary.....	95
Table 4.18: Mortgage backed securities coefficients.....	96
Table 4.19: Collateralized loan obligations descriptive analysis.....	98
Table 4.20: Collateralized bond obligations descriptive analysis.....	100
Table 4.21: Collateralized credit derivatives descriptive analysis.....	102
Table 4.22: Collateralized debt obligations model summary.....	104
Table 4.23: Collateralized debt obligations coefficients.....	105
Table 4.24: ANOVA for Asset Backed Securities and Financial Performance	106
Table 4.25: ANOVA for Mortgage Backed Securities and Financial Performance	107
Table 4.26: ANOVA for Collateralized debt obligations and Financial Perform...	108
Table 4.27: Multiple linear regression analysis model summary.....	110
Table 4.28: ANOVA for Asset securitization and financial performance.....	111
Table 4.29: Multiple linear regression analysis.....	112

LIST OF FIGURES

Figure 2.1: Conceptual framework.....	49
Figure 2.2: Operational framework.....	50
Figure 4.1: Normal Q-Q Plot	67

ABBREVIATIONS AND ACRONYMS

ABS	Asset Backed Security
AFME	Association for Financial Markets in Europe
ASIFMA	Asia Securities Industry & Financial Markets ...
CBK	Central bank of Kenya
CBOs	Collateralized Bond Obligations
CDO	Collateralized Debt Obligations
CLO	Collateralized Loan Obligations
CMA	Capital Market Authority
CMBS	Commercial Mortgage-Backed Security
EBA	European Banking Authority
FDI	Foreign direct investments
MBS	Mortgage-Backed Security
NIM	Net Interest Margin
NPLs	Non-performing loan
ROA	Return on Asset
ROE	Return on Equity
RMBS	Residential Mortgage-Backed Security
SIFMA	Securities Industry and Financial Markets Association
SPV	Special purpose vehicle

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The economic aspect of any nation is strengthened by a well-regulated and managed banking sector. The Kenyan government through central bank has provided regulations and measures that Kenyan commercial banks uphold for strong and reliable financial results (Banking Act chapter 488, 2015; Central Bank of Kenya, 2018a, 2018b, 2017). These regulations and measures involve restructuring programs in the banking industry. Programs that are meant to improve resource allocation and productivity are put into place to foster superior performance. Financial innovation of packaging commercial banks loans into financial market products through asset securitization is an example of such a program. This chapter therefore provides background of the study on financial performance where measurable financial performance indicators like net interest margin, return on asset and return on equity are described. This is followed by asset securitization, problem statement, study's purpose, objectives of the research, hypothesis of the research, study's significance, scope, limitations, and study's assumptions. This chapter concludes by providing a definition of terms.

1.1.1 Financial Performance

Financial Performance is the extent to which an organization uses its resources to generate income (Greenwood & Boyan , 1990). A different definition indicates that it is a degree of organization's overall financial fitness over a stretch of economic periods.

Comparison of the same organizations in the same field or other fields is made possible through financial performance (Jayawardhena & Foley, 2000). A definition given by Jayawardhena and Foley in 2000 is used in this study because a firm is established to go through fluctuations in its business cycle to achieve its financial achievement. After a period of time, financial health of a firm determines how shareholders get value for their investments (Makkar & Singh, 2017). Commercial banks are monetary firms that are required to receive payments from clients and lend money to borrowers (Ernst & Young, 2018). They provide transactional, savings and money market accounts to their clients. Banking Act chapter 488 (2015) elaborates that any establishment that participates in banking business but do not include Central Bank of Kenya is a bank. It further state that a banking business accepts money deposited in its accounts and avails the money once the owner needs it or at the end of agreed fixed time.

The bank also lends money deposited by its clients to borrowers at a risk of default. Commercial banks have a goal of achieving maximum level of profitability. They use every strategy economically possible to achieve this goal as a way of adding value to shareholders' wealth (Chepkorir, 2018; Ongore & Kusa, 2013). Literature shows that organizations measure financial performance differently. For example, organizations in insurance industry use debt leverage to measure financial performance. The ratio of total debt to equity (debt/equity ratio) measured debt leverage. This ratio indicates how money borrowed in insurance companies' is utilized and helped to determine economic exposure to unexpected losses management (Wanjugu, 2014). Return on assets and asset turnover ratio are used to measure organization's financial performance in agriculture industry (Bailey, 2017). Return on assets is resultant from dividing post-tax revenue by entire

assets. Labor is deducted from net income upfront before dividing it by total assets. (Bailey, 2017). Asset turnover ratio is a measure of performance that show how resourcefully farm assets are generating revenues (Bailey, 2017).

Organizations in automotive industry use gross revenue fraction, net revenue fraction, operating revenue fraction and equity fraction to measure financial performance (Ramya & Kavitha, 2017). Gross Profit Ratio is the ratio of gross profit to net sales. Net profit fraction is the net profit fraction after taxes to sales. Operating revenue ratio is the ratio of firm's operating expenses to revenue. Equity ratio is the ratio of equity of the shareholders to assets. In construction industry, organizations use revenue before tax ratio, return on assets, active capital fraction, disbursement ratio of the dividends and equity of the shareholders (Rajasekhar, 2017). In this research, financial performance of commercial banks is characterized by ROA, ROE and NIM. This is because ROA, ROE and NIM are recognized by CBK as financial performance measures in Kenya, and are also used globally to measure various commercial banks' performance for ranking purposes (Central bank of Kenya [CBK], 2018a). Furthermore, Ally (2013) indicates that there are no huge mean changes in terms of profits in many banks in term of ROA only. However, there are noteworthy mean changes of revenues through ROE and NIM.

In order to determine how effectively bank's resources are used to create income, return on asset had to be calculated. Return on asset is the ratio derived from commercial bank's income to its assets. That is, dividing income that has already been deducted interest from liabilities by average assets of the bank (Muluaem, 2015; Ojiambo, 2014). Return on equity relates to the amount of revenue generated in a bank to its value of equity. The Return on equity is the ratio of bank's income to equity (Muluaem, 2015).

NIM is the change between interest revenue created through a bank and interest compensated to creditors comparative to assets value (Khrawish, 2011). It is derived as a percentage of difference between earned interest on banks assets such as loans and debts interest divided by assets' worth from income earned in a financial year. The financial performance of a bank is crucial towards the stability of the financial sector which has a potential effect on economic growth (Kanwal, 2014).

There have been low post crisis net profit margins and return on equity as compared to pre-crisis levels in America (Weigand, 2016). Inadequate auditing, misstated regulatory reports, operational shortages, congestion, interest rates that are low and weak capital base of less than 19.5 percent relative to the risk-weighted assets have affected Asian banks such as Nepal banks and Japan banks; European banks such as Deutsche Bank in Germany and Banco Espirito Santo in Portugal (Acharya & Steffen, 2014; Economist, 2018; Enrich et al., 2014; Weigand, 2016; Weigand, 2015). This has gone to an extent of formulating laws that allows banks transfer risks to depositors. These laws allow banks default on deposit insurance when a systematic crisis arises and even look for protection from creditors. This eventually leads to financial failure that exposes the banks to huge risks. (Acharya & Steffen, 2014; Coppola, 2014; Deloitte, 2019; Weigand, 2016; Jha & Xiaofeng, 2012).

Low income levels in many African countries have caused uneven distribution of revenues generated by banking sectors. This have made banks in African nations like South Africa, Nigeria, Egypt, Angola, and Morocco account for 68 percent of total Africa banking revenue pool while the remaining 49 countries represents only 32 percent (International Monetary Fund [IMF], 2014; African Development Bank Group [AfDB],

2014). Commercial banks in African nations like South Africa, Nigeria, Tunisia, Ethiopia and Rwanda have turned to financial innovations such as trade financing, mobile banking, debit and credit card banking and ATM banking (AfDB, 2017; Gichungu & Oloko, 2015; Nguena, 2019). This has been done with an aim of boosting their performance and facilitated improvement of income levels among African nations (AfDB, 2017). 90 percent of commercial banks in East, North, and West Africa have actively engaged in trade finance. South African banks and Central Africa commercial banks accounts for 87 and 82 percent respectively (AfDB, 2017).

Low financial performance due to capital, liquidity deficiencies and fraudulent activities has been experienced among commercial banks in Kenya (Kamande et al., 2016). This is emphasized by Kaneza (2016) who indicates that quality of assets has immensely deteriorated the financial results of many banks in Kenya. ROE and ROA decreased significantly in many banks because of upsurge in defaulted credits (Kaneza, 2016). These issues among others have been found to compel banks into replacing traditional banking methods with alternative financial innovations such as securitization to improve their financial performances (Ngari et al., 2014). Commercial banks in Kenya have been offering e-banking, Islamic banking, mobile banking, agency banking, m-pesa services, debit and credit card banking and ATM banking to overcome financial challenges (CBK, 2013; Cook & McKay, 2017; Mabwai, 2016; Monica, 2016; Muasya, 2014; Muiruri, 2017; Njoroge & Mugambi, 2018). However, there are only three credit rating agencies licensed to operate in Kenya whose responsibilities are to evaluate the relative creditworthiness of issuers of securities and assigning ratings to such securities (Capital Market Authority website, 2014). Main issuers of securities are banks. The low

number of only three agencies shows the idea of asset securitization is not so rampant in many commercial banks in Kenya.

1.1.2 Asset securitization

Asset securitization is a system used by commercial banks to change illiquid assets such as car loans, trade receivables and mortgage loans into securities that could be traded (Deloitte, 2018a). Dong (2017) defines asset securitization as a process that involves packing illiquid loans or bond assets through a special purpose vehicle so that there are stable cash flows, improved credit status and converting packages into securities through tranche techniques to improve their sale to investors in the financial markets. Asset securitization in this study means the financial innovative process of converting illiquid loans and other receivables through special purpose vehicle and separate tranches into tradable securities that have stable cash flow to investors in financial markets. Asset-backed securities issued by tranches, have different risk ratings and revenues (Cerasi & Rochet, 2014). An asset-backed security usually has three tranches: class A, B and C. The highest credit rating is AAA, which is supported by junior tranches. The class B and C tranches pay higher yields for the reason that they had a lower credit rating (Deloitte, 2014).

Mostly involved assets in securitization include automobile loans, credit card receivables, residential mortgages, commercial mortgages, personal loans, commercial loans and bonds. By issuing securitized assets through asset backed notes, investors purchase the notes thereby freeing up bank capital assets such as long-term loans. This allow banks to issue more credit (IMF, 2015). If pooled assets liquidate faster, a special purpose vehicle issuer is granted access to utilize revenue generated through accumulated

assets to purchase more like assets from commercial banks hence increased financial performance in banks (Persistent Energy Capital, 2016). Slow growth and low returns have been evident after the financial crisis of 2008 as the banking global revenue growth was 3 percent in 2016 from an average of 6 percent over the preceding five years (Global banking, 2018). Lehman Brothers which was Wall Street's leading financial firm, filed for bankruptcy in 2008 with over 600 billion dollars of assets.

The bank became so much involved in risky mortgage assets securitization. It had become a real estate hedge fund hidden as an investment bank. This involvement exposed it to losses when market meltdown occurred. The meltdown of the market for asset-backed commercial paper which began in August 2007 was caused by high default from sub-prime mortgage borrowers causing capital losses to many money funds. Following the bankruptcy of Lehman Brothers, a run was experienced as many people wanted to withdraw their money affecting the reserve primary fund. This fund had been invested in commercial papers backed by mortgages from Lehman brothers (Kanwal, 2014; Kozubovska, 2016). Out of fear of loss, people from other funds withdrew their money accounting to \$300 billion dollars just days after bankruptcy was announced. This instigated 2008 financial catastrophe in the world (Chadha, 2016; Mawutor, 2015). Securitization markets were blamed for the crisis and as a result, there was need to reform and regulate them more. It involved reducing high risk activities banks engaged when securitizing.

This resulted to decline in bank's asset securitization issuance in continents such as Europe and America (AFME, 2017). The decline caused lower profits generated from securities rather than other banking transactions. Decline in securitization which

previously provided various incentives to commercial banks to improve their financial performance, kept banks' profits low even after financial crisis 2008 (Bank for International Settlements [BIS], 2018). That notwithstanding, productivity enhancement and spread of risk to different stakeholders in securities markets, are some of the efforts that have been applied to restore securitization (Mersch, 2017). There is asset mix in issuance of asset backed securities, mortgage backed securities and collateralized loan obligations by banks in America. In Europe, investments of long-dated sovereign bonds by economically-struggling countries like Portugal, Spain and Ireland of other European nations has been experienced (AFME, 2019). Cheap funding of Asian banks in Korea, India, and China has been made possible through trading asset backed securities, mortgage backed securities and collateralized debt obligations securities (IMF, 2014).

Eurobonds issuance by African banks in Nigeria, Ghana, Zambia Gabon, Rwanda and Kenya has been evidenced (Acharya & Steffen, 2014; AfDB, 2014; Deloitte, 2014). Asset securitization over time has changed the structure of financial intermediation and is shaping the future of traditional commercial banking. There is therefore need for keen evaluation to avoid any crisis in future that would inhibit bank's performance. Some banks are able to allocate capital effectively, access different cost friendly funding sources and manage credit risks through use of securitization. Non-banks firms such as hedge funds have provided competition to commercial banks as they attract banks' market shares and profitability in loan securities making banks to adopt some of their practices which are very challenging and risky. This pressure put on banking industry to securitize more through originating loans as much as possible, has kept the industry on focus to clearly understand the benefits and inherent risks associated with securitization

(Comptroller's Handbook, 1997). The Central Bank of Kenya has dispensed prudential guidelines that provides a framework for managing risk. These guidelines are part of ensuring that commercial banks which dominate the finance sector do not have any failure which would result to negative effects in the economy such as contagion effects (Ronoh, 2015).

1.1.3 Listed commercial banks in Kenya

Central Bank of Kenya, leads in banking sector as the regulatory authority, followed by forty-two commercial banks, one mortgage finance company, thirteen microfinance banks, nine epitomizing offices of foreign banks, seventy-four foreign exchange bureaus, nineteen remittance providers and three credit reference bureaus (Central Bank of Kenya [CBK], 2018a). From the forty-two commercial banks in Kenya, only eleven Kenyan banks were listed on Nairobi Securities Exchange. They included Barclays Bank, Stanbic Holdings, I&M Holdings, Diamond Trust Bank Kenya, HF Group, KCB Group, National Bank of Kenya, NIC Group, Standard Chartered Bank, Equity Group Holdings and Co-operative Bank of Kenya (Nairobi Securities Exchange, 2019). These banks were categorized by Central bank of Kenya as large banks (CBK, 2018). In 2018, they comprised 70 percent of the total banking industry deposit base and net asset value base (CBK, 2018a). Their financial performance is therefore very significant since they have the capacity to securitize their assets largely on capital markets.

However, an increasing trend in rate of losses from defaulted loans which are the main banks assets raised concerns of the future of asset securitization in Kenya (CBK, 2018a; 2017). This has resulted to poor performance causing bank run in large banks

such as Chase bank (Kamande et al., 2016). Losses from defaulted loans cause risky assets in securitization process. Risky assets in commercial banks have played part before in increasing systematic risk across the financial sector in developed nations such as America (Aikman et al., 2018; Aikman et al., 2015; IMF, 2019; Lee et al., 2018). As asset securitization is growing in Kenya, commercial banks have a challenge of ensuring that they do not follow the path followed by banks in developed nations which plunged the whole world into financial crisis (CMA, 2018). Large banks such as Lehman Brothers who were believed to be large enough not to fail closed (Adams & Gramlich, 2014). This was as a result of allowing risky assets in securitization process (Adams & Gramlich, 2014; Federal Reserve Bank of Richmond, 2015).

1.2 Statement of the problem

An effective and regulated asset securitization structure motivates commercial banks to improve their financial performance (Banco de españa, 2015). This is through true sale of illiquid assets like loans that are for long duration packaged into marketable securities in the capital markets. By trading illiquid assets, commercial banks held-up capital in the long-term loans is freed to offer more credit to clients (Deloitte, 2018b; Nikolova et al., 2016; Zhi, 2017) When there is adequate capital, liquidity is enhanced leading to improved financial performance in commercial banks (Cheruiyot, 2016; Mburu, 2017; Mohanty, 2015; Musyoka, 2017; Nzioka, 2015).

Unlike that, listed commercial banks' profitability is low despite asset securitization taking place in Kenya (Banking Act chapter 488, 2015; CBK, 2017). In 2017, big banks such as Standard Chartered Bank profit after tax deteriorated by 38 percent to Ksh4.73 billion. Co-operative Bank of Kenya's profit after tax was Ksh9.57

billion from Ksh10.54 billion which was a decline of 9.5 percent, Equity Bank's profit after tax was Ksh14.6 billion which was three percent fall. KCB's total profit after tax was the same as the previous year which was Ksh15.072 billion (CBK, 2017). These low profits caused central bank of Kenya to allow banks from 1st January to 31st December, 2018 to charge their increased loan-loss provisions against the retained earnings on the statement of affairs and not in the income statement (CBK, 2018b). This is only allowed in the first year of the International Financial Reporting Standards 9 regime, providing a temporary solution to low profitability problem (Institute of Certified Public Accountants of Kenya, 2017).

Despite this support, total risk weighted assets in commercial banks in Kenya have grown by 5.2 percent and non-performing loans have risen by Ksh63.8 billion to Ksh298.4 billion from Kshs 234 billion in 2017 (CBK, 2018a). Guidelines from Capital Market Acts do not provide clear direction on how to effectively measure and price credit risks originating from securitized loans (Capital Market Authority, 2018; Mbugua, 2014; Mutegi, 2016). When credit risk is not measured, less emphasis is put on proper scrutiny of borrowers during loan issuance allowing loopholes of loan defaults. Failure to address this issue, increases excessive leverage problems among commercial banks in Kenya. This eventually causes systematic financial crisis in Kenya. The systematic crisis is the main cause of 2008 financial crisis in America and other continents such as Europe, Asia and Africa (Ba, 2017; Nyakundi, 2015).

Previous studies have debated on whether asset securitization being a recent innovation causes stability or fragility in commercial banks in the long-run (Shin, 2009; Jiangli et al., 2007; Cebonoyan & Strahan, 2004; Demarzo, 2005; Di Cesare, 2009;

Dionne & Harchaoui, 2003). However, it is noted that investing in risky unsecured assets and laxity on the part of regulators, affects bank's profitability causing failure. Therefore, more supervision and disclosure are appropriate for averting any forthcoming financial catastrophes instead of allowing big banks to fail (Kozubovska, 2016; Mawutor, 2014). No local studies have been done in relation to relationship between asset securitization and financial performance of listed commercial banks in Kenya. This gave this study a need to look at how asset backed securities, mortgage backed securities and collateralized debt obligation influenced financial performance of listed commercial banks in Kenya.

1.3 Purpose of the study

The purpose of the study was to examine the relationship between asset securitization and financial performance of listed commercial banks in Kenya with an aim of establishing the extent of influence of each construct of asset securitization.

1.4 Research objectives

- i. To assess the influence of asset backed securities on financial performance of listed commercial banks in Kenya.
- ii. To determine the influence of mortgage backed securities on financial performance of listed commercial banks in Kenya.
- iii. To evaluate the influence of collateralized debt obligations on financial performance of listed commercial banks in Kenya.

1.5 Research hypothesis

Ho1: Asset backed securities did not significantly influence financial performance of listed commercial banks in Kenya.

Ho2: Mortgage backed securities did not significantly influence financial performance of listed commercial banks in Kenya.

Ho3: Collateralized debt obligations did not significantly influence financial performance of listed commercial banks in Kenya.

1.6 Significance of the study

Banking institutions funds have always been tied up in long-term loans and mortgages exposing them to liquidity risk and default risk associated with borrowers. Asset securitization makes it possible to transfer a portion of this risk to investors. As a result, freed up capital promotes liquidity in the bank hence increased financial performance. This in the long-run cause growth in the assets hence the banks become going concern for many years to come. This study therefore will benefit banks by providing information on the connection that exists between asset securitization and financial performance. The new financial innovation that comes from asset securitization will free up bank's capital for improved financial performance.

Non-banking institutions such as insurance companies that have interest in securities will know the performance of asset backed securities, mortgage backed securities and collateralized debt obligations. This will help them understand how securitization is faring in Kenya. This study will assist investors constrained to available financial instruments on how to make investment decisions when considering securitization products such as asset backed securities, mortgage backed securities and collateralized debt obligations.

The results from this study will benefit financial regulators. They would be enlightened on the problems affecting securitization and the recommended regulations

and procedures that boost the financial performance. Empirical evidence from this study on connection between asset securitization and financial performance would enable shareholders shape their expectations and forecasts about the shift in their wealth.

A commercial bank views deposits from its customers as liabilities to pay with interest. By understanding how securitization is faring in Kenya, a deposit account holder will have a basis to bargain for more interest from the banks. This is because since the bank is securitizing, liquidity is assured and plenty.

Shareholders who are the owners of the bank are concerned to know whether asset securitization maximized their wealth. Any product or financial innovation endorsed by the bank benefits the owners once it is operationalized. This is due to the fact that owners have allowed their investments to be used in operations of the banks, hence reap maximum benefit from the venture. Therefore, this study will provide information to shareholders on wealth maximization aspect of asset securitization.

Kenya's economy requires huge financial support to fulfill financial requirements of Vision 2030. Knowledge gotten from this study about the kind of securitization products available in Kenya attracts foreign direct investments (FDI) that have higher returns than other financial instruments. This will result to improved economy.

Academicians and researchers, who in future would wish to study more on asset securitization in Kenya, will find this research useful. This study will provide relevant and foundational information that will assist in the future studies. This study contributes to new knowledge in finance when the connection between asset securitization and financial performance of listed commercial banks in Kenya is clearly established. There

is currently little literature that exists about securitization in Kenya. Therefore, information about securitization is expanded.

1.7 Scope of study

This study was done in Kenya. Data was collected from all listed Kenyan banks. In the year 2018, listed commercial banks contributed 70 percent of the total banking industry deposit base and net asset value base (CBK, 2018a). This created the need to look at why Kenya's listed commercial banks were struggling with performances yet utilizing financial innovations such as asset securitization. Therefore, the main information collected was on asset backed securities, mortgage backed securities, collateralized debt obligations, and financial performance of listed Kenyan banks.

This study did not scrutinize other indicators of financial performance in commercial banks such as deposit liabilities. Primary data was provided by head of departments in risk, finance, compliance and operations departments while published financial reports was consulted for secondary data especially in analyzing Kenyan commercial banks' financial performance.

1.8 Limitations of the study

There was little time in-which asset securitization was practiced hence did not give extensive trend for examination. In Kenya, asset securitization market began by passing of asset backed securities' Act of Capital Market Authority in 2007. However not until 2014 did asset backed securities market really start in capital market with banks packaging their loans into securities and was viewed as an awakening in the Kenyan banking sector (Capital Market Authority, 2018; Ernst & Young, 2018). At the time of

this study, it was only four years since banks began securitizing hence deep understanding of securitization by respondents was limited. This was minimized by use of closed ended questionnaires. Closed ended questionnaires guided respondents on how to answer the questions using a 5 ordinal Likert scale on each of the variables. Another limitation was the measures used in analyzing financial performance of listed commercial banks in Kenya changed every financial year due to various factors. For example, number of total assets owned by developing commercial banks change every year due to deposit-taking and loan-creating activities (Nguyen, Tripe & Ngo, 2018). This was minimized by not examining indicators such as deposit liabilities of commercial banks.

1.9 Assumptions of the study

This study is guided by the assumption that asset securitization is governed by inclination of the economy to distribute assets to investors who had more information about asset prices. This assumption ensured that partiality was minimized to know the exact connection between asset securitization and financial performance of listed Kenyan banks.

1.10 Definition of operational terms

Asset backed security

This is a marketable security dispensed through notes which is secured by predictable future cash movements from revenue generating pool of underlying assets that are small, illiquid and unable to be sold individually to disperse risk (Giron & Chapoy, 2012; Loutskina & Strahan, 2009).

Asset securitization

Asset securitization is a system used by commercial banks to change illiquid assets such as car loans, trade receivables and mortgage loans into securities that were traded (Deloitte, 2018a).

Collateralized bond obligations

Collateralized bond obligations are securitized by corporate bonds (Investopedia, 2013).

Commercial mortgage-backed securities

They are more complex and volatile securities emanating from commercial mortgages which contain multiple pools of securities referred to as tranche (Mbugua, 2014; Deloitte, 2014).

Credit card receivables

Credit card receivables are non-amortizing assets since their cash flows are interest, principle payment and annual fees (Dong, 2017; Viva Africa Consulting [VAC], 2016).

Residential mortgage-backed securities

They are securities that have cash yields paid to investors that come from cash payments from homeowners who pay interest and principle according to lending terms they have with the lenders (Mbugua, 2014).

Special Purpose Vehicle/Entity (SPV/SPE)

This is an entity involved in buying banks assets such as loans. They pooled assets together to form a huge pool of assets that were repackaged as securities traded in the capital market (Deloitte, 2014).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews prior studies related on the connection between asset securitization and the financial performance of listed Kenyan banks. A theoretical framework is then presented followed by the conceptual framework.

2.2 Theoretical literature

An asset backed security is a type of marketable security issued through notes which are secured by predictable future cash movements from revenue generating pool of underlying assets that were small, illiquid and unable to be sold individually to disperse risk (Giron & Chapoy, 2012; Loutskina & Strahan, 2009). Asset backed security is commonly used to address securities backed by assets that are not mortgages (Chen, 2018; Siew, 2003). Types of asset backed securities include automobile loans payments, credit card receivables, royalty receivables, corporate debt receivables and insurance receivables (Dong, 2017; Mbugua, 2014; SIFMA, 2018). Automobile loans and credit cards receivables are the major types of asset backed securities considered in this study because they are long-term securities hence reliable over different business cycles (Dong, 2017). On the one hand, automobile loans are amortizing assets because their cash flows comprise of monthly interest, principle payment and prepayment. Credit card receivables on the other hand, are non-amortizing assets since their cash flows are interest, principle payment and annual fees (Dong, 2017; Viva Africa Consulting [VAC], 2016).

The key indicators of asset backed securities in a bank include asset backed securities issuance volume, outstanding volume and outstanding addendum (SIFMA, 2019). According to SIFMA (2019), asset backed securities issuance volume entail how many assets backed securities distributed to investors while asset backed securities outstanding volume put into light the balances of asset backed securities that the bank has not been able to distribute to investors due to various reasons. The reasons for this as noted by SIFMA includes low markets and retained part of asset backed securities by the originator so as to send signals to investors to buy more. Asset backed securities outstanding addendum explains further collateral type of each of asset backed securities in details for example, if issuance volume showed automobile securities were 5,000 in a particular year, outstanding addendum showed what constituted the 5,000 in automobile securities such as motorcycle, cars, buses and lorries.

An effective asset backed security is issued in form of different tranches which have a lifespan that was long-term (Rehman & Tigerschiöld, 2015). Dong (2017) additionally notes that asset backed securities have static SPV fund management. According to Dong, static SPV fund management occurs when an organization is having a constant fund payment schedule whereby changes in the business cycle do not affect the payments of the securities (Dong, 2017). Other requisite for asset backed securities are the two forms of payments which are principle and interest payments (Rehman & Tigerschiöld, 2015). Depending on the agreement between the party paying and the bank, principle payments are paid once to reduce the whole estimated amount issued by a bank while interest payments occur monthly, quarterly or semi-annually to equal the remaining loan obligation multiplied by agreed coupon rate.

2.2.1 Asset backed securities issues and advances in developed nations

Originally, securitizations in automobile loans and bank credit cards were developed by commercial banks in America in 1980s (Xingyun, 2015) while credit card securitization grew prior the 2008 financial crisis. As at the completion of 2007, the outstanding debt balance was 323 billion dollars (Diamond Hill Capital Management [DHCM], 2018). Credit card issuance was highest with 95.7 billion dollars in 2007. In 2008, credit card issuance was 55 billion dollars declining to 51.5 billion dollars in 2009 (DHCM, 2018). In 2010, 6.5 billion dollars credit card issuance was the lowermost position since 1980s (DHCM, 2018). Available literature indicated that credit card industry has since recovered and grown. A recent report from DHCM (2018) shows that an issuance average of 36.7 billion dollars from 2013 to 2017. By September 2018, it had an issuance of 25.8 billion dollars. Credit card securitization took the lead in all classes of asset backed securities with 108 billion dollars outstanding balance as at September 30, 2018 (DHCM, 2018).

Deeper understanding of credit card securities was required since previous studies such as (Riley, 2019; Engelen & Glasmacher, 2018; Buchanan, 2016) shows that transactions relating to credit cards securitization struggled during the financial crisis of 2008. This struggle was experienced when many credit cards securities were written off due to increment from 3.5 percent to 10 percent of defaulted credit card receivables (Riley, 2019). Riley (2019) explains the important financing tools used by issuers on the legal and logical precepts followed on credit card securities. Riley (2019) indicates that commercial banks in America among others originators of credit card accounts and season accounts, sold credit cards securities portfolios to investors so as to generate income that was reinvested to add new credit card holders. Riley (2019) explains further

those lenders who securitized had market advantage over those who did not securitize since they were able to minimize expenses through economies of scale. Riley (2019) insinuates that over the next ten years, credit card securities would grow due to slow growth of America's public debt. However, a study done by Consumer Finance Protection Bureau in July 2019, contradicts the future growth of credit card securities in America. This was due to high revolving balance of two-thirds active credit cards in America (Consumer Financial Protection Bureau [CFPB], 2019).

Balance repayment duration averaged to 10 months and 15 percent of the cases took 2 years to repay back the balances. Consequently, CFPB concluded that the securities backed by credit cards in America could decline in future creating a gap of study to ascertain the influence of securitization towards monetary achievement of Kenyan banks where public debt was escalating (National Treasury of Kenya [NTK], 2018). In Europe, European Banking Authority consumer trends report (2017) indicates that European Union (EU) lawmakers approved a new credit card payment Services Directive (PSD2), which began being applied on 13th January 2018. PSD2 ensured competition, eased origination, endorsed client suitability and customer safety, reinforce of security and contributed to the individual EU expenses economy. There was a concern to understand developments done in Kenyan market in relation to securitization products in banks.

The Study by Dong in 2017 on influence of securitization on the functioning of banks in America, Europe and Asia, found out that typical nonpayment proportion had noteworthy correlation with securitized assets. This caused banks not to report default rates which eventually resulted to systematic risk. The findings from this study which did

not concentrate on African continent blends further with another study done by Australian Securities and Investments Commission on credit card lending in the Australian market between 2012 and 2017. According to the study, 18.5 percent of card holders are struggling with repayment of debt which involves 1.9 million customers (Australian Securities and Investments Commission, 2018). The study elaborates further that 178,000 accounts were defaulted causing them to be written off posing risk of unproductive securities in capital markets. However, the study did not explain how they sampled the three cities which were Melbourne, Sydney and Brisbane to represent the entire continent of Australia. Another gap found out in this study is that the 16 respondents' number of interviews conducted are too few to rely on their responses for such a high impact conclusion. This created a gap to evaluate whether cost of credit has gone down or not in Kenyan banks after asset securitization began in 2014.

Automobile loans being the most established collateral class for asset backed securities in developed nations such as America, were least affected during the financial crisis of 2008 (Karaoglu, 2005; Loeser, 2016; Ossa, 2014). This conclusion agrees with a study done by Diamond hill Capital management in 2018 that over the years, automobile asset backed securities has evolved with time. It offered various wide structures and opportunities for investment managers and banks to use auto-loans as collateral (DHCM, 2018). In agreement, a report on second quarter by Federal Reserve Bank (FRB) in November 2018 indicated that auto loans outstanding balances were 1,129 billion dollars in America. This is 3.5 percent growth from second quarter in 2017 and was growing at 9.7 percent since 1997 (Federal Reserve Bank [FRB], 2018).

Learning from the US experience during the financial crisis of 2008, the Chinese regulators, Peoples Bank of China and China Banking Regulatory Commission, issued a governing structure to monitor securitization market (Ngwu et al., 2017). It comprises of six main types: backing assets, formal access consent, risk holding, credit ranking, facts revelation and financier obligations (Ngwu et al., 2017). Underlying assets inspired banks' attention on main system in connection to the state business rule. According to Ngwu et al. (2017), facts revelation necessitated an advanced openness level from all members in the securitization. Boosting further the process, every securitization transaction is subjected to two reputable credit rating agencies (Chen, 2016; Peoples Bank of China, 2013). The reviewed outline entails that the originating bank to hold 5% of every category of the securitized assets which amplifies the risk holding of the banks (Ngwu et al., 2017).

In 2018, China's securitization issuance had 42% year-over-year growth (Deloitte, 2019). This made Chinese banking industry size to surpass that of the European Union (EU). In 2017, large banks in China had 15.3 percent in terms of ROE (Deloitte, 2019). In 2018, Chinese four large banks were among the top large banks in the world and interestingly China did not have any bank on the top world's large banks list in 2007 (Deloitte, 2019). A major concern in China ABS is unsteady development of the regulations which has a huge risk to the real estate region and the entire economy. Another worry is the high population of state-owned banks causing the crowding effect of the private sector (IMF, 2011; Ngwu & Chen, 2016). In light of these developments, there was need to understand whether regulations had any impact on asset securitization

in Kenya which was inhibiting listed commercial banks to improve their financial performances.

An Asian nation such as South Korea also expanded after ABS transactions were introduced but non-ABS Act securitization market still remains a challenge to them. This is because non-ABS Act securitization market such as subprime mortgage market is bigger than ABS act securitization market due to procedural requirements under the asset backed securities Act, such as registration of a securitization plan (Kwon, Sohn & Ko, 2019; ASIFMA, 2018). Lack of secondary market liquidity affects India despite it having the largest product class advantage with growing retail loan portfolio of banks, growing housing finance market and investors' knowledge with underlying assets (ASIFMA, 2018; Dong, 2017). There was a gap to establish if Kenyan banks securitization's profitability growth is affected by subprime mortgages lenders which issue unregulated mortgages. There was also a need to look at the liquidity of Kenyan banks after asset securitization was introduced to understand whether indeed liquidity had been enhanced or not.

2.2.2 Asset backed securities issues and advances in developing nations

In developing nations such as Africa, the concept of securitizing automobile loans and credit cards receivables is still growing with some countries like Ghana not practicing it at all (Ngwu et al., 2017; Quacoe et al., 2015). This is attributed mostly due to non-performing loans slowing down advance of new loans and low usage of credit cards fetching low market for asset backed securities in many developing nations (Ngwu et al., 2017). Beginning with automobile loans securitization, it has not been high in

Africa due to high depreciation in most cars used (Ngwu et al., 2017; United Nations environment, 2018). As noted by United Nations environment, when depreciation is higher than loan balance, the value of the vehicle is fewer than remaining balance in the securities. This results to risky asset problem to investors. United Nations environment heightened further by indicating second hand cars are bought more than new ones in most African countries.

Countries such as Ethiopia and Nigeria used vehicle imports accounts for 80% of all vehicle sales and the rate of vehicle fleet is growing. For example, in Ethiopia, there is 10 percent growth in import of second-hand vehicles. Considering the fact that most of Kenyan population's car financing is made by banks when car loans are issued, there was need to evaluate the impact of the 12% growth in vehicle fleet in Kenya on automobile securities growth in Kenyan banks (Kenya Bankers Association, 2019). This is because 96% of Kenyan vehicles imported into the country are second hand. This has a high depreciation value which is eventually translated into asset securitization in banks as automobile securities loose value at very high rate (United Nations environment, 2018).

A study done by Abata (2015) proves that among other valid reasons, Nigerian banks have too many non-performing loans leading to nine big banks to have low capital adequacy ratio. This study was in concurrent with 2018 Ghana Banking Survey report which showed that banks in Ghana generally slowed down advancement of new loans in 2017 so as to recover defaulted loans hence a uniform decline in loans and advances. A country like Liberia has only four commercial banks branches and two automated teller machines per 100, 000 adult population (IMF, 2016). This means that people in that country are very limited to access credit cards and automobile loans let alone the idea of

securitizing. Questioning the quality of assets that are used in securitization processes in developing nations, presence of low minimum retention requirement (MRR) which gives accountability of originators has raised concerns (Financial Stability Board, 2013).

MRR was established as a core improvement of securitization regulations in global securitization after financial crisis 2008 (Financial Stability Board, 2013). Ngwu et al. (2017), puts into light that though credit card securitization is being practiced in a developing country like South Africa, it has not been applying the MRR hence taking less consideration of securitized assets quality. There was therefore a gap to ascertain the accountability status of credit card and automobile loans issuance in Kenya.

Malak (2014) on South Sudan's banks, establishes that commercial banks are in the process of establishing credit cards among other modern payment systems. Malak did not explain how the study sampled the 28 banks population in South Sudan to have a target sample of 18 banks. In Uganda according to World Bank (2017), there was slow growth of people in Uganda who had access to credit card from 1.87 percent in 2011 to 2.32 percent in 2017. This means that credit card securitization is slowed down by low credit card issues in East Africa. A need arose on fathoming the credit card issuance volumes in our Kenyan listed commercial banks. This would be achieved on looking at the levels of credit card securities issuance and retained volumes.

Kenyan ABS trading in capital market began in 2014, seven years after passing of asset backed securities Act of Capital Market Authority (CMA) in 2007 (CMA, 2018). However, lack of proper management of financial innovations by banks, illiquidity and risky assets in Kenyan market affects its growth. For example, few matchings of bids and offers resulting to high transactional costs compelled CMA to issue new guidelines that

ensured risk transferred from seller to buyer was shared to reduce pool of negative correlated assets. Issuers of asset backed securities such as banks hold equity in SPV carrying the securities or acquire a percentage of asset backed securities (CMA, 2018; Mutegi, 2016; Mbugua, 2014). These guidelines do not clearly spell out how credit risk is measured so as to be able to coherently price the securities. Study such as Irungu (2014) proclaimed that if financial innovations are properly managed, credit risk is minimized since bank financial innovations positively influence credit risk management. In support of this, Muita (2015) confirms that securitizing credit card receivables which are a form of financial innovation eliminates all interest rate risk in them.

However, interest rate risk cannot be eliminated but reduced because when securitizing credit cards, originators are required to hold a portion of assets securitized. This created a gap to study what proportions are the listed Kenyan banks retaining as part of reducing risks. Muita (2015) (as cited Furletti, 2002) in their study on outlining payment cards center notes the need for more studies in regards to credit cards receivables securities to promote more understanding of its influence on industry's profitability and growth. Muita (2015) sample size of 25 respondents from eleven credit banks in Kenya were too small comparing to the normal desired sample size of 30 respondents to make a thorough conclusion. This shows that there are currently few studies that caused developments in understanding asset securitization especially credit cards. This created need to add more literature on relation between asset securitization and financial performance. This in the long term enabled different stakeholders comprehend asset securitization phenomenon.

2.3 Mortgage-backed security and financial performance of commercial banks

Mortgage-backed security is a type of marketable security that is issued through notes and collateralized by mortgage receivables (Deloitte, 2018a; Dong, 2017). These receivables are sold to investment banks who pack the loans together into securities that investors buy. The types of mortgage-backed securities include residential mortgage-backed security, commercial mortgage-backed security and collateralized mortgage obligations (Dong, 2017; Mbugua, 2014). The two types of mortgage-backed securities at the center of this study are residential mortgage-backed security and commercial mortgage-backed security. This is because both the residential and commercial mortgage backed securities are arranged into different tranches based on the potential risk of the loan (AFME, 2013; Deloitte, 2014).

The highest tranches are paid first while the lowest tranches are paid last in case of a loan default (AFME, 2013). This study ascertained how the two types of mortgage-backed securities get affected by various different types of loan default risks. On the one hand, the residential mortgage-backed securities are securities that have cash yields paid to investors that come from cash payments from homeowners who pay interest and principle according to lending terms they had with the lenders (Mbugua, 2014; Deloitte, 2014). On the other hand, the commercial mortgage-backed securities are more complex and volatile securities emanating from commercial mortgages that contain multiple pools of securities referred to as tranche (Deloitte, 2014; Mbugua, 2014). The description of collateralized mortgage obligations exonerates them from this study because of their unattractive low income as compared to residential mortgage backed securities and

commercial mortgage backed securities due to their nature of being highly diversified reducing risk to least levels (Dong, 2017).

The key indicators of mortgage backed securities include issuance volume and outstanding volume. Mortgage backed securities issuance volume entail how much mortgage loans are issued to investors while mortgage backed securities outstanding volume give account to balances that have either been retained to signal more investors to buy or when there is low market for the mortgage backed securities. Also noted is that a good mortgage backed securities has static SPV fund management and interest rate sensitive (Dong, 2017). A rise in interest rates causes the cost of borrowing to increase. This reduces the demand for mortgages hence low returns on mortgage backed securities (Mang'era, 2014). The duration in which the mortgage backed securities is undertaken is long-term so as to earn good interests to investors (Dong, 2017).

2.3.1 Mortgage backed securities issues and advances in developed nations

The modern time mortgage securitization in America began in the 1970s when mortgage bankers pooled their lately originated residential mortgages and issued residential mortgage-backed securities. Securitization market growth in 1980s and 1990s attracted other unregulated players in a field that was originally done by commercial banks (Dong, 2017). Poor regulation led to compromise of standards for lending such as presence of teaser interest rates and sub-prime residential mortgage which opened a door for many more sub-prime mortgages (Hanweck, 2014; Palmer, 2015). Sub-prime mortgages in America were a significant contributing factor to financial crisis, 2007-2008 since more than 70 percent in 2007 from 35 percent in 2000 of securitized subprime

mortgages did not conform to the underwriting standards (Beck, Claessens, & Schmukler, 2012).

This caused defaults in commercial banks which led to liquidity risk, contagion risk, common shock, leverage and financial shock which was as high as 30 percent in all securitization sectors hence leading to a decline in the financial performance of these entities (Buchanan, 2014; Dabas & Bakri, 2018). Adverse selection issues arose when offering mortgage products such as residential mortgage backed securities and commercial mortgage backed securities to borrowers. Borrowers not having complied with full documentation especially self-employed ones, made lenders not able to verify properly their income levels in developed nations such as America, Europe and Asia which made many borrowers amplify their proceeds to get higher mortgages (ASIFMA; 2018; Buchanan, 2014; Frame, 2017; Garmaise, 2013; LaCour-Little & Yang, 2013a).

Previous studies such as by Frame (2017) who investigated agency conflicts in residential mortgage securitization in America shows that mortgage securitization itself is not a problem, but rather the origination of risky loans. This narrative has given lenders in America a good reason to retain risk as part of securitization deals. However, other studies disagree on this. A good example is a study by Willen (2014) which indicates that large commercial banks in America during housing boom increased their risk exposure by retaining too much credit risks. This made them suffer huge losses when financial crisis of 2008 was experienced (Willen, 2014).

A report by Federal Deposit Insurance Corporation (2019) shows concern over commercial mortgage loan balances increasing due to competition by commercial banks to maintain market share in deteriorating loan growth. Notably, commercial banks have

shifted focus on financing on already constructed property rather than financing construction of property. According to a study by Kim et al., (2018), on liquidity crises in the mortgage market, concentration of commercial banks on one area has left non-banks to finance half of all mortgages in America. Non-banks have few resources to handle a financial crisis when it occurs exposing the mortgage industry in developed nations such as America to a future financial crisis yet again. There was need to know whether non-banks in developed nations were financing mortgages specifically in Kenya. This would be achieved when mortgage backed securities issuance volume and retained volumes were known.

A more recent report on first quarter 2019 by Office of Comptroller of the Currency Mortgage Metrics, who collected data from large mortgage banks and firms in America, sheds more light. This report indicates that mortgage performance has slightly increased to 96.2 percent as at March 2019 by 0.4 percent from 95.8 percent at March 2018. The report further shows that commercial banks had issued 16.7 million new residential mortgages within this period. Out of these 16.7 million residential mortgages, there were unpaid principle balances worth 3.7 trillion dollars which was 31 percent of all America's residential mortgage debt outstanding. This means that residential mortgage backed securities would be affected in future due to issuing residential mortgage loans to unqualified borrowers. Considering Kenyan listed commercial banks, there was more need to know the ratio between income generated from mortgage backed securities sold and the issue volumes.

In Europe the concept of securitization developed in 1980s where residential mortgage backed securities market emerged in United Kingdom. This was a result of

competition from banks participation in building society. United Kingdom through its banks became a pioneer in asset securitization transactions. Countries such as Belgium, Germany, Netherlands, Italy, and Spain also followed in residential mortgage backed securitization. Residential mortgage-backed securities growth in due time led to shortage of funds in stock market. As a result, economic slowdown presence made residential mortgage backed securities market fall into recession in 1990s. In 1996, the economy seemed to be recovering and this made residential mortgage backed securities to grow in the United Kingdom. The European Commission, the European Central Bank and the Bank of England came up together to revive and restart securitization in Europe since it was labeled as the major reason of the 2008 financial crisis (AFME, SIFMA, 2019). ASIFMA (2018) report shows that European securitization market is steadily recovering from the financial crisis of 2008 though at a slow pace as to what is expected. For example, banks gained EUR 180 billion in 2013, EUR 237 billion in 2017 and € 269 billion in 2018 out of securitization (ASIFMA, 2018). Stability of securitization in Europe could be questioned since this report indicated that in 2013 to 2016, securitization declined significantly before improving in 2017.

Recently, the Europe Regional Network and World Green Building Council (2017) boosted mortgage lenders in Europe to encourage energy efficient buildings. This is because securities that are secured against mortgages with poor performances attributable to environmental regulations and preference of the consumers, have increased the overall default risk profile. This reduces systematic risk in the long-run. This study is supported by Buildings Performance Institute Europe (2014) report that plots steps that are followed when energy efficient buildings would begin. This involves providing vital

information on building owners, occupiers and real estate actors' decision making when it comes to costs allocations.

The EBA consumer trends report of 2017 puts into perspective the introduction of Mortgage Credit Directive (MCD) which began from 21st March 2016. MCD ensures that EU nations have a more transparent and competitive mortgage market which has fair credit agreements. The lenders are issued with common EU lending standards that are considered when issuing a mortgage unlike before every lender had their own criterion of assessing the borrowers. Consumer protections are emphasized in MCD whereby they are given the right to repay their mortgages earlier than the contracted time without penalties.

2.3.2 Mortgage backed securities issues and advances in developing nations

A study by World Bank (2016) on housing finance shows developing nations like Brazil's mortgage backed securities have not been performing well in issuance volumes due to high biased market. Though Brazil is funded by World Bank to develop its mortgage market, 95 per cent of its mortgage issues are private allocations which are a small mortgage backed securities market share. There was need to know the performance of mortgage backed securities issuance status in Kenyan listed commercial banks.

South Africa set pace in Africa when it issued through Johannesburg Stock Exchange, a 20 years R250m of unsecured redeemable mortgage backed securities in 1989 which was to mature in 2009. The main aim of this nature of venturing was to get experience in securitization rather than liquidity increment, and improve asset/ capital ratio (Mbugua, 2014). Following years, growth in securitization is evident especially after amendment of securitization regulations in 2001 which initiated first residential mortgage backed securities program in South Africa followed by first Asset Backed Securities

(ABS) program. World Bank (2015) report on mortgage finance project performance assessment in Arab republic of Egypt shows that mortgage issuance in Egypt has grown over the past years. Commercial banks are active when it came to mortgage lending. For example, mortgages rose from 300 million in 2006 to 5,232 million in 2013, but as the mortgages rose, so did the unpaid balances rise. In 2015 they were one half of 1 percent of growth domestic product.

As Africa is growing into an investment hub for investors from developing and developed economies, there are developments made to foster securitization growth in African countries. In 2018, African Development Bank (AfDB) made an announcement to transfer risk entrenched, that is, US\$ 1 billion in loans already made by the AfDB to a group of investors, for a fee. This is seen as a remarkable step towards securitization growth in Africa although it is under-utilized as 98 percent of securitization instruments are mostly issued in developed nations and only 2 percent in developing nations such as Africa (Waithaka & Ngugi, 2013). Under developed laws and regulations governing mortgage securitization in countries such as Nigeria, Uganda and Burundi cause borrowers' default on a high rate inhibiting mortgage securitization growth (Hossain & Chowdhury, 2015; Munene 2010; Persistent Energy Capital, 2016).

This weakness in securitization growth in Africa has attracted World Bank attention. A review by Clegg (2017) reveals that in 2015, Tanzania was offered 60 million dollars by World Bank so as to boost housing micro-finance and mortgage market extensions. This move is seen remarkable to a point that Government of Nigeria in West Africa adopted the same technique. Government of Nigeria reserved 5 per cent of 300 million dollars for improvement of home improvement micro-loans. A nearer perspective

to know how Kenya is utilizing securitization products such as mortgage backed securities would be established in this study. A closer look in Kenya's market shows that apart from undeveloped laws, low income levels have affected the repayment of mortgage loans. A mortgage report by Hass Consultants Limited (HCL) in 2014 showed that only 1 and 4 percent of Kenyans living in urban areas could afford mortgage repayments for houses priced at 5.7 million shillings and 3.9 million shillings respectively. This complicates the growing mortgage securitization even further since though commercial banks have been securitizing, the quality and quantity of assets is wanting in Kenya.

The report by HCL further indicates that assessing credit risk in the informal sector remains main challenge in Kenya. The significance of commercial banks originating mortgage loans to form pool of assets that are used in securities in capital market could not be undermined since they are the main sources of mortgage financing (Hass Consult Limited, 2014; Munene, 2010). Consequently, commercial banks have had to act cautiously when issuing commercial mortgage loans to clients who are considered a poor credit risk for a long-term lending. This is due to the fact that majority of Kenyans are not in formal employment hence government intervention is required for massive mortgages take-ups in Kenya (AfDB, 2019).

2.4 Collateralized debt obligations and financial performance of commercial banks

Collateralized debt obligations are the popular latest form of asset backed securities. They include: collateralized loan obligations collateralized bond obligations and collateralized credit derivatives (Chong, 2016). Collateralized loan obligations are securitized by commercial and industrial loans of banks. They comprise of personal and

business loans. These loans are attractive due to their higher-yielding nature in developed nations such as America and other developed nations. This high yield, consistence performance of underlying bank loans and rigid capital structure comparing to other securities such as asset backed securities, residential mortgage backed securities, commercial mortgage backed securities and corporate bonds attracts investors to invest in these securities in capital markets. Collateralized bond obligations are securitized by corporate bonds (Investopedia, 2013). Collateralized credit derivatives are synthetic collateralized debt obligations backed by credit derivatives. This study concentrated on two types of collateralized debt obligations which are collateralized loan obligations and collateralized bond obligations.

This is because; collateralized credit derivatives have previously experienced challenges in its pricing model. The standard single-factor normal copula framework requires assumptions about its correlation with assets, and base correlations sometimes failed to explain tranche pricing. The key indicators of collateralized debt obligations in a bank include collateralized debt obligation's issuance and outstanding volume. Collateralized debt obligations issuance volume entails how much collateralized debt obligations have been sold to investors (SIFMA, 2019). Collateralized debt obligations outstanding volume shows balances from retained volumes so as to signal more investors to buy and low market (AFME, 2017). An effective collateralized debt obligation's duration is long-term and have characteristics of either fixed or monthly repayments of funds. For example, when dealing with collateralized debt obligations, bonds are paid at the beginning which is a fixed amount and thereafter start earning interest over the bond

period. When dealing with collateralized loan obligations, personal loans and business loans are repaid monthly till the loan and interest is fully repaid (ASIFMA, 2019).

2.4.1 Collateralized debt obligations issues and advances in developed nations

According to National Association of Insurance Commissioners (NAIC) study conducted in 2014, collateralized loan obligations portfolios in general have a specific measure of cover across backers in America. This is on the grounds that bank advance resources are gained in the essential market (new issues), and a lot of cover happens when interest for bank advances outpaces flexibly. This pattern is especially obvious across collateralized credit commitments of a similar year of beginning just as with collateralized advance commitments overseen by a similar resource director. A high level of cover demonstrates an exceptionally associated portfolio; relationship quantifies the probability of defaults happening together. High need from investors for collateralized loan obligations drive demand for these leveraged loans which secures them. This makes banks lower their standards for corporate lending as they look for more collateral for collateralized loan obligations (Leaver & Tischer, 2019).

This increases pool of willing borrowers and more loans to securitize. When a bank securitizes the payment claims of many loans granted to small and medium sized enterprises, investors know little about these obligors relative to the bank. This provides room for adverse selection by the bank. Investors therefore require enhancement of credit in securitization (Franke, Herrmann & Weber, 2007). Overlooking the aspect of proper scrutinizing of borrowers to make a quick sale poses a risk of default which is transferred to investors of collateralized loan obligations (Leaver & Tischer, 2019). Di Maggio et al. (2017), established that traders were unwilling to buy corporate bonds from originators

and as result there was high transaction costs associated with corporate bonds. However, this study made assumptions that tried to explain dealer positions in the capital market because they did not get dealer or investor information in their data collection. This shows that the conclusions made were not truly reflecting what was happening on the ground with investors willing to buy corporate bonds from originators.

A detailed study on corporate bond markets published by European Commission in 2017 shows that during different crises such as European sovereign debt crisis and world financial crisis of 2008, bond markets are tough. Investors have had a hard time in purchasing bonds from euro primary corporate bond markets due to sudden and temporary market closure for high yield issuers. This has made investors post pone their purchases leading to low liquidity and profits to the originators. This study would therefore give this information on whether investors were buying securitization products from Kenyan listed commercial banks or not.

Financial Conduct Authority (2016) in their examination of monetary availability in corporate bond markets in the United Kingdom (UK) after financial crisis of 2008 to 2014 established that the corporate bond market is unstable however after 2014 to 2016 there was an increase in trading time. This meant that it takes more time to find suitable investor to buy corporate bonds. A similar trend on why corporate bonds market is favorable after collapse of Lehman Brothers is emphasized by (Choi et al., 2018) who concentrated on monetary request from relaxing collateralized debt obligations-bond basis market affects incorrect in corporate bonds. They found out that investors purchased extra bonds when bond prices fell as a result of Lehman Brothers filing for bankruptcy. Afterwards they suffered losses because most of investors were sellers and

few buyers to match their bids. This led to destabilization of corporate bond market in developed nations such as America, Europe and Asia.

Transunion CIBIL's fourth quarter of 2018 overview of consumer credit trends indicates that unsecured personal loans and business loans have reached 138 billion dollars attributable to digital lending by Fintech firms in America. In 2017 according to the report these Fintech firms issued 38 percent of all America unsecured personal and business loans. This is a pending new credit crisis. This is because subprime unsecured loans issued on mortgages in America turned out to be catastrophic. When people access easy subprime loans from these firms, default rates are unavoidable which lead to stress in the economy. European banking authority consumer trends report (2017) documents that Europe have put into place compulsory amortization of both business and personal loans. New laws have been enacted by Europe legislators on importance of invoicing of user's credit, spinning card test systems and instructive activities to educate buyers about the dangers identified with deferment of the reimbursement of an advance. This was aimed at reducing net profit liabilities ratios currently experienced in commercial banks.

2.4.2 Collateralized debt obligations issues and advances in developing nations

There is a positive role played by collateralized bond obligations in emerging markets such as South Africa, India Tunisia and Malaysia (World Bank, 2018). Tunisia's parliament approved a Eurobond issuance of up to US\$1 billion in 2018 as a way to boost the international market access of Tunisia. Covered bonds become securitized since they do not have capital base to retain the loans but there is a strong regulatory framework that supports parties' involved incentives with the longer-term performance of the securitized

assets (Muthaura, 2010). Weak regulatory framework has caused banks in other developing markets like Brazil continue to repair their balance sheets to fit in the current environment. A study done by World Bank in 2016 reveals that in Brazil bond market have suffered a lot since there is crowding effects by private sector due to substantial government bond issue. The government bonds are meant to reduce insufficient funding in the capital market by private sector due to biased market and high cost of issuance by private sector. Despite this effort, they lack a risk transfer mechanism that can preserve deleveraging risks rather than improving them (Muita, 2015).

Eba (2014) proclaims that NPLs have had a negative relation to asset quality. The study was conducted from 2011-2015. It is noted that in 2015, most commercial banks had not published their financial reports in full indicating that the results were not conclusive. A recent study by Farah et al. (2019) on factors affecting financial performance of banks in Garowe, Somalia establishes that credit risk exposure affects profitability of commercial banks. Data on 178 respondents linked high default rate to unsecured loans. The study ascertains that secured loans issuance have less default rates in commercial banks in Somalia. This gave this study a chance to show what was happening in Kenya in relation to asset securitization as a factor affecting the financial performance of listed commercial banks.

In Kenya, Abdikadir (2017) studied the relationship between investments and financial performance of commercial banks in Kenya. This study establishes that there was a positive relationship between corporate bonds and financial return on assets of commercial banks. Abdikadir (2017) opted to use secondary data from annual reports instead of using quarterly reports for the period between 2012 to 2016 thus making

conclusions based on outdated data since investments is a continuous economic activity in a bank. The study also concentrated on all commercial banks, thereby creating a gap of study to ascertain the results from listed commercial banks. Khole (2014) did a study on the influence of indiscreet advancing on loan performance of Kenyan banks. Khole (2014) ascertains that unsecured commercial loans have exceeded secured loans and this has a positive effect on loan performance.

Khole (2014) however considered the effects of unsecured lending in the short-term. It also did not consider a factor that many people were campaigning to be elected to various political positions in Kenya (2013) hence high need for unsecured loan for campaigns. Failure to overlook the political situation in the country when addressing various loans needs did not provide a clear status of affairs. Other study done by Maranga and Nyakundi (2017) ascertained that timely personal and business loan repayment had an influence on financial performance in banks. The location of the study was Kisii town which was still growing. There was need to look at Kenyan market in general in which established towns and cities were put into perspective.

Summary of research gaps

Poor regulations from the government and high default rates causing non-performing asset backed securities loans were established as the main weaknesses inhabiting the growth of asset backed securities. On one hand, when the government sees the worth of asset backed securities towards improving the financial performance of listed commercial banks, they put into place well thought regulations governing the asset backed securities. On the other hand, when banks understand the practical relevance of

asset backed securities, they are keen on issuing loans to borrowers who qualify. This is because the main cause for non-performing loans is discovered to be laxity of lenders not properly scrutinizing borrowers of asset backed securities loans. Previous studies such as World Abata (2015), Bank (2017) and European Banking Authority (2017) categorically dwelt mostly on management of asset backed securities overlooking at low issuance of assets that backed them such as credit cards and car loans levels. This study addressed this by looking at influence of asset backed securities on financial performance of listed commercial banks in Kenya. Understanding this, assists banks have information needed to come up with marketing strategies on improving issuance of assets that back them.

Insufficient credit rating agencies, market distortions and under developed laws proved to be problems associated with mortgage backed securities as indicated by the foregoing literature. When there are few rating agencies whose work is to ensure that the securities originated from banks are well diversified, presence of undiversified portfolios of mortgage backed securities are inevitable. Commercial banks have more information than any other involved party relating to the securities they originated. Therefore, they are tempted to sell to investors only the non-performing mortgage backed securities loans which turn into losses to investors leading to market distortions. When the mortgage backed securities market is distorted, there are well developed laws that provide directions on what to do. The existing literature focuses more on customer-oriented blame game due to outstanding balances of mortgage backed securities. The studies have left out any consideration of the commercial bank as the main cause for those defaulted balances due to proper scrutiny of borrowers. This created the need to know what influence mortgage backed securities had on financial performance of listed commercial

banks so that the bank could take seriously scrutiny of mortgage borrowers. The current study was envisaged to provide knowledge to fuel the prerequisite with a view to increasing more credit rating agencies in Kenya, which would reduce securities market distortions and backing by the government through developing laws that regulate the market.

Crowding effect due to many government bonds was noticed as a major issue affecting collateralized debt obligations. When there are too many government bonds, this weakens the entire market as many private sectors cannot cope up with the government standards. There was therefore need to issue new knowledge ascertaining fair business running from the government to the banks. Studies reviewed generally exhibits a sensation of issues located at the collateralized debt obligations market environment such current weak regulations in capital markets and poor running of bond markets. Though they affect collateralized debt obligations, the literature did not categorically address the issues facing collateralized debt obligations' origination by banks. This study looked at issues affecting collateralized debt obligations on the banking side. That is, how the running of collateralized debt obligations activities influences the financial performance of listed Kenyan banks.

2.5 Theoretical Review

This study was steered by three theories; Regulatory arbitrage theory, convenience yield theory and credit creation theory. Regulatory arbitrage theory guided investigations into asset backed securities, convenience yield theory guided studies into mortgage backed securities and credit creation theory guided investigations into collateralized debt obligations

2.5.1 Regulatory arbitrage theory

Asset backed securities was guided by regulatory arbitrage theory. Regulatory arbitrage theory was advanced by Frank Partnoy in 1997 (Partnoy, 1997). The theory proposes that any regulated institution takes advantage of the difference between its commercial risk and the regulatory position. There ought to be financial transactions drafted to reduce costs caused by laws. It is a responsibility of any organization to reduce costs as lowest as possible and increase returns while observing the law. Since laws are uniform to all institutions, institutions ensure that they come up with innovations within the law that are used by the institution to have a competitive market edge over other similar institutions.

Regulatory arbitrage theory was adopted in guiding this study because, asset backed securities takes part in improving the capital structure of Kenyan banks hence improved profitability and avoiding the minimum capital regulation threshold. In the context of this study, the theory holds that the motivation for commercial banks to securitize asset backed securities is not to transfer risk but to avoid related regulation. Commercial banks remove the credit assets off the balance sheet to decrease the statutory capital requirement and deposit insurance charges by selling the credit assets to SPV (Greenbaum & Thakor, 1987; Keys et al., 2012; Leland, 2007).

Generally, commercial banks with lower capital requirement issue more asset backed securities (Acharya & Schnabl, 2010; Acharya et al., 2013). By issuing the ABS, commercial banks gain more benefits, which have no influence on their investment decisions. The theory is criticized that it is a fundamental component of administrative

rivalry as it gave administrative substitutes to firms, and permits those organizations to ideally profit by such rivalry. This additionally expands the flexibility of interest for controllers and incites responsibility among them (Nabilou, 2017).

2.5.2 Convenience yield theory

The investigation into mortgage-backed securities in this study was informed by convenience yield theory. The theory of convenience yield described by Holbrook Working in 1933 was extended by Kaldor in 1939 who introduced the notion of convenience yield. The theory states that when accessible provisions of the product are great, and the employed portfolios of marketable customers of that product are consequently held to the least, instability of current and futures values are likely to be little, and futures payments increased to the full charge of storage. When provisions are constricted, there is instability of currency and the nearby futures values increases due to unfriendly futures deals.

Convenience yield was adopted in informing this study because mortgage backed securities contributes to solution of shortage matter of collaterals with high quality. BIS (2019) discloses that mortgage backed securities turns credit assets with lower liquidity into standard assets with high liquidity. The standardized assets with stable value according to BIS do not get affected by heterogeneous risk and satisfies the demand of collaterals with high quality. In the context of this study, the theory holds that there is demand of collaterals with high quality results from mortgage backed securities trading, buyback transactions and settlements, which eventually improves the preference of

mortgage backed securities. This results to investors having a choice to buy today and sell in future when the prices are favorable.

Convenience yield theory is criticized that the matters resulting from the convenience yield theory, such as maturity mismatching and repeat pledge, leads to financial instability. Gorton and Metrick (2010, 2012) found that during the financial crisis in America, the trimming of collaterals in the buyback transaction increased with a large scale. Singh and Aitken (2010) found that the repeat pledge led to multiple effect responded to the negative shock.

2.5.3 Credit creation theory

Collateralized debt obligations was guided by the credit creation theory of banking which was advanced by Henry Dunning Macleod in 1856 (Werner, 2015). The theory states that banks create new credit and cash from nothing at whatever point there is advance issuance. This is on the grounds that they do not advance any current cash. Since loaning is making new credit and store cash, increment in balances happens without essentially causing a diminishing somewhere else. This theory in this manner intimates that banks do not have to assemble stores or holds to loan to borrowers since the matter of banking is not to loan cash but to make credit (Werner, 2015). This credit is payable on request and plays out all elements of an equivalent measure of money making thus, banking is an expansion of capital and not an economy of capital. Extra time, bank asset reports and proportions of cash flexibly consistently rise after some time as the remarkable banks credit develops (Edgeworth & Withers, 1909; MaLeod, 1856; Werner 2015; Withers 1919).

Credit creation theory of banking was adopted for collateralized debt obligations because it is much realistic to say that banks create new credit. This is because, through lending, they create deposits. Understanding this phenomenon is critical in this study because it sheds light on the role that banks play when lending money to borrowers. If it becomes clear that banks are not in the business of borrowing money from one set of persons and lending it to another set but creating new credit, banks take full responsibility of their lending actions to minimize presence of risky assets (Bank of England [BOE], 2013).

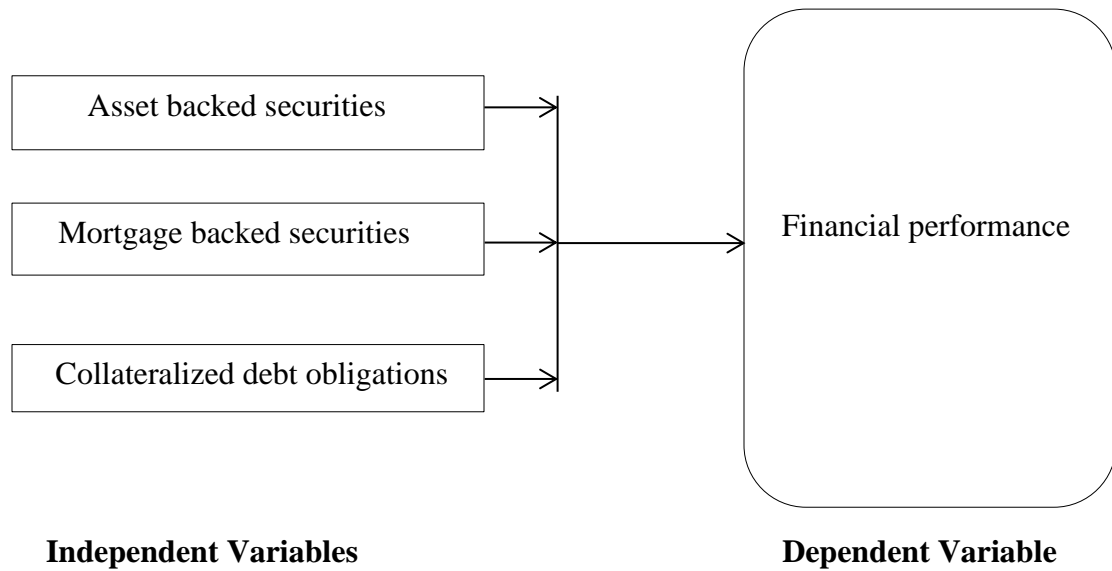
In the context of this study, the theory holds that banks create new credit in which reasonable interest is charged for its use through lending and not borrowing money from depositors to loan it to borrowers. This theory is criticized by economists such as Walter Leaf and Edwin Cannon who indicates that banks cannot not lend more than the deposits received from customers (Lainà, 2018).

2.6 Conceptual frame work

Figure 2.1 is a structure that was used in this study to explain the variables under study. It shows independent variables on the left and dependent variable on the right. The independent variables comprise of asset backed securities, mortgage backed securities, and collateralized debt obligations while dependent variable is financial performance.

Figure 2.1

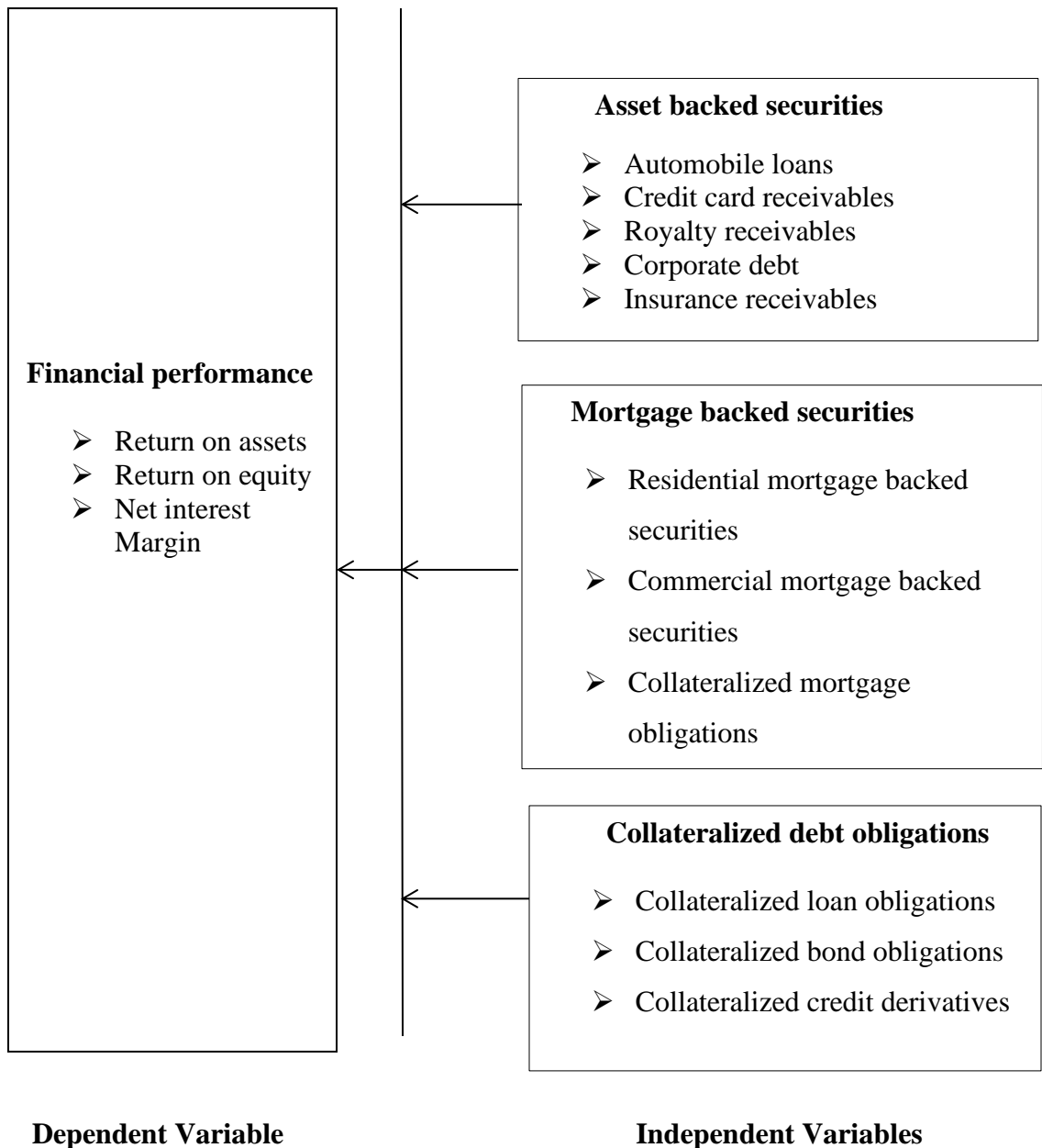
Conceptual framework



2.7 Operationalized framework

Figure 2.2

Operational framework



The dependent variable in this study is the financial performance (Bailey, 2017). It is measured by comparing changes in terms of profits indicators such as return on assets, return on equity and net interest margin among listed commercial banks in Kenya (CBK, 2018). The independent variables in this study include the asset backed securities, mortgage backed securities and collateralized debt obligations (Dong, 2017; Mbugua, 2014; SIFMA, 2018). Automobile loans securities, credit card receivables, royalty receivables, corporate debt and insurance receivables indicates asset backed securities (Giron & Chapoy, 2012; Loutskina & Strahan, 2009). Residential mortgage backed securities, commercial mortgage backed securities and collateralized mortgage obligations indicates mortgage backed securities (Deloitte, 2018a; Dong, 2017). Collateralized loan obligations collateralized bond obligations and collateralized credit derivatives indicates collateralized bond obligations (Leaver & Tischer, 2019).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides an overview through which research objectives are attained. It describes research design, location of the study, target population, sampling techniques and sample size, research instrumentation, pre-testing of questionnaire, validity of research instrument, reliability of research instrument, data collection procedure, data analysis techniques which includes analysis of quantitative data. Ethical considerations to be observed in the study are also concluded.

3.2 Research design

Chandran (2004) defines a research design as arrangement of the collection conditions and data analysis to combine their relationship with the research purpose to economy of procedures. This study adopted descriptive survey research design to study the connection between asset securitization and financial performance of listed Kenyan banks. Descriptive survey research design allows study of connection among variables and reported the way circumstances are on the ground. Examples of circumstances are attitudes, values and characteristics (Bryman 2016). The study adopted this design because it helps the researcher explain why, what and how the vicissitudes in financial performance in banks are caused by ABS, MBS and CDOs.

3.3 Location of the study

This study was conducted on headquarters offices of listed commercial banks present in Kenya. This is because asset securitization process in a commercial bank is

coordinated between accounts department, operations department and risk department (CMA 2018; Deloitte, 2018a) Most of these departments are only found at the headquarters offices and not at branches (CBK, 2018). Kenya has a robust economic grounding all attributable to stable government, equatorial climate that allows growth and trade of cash crops and food crops, good coastlines that are accessible to ships and tourism attractions sites among others (World Bank, 2016b). From as early as 2000, Kenya proved the ability to handle innovations especially in telecommunication and banking industries which triggered its role as a regional center for trade (World Bank, 2016b).

3.4 Target population

This is a group of entities, items or procedures that had a common characteristic (Mugenda & Mugenda, 2003). The target population was the listed commercial banks that are in Kenya. The respondents were head of department in risk, finance, compliance and operations departments at each of the 11 commercial banks listed at NSE as at 1st September, 2019.

The target population is shown on Table 3.1. It shows total number of expected respondents who were risk managers, finance managers, compliance managers and operations managers in each of the listed commercial banks.

Table 3.1*Target Population*

Listed commercial banks and population categories	Risk managers	Finance managers	Compliance managers	Operations managers	Total
Barclays Bank	1	1	1	1	4
Stanbic Holdings Plc	1	1	1	1	4
I&M Holdings	1	1	1	1	4
Diamond Trust Bank Kenya	1	1	1	1	4
HF Group	1	1	1	1	4
KCB Group	1	1	1	1	4
National Bank of Kenya	1	1	1	1	4
NIC Plc Group	1	1	1	1	4
Standard Chartered Bank	1	1	1	1	4
Equity Group Holdings	1	1	1	1	4
Co-operative Bank of Kenya	1	1	1	1	4
Total	11	11	11	11	44

Source: Each of the listed commercial bank's website

3.5 Sampling techniques and sample size

Sampling is the procedure of selecting a subgroup characters from an entire whole population from which the study intends to cover, so as to act in the capacity of exemplifying the whole population (Allwood, 2012; Mugenda, 2008; White &

McBurney, 2013). This study used census technique. This is because the entire population was fairly small hence every sample was counted.

3.6 Research instrumentation

This study adopted a self-administered questionnaire which had closed ended questions. The closed ended questions employed a tabular Likert scale (Ngumi, 2013). This aided in having multiple choice questions that guided respondents on how to answer the questions on ABS, MBS and CDOs. This is because asset securitization is relatively new hence many of them did not have deep understanding of what it entailed. This method was preferred because questionnaires promoted standardized ways of responding; something that facilitated measurements of concepts quantitatively. The sections in the questionnaires are indicated in appendix III.

This study consulted literature in chapter two in formulating questions regarding ABS, MBS and CDOs' influence on financial performance. There was one questionnaire for the study which had the same questions for all respondents. This was because; the study intended to ascertain whether respondents who play different roles in asset securitization process had similar or different views on ABS, MBS and CDOs' influence. Appendix III contained the questionnaire that was used.

The study also collected secondary data from five years issued financial reports such as income statements and balance sheets dating from 2014 to 2018. This was because banks began practicing asset securitization in 2014 (CMA, 2018). The information collected through documentary method entailed percentages on ROE, ROA and NIM for the five-year period. The income statement and balance sheets were

obtained from various listed commercial bank's websites. Appendix (IV) contains the secondary data collection instrument used.

3.6.1 Pre-testing of questionnaire

Bolarinwa (2015) advises that it was important to pre-test study's questionnaires to ensure that the questions asked are valid and easily comprehensible by respondents. In this study, eight respondents from non-listed commercial banks in Nairobi were selected by simple random method. These non-listed banks in Nairobi were not included in the main study. The eight respondents were officers in risk, finance, compliance and operations departments. They were issued with the questionnaires to answer them. This assisted in rephrasing questions that the respondents did not understand hence having reliable questionnaires when doing the study.

3.6.2 Validity of research instrument

Validity entails the degree that a data collection instrument does what was required to do. Different independent and dependent variables in literature review in gave the foundation for validity of the questionnaire.

This study observed content validity by ensuring the questions asked related to automobile securities, credit card securities, residential mortgage backed securities, commercial mortgage backed securities, collateralized loan obligations and collateralized bond obligations. Literature reviewed in chapter two was helpful in identifying all indicators.

Face validity was guaranteed by the study when there was a review on influence of individual independent variable on dependent variable. That was, influence of ABS,

MBS and CDOs on financial performance. Criterion validity which tested how well results from the study were relevant to measuring the influence of ABS, MBS and CDOs on financial performance were observed. This was done by comparing results of pre-test with existing tests that have ever been done on asset securitization. An example would be; comparing results on asset securitization with the ones of (Mutegi, 2016) who did a study on regulation of asset securitization in Kenya. Later compared results on MBS with the ones of (Munene, 2010) who did a study on introduction of MBS in Kenya capital market.

3.6.3 Reliability of research instruments

Reliability is the dependable aptitude of a research instrument's outcomes when used at a target population (Ko et al., 2017). It ensures that results remain consistent even when repeated. To ensure questionnaires were reliable, the researcher conducted a pre-test as described in section 3.6.1. This study computed Cronbach alpha coefficient value in determining the reliability of the instruments. According to Cooper and Schindler (2014), the response rate should have a minimum Cronbach alpha coefficient rate of 0.7 which shows high reliability in business studies.

3.7 Data collection procedure

This study got research permit from the National Council of Science, Technology and Innovation (NACOSTI) to carry on the study as indicated in appendix (IX). An appointment request to meet up with bank officials was made so as to seek approval to conduct the study. Once the request was granted, the respondents were identified and clarification of the need of the study was made by the researcher. The study used research assistants to administer the questionnaires to the people answering them in the listed

banks. Research assistants were trained on confidence when communicating so as to communicate the relevance of the study to respondents. Emphasis when training the research assistants was placed on attention to details and ability to maintain confidentiality while undertaking the data collection process.

The research assistants waited for the respondents in all categories to complete the questionnaires within one week, collected them for analysis and appreciated the respondents with free notebooks. This data collection method provided precise and assured high notable response. It provided a chance to increase accuracy in case of further clarification needed by the researcher. In addition, secondary data was obtained through data collection panes from the listed commercial banks' monetary reports. These reports were readily available on each of listed commercial bank's website. The researcher searched over the internet the name of the bank, proceeded to reports port and downloaded the reports such as balance sheets and income statements for analysis.

3.8 Data analysis and presentation

Quantitative data was collected in this study. Once data was collected, incomplete questionnaires were sorted out to identify any ambiguity as well. Proper coding of sort out data was done by the help of Statistical Package for Social Sciences (SPSS software, Version 24) and Microsoft excel. The coding involved conveying different statistics arrangements with numbers to assist in analysis. This eased the huge number of statistics into a structure that could be simply used in analysis.

3.8.1 Analysis of quantitative data

Descriptive analysis was used to analyze quantitative data to establish the connection between asset securitization and financial performance. Research hypothesis was validated using coefficient of correlation. Descriptive statistics measured mean, percentage and standard deviation of main phenomena and also on background information. Linear regression analysis and a Pearson correlation analysis were used to ascertain the relationship between variables under investigation. The beta (β) coefficients for ABS, MBS and CDOs were generated from the linear regression model in order to test each of the hypotheses under study. It was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \hat{\epsilon}$$

Where: Y = Financial performance of listed commercial banks

β_i = Coefficients to be estimated

X1 = Asset based securities

X2 = Mortgage backed securities

X3 = Collateralized debt obligation

$\hat{\epsilon}$ = Error term

Normality test, heteroskedasticity test and multi-collinearity test was applied to regulate the suitability of using regression in the analysis. In addition to descriptive interpretation, tables and detailed explanations were utilized to give the ultimate outcomes.

3.9 Measurement of variables

Variables in this study were grouped into dependent and independent variables. Financial performance of listed banks was the dependent variable. The dependent variable was measured by ROA, ROE and NIM. The dependent values gotten from

financial statements of listed commercial banks were incorporated with raw data collected through questionnaire, in multiple and linear regression analysis. Independent variables which included ABS, MBS and CDOs were measured by net income, total assets, total equity capital growth, good quality loans and cost of credit. Appendix V shows how the dependent and independent variables were measured and the formulas applicable to them. Multiple regression models were used in analysis of sample data to measure the dependent variable as also used by Mitani (2014) and Muritala (2012). This was as follows:

$$\text{Financial performance} = C + \beta_1 \text{ABS}_{i,t} + \beta_2 \text{MBS}_{i,t} + \beta_3 \text{CDO}_{i,t} + \epsilon_{i,t}$$

Where;

ABS = Asset Backed Securities, independent variable.

MBS = Mortgage Backed Securities, independent variable.

CDO = Collateralized Debt Obligations, independent variable.

C = constant coefficient (intercept)

β = slope coefficient of independent variables

i = number of listed commercial banks in Kenya

t = time period

ϵ = error term

3.10 Ethical consideration

The researcher sought approval to conduct the study from Kenya Methodist University. This was followed by obtaining research permit from the National Council of Science, Technology and Innovation (NACOSTI) to carry on the study. Then lastly, the study sought authorization from management team of various listed commercial banks through an authorization letter (Appendix I). Once permission was granted by the commercial banks management, the researcher issued each respondent with a letter of introduction (Appendix II). This introduction letter described the intent of the research, consensus of the research and what was willingly expected from the respondents. Confidentiality was key to the study especially identities of respondents.

The questionnaires that were used in this study did not have any question regarding respondent's name, telephone number and email. Each bank was represented by a special code. For example, Barclay's bank's code will be '2000'. The purpose of doing this was to hide respondent's identity as much as possible in case a bank has few officers whose identity would be revealed when they answer the questionnaire. The questionnaires also strictly asked very relevant questions related to this study. Any other assistance received from various individuals such as respondents and other peoples' work used was acknowledged in the form of American Psychological Association (APA) referencing. Once the respondents had completed the questionnaires, the researcher stored them in a safe place before and prior to data analysis.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of analysis of data collected from the field using questionnaire. Data interpretation is done in line with the research objectives. The statistical techniques proposed in chapter three for data analysis and presentations are adopted in this chapter.

4.2 Response rate

Forty-four questionnaires were dispersed to the heads of department in risk finance, compliance and operations departments at the 11 banks listed at NSE as at 1st September, 2019. All the 44 questionnaires were given back when fully filled by the respondents. This signified 100% on response. This proved that respondents were much willing to participate in the study. This was directly attributable to a high level of confidence and professional rapport that the research assistants created with the head of departments in the listed commercial banks. The note book gifts given to the respondents also partly played towards this high response. These results were concurrent with Raychaudhuri et al. (2010) who collected 332 responses out of the intended 332 from students. The results were as a result of issuing gifts to the students after responding to the survey. Mugenda and Mugenda (2003) pinpointed results above 70% were termed to be very good, 60% was good and above 50% was adequate for a descriptive study.

4.3 Test of reliability

To certify the steadfastness of the instrument, Cronbach's Alpha was utilized on the proposed questions. The acceptable alpha coefficient should be at least 0.70 (Cooper & Schindler, 2014). Pre-test of this study gave the alpha values of all elements which were above 0.70 as shown in Table 4.1.

Table 4.1

Reliability Test Statistics

Variables	Cronbach's Alpha	N of Items
Financial performance	.962	8
Asset backed securities	.995	8
Mortgage backed securities	.972	8
Collateralized debt obligations	.939	8
Average	.967	8

The general reliability result was of 0.967 alpha. This demonstrated solid inward consistency among proportions of the variables. This suggested the information assortment instrument was along these lines dependable and satisfactory for the motivations behind the investigation.

4.4 Background Information

Background information of the respondents was considered in this study and it entailed the work duration the respondents had operated in the specific listed banks. Section 4.4.1 indicates this information.

4.4.1 Work duration

The study was concerned with knowing how long the respondents had worked in the listed Kenyan banks. The study acknowledged this information relevant given that the longer the period they had worked, the more they understood the connection between asset securitization and financial performance. Work duration in years information is given in Table 4.2.

Table 4.2

Work Duration

Years	Frequency	Percent	Cumulative Percent
Less 10	18	40.9	40.9
11-20	14	31.8	72.7
21-30	8	18.2	90.9
Above 30	4	9.1	100.0
Total	44	100.0	

The results as presented in Table 4.2 shows that 18(40.9%) had worked for less than 10 years, 14 (31.8%) for a period between 11-20 years, 8 (8.2%) for 21-30 years while only 4 (9.1%) had worked for more than 30 years. This implies that many of the people answering the questionnaires had worked less than 10 years due to continuous job shifting in the banking sector. The second which was 14 (31.8%) categories of head of departments, had worked more than 10 years. This showed that they were experienced due to their long service in the commercial banks having worked for more than 10 years. It was therefore expected that the respondents had in-depth information regarding the

research topic and would be able to rate the variable under consideration effectively. Similar results were also reported by Obiero (2014) who established there was high job shift was due to control, freedom, conducive environment to attain targets, salary and job satisfaction.

4.5 Diagnostic Tests

The researcher conducted multicollinearity, normality and heteroskedasticity test to establish whether regression assumptions were satisfied before generating the expected regression models.

4.5.1 Multicollinearity test

The regression analysis assumed that there should be no multicollinearity between variables. To test for multicollinearity, Variance Inflation Variable (VIF) or tolerance, which was a diagnostic tool, was used to detect how severe the problem of multicollinearity is in a regression model. Using the VIF method, a tolerance of less than 0.20 and a VIF of more than 5 indicated a presence of multicollinearity. The variables should not have a Variance Inflation Factor (VIF) of 5 or greater than 5, as this indicated presence of multicollinearity (Wanjiku, 2019). The result of multicollinearity test is given in Table 4.3

Table 4.3*Multicollinearity Test*

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Asset backed securities	.659	1.517
Mortgage backed securities	.785	1.274
Collateral backed securities	.808	1.238

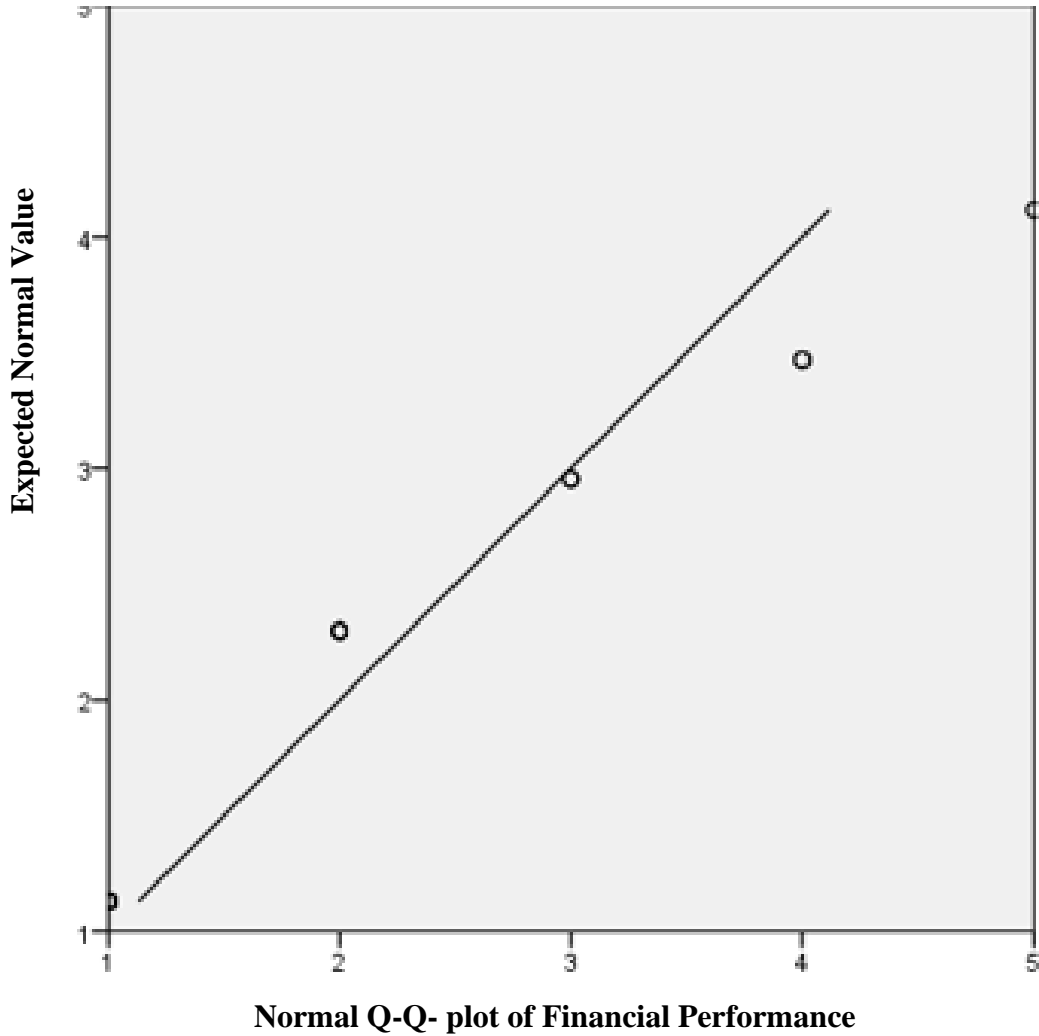
From Table 4.3 there was no VIF with a value of 5 or greater than 5, there was no presence of multicollinearity in the variables under this study.

4.5.2 Normality test

A Q-Q test for normality was completed on the financial performance. The yield of normal Q-Q plot was applied (Ghasemi & Zahediasl, 2012). For data that was normally distributed, the data points were near the sloping line (Ghasemi & Zahediasl, 2012).

Figure 4.1

Normal Q-Q Plot



The results presented in Figure 4.1 showed a flow of data points close to the diagonal line and therefore, the data appeared to be normally distributed. When data was normally distributed showed that the responses given would be relied for further analysis.

4.5.3 Heteroskedasticity test

Heteroskedasticity test was done by computing correlation coefficients values. Outcomes are made known in Table 4.4.

Table 4.4

Test of Heteroskedasticity

Model	Unstandardized Coefficients		Standardized	T	Sig.
	B	Std. Error	Coefficients Beta		
(Constant)	-.109	.256		-.425	.673
Asset	.810	.138	.766	5.741	.108
Mortgage	.467	.181	.412	2.536	.110
Collateral	-.310	.123	-.304	-2.456	.211

a. Dependent Variable: Financial performance

The coefficients given by the Table 4.4 initially indicated that asset backed securities had a significance level of 0.110; mortgage backed securities had a significance level of 0.113 while collateralized debt obligation had a significance level of 0.216. However, the researcher discovered one outlier and was eliminated. An outlier affects variance, and standard deviation of a data distribution. in a data distribution, with extreme outliers, the distribution is skewed in the direction of the outliers which makes it difficult to analyze the data. After elimination, the values of the independent variables table were adjusted to represent the new values without the outlier. Asset backed securities had a new significance level of 0.108; mortgage backed securities had a new significance level of 0.110 while collateralized debt obligation had a new significance level of 0.211.

4.6 Descriptive Statistics on Financial Performance

The study also scrutinized the influence of asset securitization on financial performance in listed banks. There was also assessment of dependent variable indicators such as ROE, ROA and NIM of listed banks.

4.6.1: Influence of asset securitization on financial performance

The respondents were asked how asset securitization influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how different types asset securitization had influenced financial performance. The study was specifically interested to know how ABS, MBS and CDOs had impacted financial performance. Table 4.5 displays the findings obtained from descriptive statistics analysis on the overall asset securitization.

Table 4.5*Asset Securitization Descriptive Statistics*

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Asset backed securities improved the financial performance of the bank	2(4.5%)	4(9%)	9(20.5%)	15(34%)	14(32%)	3.79	1.13
Mortgage backed securities have led to improved financial performance of the bank	4(9.1%)	12(27.3%)	19(43%)	6(13.6%)	3(7%)	2.81	1.02
Collateralized debt obligations improved financial performance of the bank	12(27%)	19(43%)	7(16%)	4(9.1%)	2(5%)	2.20	1.09
Average						2.94	1.08

The findings in Table 4.5 have an average mean of 2.94 and standard deviation of 1.08. Asset backed securities had the highest mean of 3.7 with majority of responses either strongly agreeing or agreeing. Mortgage backed securities had a mean of 2.81 with majority of respondents giving neutral responses. Collateralized debt obligations had the lowest mean of 2.20 with majority of responses either strongly disagreeing or disagreeing. These findings showed that asset backed securities had a major impact on improving the performance of banks while collateralized had a minimal impact. Listed commercial banks

seem to have noticed a growth when they incorporated asset backed securities as compared to other types of securities such as mortgage backed securities and collateralized debt obligations. Nikolova et al. (2016) results though not giving the specific types indicates that some of the bank's assets can be used in securitization which then acts as a source of finance to the innovation activity. The nature of activity and securitization will depend which bank asset leads to profitability (Nikolova et al., 2016).

4.6.2: Financial performance indicators

The researcher assessed the financial performance of listed banks. The financial performance indicators such as ROA, ROE and NIM for a period between 2014-2018. The rates were analyzed and their means derived as indicated on Table 4.6

Table 4.6

Financial Performance Indicators

Variable	N	Mean	Std Dev
Return on equity	11	3.6	1.9
Return on assets	11	2.9	1.7
Net interest margin	11	3.2	1.8
Total		3.3	1.8

The findings show that the financial performance indicators had an average mean of 3.3 and a standard deviation of 1.8. Return on equity had the highest mean of 3.6 while return on assets had the lowest mean of 2.9. The results showed that owners of the listed banks had greatly gained from incorporation of the securitization process while assets of the bank had least benefited as a result from securitization innovation. The overall results indicated that listed commercial banks performance lied between low performance to

medium performance. Irungu (2019) and Muia (2017) got similar results when the study discovered a low ROA, ROE and an average performance on NIM.

4.7 Influence of Asset Backed Securities (ABS) on financial performance

The first objective was to examine the influence of ABS on financial performance in listed banks. This composite / latent variable had several elements. These were: automobile securities, credit card securities, royalty securities, corporate debt securities and insurance receivables / securities. Their results are presented in section 4.7.1, 4.7.2, 4.7.3, 4.7.4 and 4.7.5 respectively.

4.7.1 Descriptive analysis of automobile securities

The respondents were asked how automobile securities influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how automobile securities had influenced various financial performance indicators. The study was specifically interested to know how automobile securities had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. The results obtained are made known in Table 4.7.

Table 4.7*Descriptive Analysis of Automobile Securities*

Statements N=44	1	2	3	4	5	Mean	Std. Dev
There was improved gross profit of the bank	1(2.3%)	2(4.5%)	11(25%)	17(38.6%)	13(29.5%)	3.89	0.96
There was a positive effect on increasing net income of the bank	2(4.5%)	5(11.4%)	7(15.9%)	13(29.4%)	17(38.6%)	3.86	1.19
Automobile securities lowered cost of credit	3(6.8%)	4(9.1%)	10(22.7%)	12(27.3%)	15(34.1%)	3.73	1.23
Automobile securities led to overall total equity capital growth of the bank	2(4.5%)	2(4.5%)	9(20.5%)	19(43.2%)	12(27.3%)	3.84	1.03
Automobile securities expanded total assets of the bank	4(9.1%)	3(6.8%)	7(15.9%)	14(31.8%)	16(36.4%)	3.79	1.27
Average						3.82	1.38

The findings in Table 4.7 indicates that an average mean of 3.82 and standard deviation of 1.38. The people answering the questionnaires agreed majorly that

automobile securities improved gross profit of the bank. This statement had the highest mean of 3.89. The respondents comparatively disagreed that automobile securities lowered cost of credit which had the lowest mean of 3.73 in this section. Most responses in Table 4.6 showed that they either strongly agreed or agreed with all of the statements. This meant that automobile securities were expensive to maintain since what they generated was not sufficient to keep them afloat without the bank making losses in the long-term. Previous study such as Dong (2017) also established that revenue of commercial banks increased as a result of banks engaging in securitization of vehicle loans. Abdikadir (2017) similarly discovered that when banks invested in areas that grew their financial performance, this resulted to improved share values and higher dividend payments. Listed commercial banks were able to achieve their goal of ensuring that the shareholder's wealth is maximized; and listed commercial banks were assured of their banks a going concern for years to come by selling automobile securities.

4.7.2 Credit card securities descriptive analysis

The respondents were asked how credit card securities influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how credit card securities had influenced various financial performance indicators. The study was specifically interested to know how credit card securities had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. The outcomes obtained are made known in Table 4.8.

Table 4.8*Credit Card Securities Descriptive Analysis*

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Credit card securities improved gross profit of the bank	1(2.3%)	5(11.4%)	8(18.2%)	16(36.4%)	14(31.8%)	3.84	1.08
Credit card securities had a positive effect on increasing net income of the bank	2(4.5%)	5(11.4%)	5(11.4%)	20(45.5%)	12(27.3%)	3.79	1.11
Credit card securities lowered cost of credit	4(9.1%)	3(6.8%)	8(22.7%)	18(40.9%)	11(25.0%)	3.67	1.19
Credit card securities led to overall total equity capital growth of the bank	3(6.8%)	4(9.1%)	10(22.7%)	14(31.8%)	13(29.5%)	3.68	1.19
Credit card securities expanded total assets of the bank	2(4.5%)	5(11.4%)	7(15.9%)	16(36.4%)	14(31.8%)	3.79	1.15
Average						3.74	1.15

The findings in Table 4.8 indicates an average mean of 3.74 and standard deviation of 1.15. The people answering the questionnaires agreed majorly that credit card securities improved gross profit of the bank. This statement had the highest mean of 3.84. The respondents comparatively disagreed that credit cards securities lowered cost of credit which had the lowest mean of 3.67 in this section. This could be explained that the idea of selling credit cards which has been marketed a lot by banks has been accepted in the Kenya. People are using credit cards in their day to day lives and they are paying up debts incurred as a result of using credit cards. In return, this has attracted so many investors willing to purchase credit card securities. Interestingly, in as much as there has been noticeable sales of credit card securities, the income generated has not yet reached a level to cover the costs of credit or the point of break even. Most responses in Table 4.8 showed that they either strongly agreed or agreed with all of the statements.

Riley (2019) findings explained that lenders who securitize various loans such as credit card loans had market advantage over those who do not securitize since they are able to minimize expenses and improve gross profit through economies of scale. Also, the results of a study by Australian Securities and Investments Commission (2018) reported similar results, whereby, 10.2 million (81.5 percent) cardholders were paying their loans timely which made issuance of new credit card loans rolling manageable as compared to the 1.9 million (18.5 percent) customers that were struggling paying back the loans.

4.7.3 Royalty securities descriptive analysis

The respondents were asked how royalty securities influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how royalty securities had influenced various financial performance indicators. The study was specifically interested to know how royalty securities had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. The outcomes obtained are made known in Table 4.9.

Table 4.9*Royalty Securities Descriptive Analysis*

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Royalty securities improved gross profit of the bank	1(2.3%)	3(6.8%)	8(18.2%)	13(29.5%)	19(43.2%)	4.05	1.06
Royalty securities had a positive effect on increasing net income of the bank	2(4.5%)	2(4.5%)	11(25.0%)	14(31.8%)	15(34.1%)	3.86	1.09
Royalty securities lowered cost of credit	3(6.8%)	2(4.5%)	7(15.9%)	20(45.5%)	2(27.3%)	3.82	1.11
Royalty securities led to overall total equity capital growth of the bank	5(11.4%)	7(15.9%)	10(22.7%)	11(25.0%)	11(25.0%)	3.36	1.33
Royalty securities expanded total assets of the bank	0(0%)	2(4.5%)	10(22.8%)	13(29.5%)	19(43.2%)	4.07	1.04
Average						3.83	1.13

The findings in Table 4.9 indicates an average mean of 3.83 and standard deviation of 1.13. The people answering the questionnaires agreed majorly that royalty securities expanded total assets of the bank. This statement had the highest mean of 4.07. The respondents comparatively disagreed that royalty securities led to overall total equity capital growth of the bank which had the lowest mean of 3.36 in this section. These results show that by the fact that royalties have been attracting investors, this has positively boosted growth in assets that the bank have. This is because they investors has gotten confidence that banks are sharing their level of goodwill with them hence improving confidence of investments. But selling of royalties has only been improving the goodwill of the banks and not a direct benefit to shareholders of the bank. Most responses in Table 4.8 showed that they either strongly agreed or agreed with all of the statements.

These findings are supported by KCB annual report of 2017 which indicates royalties' securities had played an essential part towards improving the profits of a bank in that year. Due to that potential, KCB group put regulatory framework that would boost the even more royalties. In agreement, Nisar et al. (2018) results indicate that when banks correlated various types of incomes from different sources such as royalties amongst other sources, there would be amplification of various banking practices at more convenient economies of scale. When there was economies of scale in a bank, there would be cost effective inputs that would result to even more income hence improving financial performance of a bank.

4.7.4 Corporate debt securities descriptive analysis

The respondents were asked how corporate debt securities influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how corporate debt securities had influenced various financial performance indicators. The study was specifically interested to know how corporate debt securities had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. The outcomes obtained are made known in Table 4.10.

Table 4.10*Corporate Debt Securities Descriptive Analysis*

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Corporate debt securities improved gross profit of the bank	1(2.3%)	4(9.1%)	9(20.5%)	16(36.4%)	14(31.8%)	3.86	1.05
There was a positive effect on increasing net income	2(4.5%)	2(4.5%)	8(22.7%)	14(31.8%)	18(40.9%)	4.00	1.09
Corporate debt securities lowered cost of credit	3(6.8%)	4(9.1%)	10(22.7%)	13(29.5%)	14(31.8%)	3.70	1.21
Corporate debt securities led to overall total equity capital growth	1(2.3%)	2(4.5%)	7(15.9%)	13(29.5%)	21(47.7%)	4.16	1.01
Corporate debt securities expanded total assets	4(9.1%)	2(4.5%)	6(13.6%)	15(34.1%)	17(38.6%)	3.88	1.24
Average						3.92	1.12

The findings in Table 4.10 indicates an average mean of 3.92 and standard deviation of 1.12. This class of asset backed securities had the highest average mean comparing to other types of asset backed securities' means in this study. The respondents agreed majorly that corporate debt securities led to overall total equity capital growth of the bank. This statement had the highest mean of 4.16. The respondents comparatively disagreed that corporate debt securities lowered cost of credit of the bank which had the lowest mean of 3.70 in this section. Most responses in Table 4.9 showed that they either strongly agreed or agreed with all of the statements. These results explain a lot on what has been helping many banks survive. By banks selling corporate debt or bonds emanating from the firm, they borrow money from the investors and later use the money to generate more profits. This has in turn boosted the shareholders' wealth but it has not majorly assisted towards the bank breaking even from securitization venture.

In their study Bakoush et al. (2018), notices that when banks transferred their debtors to investors through securitization process, there was occurrence of so many bad debts resulting to losses in the securities. This trickled down to affecting the financial performance of commercial banks negatively but in this study, it was discovered otherwise that in listed commercial banks, the case was different.

4.7.5 Insurance receivables / securities descriptive analysis

The respondents were asked how insurance securities influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how insurance securities had influenced various financial performance

indicators. The study was specifically interested to know how insurance securities had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. The outcomes obtained are made known in Table 4.11.

Table 4.11

Insurance Receivables / Securities Descriptive Analysis

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Insurance securities improved gross profit	2(4.5%)	6(13.6%)	9(20.5%)	16(36.4%)	11(25.0%)	3.63	1.14
There was a positive effect on increasing net income	3(6.8%)	5(11.4%)	7(15.9%)	19(43.2%)	10(22.7%)	3.64	1.16
Insurance securities lowered cost of credit	1(9.1%)	7(15.9%)	12(27.3%)	15(34.1%)	9(20.5%)	3.54	1.07
Insurance securities led to overall total equity capital growth of	2(4.5%)	4(9.1%)	10(22.7%)	17(38.6%)	11(25.0%)	3.70	1.09
Insurance securities expanded total assets	2(4.5%)	3(6.8%)	8(18.2%)	19(43.2%)	12(27.3%)	3.81	1.06
Average						3.66	1.11

The findings in Table 4.11 indicates an average mean of 3.66 and standard deviation of 1.11. This class of asset backed securities had the lowest average mean comparing to other types of asset backed securities' means in this study. The respondents agreed majorly that insurance securities expanded total assets of the bank. This statement had the highest mean of 3.81. The respondents comparatively disagreed that insurance securities lowered cost of credit of the bank which had the lowest mean of 3.54 in this section. Most responses in Table 4.11 showed that they either strongly agreed or agreed with all of the statement. Insurance securities seem to only add to assets of the banks but do not help the bank cover all costs associated in rolling them out. This means that a bank will have many assets but also the cost will also increase significantly.

The study by Acharya et al. (2013) establishes that low risk transferred to securities from various products such as loans and indemnification improved the net income and shareholder's wealth of the banks. This was due to fewer expenses the banks incurred from minimizing the effects of high-risk profiles in the securities. In par with the sentiments Cheruiyot (2016) expalins that the level of asset quality that a banks maintains dictates a lot the level of profitability the banks can achieve at a particlar time. Other more recent study by Engelen and Glasmacher (2018) reveals that securitization of insurance assets actualization became the resolution for the development delinquent of the Eurozone banks. The results indicated that sales of securities by listed banks which derived their values from insurance issued, had played a vital role of enhancing gross profit; were cost effective and had less expenditure attributed to them hence improving the net profit; were able to achieve their goal of ensuring that the shareholder's wealth is

maximized; and listed commercial banks were assured of their banks a going concern for years to come by selling insurance securities.

4.7.6 Asset backed securities model summary

In establishing the connection between asset securitization and financial performance, the study measured various hypotheses. The first hypothesis was that asset backed securities did not significantly influence financial performance of listed banks. The outcomes in Table 4.12 shows R value of .910. The P value of constant is insignificant (.128); hence the adjusted R square value was used instead. The adjusted R square value of 0.824 implied that asset backed securities predicted 82.4% of the variability in the financial performance. The rest of the variability can be explained by factors beyond the asset backed securities.

Table 4.12

Asset Backed Securities Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.910 ^a	.828	.824	.483

Predictors: (Constant), Asset backed securities

The finding therefore indicates that there was a very strong positive connection between asset backed securities and financial performance. This means that an improvement in financial performance in listed commercial banks have been caused mainly by sell of asset backed securities as compared to other securities' products. A report by African Development Bank Group (2014) shares the same idea when it strongly

indicated that it has always been a concern for any bank to have reliable operational activities, innovations, resources and finances that would place them into a road-map of always being in business throughout the economic cycles. In the report, African banks were highly advised to originate asset backed securities to have more income.

4.7.7 Regression coefficients

The regression coefficients presented in Table 4.13 indicates that asset backed securities statistically and significantly influenced financial performance of listed banks ($\beta = 0.910$, $t = 14.238$, $p < .05$). The study used standardized coefficients beta score and not the unstandardized coefficient because the P value of constant is insignificant (.128).

Table 4.13

Asset Backed Securities Coefficients

Model	Unstandardized		Standardized	T	Sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	-.258	.166		-1.554	.128
Asset backed securities	.962	.068	.910	14.238	.000

a. Dependent Variable: Financial Performance

The beta values of asset = 0.910 indicates that asset backed securities positively influenced the financial performance in the listed Kenyan banks. This finding indicated that for every increase of one unit of asset backed security, there was a statistically

significant increase of financial performance by 0.910. This means that when banks securitize a loan such as car loans, credit card or sell insurance, investors buy the securities and by purchasing these securities, performance of listed commercial banks is improved by 0.910. Chen (2018) also got similar outcome when the study realized that loans that had less risks when securitized proved to be efficient and effective.

4.8 Influence of Mortgage Backed Securities (MBS) on Financial Performance

The second objective was to examine the influence of mortgage backed securities (MBS) on financial performance in listed banks. This composite / latent variable had several elements. These were: residential mortgage backed securities, commercial mortgage backed securities and collateralized mortgage backed securities. Their results are presented in section 4.8.1, 4.8.2 and 4.8.3 respectively.

4.8.1 Residential mortgage backed securities descriptive analysis

The respondents were asked how residential mortgage backed securities influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how residential mortgage backed securities had influenced various financial performance indicators. The study was specifically interested to know how residential mortgage backed securities had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. The outcome attained are made known in Table 4.14.

Table 4.14*Residential Mortgage Backed Securities Descriptive Analysis*

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Residential mortgage backed securities improved gross profit	5(11.4%)	10(22.7%)	17(38.6%)	8(18.2%)	4(9.1%)	2.91	1.11
There was a positive effect on increasing net income	3(6.8%)	9(20.5%)	21(47.7%)	6(13.6%)	5(11.4%)	3.02	1.05
There was low cost of credit	2(4.5%)	11(25.0%)	17(38.6%)	10(22.7%)	4(9.1%)	3.07	1.02
They led to overall total equity capital growth	2(4.5%)	9(20.5%)	22(50%)	7(15.9%)	4(9.1%)	3.05	0.96
They expanded total assets	4(9.1%)	12(27.3%)	15(34.1%)	10(22.7%)	3(6.8%)	2.91	1.07
Average						2.99	1.04

The findings in Table 4.14 indicates an average mean of 2.99 and standard deviation of 1.04. This class of mortgage backed securities had the highest average mean comparing to other types of mortgage backed securities' means in this study. The respondents agreed majorly that residential mortgage backed securities lowered cost of

credit. This statement had the highest mean of 3.07. The respondents comparatively disagreed that residential mortgage backed securities improved gross profit of the bank and expanded total assets of the bank in which both had the lowest means of 2.91 in this section. Most responses in Table 4.14 showed that they were neutral with all of the statements. These results strongly prove that not only have investors accepted the residential mortgages securities due to sales of residential mortgage loans but they are greatly impacting the breaking even point of the banks. That is, a bank is able to cover the costs associated with rolling out of the residential mortgage securities.

In agreement, Bakri et al. (2015) had a similar outcome when they discovered that residential mortgage backed securities involvement in subprime mortgage had a mixture of results. Some banks suffered greatly on the losses as a result of crushing of sub-prime mortgages while others did not. It was also gathered by Keys et al. (2014), that the cause of these kind of outcome could be linked to relaxation on borrowers screening by banks. The study concluded this after gathering evidence that majority of securities mortgages were leading to substantial amount of losses as compared to other securities.

4.8.2 Commercial mortgage backed securities descriptive analysis

The respondents were asked how commercial mortgage backed securities influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how commercial mortgage backed securities had influenced various financial performance indicators. The study was specifically interested to know how commercial mortgage backed securities had impacted on gross profit, net

income, cost of credit, total equity capital, and total assets of the bank. Table 4.15 displays the findings obtained from descriptive statistics analysis on commercial mortgage backed securities.

Table 4.15

Commercial Mortgage Backed Securities Descriptive Analysis

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Commercial mortgage backed securities improved gross profit	4(9.1%)	14(31.8%)	18(40.9%)	6(13.6%)	2(4.5%)	2.72	0.97
They had a positive effect on increasing net income	7(15.9%)	13(29.5%)	17(38.6%)	5(11.4%)	2(4.5%)	2.59	1.04
They lowered cost of credit	7(15.9%)	12(27.3%)	19(43.2%)	4(9.1%)	2(4.5%)	2.59	1.01
They led to overall total equity capital growth	5(11.4%)	14(31.8%)	18(40.9%)	6(13.6%)	1(2.3%)	2.64	0.94
They expanded total assets	4(9.1%)	15(34.1%)	17(38.6%)	5(11.4%)	3(6.8%)	2.72	1.01
Average						2.65	0.99

The findings in Table 4.15 indicates an average mean of 2.65 and standard deviation of 0.99. This class of mortgage backed securities had the lowest average mean comparing to other types of mortgage backed securities' means in this study. The respondents agreed majorly that commercial mortgage backed securities improved gross profit and expanded total assets of the banks. These statements had the highest means of 2.72. The respondents comparatively disagreed that commercial mortgage backed securities had an encouraging influence on increasing net income of the bank and lowered cost of credit. Both had the lowest mean of 2.59 in this section. Most responses in Table 4.15 showed that they were neutral with all of the statements. Looking further into these results, it could be said that in as much as sale of mortgage securities seem to bring about profits and assets to the bank, it is very expensive to maintain them due to their high cost of maintenance. In fact, these costs have resulted to reduction of net profits of the banks significantly. These costs could be the kind of taxes charged on commercial mortgage loans

An interesting outcome by Buachanan (2016) supports the idea to issue various types of securities because, though they may not pay much, they provide a financing cushion in all economic cycle seasons.

4.8.3 Collateralized mortgage backed securities descriptive analysis

The respondents were asked how collateralized mortgage backed securities influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how collateralized mortgage backed securities had

influenced various financial performance indicators. The study was specifically interested to know how collateralized mortgage backed securities had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. Table 4.16 displays the findings obtained from descriptive statistics analysis on collateralized mortgage backed securities.

Table 4.16*Collateralized Mortgage Backed Securities Descriptive Analysis*

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Collateralized mortgage backed securities improved gross profit	3(6.8%)	11(25.0%)	18(40.9%)	8(18.2%)	4(9.1%)	2.97	1.05
Collateralized mortgage backed securities had a positive effect on increasing net income	2(4.5%)	13(29.5%)	21(47.7%)	7(15.9%)	1(2.3%)	2.82	0.84
Collateralized mortgage backed securities lowered cost of credit	4(9.1%)	9(20.5%)	24(54.5%)	5(11.4%)	2(4.5%)	2.81	0.92
Collateralized mortgage backed securities led to overall total equity capital growth	5(11.4%)	12(27.3%)	22(50%)	4(9.1%)	1(2.3%)	2.64	0.89
Collateralized mortgage backed securities expanded total assets	6(13.6%)	13(29.5%)	17(38.6%)	5(11.4%)	3(6.8%)	2.68	1.07
Average						2.78	0.95

The findings in table 4.16 indicates an average mean of 2.78 and standard deviation of 0.95. The respondents agreed majorly that collateralized mortgage backed securities improved gross profit of the banks. This statement had the highest mean of 2.97. The respondents comparatively disagreed that collateralized mortgage backed securities had led to overall total equity capital growth of the bank which had a mean of 2.64 in this section. Most responses in Table 4.16 showed that they were neutral with all of the statements. In further interpretation of the results, collateralized mortgage backed securities have boosted profits on the one hand. However, these profits do not seem to directly benefiting the owners of the bank. This means that profits generating from these securities end up being used in day to day running of the bank and little is left to share with the shareholders

Chepkorir (2018) findings on advocacy of diversifying securities' portfolio to support the financial performance blends well with this study's findings that having various securities such as collateralized mortgage backed securities amongst other at long last improves the performance of banks. Also, another study by Hanweck (2014) that got the same results reasons that relatively low influence of collateralized mortgage loans would be because of high default rates by loans issued in the class of mortgages. These can actually conclude that the sales of securities which derived their values from collateralized mortgage loans issued, had on some extent played a vital role of enhancing gross profit; were cost effective and had less expenditure attributed to them hence to some extent improving the net profit; were able to achieve their goal of ensuring that the shareholder's wealth is maximized; and listed commercial banks were to some extent

assured of their banks a going concern for years to come by selling collateralized mortgage backed securities.

4.8.4 Mortgage backed securities model summary

In establishing the relationship between asset securitization and financial performance, the study measured various hypotheses. The second hypothesis was that mortgage backed securities did not significantly influence financial performance of listed banks.

The results in Table 4.17 shows R value of .850. The R square value of 0.723 implied that mortgage backed securities predicted 72.3% of the variability in the financial performance. R-square was used instead on adjusted R-square because the p-value of constant was significant (.004). The rest of the variability could be explained by factors beyond the mortgage backed

Table 4.17

Mortgage Backed Securities Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.850 ^a	.723	.716	.614

Predictors: (Constant), Mortgage backed securities

The finding therefore indicates that there was an encouraging connection between mortgage backed securities and financial performance in listed Kenyan banks. Banks are significantly benefiting by improving their financial performance as a result of engaging

in sale of mortgage backed securities. These results were also gotten by Dabas (2018) who confirmed that securitization was performing better when mortgage classes of securities were added into the profitability model in Malaysia.

4.8.5 Regression coefficients

The regression coefficients presented in table 4.18 indicates that mortgage backed securities statistically and significantly influenced financial performance of listed banks ($\beta = 0.092$, $t = 10.466$, $p < .05$). The study used unstandardized coefficients beta score and not the standardized coefficient because the p-value of constant is significant (.004).

Table 4.18

Mortgage Backed Securities Coefficients

Model	Unstandardized		Standardized	T	Sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	-.851	.275		-3.090	.004
Mortgage backed securities	.963	.092	.850	10.466	.000

a. Dependent Variable: Financial Performance

The beta values of asset= 0.850, indicated that mortgage backed securities positively influenced the financial performance in the listed commercial banks in Kenya. This finding indicates that for every increase of one unit of mortgage backed security, there was a statistically significant increase of financial performance by 0.850. This means that when banks securitize a loan such residential mortgage or commercial

mortgage, investors buy the securities and by purchasing these securities, performance of listed commercial banks is improved by 0.850. Giron and Chapoy (2012) in their study found out that there is a link between various types of securitization from various bank's assets such as mortgage loans and financing of bank's operations. They explained that these securities are vital in defining how the robustness of a financial structure of a financial institution will look like.

4.9 Influence of Collateralized Debt Obligations (CDOs) on financial performance

The final objective was to examine the influence of collateralized debt obligations (CDO) on financial performance in listed banks. This composite / latent variable had several elements. These were: collateralized loan obligations, collateralized bond obligations and collateralized credit derivatives. Their results are presented in section 4.9.1, 4.9.2 and 4.9.3 respectively.

4.9.1 Collateralized loan obligations descriptive analysis

The respondents were asked how collateralized loan obligations influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how collateralized loan obligations had influenced various financial performance indicators. The study was specifically interested to know how collateralized loan obligations had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. Table 4.19 displays the findings obtained from descriptive statistics analysis on collateralized loan obligations.

Table 4.19*Collateralized Loan Obligations Descriptive Analysis*

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Collateralized loan obligations improved gross profit	11(25.0%)	17(38.6%)	8(18.2%)	5(11.4%)	3(6.8%)	2.36	1.18
Collateralized loan obligations had a positive effect on increasing net income	13(29.5%)	19(43.2%)	7(15.9%)	3(6.8%)	2(4.5%)	2.14	1.07
Collateralized loan obligations lowered cost of credit	14(31.8%)	20(45.5%)	5(11.4%)	4(9.1%)	1(2.3%)	2.05	1.01
Collateralized loan obligations led to overall total equity capital growth	12(27.3%)	18(40.9%)	6(13.6%)	5(11.4%)	3(6.8%)	2.29	1.19
Collateralized loan obligations expanded total assets	12(27.3%)	17(38.6%)	9(20.5%)	4(9.1%)	2(4.5%)	2.25	1.10
Average						2.22	1.11

The findings in Table 4.19 indicates an average mean of 2.22 and standard deviation of 1.11. The respondents slightly agreed majorly that collateralized loan obligations improved gross profit of the banks. This statement had the highest mean of 2.36. The respondents comparatively disagreed that collateralized loan obligations lowered cost of credit of the bank which had a mean of 2.05 in this section. Most responses in Table 4.19 showed that there was a relative strong disagreement or disagreements with all of the statements. The results prove that the profit is improved when banks engage in selling collateralized loan obligations. However, the costs associated with this type of security is very high for a bank to break even.

Ngari and Muiruri (2014) found out that for a financial innovation to effectively take roots in a new market, awareness must be geared up on the advantages. These results agree with this study because, when few is known about a financial product such as collateralized loan obligations, less customers tend to buy it. This in the long-run negatively impacts the financial performance of commercial banks. These results indicated that sales of securities which derived their values from collateralized loan obligations, had a weak influence on enhancing gross profit; the net profit; total capital growth; cost of capital and asset growth.

4.9.2 Collateralized bond obligations descriptive analysis

The respondents were asked how collateralized bond obligations influenced financial performance in the listed commercial bank. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how collateralized bond obligations had influenced various financial performance indicators. The study was specifically interested to know how

collateralized bond obligations had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. Table 4.20 shows the findings obtained from descriptive statistics analysis on collateralized bond obligations.

Table 4.20

Collateralized Bond Obligations Descriptive Analysis

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Collateralized bond obligations improved gross profit	14(31.8%)	17(38.6%)	8(18.2%)	3(6.8%)	2(4.5%)	2.14	1.09
They had a positive effect on increasing net income	13(29.5%)	22(50.0%)	5(11.4%)	3(6.8%)	1(2.3%)	2.02	0.95
Collateralized bond obligations lowered cost of credit	11(25.0%)	18(40.9%)	7(15.9%)	5(11.4%)	3(6.8%)	2.34	1.18
Collateralized bond obligations led to overall total equity capital growth	12(27.3%)	16(36.4%)	8(18.2%)	6(13.6%)	2(4.5%)	2.32	1.16
They expanded total assets	10(22.7%)	21(47.7%)	7(15.9%)	5(11.4%)	1(2.3%)	2.22	1.01
Average						2.21	1.08

The findings in table 4.20 indicates an average mean of 2.21 and standard deviation of 1.08. The respondents slightly agreed majorly that collateralized bond obligations lowered the cost of credit. This statement had the highest mean of 2.34. The respondents comparatively disagreed that collateralized bond obligations had a positive effect on increasing net income of the bank which had a mean of 2.02 in this section. Most responses in Table 4.20 showed that there was a relative strong disagreement or disagreements with all of the statements. These results indicated that when commercial banks issued bonds, the income generated was sufficient to break-even but not high enough to constantly improve net income. This shows that various expenses of collateralized bond obligations kept on varying which was negatively affecting the stability of these type of securities.

Mohanty (2015) agrees with the findings associating collateralized bond obligations as new forms of finance to commercial banks. Being new, the reception of the idea would take some time before being actualized among the investors (Mohanty, 2015). These results indicated that sales of securities which derived their values from collateralized bond obligations, had a weak influence on enhancing gross profit; the net profit; total capital growth; cost of capital and asset growth.

4.9.3 Collateralized credit derivatives descriptive analysis

The respondents were asked how collateralized credit derivatives influenced financial performance in the listed banks. There were statements that the respondents were supposed to (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how collateralized credit derivatives had influenced various financial performance indicators. The study was specifically interested to know how collateralized

credit derivatives had impacted on gross profit, net income, cost of credit, total equity capital, and total assets of the bank. Table 4.21 displays the findings obtained from descriptive statistics analysis on collateralized credit derivatives.

Table 4.21

Collateralized Credit Derivatives Descriptive Analysis

Statements N=44	1	2	3	4	5	Mean	Std. Dev
Collateralized credit derivatives improved gross profit of the bank	13(29.5%)	21(47.7%)	7(15.9%)	2(4.5%)	1(2.3%)	2.02	0.93
There was a positive effect on increasing net income of the bank	10(22.7%)	20(45.5%)	6(13.6%)	5(11.4%)	3(6.8%)	2.34	1.16
They lowered cost of credit	15(34.1%)	17(38.6%)	5(11.4%)	4(9.1%)	3(6.8%)	2.16	1.19
They led to overall total equity capital growth of the bank	11(25.0%)	19(43.2%)	8(18.2%)	4(9.1%)	2(4.5%)	2.25	1.08
They expanded total assets of the bank	14(31.8%)	16(36.4%)	9(20.5%)	3(6.8%)	2(4.5%)	2.16	1.09
Average						2.18	1.09

The findings in Table 4.21 indicates an average mean of 2.18 and standard deviation of 1.09. The respondents slightly agreed majorly that collateralized credit derivatives led to overall total equity capital growth of the bank. This statement had the highest mean of 2.25. The respondents comparatively disagreed that collateralized credit derivatives improved gross profit of the bank which had a mean of 2.02 in this section. Most responses in Table 4.21 showed that there was a relative strong disagreement or disagreements with all of the statements. This outcome depicts that a lot of income generated from collateralized credit derivatives was going to shareholders as compared to improving to profitability of the bank. This could be a problem especially in ensuring that the banks survive for long in the market.

Muthaura (2010) shares the same opinion when he indicated that due to tinted history of securitization in developed nations, it was certain that some complex securitized debt instruments such as collateralized debt obligations would be shunned in emerging markets. That meant they would have a negative performance for a significant time of time. That can be indicated that sales of securities which derived their values from collateralized credit derivatives, had a weak influence on enhancing gross profit; the net profit; total capital growth; cost of capital and asset growth.

4.9.4 Collateralized debt obligations model summary

In establishing the connection between asset securitization and financial performance of listed banks, the study measured various hypotheses. The third hypothesis was that collateralized debt obligations did not significantly influence financial performance of listed commercial banks in Kenya. The results in Table 4.22 shows R value of .690. The P value of constant is insignificant (.081), hence adjusted R square

value was used instead. The R square value of 0.464 implied that collateralized debt obligations predicted 46.4% of the variability in the financial performance.

Table 4.22

Collateralized Debt Obligations Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.690 ^a	.477	.464	.844

Predictors: (Constant), Collateralized debt obligations

The finding therefore indicates that there was a fairly strong positive connection between collateralized debt obligations and financial performance in listed banks. The rest of the variability can be explained by factors beyond the collateralized debt obligations. It could therefore be explained that collateralized debt obligations are not widely bought by investors. Reason could be attributed to the rate of interest paid, readily available information on them and number of banks that have securitized these kinds of securities. These results are supported by a report done by National Association of Insurance Commissioners, 2014).

The report indicated that the largest investors in leveraged loans and collateralized debt obligations were mutual funds, insurance companies, banks, and pension funds. Few individual investors with high net worth take up this kind of securities explaining why they predicted 46.4 % of the variability in the financial performance in this study.

4.9.5 Regression coefficients

The regression coefficients presented in Table 4.23 indicates that collateralized debt obligations statistically and significantly influenced financial performance of listed banks ($\beta = 0.690$, $t = 6.185$, $p < .05$). The study used standardized coefficients beta score and not the unstandardized coefficient because the p-value of constant is insignificant (.081).

Table 4.23

Collateralized Debt Obligations Coefficients

Model	Unstandardized		Standardized	T	Sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	-.804	.450		-1.788	.081
Collateralized debt obligations	.703	.114	.690	6.185	.000

a. Dependent Variable: Financial Performance

The beta values of asset= 0.690, indicates that collateralized debt obligations positively influenced the financial performance in the listed Kenyan banks. This finding indicated that for every increase of one unit of collateralized debt obligations, there was a statistically significant increase of financial performance by 0.690. This means that when banks securitize collateralized loan obligations, collateralized bond obligations and collateralized credit derivatives investors buy the securities. Purchasing these securities improves performance of listed commercial banks is improved by 0.690.

4.10 Hypothesis Testing

The study had an objective of testing the various hypotheses. These hypotheses indicated that there was no significant relationship between asset backed securities, mortgage backed securities and collateralized debt obligations and financial performance of listed commercial banks in Kenya.

4.10.1 ANOVA for linear relationship between asset backed securities and financial performance.

The output on Table 4.24 indicates that the p -value was 0.000 which is lower than 0.05 at 0.05 significance level. This implied that the relationship between the asset backed securities and financial performance was statistically significant and the model could be used to predict the dependent variable. The study therefore rejected the null hypothesis and concluded that asset backed securities are an important determinant of financial performance.

Table 4.24

ANOVA for Asset Backed Securities and Financial Performance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	47.368	1	47.368	202.730	.000 ^b
Residual	9.813	42	.234		
Total	57.182	43			

a. Dependent Variable: Financial performance

b. Predictors: (Constant), Asset backed securities

This finding was consistent with the study by Mbugua (2014) who reveals that by investors accepting to buy asset backed securities in the Nairobi securities exchange, there was more provision of new loans in future that would be used to issue more securities in the capital market. In the long run this would positively affect financial performance of the banks.

4.10.2 ANOVA for linear relationship between mortgage backed securities and financial performance.

The output on Table 4.18 indicates that the *p*-value was 0.000 which is less than 0.05 at 0.05 significance level. This implied that the connection between the mortgage backed securities and financial performance is statistically significant and the model can be used to predict the dependent variable. The study therefore rejected the null hypothesis and concluded that mortgage backed securities are an important determinant of financial performance.

Table 4.25

ANOVA for Mortgage Backed Securities and Financial Performance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	41.333	1	41.333	109.533	.000 ^b
Residual	15.849	42	.377		
Total	57.182	43			

a. Dependent Variable: Financial performance

Predictors: (Constant), Mortgage backed securities

These results are per with Garmaise and Mark (2013) who found out that the attractions of mortgage lending were more than the perils if done well and borrowers scrutinized before issued with the loans. They further ascertained that mortgage lending improves financial performance and gives banks a chance to innovate the loan portfolios into more profitable products such as through securitization.

4.10.3 ANOVA for linear relationship between collateralized debt obligations and financial performance.

The output on Table 4.26 indicates that the p -value was 0.000 which is less than 0.05 at 0.05 significance level. This implied that the relationship between the collateralized debt obligations and financial performance is statistically significant and the model can be used to predict the dependent variable.

Table 4.26

ANOVA for Linear Relationship Between Collateralized Debt Obligations and Financial Performance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	27.254	1	27.254	38.249	.000 ^b
Residual	29.927	42	.713		
Total	57.182	43			

a. Dependent Variable: Financial performance

b. Predictors: (Constant), Collateralized debt obligations

Ngwu and Chen (2016) were also able to trace the predictability of financial performance from collateralized debt obligations due to a significant input on the regulations made. The study therefore rejected the null hypothesis and concluded that collateralized debt obligations were an important determinant of financial performance.

4.11 Inferential statistics

To evaluate the relationships between the dependent and independent variables, multiple regression analysis was done.

4.11.1 Multiple Regression Analysis

Multivariate regression analysis was applied to determine the multiple regression model hypothesized in chapter three. It was also used to determine how the independent variables influenced the dependent variable collectively. The analysis was also meant to establish the extent to which specific independent element affected the dependent element in such a accumulated setup and which were the more significant items. The finding in Table 4.27 shows R value of 0.926. The P value of constant is insignificant (.673); hence the adjusted R square value is used instead of R-square. The adjusted R square value of 0.847 implied that asset securitization predicted collectively 84.7% of the variability in the financial performance. The rest of the variability could be explained by factors beyond the asset securitization.

Table 4.27*Multiple Linear Regression Analysis Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.926 ^a	.858	.847	.45099

a. Predictors: (Constant), asset, mortgage, collateralized

The result indicated that there was a strong encouraging connection between asset securitization and financial performance in listed banks. A prior study while assessing whether asset securitization really led to improved financing or it was just complicating the procedures, found out that when done with moderation it can lead to improvement, but when abused or complicated it had not positive effects on procedures (Persistent energy capital, 2016).

4.11.2 ANOVA for linear relationship between asset securitization and financial performance.

The output on Table 4.28 indicates that the p -value was 0.000 which is less than 0.05 at 0.05 significance level. This implied that the entire model on the connection between the asset securitization and financial performance was statistically significant and the model can be used to predict the fiscal results of listed banks.

Table 4.28*ANOVA for Asset Securitization and Financial Performance*

Model	Sum Squares	of Df	Mean Square	F	Sig.
Regression	49.046	3	16.349	80.382	.000 ^b
Residual	8.136	40	.203		
Total	57.182	43			

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Asset, Mortgage, Collateralized

4.11.3 Multiple linear regression coefficients

Since the p-value of constant was insignificant (.673), the study used standardized coefficients beta score and not the unstandardized coefficients of ABS, MBS and CDOs. Therefore, beta values of asset= 0.766 mortgage =0.412 and collateral = -0.304 as in Table 4.29, indicated that these asset securitization variables are a predictor of the fiscal results in the listed banks. Although the model was significant in predicting the dependent variable, combination of the three makes each to be insignificant. Each independent variable was individually significant but when combined only asset backed securities was significant.

Table 4.29*Multiple Linear Regression coefficients*

Model	Unstandardized		Standardized	T	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	-.109	.256		-.425	.673
Asset	.810	.138	.766	5.741	.108
Mortgage	.467	.181	.412	2.536	.110
Collateral	-.310	.123	-.304	-2.456	.211

a. Dependent Variable: Financial Performance

From Table 4.29, the multi linear regression model equation as $Y = C + \beta_1 X_{1i,t} + \beta_2 X_{2i,t} + \beta_3 X_{3i,t} + \epsilon_{i,t}$. When fitted using unstandardized coefficients was; financial performance = $-0.109 + 0.766 X_1 + 0.412 X_2 - 0.304 X_3 + e$ where -0.109 was the constant, X_1 ABS index; X_2 was MBS index and X_3 was CDOs index. The study finding implied that an increase of one unit of X_1 , X_2 & X_3 increases or decrease Y by 0.766 , 0.412 & -0.304 . That is to say in a combined multiple regression, only asset backed securities had a significant impact on financial performance. Therefore, it was decided that in asset securitization, apart from collateralized backed securities when other variables were examined alone had a significant and positive effect on the financial performance. However, when examined together in a joint model, only asset backed securities had a significant impact. This meant that commercial banks ought to effectively combine the three types of securities however for them to make sustainable profits they should consider investing more in securities ABS.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is a summary of the whole report and contains the rundown of the discoveries and approach suggestions emerging from the examination. The primary issue of the examination is low profitability in listed Kenya banks. The reason for the investigation is assessing the relationship between asset securitization and financial performance of listed banks.

5.2 Summary of Findings

This segment presented a summary of the key discoveries of the study based on the three core objectives that the researcher sought to accomplish. Overall, the discoveries exposed that there was a strong connection between asset securitization and monetary performance of listed Kenyan banks. The general reliability result was of 0.967 alpha. This demonstrated solid inward consistency among proportions of the variables.

5.2.1 Asset-Based Securities

The first objective was to assess the influence of asset-backed securities on financial performance of listed commercial banks in Kenya. This being a composite variable, it had several elements such as automobile securities, credit card securities, royalty securities, corporate debt securities and insurance receivables / securities. The influence of asset-based securities on financial performance was at a mean of 3.7980 and standard deviation of 1.17636. The adjusted R square value of 0.824 implied that asset

backed securities predicted 82.4% of the variability in the financial performance. The findings also established that main asset backed predictors that include automobile loans, credit card receivables, royalty receivables, corporate debt and insurance securities.

5.2.2 Mortgage Backed Securities

The second study objective was to determine the influence of mortgage-backed securities on financial performance of listed commercial banks in Kenya. This being a composite variable, it had several elements such as residential mortgage backed securities, commercial mortgage backed securities and collateralized mortgage backed securities. The influence of mortgage-backed securities on financial performance was at a mean of 2.8106 and standard deviation of 0.99941. The R square value of 0.723 implied that mortgage backed securities predicted 72.3% of the variability in the financial performance. The results also showed that the main mortgage backed security predictors as residential mortgage-backed securities; commercial mortgage backed securities and collateralized mortgage obligations.

5.2.3 Collateralized Debt Obligation

The third study objective was to evaluate the influence of collateralized debt obligations on financial performance of listed commercial banks in Kenya. This being a composite variable, it had several elements such as collateralized loan obligations, collateralized bond obligations and collateralized credit derivatives. The influence of collateralized debt obligations on financial performance was at a mean of 2.2046 and standard deviation of 1.09421. The R square value of 0.464 implied that collateralized debt obligations predicted 46.4% of the variability in the financial performance. The

findings also established that collateralized debt security predictors were: collateralized loan obligations, collateralized bond obligations and collateralized credit derivatives.

5.3 Conclusion of the study

The study established a positive relationship and statistically significant between that asset backed securities and financial performance. This could be explained that the idea of selling of asset backed securities such as credit cards which has been marketed a lot by banks has been accepted in the Kenya. People are using credit cards in their day to day lives and they are paying up debts incurred as a result of using credit cards. In return, this has attracted so many investors willing to purchase credit card securities. Further on, some securities such as royalties have only been improving the goodwill of the banks and not a direct benefit to shareholders of the bank. Other securities such as corporate debt and insurance securities, have boosted the shareholders' wealth and assets of the bank respectively. However, almost all asset backed securities' various incomes generated has not yet reached a level to cover the costs of credit or the point of break even.

The findings showed a positive relationship and statistically significant between mortgage-backed securities and financial performance. These results strongly prove that not only have investors accepted the various mortgage securities such as residential mortgages securities, but they are greatly impacting the breaking even point of the banks. That is, a bank is able to cover the costs associated with rolling out of the residential mortgage securities. However, maintaining commercial mortgage securities is very expensive for the bank. In fact, these costs have resulted to reduction of net profits of the banks significantly. These costs could be the kind of taxes charged on commercial mortgage loans. The study has also discovered that securities such collateralized

mortgage backed securities have boosted profits on the one hand. However, on the other hand, these profits do not seem to directly benefiting the owners of the bank. This means that profits generating from these securities end up being used in day to day running of the bank and little is left to share with the shareholders.

The findings established a negative relationship and statistically significant between that collateralized debt obligations and financial performance. It could therefore be explained that securities such as collateralized debt obligations are not widely bought by investors. Reason could be attributed to the rate of interest paid, readily available information on them and number of banks that have securitized these kinds of securities. The results also prove that the costs associated with this type of security is very high for a bank to break even. When the bank breaks even, the income generated is insufficient to constantly improve net income. This shows that various expenses of collateralized bond obligations keep on varying which is negatively affecting the stability of these type of securities. Lastly, it is clear that a lot of income generated from securities such as collateralized credit derivatives is going to shareholders as compared to improving to profitability of the bank. This could be a problem especially in ensuring that the banks survive for long in the market.

5.4 Recommendations of the study

Based on the results gotten from the study on ABS, MBS and CDO there was room for improvement. The study recommended for more customized ABS to boost financial performance in listed banks since though it had the highest mean, the mean was 3.7955. Banks should incorporate more ABS such as bancassurance products into securitization process. Commercial banks should also advertise these securities widely

for general public to know. All this will help more purchase for a higher likelihood of breaking even in future.

The study recommended for broader MBS to enhance financial performance in the banks since it had a mean of 2.8182. Banks should incorporate new technology in their mortgage financing such as fabrication of shipment containers. There should be development of policies by the government to guide Kenyan banks from going bankrupt due to default by borrowers. Government should review taxation laws to enable banks have a fair environment to earn from mortgage securities. Banks should provide more public awareness to enable people understand mortgage backed securities more.

The study also recommended for more innovative CDO to heighten financial performance in the banks. The results showed that this class of securitization has the least impact on improved profitability of banks with a mean of 2.2045. Therefore, banks should raise awareness and educate the public on what it entails and how it is operated. The banks should also avoid complicating the process of purchasing these securities. There should be a refresher training on the relevance of collateralized debt obligations to commercial banks. Information should also be provided on these securities especially in public domains such as social media. There should be clear policies on how the government regulates the market to ensure there is constant type of taxes. Commercial banks should hire more professions to aid in balancing income so that profit allocation is balanced

5.5 Suggestions for future research

The study suggested future researcher to focus on customized ABS, broad MBS and innovative CDOs for financial performance in the banks. This was because, though

the few ABS, MBS and CDOs that were introduced since 2014 improved performance, evidence showed that financial performance of listed commercial banks was still struggling between low performance to medium performance due to investors not fully comprehending how these securities work. There should be more research to ascertain how various commercial banks can break-even when venturing in securitization process.

REFERENCES

- Abata, M. A. (2015). Impact of asset management corporation of Nigeria (AMCON) on the securitization in the Nigerian banking sector. *Global Journal of Contemporary Research in Accounting, Auditing and Business Ethics (GJCRA)*, 1(2), 282-298.
http://globalbizresearch.org/files/2036_gjcra_matthew-a-abata-134626.pdf
- Abdikadir, A. H. (2017). *The relationship between investments and financial performance of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.
<http://erepository.uonbi.ac.ke/bitstream/handle/11295/102735/FUAD0723%20EDITED.pdf?sequence=1&isAllowed=y>
- Acharya, V. V., & Steffen, S. (2015). The greatest carry trade ever; Understanding Eurozone bank risks. *Journal of Financial Economics (JFE)*, 115(2), 215-236.
<http://dx.doi.org/10.2139/ssrn.2257665>.
- Acharya V. V., Schnabl P., & Suarez G. (2013). Securitization without risk transfer. *Journal of Financial Economics*, 107(3), 515-536.
<https://doi.org/10.1016/j.jfineco.2012.09.004>
- Acharya V. V., & Schnabl, P. (2010). Do global banks spread global imbalances. Asset-backed commercial paper during the financial crisis of 2007–09. *IMF Economic Review*, 58(1), 37-73. [http://doi: 10.3386/w16079](http://doi:10.3386/w16079)
- Adams, R. M., & Gramlich, J. P. (2014). *Where are all the new banks. The role of regulatory burden in new charter creation*.
<https://www.federalreserve.gov/econresdata/feds/2014/files/2014113pap.pdf>
- AfriAsia Bank (2019). *Africa wealth report 2019*.
https://e.issuu.com/embed.html?u=newworldwealth&d=africa_2019
- African Development Bank Group (2014). *Summary of bank group operations, resources and finance, 2005-2014: Annual report*.

https://www.afdb.org/fileadmin/uploads/afdb/documents/generic-documents/annual_report_2014_-full.pdf

African development Bank Group (2017). *Trade finance: Overcoming.*

https://www.afdb.org/fileadmin/uploads/afdb/documents/publications/trade_finance_in_africa_survey_report.pdf.

African development Bank Group (2019). *East Africa economic outlook.*

https://www.afdb.org/fileadmin/uploads/afdb/documents/publications/2019aeo/reo_2019_-_east_africa_.pdf

Aikman, D. M. (2015). *Mapping heat in the U.S. financial system.*

<http://dx.doi.org/10.17016/feds.2015.059>.

Albertazzi, U., Eramo, G., & Gambacorta, L. (2015). Asymmetric information in securitization: An empirical assessment. *Journal of Monetary Economics*, 71(1), 33-49. <https://doi.org/10.1016/j.jmoneco.2014.11.002>.

Allwood, C. M. (2012). The distinction between qualitative and quantitative research methods is problematic. *International Journal of Methodology*, 46(5), 1417-1429. <https://doi.org/10.1007/s11135-011-9455-8>

Ally, Z. (2013). Comparative analysis of financial performance of commercial banks in Tanzania. *Research Journal of Finance and Accounting*, 4(19), 133-143. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1013.689&rep=rep1&type=pdf>.

Asia Securities Industry, & Financial Markets Association (2018). *Securitisation in Asia 2018*. <https://www.asifma.org/wp-content/uploads/2018/09/asifma-2018-securitization-handbook-final-003.pdf>

Association for Financial Markets in Europe (2017). *Securitization data report, q3:2017*. <https://www.afme.eu/en/reports/Statistics/securitisation-data-report-q3-2017/>

Association for Financial Markets in Europe, Securities Industry, & Financial Markets Association (2019). *Securitisation data report, European structured finance q1:*

2019. <https://www.sifma.org/wp-content/uploads/2019/06/europe-securitisation-quarterly-2019-06-12-afme-sifma.pdf>

Association for Financial Markets in Europe (2013). *Shaping the growth agenda*.
<https://www.afme.eu/globalassets/downloads/publications/afme-annual-review-2013.pdf>

Australian Securities & Investments Commission (2018). *Report 580: Credit card lending in Australia*. <https://download.asic.gov.au/media/4801724/rep580-published-4-7-2018.pdf>

Ba, H. (2017). The systemic causes of financial crises in the long nineteenth century. *Business and Politics*, 20(2), 208-238. <https://doi.org/10.1017/bap.2017.22>

Bailey, R. A. (2017). *Evaluating farm financial performance measures in Illinois* [Master's thesis, Southern Illinois University] Carbondale, Illinois.
https://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=2080&context=gs_rp

Bakoush, M., Abouarab, R., & Wolfe, S. (2018). Disentangling the impact of securitization on bank profitability. *Research in International Business and Finance*, 47(1), 520-537. <https://doi.org/10.1016/j.ribaf.2018.09.013>

Bakri, M., Ali, R., & Ismail, S. (2015). The study of residential mortgage backed securities during subprime mortgage: Malaysian experience. *Advanced Science Letters*, 21(5), 1468-1472. <https://doi.org/10.1166/asl.2015.6073>.

Banco de España (2015). *Securitization and banks' capital structure*.
<https://pdfs.semanticscholar.org/9680/f65ae135ac2f88c3a3f3121418efc0c224e5.pdf>

Bank for International Settlements (2017). *Asymmetric information and the securitization of SME loans*. https://ideas.repec.org/p/bdi/wptemi/td_1091_16.html

Bank for International Settlements (2018). *Structural changes in banking after the crisis, CGFS Papers No 60*. New York. <https://www.bis.org/publ/cgfs60.pdf>

- Bank for International Settlements (2019). *Liquidity coverage ratio(LCR); High quality liquid assets(LCR30)*.
https://www.bis.org/basel_framework/chapter/lcr/30.htm?inforce=20190101&export=pdf&pdfid=15723335347203754
- Banking Act chapter 488 (2015). *Laws of Kenya*. <https://www.centralbank.go.ke/wp-content/uploads/2016/08/bankingactoct2015.pdf>
- Beck, T., & Cull, R. (2013). *Banking in Africa. Policy research working paper series 6684*, The World Bank.
- Beck, T., Claessens, S., & Schmukler, S. (2012). *Financial globalization and crises:The evidence and impact of financial globalization*. <https://doi.org/10.1016/b978-0-12-397874-5.00001-4>.
- Bolarinwa, O. A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal*, 22(4), 195-201.
<https://www.validityandreliabilitypaper.pdf>
- Bord, V. M., & Santos, J. A. (2015). *Does securitization of corporate loans lead to riskier lending*. <https://onlinelibrary.wiley.com/doi/abs/10.1111/jmcb.12181>
- Boshoff, A., & Krisch, K. (2017). *Structured finance and securitisation in South Africa: Overview*. <https://uk.practicallaw.thomsonreuters.com/4-521-4150?transitiontype=default&contextdata=%28sc.default%29>
- Bryman, A. (2016). *Social research methods*. Oxford university press.
<https://www.managementboek.nl/code/inkijkexemplaar/9780199689453/social-research-methods-engels-alan-bryman.pdf>
- Buchanan, B. G. (2016). *Securitization: A financing vehicle for all seasons*. Discussion Paper, No. 31-2016, Bank of Finland research, Finland.
https://helda.helsinki.fi/bof/bitstream/handle/123456789/14439/bof_dp_1631.pdf;jsessionid=1d12bd6d699d74680b32a9d06190180b?sequence=1

Buchanan, B. (2014). Back to the future : 900 years of securitization. *The Journal of Risk Finance*, 15(4), 316–333. <https://www.emeraldinsight.com/doi/abs/10.1108/jrf-04-2014-0040>.

Buildings Performance Institute Europe (2014). *Energy performance certificates across the EU report: A mapping of national approaches*.
http://bpie.eu/uploads/lib/document/attachment/81/bpie_energy_performance_certificates_eu_mapping_-_2014.pdf

Burgess, S., Fernandez, C., Emilio, G., Carlotta, H., Richard, M., Francesca, T K., & Waldron, M. (2013). *The Bank of England's forecasting platform: COMPASS, MAPS, EASE and the suite of models*. Bank of England working papers 471, Bank of England.

Capital Market Authority (2014). *CMA approves registration of credit rating agency*.
https://cma.or.ke/index.php?option=com_content&view=article&id=166:cma-approves-registration-of-credit-rating-agency&catid=12&Itemid=207

Capital Market Authority (2018). *Study on low uptake of capital markets products in Kenya*.
https://www.cma.or.ke/index.php?option=com_phocadownload&view=category&download=435:cma-study-on-low-uptake-of-capital-markets-products&id=56:publications&Itemid=206.

Cebenoyan, S., & Strahan, P. (2004). Risk management, capital structure and lending at banks. *Journal of Banking and Finance*, 28(1), 19-43.
<http://www.semanticscholar.org/paper/risk-management%2c-capital-structure-and-lending-at-cebenoyan-strahan/40eb5c2b8926ed2351d9059d5232b54dd698572>. doi:10.1016/s0378-4266(02)00391-6.

Central Bank of Kenya (2013). *Bank supervision annual report*.
<https://www.centralbank.go.ke/images/docs/bank%20supervision%20reports/annual%20reports/bsd2013annualreport.pdf>

- Central Bank of Kenya (2017). *Annual report and financial statements 2016/2017*.
https://www.centralbank.go.ke/uploads/cbk_annual_reports/473768326_annual%20report%20201617_%20with%20dgs%20comments.pdf
- Central Bank of Kenya (2018a). *Annual report and financial statements 2017/18*.
https://www.centralbank.go.ke/uploads/cbk_annual_reports/665458124_annual%20report%202917%2018%20low%20resolution.pdf
- Central Bank of Kenya (2018b). *Guidance note on implementation of international reporting standards(IFRS) 9 on financial instruments*.
<https://www.centralbank.go.ke/wp-content/uploads/2018/04/cbk-guidance-note-on-implementation-of-ifrs-9.pdf>
- Cerasi, V., & Rochet, J.C. (2014). Rethinking the regulatory treatment of securitization. *Journal of Financial Stability*, 10(1), 20-31.
<https://doi.org/10.1016/j.jfs.2012.10.002>.
- Chadha, P. (2016). What caused the failure of Lehman brothers. Could it have been prevented. How. Recommendations for going forward. *International Journal of Accounting Research*, 1(2), 1-5. <https://doi.org/10.4172/2472-114x.s1-002>.
- Chandran, E. (2004). *Research methods: A quantitative approach with illustrations from Christian ministries*. <https://books.google.co.ke/books?isbn=9966936246>
- Chen, Z. (2018). *Loan securitization, bank risk, and efficiency* [PhD thesis, University of Glaslow] Glasgow, Scotland.
<https://pdfs.semanticscholar.org/eff6/4c7c981b9a281b377449c7c70bbe93951b53.pdf>
- Chemla, G., & Hennessey, C. A. (2014). *Skin in the game and moral hazard*.
<https://onlinelibrary.wiley.com/doi/abs/10.1111/jofi.12161>
- Chepkorir, A. (2018). *Influence of portfolio diversification on financial performance of commercial banks listed on nairobi securities exchange, Kenya* [Master's thesis, Jomo Kenyatta University of Agriculture and Technology] Nairobi, Kenya.

<http://ir.jkuat.ac.ke:8080/bitstream/handle/123456789/4593/agnes%20chepkorir.pdf?sequence=1&isallowed=y>

Cheruiyot, R. K. (2016). *The effect of asset quality on profitability of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.

http://erepository.uonbi.ac.ke/bitstream/handle/11295/99114/cheruiyot_the%20effect%20of%20asset%20quality%20on%20profitability%20of%20commercial%20banks%20in%20kenya.pdf?sequence=1&isallowed=y

Choi, J., Or, S., & Shin, S. S. (2018). Dealer liquidity provision and the breakdown of the law of one price: Evidence from the CDS–bond basis. *Management of Science, forthcoming, 184(2)*, 196–257. <https://doi.org/10.1287/mnsc.2017.3011>

Choong Kam Chong, M. (2016). *The credit defaults of CDOs: An investigation of securitization in offshore financial centers* [PhD thesis, University of Pennsylvania] Pennsylvania, USA.

http://repository.upenn.edu/joseph_wharton_scholars/20

Clegg, L. (2017). *The World Bank and the globalization of housing finance: Mortgage development.*

https://books.google.co.ke/books?id=zr06dwaaqbaj&pg=pt185&lpg=pt185&dq=mortgage++bank+performance+reports+in+egypt&source=bl&ots=rqhyh6jjs2&sig=acfu3u1_dxr7ktuooisgoxf2hcljn83_va&hl=en&sa=x&ved=2ahukewjvopwz2mrkabhvmagmbhzcvmq6aewc3oecakqaq#v=onepage&q=mortgage%20%20bank%20performance%20reports%20in%20egypt&f=false

Comptroller's Handbook (1997). *Asset securitization.*

<https://www.occ.treas.gov/publications/publications-by-type/comptrollers-handbook/asset-securitization/pub-ch-asset-securitization.pdf>

Cook, W., & McKay, C. (2017). *Banking in the M-PESA age: Lessons from Kenya.*

<https://www.cgap.org/sites/default/files/working-paper-banking-in-the-m-pesa-age-sep-2017.pdf>

- Cooper, D. R., & Schindler, P. S. (2014). *Business research methods*, (12th ed.). McGraw-Hill/Irwin.
- Consumer Financial Protection Bureau (2019). *Data point: Credit card revolvers*.
https://files.consumerfinance.gov/f/documents/bcfp_data-point_credit-card-revolvers.pdf
- Coppola, F. (2014). *Austria falls out with bavaria over zombie banks*. *Forbes magazine*.
<http://www.forbes.com/sites/francescoppola/2014/06/28/austria-and-bavaria-a-tale-of-zombie-banks/>.
- Dabas, N., & Bakri, M. H. (2018). *Securitization performance model in Malaysia*.
https://www.researchgate.net/publication/330011077_securitization_performance_model_in_malaysia
- Deloitte (2014). *Making an impact that matter: Global report*.
<https://www2.deloitte.com/content/dam/deloitte/global/documents/about-deloitte/gx-gr14-main-final.pdf>
- Deloitte (2018a). *Securitization: Structured finance solutions*.
https://www2.deloitte.com/content/dam/deloitte/lu/documents/financial-services/lu_securitization-finance-solutions.pdf
- Deloitte (2018b). *The new European framework for ABS transactions: The securitisation regulation and the CRR*.
https://www2.deloitte.com/content/dam/deloitte/de/documents/financial-services/deloitte_european%20regulatory%20framework%20for%20abs.pdf
- Deloitte (2019). *Banking and capital markets outlook: Reimagining transformation*.
<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/financial-services/us-fsi-dcfs-2019-banking-cap-markets-outlook.pdf>
- DeMarzo, P. (2005). The pooling and tranching of securities: A model of informed intermediation. *Review of Financial Studies*, 18(1),1-35.
<https://doi.org/10.1093/rfs/hhi008>

- Diamond Hill Capital Management (2018). *The evolution of the asset-backed securities market. Fixed income perspectives*. https://www.diamond-hill.com/wp-content/uploads/1811_diamond-hill_fixed-income-perspectives.pdf.
- Diamond, C., & Douglas, W. (1989). Reputation acquisition in debt markets. *Journal of Political Economy*, 97(4), 828-862. https://www.jstor.org/stable/1832193?seq=1#page_scan_tab_contents.
- Dionne, G., & Harchaoui, T. (2003). *Banks' capital, securitization and credit risk: An empirical evidence for Canada*. https://www.researchgate.net/publication/5165197_Banks'_Capital_Securitization_and_Credit_Risk_An_Empirical_for_Canada
- Dong, Z. (2017). *Essays on effects of securitization on the operation of commercial banks* [Phd thesis, City University of Hong Kong] Hong Kong, China. [https://scholars.cityu.edu.hk/en/theses/theses\(3863ec30-e529-4658-9d7f-de1beecd9494\).html](https://scholars.cityu.edu.hk/en/theses/theses(3863ec30-e529-4658-9d7f-de1beecd9494).html)
- Ebba, M. K. (2014). *The relationship between non-performing loans and financial performance of commercial banks in Ethiopia* [Master's thesis, University of Nairobi] Nairobi, Kenya. http://erepository.uonbi.ac.ke/bitstream/handle/11295/98781/muluwork_the%20relationship%20between%20non-performing%20loans%20and%20financial%20performance%20of%20commercial%20banks%20in%20ethiopia.pdf?sequence=1&isallowed=y
- Edgeworth, F.Y., & Withers, H. (1909). The meaning of money. *The Economic Journal*, 19(74), 251–253. <https://doi.org/10.2307/2221441>
- Engelen, E., & Glasmacher, A. (2018). The waiting game: How securitization became the solution for the growth problem of the Eurozone. *Competition & Change*, 22(2), 165–183. <https://doi.org/10.1177/1024529418758579>

- Enrich, D., Strasburg, J., & Henning, E. (2014). *Deutsche bank suffers from a litany of reporting problems, regulators said*. <https://www.wsj.com/articles/deutsche-bank-suffers-from-litany-of-reporting-problems-regulators-said-1406058151>
- Ernst & Young (2018). *Global banking outlook 2018: pivoting toward an innovation-led strategy*. [https://www.ey.com/publication/vwluassets/ey-global-banking-outlook-2018/\\$file/ey-global-banking-outlook-2018.pdf](https://www.ey.com/publication/vwluassets/ey-global-banking-outlook-2018/$file/ey-global-banking-outlook-2018.pdf)
- Etim, U. U., & Asuquo, A. I. (2016). Capital budgeting processes and wealth maximization objectives: Implications for firms in Nigeria. *Research Journal of Finance and Accounting*, 7(10), 73-85.
https://www.researchgate.net/profile/akabom_ita_asuquo/publication/333776309_capital_budgeting_processes_and_wealth_maximization_objectives_implications_for_firms_in_nigeria/links/5d08d18aa6fdcc35c1560aee/capital-budgeting-processes-and-wealth-maximization-objectives-implications-for-firms-in-nigeria.pdf
- European Banking Authority (2017). *Consumer trends report*.
<https://eba.europa.eu/documents/10180/1720738/consumer+trends+report+2017.pdf>
- European Commission (2017). *Drivers of corporate bond market liquidity in the European Union*. https://ec.europa.eu/info/sites/info/files/171120-corporate-bonds-study_en.pdf
- Europe Regional Network & World Green Building Council (2017). *Energy efficient mortgages action plan report: Creating an energy efficient mortgage for Europe: A review of building performance indicators that impact mortgage credit risk*.
https://www.worldgbc.org/sites/default/files/eemap%20technical%20report%20on%20building%20performance%20indicators%20that%20impact%20mortgage%20credit%20risk_0.pdf
- Federal Deposit Insurance Corporation (2019). *Risk review report*.
<https://www.fdic.gov/bank/analytical/risk-review/full.pdf>

- Federal Reserve Bank of Richmond (2015). *Explaining the decline in the number of banks since the great recession*.
https://www.richmondfed.org/~media/richmondfedorg/publications/research/economic_brief/2015/pdf/eb_15-03.pdf
- Federal Reserve Bank (2018). *Financial stability report: Borrowing by businesses and households*. <https://www.federalreserve.gov/publications/2018-november-financial-stability-report-borrowing.htm>
- Financial Conduct Authority (2017). *Annual report and accounts 2016/17: For the year ended 31 March 2017*. <https://www.fca.org.uk/publication/annual-reports/annual-report-2016-17.pdf>
- Financial Stability Board (2013). *Global shadow banking monitoring report*.
https://www.fsb.org/wp-content/uploads/r_131114.pdf
- Frame, W. S. (2017). *Agency conflicts in residential mortgage securitization: What does the empirical literature tell us. Working Paper, No. 2017-1*, Federal Reserve Bank of Atlanta, Atlanta, GA.
<https://www.econstor.eu/bitstream/10419/172914/1/882678701.pdf>
- Franke, G., Herrmann, M., & Weber, T. (2007). *Information asymmetries and securitization design*.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1107877
- Gallizo, J. L., & Saladrigues, R. (2016). An analysis of determinants of going concern audit opinion: Evidence from Spain stock exchange. *Intangible Capital*, 12(1), 1-16. <https://doi.org/10.3926/ic.683>
- Garmaise, W., & Mark, J. (2013). The attractions and perils of flexible mortgage lending. *Review of Financial Studies*, 26(10), 2548-2582.
<https://doi.org/10.1093/rfs/hht050>.
- Ghana Banking Survey (2018). *Having secured the new capital; What next for banks*.
<https://www.pwc.com/gh/en/assets/pdf/2018-gh-banking-survey.pdf>

- Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology Metabolism*, 10(2), 486–489. <https://doi.org/10.5812/ijem.3505>
- Gichungu, Z. N., & Oloko, M. A. (2015). Relationship between bank innovations and financial performance of commercial banks in Kenya. *International Journal of Education and Research*, 3(5), 443-456.
<https://www.ijern.com/journal/2015/may-2015/39.pdf>.
- Giron, A., & Chapoy, A. (2012). Securitization and financialization. *Journal of Post Keynesian Economics*, 35(2), 171-186. <https://doi.org/10.2307/23469989>.
- Global banking (2018). *Roaring to life: growth and innovation in african retail banking*.
<https://www.mckinsey.com/~media/mckinsey/industries/financial%20services/our%20insights/african%20retail%20bankings%20next%20growth%20frontier/roaring-to-life-growth-and-innovation-in-african-retail-banking-web-final.ashx>
- Gorton, G., & Metrick, A. (2012). Securitized banking and the run on repo. *Journal of Financial Economics*, 104(3), 425-451.
<https://doi.org/10.1016/j.jfineco.2011.03.016>
- Gorton G., Metrick A., & Shleifer A. (2010). Regulating the shadow banking system. *Brookings Papers on Economic Activity*. 41(41), 261-312.
https://www.brookings.edu/wp-content/uploads/2010/09/2010b_bpea_gorton.pdf
- Greenwood, J., & Boyan, J. (1990). Financial development, growth, and the distribution of income. *The Journal of Political Economy*, 98(5), 1076-1107.
https://www.jstor.org/stable/2937625?seq=1#page_scan_tab_contents.
- Hanweck, G. A. (2014). Subprime mortgage delinquency and default rates by metropolitan area: an analysis by origination vintages and projections for 2007. *Journal of Finance and Economics*, 2(1), 24-35.
<http://pubs.sciepub.com/jfe/2/1/4>. doi:10.12691/jfe-2-1-4.

- Hass Consult Limited (2014). *Mortgage report: Mortgage market energized by new rates and policies*. <http://hassconsult.co.ke/images/q22014/mortgage%20report.pdf>
- Hawtrey, R. G. (1919). *Currency and credit*. Green and Co.
- Hossain, M. M., & Chowdhury, A. U. (2015). Moral hazard in banking. *Journal of Banking & Financial Services*, 9(1), 96-115.
<https://www.researchgate.net/publication/320685615>.
- International Monetary Fund (2008a). *Global financial stability report: Containing systemic risks and restoring financial soundness*.
https://www.imf.org/~media/websites/imf/imported-flagship.../ft/.../_textpdf.ashx
- International Monetary Fund (2008b). *The recent financial turmoil: Initial assessment, policy lessons, and implications for fund*.
<https://www.imf.org/external/np/pp/eng/2008/040908.pdf>
- International Monetary Fund (2011). *Annual report 2011: Pursuing equitable and balanced growth*.
<https://www.imf.org/en/Publications/AREB/Issues/2016/12/31/International-Monetary-Fund-Annual-Report-2011-Pursuing-Equitable-and-Balanced-Growth->
- International Monetary Fund (2014). *International monetary fund annual report: From stabilization to sustainable growth*.
https://www.imf.org/~media/websites/imf/imported.../2014/.../_ar14engpdf.ashx
- International Monetary Fund (2015). *Global financial stability annual report*.
<https://www.imf.org/external/pubs/ft/ar/2015/eng/index.htm>
- International Monetary Fund (2016). *IMF Country Report No. 16/239: Selected issues on Liberia*. <https://www.imf.org/external/pubs/ft/scr/2016/cr16239.pdf>
- International Monetary Fund (2019). *Global financial stability annual report*.
<https://www.imf.org/~media/files/publications/gfsr/2019/.../onlineannex11.ashx?1>
a.

- Investopedia (2013). *Introduction to asset-backed and mortgage-backed securities*.
<https://www.forbes.com/sites/investopedia/2013/01/18/introduction-to-asset-backed-and-mortgage-backed-securities/#44a671c61681>
- Irungu, A. M. (2019). *Effect of firm level factors on financial performance of listed firms in the Nairobi Securities Exchange* [PhD thesis. Jomo Kenyatta University of Agriculture and Technology] Nairobi, Kenya.
<https://pdfs.semanticscholar.org/d2fc/ad71c8db7f612bee4a5aec4cfb0057f2f9a0.pdf>
- Irungu, M. J. (2014). *The effects of financial innovations on credit* [Master's thesis, University of Nairobi] Nairobi, Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/76497/Maina%20Joseph%20Irungu_The%20effects%20of%20financial%20innovations%20on%20credit%20risk%20management%20of%20com%20mercial%20banks.pdf?sequence=3.
- Jayawardhena, C., & Foley, P. (2000). Changes in the banking sector- the case of internet banking in the UK. *Electronic Networking Application and Policy*, 10(1), 19-31.
<https://www.emeraldinsight.com/doi/abs/10.1108/10662240010312048>
- Jha, S., & Xiaofeng, H. (2012). The use of key performance indicators for a comparison of financial performance of commercial banks: A case study of Nepal. *African Journal of Business Management*, 6(25), 7601-7611.
<http://www.academicjournals.org/ajbm>.
- Jiangli, W., Pritsker, M., & Raupach, P. (2007). Banking and securitization. *Working Paper*, FDIC, Federal Reserve Board and Deutsche Bundesbank.
<https://pdfs.semanticscholar.org/4151/52cc8731630a73bee2a653e906e5b7bf02c9.pdf>.
- Kamande, E., Zablon, E., & Ariemba, J. (2016). The effect of bank specific factors on financial performance of commercial banks in Kenya. *International Journal of Sciences; Basic and Applied Research*, 15(11), 165-180.
<http://gssrr.org/index.php?journal=journalofbasicandapplied>.

- Kaneza, C. (2016). *Factors affecting the financial performance of commercial banks listed on the nairobi securities exchange* [Master's thesis, United States Intenational University] Nairobi, Kenya.
<http://erepo.usiu.ac.ke/bitstream/handle/11732/2561/factors%20affecting%20the%20financial%20performance%20of%20.pdf?sequence=1&isallowed=y>
- Kanwal, W. (2014). *Lehman brothers (financial case); Department of management sciences*. <https://www.researchgate.net/publication/324808648>.
- Karaoglu, E. (2005). *Regulatory capital and earnings management in banks: The case of loan sales and securitizations*.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=722982
- Kawai, K. (2015). Reputation for quality and adverse selection. *European Economic Review*, 76(1), 47-59. <https://doi.org/10.1016/j.eurocorev.2015.02.001>.
- Kenya Bankers Association (2019). *Kenya banking industry: Shared value report*.
<https://www.kba.co.ke/downloads/The%20Kenya%20Banking%20Industry%20Shared%20Value%20Report%202019.pdf>
- Kenya Commercial Bank (2017). *Integrated report and financial statements*.
<https://kcbgroup.com/wp-content/uploads/2018/04/kcb-integrated-report-2017.pdf>
- Keys, B. J., Seru, A., & Vig, V. (2014). Lender Screening and the role of securitization: Evidence from prime and subprime mortgage markets. *Review of Financial Studies*, 25(7), 2071–2108. <https://doi.org/10.1093/rfs/hhs059>
- Khole, J. J. S. (2014). *The effects of unsecured lending on loan performance of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/74876/khole_the%20effects%20of%20unsecured%20lending%20on%20loan%20performance%20of%20commercial%20banks%20in%20kenya.pdf?sequence=4&isallowed=y

- Khrawish, H. A. (2011). Determinants of commercial banks performance: Evidence from Jordan. *International Research Journal of Finance and Economics*, 5(5), 19-45. https://www.researchgate.net/publication/267230689_determinants_of_commercial_banks_performance_evidence_from_jordan.
- Kim, Y. S., Laufer, S. M., Pence, K., Stanton, R., & Wallace, N. (2018). *Liquidity crises in the mortgage market*. Conference drafts of Brookings papers on economic activity (BPEA), Washington, D.C., U.S. https://www.brookings.edu/wp-content/uploads/2018/03/5_kimetal.pdf
- Knaub, J. (2007). *Heteroscedasticity and homoscedasticity*. In N. Salkind (Ed.), *Encyclopedia of measurement and statistics*. (pp. 431-432). Thousand Oaks, CA: SAGE Publications, Inc. <http://dx.doi.org/10.4135/9781412952644.n201>
- Ko, M. M., Lee, M. S., Birch, S., & Lee, J. A. (2017). The reliability and validity of instruments measuring pattern identification in Korean medicine: A systematic review. *European Journal of Integrative Medicine*, 15(1), 47-63. <https://doi.org/10.1016/j.eujim.2017.09.005>
- Kozubovska, M. E. (2016). *Securitization, asset-backed commercial paper, information opacity, systemic risk and banks' incentives to become large* [PhD thesis, University of Glaslow] Glasgow, Scotland. <http://theses.gla.ac.uk/id/eprint/8025>
- Kwon, J. H., Sohn, H. H., & Ko, Y. J. (2019). *Structured finance and securitisation in South Korea: Overview*. [https://uk.practicallaw.thomsonreuters.com/6-381-1640?source=relatedcontent&__lrts=20190626095550606&transitiontype=default&contextdata=\(sc.default\)&firstpage=true&bhcp=1](https://uk.practicallaw.thomsonreuters.com/6-381-1640?source=relatedcontent&__lrts=20190626095550606&transitiontype=default&contextdata=(sc.default)&firstpage=true&bhcp=1)
- LaCour-Little, M., & Yang, J. (2013). Taking the lie out of liar loans: The effects of reduced documentation on the performance and pricing of alt-a and subprime mortgages. *Journal of Real Estate Research*, 35(4), 507-553. http://pages.jh.edu/jrer/papers/pdf/past/vol35n04/05.507_554.pdf.
- Lainà, P. (2018). *Full- reserve banking: Separating money creation from bank lending* (Academic dissertation). University of Helsinki, Helsinki.

<https://helda.helsinki.fi/bitstream/handle/10138/241062/fullrese.pdf?sequence=1&isallowed=y>.

- Lakada, M. N., Lopian, S.L.H.V & Tumiwa, J.R. (2017). Analyzing the financial statement using horizontal- verticle analysis to evaluating the company financial performance period 2002-2016. *Journal of EMBA*, 5(3), 3985-3994.
<https://ejournal.unsrat.ac.id-index-phd-emba-article-download>
- Leaver, A., & Tischer, D. (2019). *Brave new Europe*. <https://braveneweuropa.com/adam-leaver-and-daniel-tischer-attack-of-the-clones-the-return-of-complex-debt-instruments>
- Leland H. E. (2007). Financial synergies and the optimal scope of the firm: Implications for mergers, spinoffs, and structured finance. *The Journal of Finance*, 62(2), 765–807. <https://doi.org/10.1111/j.1540-6261.2007.01223.x>
- Lipunga, A. M. (2014). Determinants of profitability of listed commercial banks in developing countries: Evidence from Malawi. *Research Journal of Finance and Accounting*, 5(6), 41-49.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1005.8926&rep=rep1&type=pdf>
- Loeser, R. (2016). *Essays on auto loan asset-backed securities: Moral hazard along the securitization chain, and the cross section of expected returns*.
https://repository.library.georgetown.edu/bitstream/handle/10822/1041826/loeser_georgetown_0076d_13452.pdf?sequence=1&isallowed=y
- Loutskina, E., & Strahan, P. E. (2009). Securitization and the declining impact of bank finance on loan supply: Evidence from mortgage originations. *Journal of the American Finance Association*, 6(2), 861-889. <https://doi.org/10.1111/j.1540-6261.2009.01451.x>.
- Mabwai, F. (2016). *Effects of mobile banking on financial performance of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/100303/mabwai_effects%2

0of%20mobile%20banking%20on%20the%20financial%20performance%20of%
20commercial%20banks%20in%20kenya.pdf?sequence=1&isallowed=y

MacLeod, H. D. (1856). *The theory and practice of banking*. Greens and Co.

Maggio, M. D., Amir, K., & Song, Z. (2016). The value of trading relationships in turbulent times. *Journal of Financial Economics (JFE)*, 124(2), 266–284.
<http://dx.doi.org/10.2139/ssrn.2597938>

Makkar, A., & Singh, S. (2013). Analysis of the financial performance of indian commercial banks: A comparative study. *Indian Journal of Finance*, 7(7), 41-49.
[http://www.scirp.org/\(s\(czeh2tfqyw2orz553k1w0r45\)\)/reference/referencespapers.aspx?referenceid=2170440](http://www.scirp.org/(s(czeh2tfqyw2orz553k1w0r45))/reference/referencespapers.aspx?referenceid=2170440)

Malak, M. P. (2014). *The effects of financial innovation on the financial performance of commercial banks in South Sudan* (Master's thesis, University of Nairobi) Nairobi, Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/76811/makur_the%20effects%20of%20financial%20innovation%20on%20the%20financial%20performance%20of%20commercial%20banks%20in%20south%20sudan.pdf?sequence=3

Malekan, S. (2015). *Securitization and optimal retention under moral hazards*.
http://chairegestiondesrisques.hec.ca/wp-content/uploads/2015/07/malekan_final_juillet2015.pdf

Maranga, W. O., & Nyakundi, E. N. (2017). Effect of interest rates on business investment performance of selected commercial banks in Kisii town, Kisii County, Kenya. *Journal of Accounting & Marketing*, 6(1), 1-16.
<https://doi.org/10.4172/2168-9601.1000221>

Mang'era, A. (2014). *Relationship between mortgage interest rate and financial performance of the mortgage firms in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/74810/mang%60era_relationship%20between%20mortgage%20interest%20rate%20and%20financial%20per

formance%20of%20the%20mortgage%20firms%20in%20kenya.pdf?sequence=1
&isallowed=y

Mariathanan, J. (2017). *Coping with innovation in China and the US*.

<https://www.ipe.com/countries/asia/joseph-mariathanan-coping-with-innovation-in-china-and-the-us/www.ipe.com/countries/asia/joseph-mariathanan-coping-with-innovation-in-china-and-the-us/10022340.fullarticle>

Mawutor, J. K. (2014). The failure of Lehman brothers: causes, preventive measures and recommendations. *Research Journal of Finance and Accounting*, 5(4), 85-91.

<https://www.iiste.org/Journals/index.php/RJFA/article/viewFile/11290/11598>.

Mbugua, C. W. (2014). *Feasibility study of asset-backed securities in Kenya (a case of NSE)* [Master's thesis, United States International University] Nairobi, Kenya.

<http://erepo.usiu.ac.ke/bitstream/handle/11732/39/charles%20wambui.pdf?sequence=1&isallowed=y>

Mburu, G. N. (2017). *The influence of asset quality on financial performance of commercial banks in Kenya*.

<https://pdfs.semanticscholar.org/a84a/2a70997eb09f0de914dd3f095140a876cc66.pdf>

Mersch, Y. (2017). *Securitisation revisited. Keynote speech at the euro finance week, frankfurt am main*.

<https://www.ecb.europa.eu/press/key/date/2015/html/sp151118.en.html>.

Mitani, H. (2014). Capital structure and competitive position in product market.

International Review of Economics and Finance. 29(3), 358-371.

<https://doi.org/10.1016/j.iref.2013.06.009>

Mohanty, M. S. (2015). *BIS papers no 831: What do new forms of finance mean for central banks*. https://www.bis.org/publ/bppdf/bispap83a_rh.pdf

Monica, D. N. (2016). *The effect of agency banking on financial performance of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi,

Kenya.

http://erepository.uonbi.ac.ke/bitstream/handle/11295/99592/monica_the%20effect%20of%20agency%20banking%20on%20financial%20performance%20of%20commercial%20banks%20in%20kenya.pdf?sequence=1&isallowed=y

Muasya, C. (2014). *Influence of card acquiring business on the performance of retail banking: kenya commercial bank group, Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.

http://erepository.uonbi.ac.ke/bitstream/handle/11295/76094/muasya%20caleb_influence%20of%20card%20acquiring%20business%20on%20the%20performance%20of%20retail%20banking.pdf?sequence=3

Mugenda, A.G. (2008) *Social Science Research: Theory and Principles*. Acts Press.

Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*. African Centre for Technology Studies

Muia, S. (2017). *The effect of financial innovations on financial performance of commercial banks in Kenya* [Master's thesis, KCA university] Nairobi, Kenya.

<http://41.89.49.13:8080/xmlui/bitstream/handle/123456789/1243/Muia-The%20Effect%20Of%20Financial%20Innovations%20On%20Financial%20Performance%20Of%20Commercial%20Banks%20In%20Kenya.pdf?sequence=1&isAllowed=y>

Muiruri, H. K. (2017). *The effects of Islamic banking products on the financial performance of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.

<http://erepository.uonbi.ac.ke/bitstream/handle/11295/102960/hilary%20final%20project.pdf?sequence=1&isallowed=y>

Muita, S. K. (2015). *Credit card securitization as capital funding and risk management tool for banks in Kenya* [Master's thesis, United States International University] Nairobi, Kenya. <http://erepo.usiu.ac.ke/11732/632>.

- Mulualem, M. (2015). *Analyzing financial performance of commercial banks in Ethiopia* [Master's thesis, Addis Ababa University] Addis Ababa, Ethiopia.
<http://etd.aau.edu.et/bitstream/handle/123456789/4549/mulualem%20getahun.pdf?sequence=1&isallowed=y>
- Munene, K. P. (2010). *Introduction of mortgage backed securities in Kenya capital market* [Master's thesis, University of Nairobi] Nairobi, Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/5432/munene_introduction%20of%20mortgage%20backed%20securities%20in%20kenya%20capital%20market.pdf?sequence=2&isallowed=y
- Muritala, A.T. (2012). An empirical analysis of capital structure on firms performance in Nigeria. *International Journal of Advances in Management and Economics*, 1(5), 116-124. <http://www.managementjournal.info>
- Musyoka, B. K. (2017). *The effect of capital adequacy on the financial performance of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/102708/musyoka_the%20effect%20of%20capital%20adequacy%20on%20the%20financial%20performance%20of%20commercial%20banks%20in%20kenya.pdf?sequence=1&isallowed=y
- Mutegi, J. M. (2017). *Regulation of asset-backed securities in Kenya : A comparative analysis* [Master's thesis, University of Pretoria] Pretoria, South Africa.
https://repository.up.ac.za/bitstream/handle/2263/60073/mutegi_regulation_2017.pdf?sequence=1&isallowed=y
- Muthaura, P. (2010). *Securitization and securitized debt instruments in emerging markets. IOSCO general secretariat final report: FR10.10.*
<https://www.iosco.org/library/pubdocs/pdf/ioscopd334.pdf>
- Mwaniki, C. (2017). *Business daily.*
<https://www.businessdailyafrica.com/markets/marketnews/New-tough-rules-sellers-asset-backed-securities/3815534-3923952-2llsiuz/index.html>

- Nabilou, H. (2017). Regulatory arbitrage and hedge fund regulation: The need for a transnational response. *Fordham Journal of Corporate & Financial Law*, 22(4), 558-603.
<https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1447&context=jcfl>
- National Association of Insurance Commissioners (2014). *Collateralized loan obligations (CLOs) primer*.
https://www.naic.org/capital_markets_archive/primer_180821.pdf
- National treasury and planning of Kenya (2018). *Annual public debt management report*.
<https://www.treasury.go.ke/publications/pdmo/category/157-annual-debt-management.html?download=1028:annual-public-debt-report-2018-2019>
- Nairobi securities exchange (2019). *Nairobi securities exchange*.
<https://www.nse.co.ke/listed-companies/how-to-become-listed.html>
- Ngari J. M. K., & Muiruri, J. K. (2014). Effects of financial innovations on the financial performance of commercial banks in Kenya. *International Journal of Humanities and Social Science*, 4(7), 51-57.
<http://erepo.usiu.ac.ke/bitstream/handle/11732/645/effects%20of%20financial%20innovations%20on%20the%20financial%20performance%20of%20commercial%20banks%20in%20kenya.pdf?sequence=4&isallowed=y>
- Nguena, C. L. (2019). On financial innovation in developing countries: The determinants of mobile banking and financial development in africa. *Journal of Innovation Economics & Management*, 2(29), 69-94. <https://doi.org/10.3917/jie.029.0069>.
- Ngumi, P. M. (2013). *Effect of banking innovations on financial performance of commercial banks in Kenya* [Phd thesis, Jomo Kenyatta University of Agriculture and Technology] Nairobi, Kenya. <http://hdl.handle.net/123456789/1238>
- Nguyen, T., Tripe, D., & Ngo, T. (2018). Operational efficiency of bank loans and deposits: A case study of Vietnamese banking system. *International Journal of Financial Studies*, 6(14), 1-13. <https://doi.org/10.3390/ijfs6010014>.

- Ngwu, F., Bavoso, V., & Chen, Z. (2017). Securitization in BRICS: Issues, challenges and prospects. *Research in International Business and Finance*, 42(1), 1219–1227. <http://dx.doi.org/10.1016/j.ribaf.2017.07.060>
- Ngwu, F. N., & Chen, Z. (2016). Regulation of securitization in China: Learning from the US experience. *Research in International Business and Finance*, 37(3), 477-488. <https://doi.org/10.1016/j.ribaf.2016.01.009>
- Nikolova, L. V., Rodionov, D. G., & Mottaeva, A. B. (2016). Securitization of bank assets as a source of financing the innovation activity. *International Journal of Economics and Financial Issues*, 6(2), 246-252. <http://www.econjournals.com>.
- Nisar, S., Peng, K., Wang, S., & Ashraf, B.N. (2018). The impact of revenue diversification on bank profitability and stability: Empirical evidence from south Asian countries. *International Journal of Financial Studies*, 6(2), 40. <https://doi.org/10.3390/ijfs6020040>
- Njoroge, M. N., & Mugambi, F. (2018). Effect of electronic banking on financial performance in Kenyan commercial banks: Case of equity bank in its Nairobi central business district branches, Kenya. *International Academic Journal of Economics and Finance*, 3(2), 197-215. http://www.iajournals.org/articles/iajef_v3_i2_197_215.pdf.
- Nyaundi, D. N. (2015). *The effects of capital adequacy requirements on liquidity of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya. http://erepository.uonbi.ac.ke/bitstream/handle/11295/95047/nyaundi_the%20effects%20of%20capital%20adequacy%20requirements%20on%20liquidity.pdf?sequence=1
- Nzioka, F. K. (2015). *The effect of assets quality on the financial performance of commercial banks in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya.

<https://pdfs.semanticscholar.org/ad11/958b3d1b7538b88636a7253aea08fbf7ff20.pdf>

Obiero, C.O. (2014). *Factors influencing high staff turnover in commercial banks in Kenya: A case of commercial bank of Africa* [Master's thesis, University of Nairobi] Nairobi, Kenya.

http://erepository.uonbi.ac.ke/bitstream/handle/11295/95247/Onyango,Collince%20O_Factors%20influencing%20high%20staff%20turnover%20in%20commercial%20banks%20in%20kenya%20a%20case%20of%20commercial%20bank%20of%20africa.pdf?sequence=1

Office of Comptroller of the Currency (2019). *Mortgage metrics report: Disclosure of national bank mortgage loan data*. <https://www.occ.gov/publications-and-resources/publications/mortgage-metrics-reports/index-mortgage-metrics-reports.html>

Ojiambo, L. A. (2014). *The effect of real estate finance on financial performance of commercial banks listed on the nairobi securities exchange* [Master's thesis, University of Nairobi] Nairobi, Kenya.

<https://chss.uonbi.ac.ke/sites/default/files/chss/linet%20ojiambo%20real%20estate.pdf>

Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1), 237-252.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.827.1383&rep=rep1&type=pdf>

Ossa, F. (2012). S&P: *Credit card subprime still small*.

https://www.spratings.com/documents/20184/908557/US_SF_Event_Webcast_10_Years72517_Slides/00efd1f6-2a9e-4221-8792-b124a0c6bc69

Palmer, T. (2015). *Borrower experiences with subprime mortgage loans in gwinnett county, Georgia*.

<https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=1327&context=dissertations>

Park, S. (2013). The design of subprime mortgage-backed securities and information insensitivity. *International Economic Journal*, 27(2), 249-284.
<https://doi.org/10.1080/10168737.2013.796115>.

Partnoy, F. (1997). Financial derivatives and the costs of regulatory arbitrage. *The Journal of Corporation Law*, 22(1), 212-243.
<https://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=4053&context=facpubs>

Persistent Energy Capital. (2016). *Securitization: Unnecessary complexity or key to financing the DESCO sector*.
https://www.gogla.org/sites/default/files/recourse_docs/securitization_-_unnecessary_complexity_or_key_to_financing_the_desco_sector.pdf

Pinto, J., & Alves, P. (2016). The economics of securitization: Evidence from the European markets. *Investment Management and Financial Innovations*, 13(1), 112-126. [http://doi:10.21511/imfi.13\(1\).2016.1](http://doi:10.21511/imfi.13(1).2016.1)

Pradhan, S. A. (2013). *A report on credit creation of a bank*.
<https://www.slideshare.net/satya4/credit-creation-of-bank-16175226>

Prescott, E., & Wallace, N. (1987). *Contractual Arrangements for Intertemporal Trade*. University of Minnesota Press. <http://www.jstor.org/stable/10.5749/j.ctttsbm4>

Quacoe, D., Bansonb, F. A. K., & Sakoe, J. (2015). The effects of asset securitization on sustainability & profitability of microfinance institutions in Ghana. *Journal of Economic & Financial Studies*, 3(4), 73-89. <http://journalofeconomics.org>

Rajasekhar, R. (2017). Financial performance evaluation of construction industries. *International Journal of Scientific and Research Publications*, 7(1), 157-175.
<https://pdfs.semanticscholar.org/855a/f3a89511b48b592835402c27eae4947e8a6.pdf>.

- Ramya, A., & Kavitha, S. (2017). A study on financial analysis of maruthi suzuki India limited company. *IOSR Journal of Business and Management (IOSR-JBM)*, 19(7), 93-101. <http://www.iosrjournals.org/iosr-jbm/papers/vol19-issue7/version-2/n19070293101.pdf>.
- Raychaudhuri, A., Debnath, M., Sen, S., & Majumder, B.G. (2010). Factors affecting students' academic performance: A case study in Agartala municipal council area. *Bangladesh e-Journal of Sociology*, 7(2), 34-41. <http://bangladeshsociology.org/BEJS%207.2%20-%20Factors%20Affecting%20Students.pdf>
- Rehman, G., & Tigerschiöld, T. (2015). *Analysis of student loan asset-backed securities: Construction of a valuation model using a trinomial interest rate tree* [Degree project, KTH royal institute of technology] Stockholm, Sweden. <https://kth.diva-portal.org/smash/get/diva2:942695/fulltext01.pdf>
- Riley, B. (2019). *Asset-backed securities: A primer for credit card managers*. <https://www.fico.com/en/resource-download-file/6846>
- Ronoh, N. C. (2015). *Bank financial performance and customer satisfaction in Kenya* [Master's thesis, University of Nairobi] Nairobi, Kenya. http://erepository.uonbi.ac.ke/bitstream/handle/11295/94101/ronoh_bank%20financial%20performance%20and%20customer%20satisfaction%20in%20kenya.pdf?sequence=3
- Schober, P., Boer, C., & Schwarte, L. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia & Analgesia*, 126(5), 1763-1768. <https://doi.org/10.1213/ANE.0000000000002864>
- Securities Industry & Financial Markets Association (2016). *US securitization year in review report, 2016*. <https://www.sifma.org/wp-content/uploads/2017/05/2016-year-in-review.pdf>.

- Securities Industry & Financial Markets Association (2019). *US asset backed securities issuance and outstanding report, 2019*.
<https://www.sifma.org/resources/research/us-abs-issuance-and-outstanding/>
- Securities Industry & Financial Markets Association (2019). *US mortgage related issuance and outstanding report, 2019*.
<https://www.sifma.org/resources/research/us-mortgage-related-issuance-and-outstanding/>
- Siew S.M. (2003). *In the footsteps of CREB transactions: RAM's views on asset-backed financing*.
http://www.academia.edu/6813222/The_use_of_sukuk_asset_backed_securities_as_an_attractive_financing_and_investment_The_Malaysian_experience?auto=download
- Shin, H. (2009). Securitization and Financial Stability. *The Economic Journal*, 119 (536), 309-332. <https://doi.org/10.1111/j.1468-0297.2008.02239.x>
- Singh M., & Aitken J. (2010). *The sizable role of re-hypothecation in the shadow banking system. IMF Working - 99 - Paper, WP/10/172*.
<https://www.imf.org/external/pubs/ft/wp/2010/wp10172.pdf>
- The Institute of Certified Public Accountants of Kenya (2017). *IFRS 9 implementation guideline: Simplified with illustrative examples*. <https://www.icpak.com/wp-content/uploads/2018/01/ifrs-9-implementation-guideline-final.pdf>
- Trans Union CIBIL (2018). *Quarterly overview of consumer credit trends: fourth quarter 2018*.
<https://www.transunioncibil.com/resources/tucibil/doc/insights/reports/report-iir-q4-2018.pdf>
- United Nations environment (2018). *Africa used vehicle report*.
<https://wedocs.unep.org/bitstream/handle/20.500.11822/25233/africaunderusedvehiclereport.pdf>

- Viva Africa Consulting LLP (2016). *Kenya's acceptance of the common reporting*.
<http://vivaafricallp.com/wp-content/uploads/2017/03/newsletter-volume-xi-kenya%e2%80%99s-acceptance-of-the-common-reporting-standard.pdf>
- Waithaka, K. H., & Ngugi, K. (2013). Factors influencing acquisition of stressed assets and assets securitization into the financial market in Kenya. *International Journal of Economics and Finance*, 1(2), 529-539.
https://www.ijssse.org/articles/ijssse_v1_i2_529_539.pdf
- Wanjiku, F. (2019). *Effect of strategic procurement practices on organizational performance in public organizations: A case of Kenya school of revenue administration* [Master's thesis, United States International University Africa] Nairobi, Kenya.
<http://erepo.usiu.ac.ke:8080/xmlui/bitstream/handle/11732/5361/flora%20wanjiku%20mba%202019.pdf?sequence=1&isallowed=y>
- Wanjugu, M. J. (2014). *The determinants of financial performance in general insurance companies in Kenya* (Master's thesis, University of Nairobi] Nairobi, Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/74685/murigu_the%20determinants%20of%20financial%20performance%20in%20general%20insurance%20companies%20in%20kenya.pdf?sequence=3
- Weigand, R. (2015). A tale of two banking systems: The performance of U.S. and European banks in the 21st century. *Investment Management and Financial Innovations*, 11(1), 8-24.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2547758.
- Weigand, R. A. (2016). The performance and risk of banks in the U.S., Europe and Japan post-financial. *Investment Management and Financial Innovations*, 13(4), 75-94.
[http://dx.doi.org/10.21511/imfi.13\(4\).2016.07](http://dx.doi.org/10.21511/imfi.13(4).2016.07).
- Werner, R. (2015). A lost century in economics: Three theories of banking and the conclusive evidence. *International Review of Financial Analysis*, 46(1), 361-379.
<http://dx.doi.org/10.1016/j.irfa.2015.08.014>.

- White, T. L., & McBurney, D. (2013). *Research methods* (9th ed.). Cengage Learning.
- Willen, P. (2014). Mandated risk retention in mortgage securitization: An economist's view. *American Economic Review Papers & Proceedings*, 104(5), 82-87.
<http://www.jstor.org/stable/42920915>
- World Bank (2018). *International bank for reconstruction and development program document for a proposed loan in the amount of euro 413.4 million (equivalent to us\$500 million) to the republic of Tunisia for the investment, competitiveness and inclusion development policy financing*.
<http://webcache.googleusercontent.com/search?q=cache:zrixwp1yydij:documents.worldbank.org/curated/en/408781530329592442/pd-tunisia-ici-dpf-board-package-052518-fin-06052018.docx+&cd=1&hl=en&ct=clnk&gl=ke>
- World Bank (2017). *The global finindex database 2017: Measuring financial inclusion and the fintech revolution*.
<http://documents.worldbank.org/curated/en/332881525873182837/pdf/126033-pub-public-pubdate-4-19-2018.pdf>
- World Bank (2016). *Housing finance: World bank group support for housing finance*.
<https://ieg.worldbankgroup.org/sites/default/files/data/reports/housingfinance.pdf>
- World Bank (2016b). *Kenya country economic memorandum: From economic growth to jobs shared prosperity*.
<http://documents.worldbank.org/curated/en/763771468197384854/pdf/103822-wp-kenya-country-economic-memorandum-public.pdf>
- World Bank (2015). *Mortgage finance project performance assessment report: Arab republic of Egypt*.
https://ieg.worldbankgroup.org/sites/default/files/data/reports/egypt_mortgage_finance_ppar.pdf
- Worldometers (2019). *World population prospects. The 2019 revision*.
<https://www.worldometers.info/world-population/kenya-population/>

Xingyun, P.(2015). *Financial theory:Perspectives from China*.

https://books.google.co.ke/books?id=vdk6cgaaqbaj&pg=pa201&lpg=pa201&dq=securitizations+in+automobile+loans+and+bank+credit+cards+were+developed+by+commercial+banks+in+usa+in+1980s&source=bl&ots=hhziwf4hdj&sig=acfu3u0zdy2u1sf6atht_dqfzthoynrydq&hl=en&sa=x&ved=2ahukewjkivyp38xkahuhdxqkhv6uaiuq6aewdxoecakqaq#v=onepage&q=securitizations%20in%20automobile%20loans%20and%20bank%20credit%20cards%20were%20developed%20by%20commercial%20banks%20in%20usa%20in%201980s&f=false

Zhang, X., & Shi, W. (2018). Path of the information asymmetry of asset backed securitization information game analysis of embedded block chain technology. *International Journal of Communications, Network and System Sciences*, 11(6), 133-146. <https://doi.org/10.4236/ijcns.2018.116008>.

APPENDICES

Appendix I: Letter of Authorization

Date.....

To

Managing Director

Name of the Bank.....

P.O. Box

NAIROBI

Dear Sir/Madam,

**RE: RESEARCH DATA ON RELATIONSHIP BETWEEN ASSET
SECURITIZATION AND FINANCIAL PERFORMANCE OF
COMMERCIAL BANKS IN KENYA.**

I am a student pursuing Masters of Science in Finance and Investments at Kenya Methodist University (KeMU). I am required to undertake a research as a partial fulfillment for the conferment of the master's degree. My research topic is stated above and I am kindly requesting for your assistance in making my research a success.

The purpose of this letter is therefore to request you to grant permission to collect relevant data from your organization from selected respondents. The respondents will be risk officers, finance officers, compliance officers and operations officers. The information collected will be treated with utmost confidentiality and will be used for the purposes on this research only. For your information, the output of this research will add value to banks in Kenya in terms of appreciating the value of asset securitization which leads to improvement of banks performance.

I wish your bank fruitful business.

Yours Sincerely,

Stephen Ndungu
Student Reg No. MFI-3-9226-2/2018
Mobile no: 0702350837

Appendix II: Letter of Consent

Date.....

To.....

.....

Dear Sir/Madam,

RE: COLLECTION OF RESEARCH DATA

My name is Stephen Ndung'u currently pursuing Masters of Science in Finance and Investments at Kenya Methodist University (KeMU). I am carrying out a research on the relationship between asset securitization and financial performance of commercial banks in Kenya. At the moment I am in the process of gathering relevant data for this study. You have been identified as one of the collaborators and respondents in this study and I am kindly requesting for your assistance towards making this study successful by responding to the attached questionnaire. I assure you that your responses will be treated with confidentiality and will be used solely for the purpose of this study.

I thank you in advance for your time and responses. It will be appreciated if you can fill the questionnaire within the next 7 days to enable early finalization of the study.

Yours Sincerely,

Stephen Ndungu

Student Reg No.: MFI-3-9226-2/2018

Mobile no: 0702350837

Appendix III: Questionnaire for risk officers, finance officers, compliance officers and operations officers.

The purpose of this questionnaire is to collect data on relationship between asset securitization and financial performance of listed commercial banks in Kenya. The data will be confidential and used for the purpose of this research only.

Instructions

1. Kindly tick as appropriate in the boxes of each question using a tick (√) or cross mark (x).

SECTION A: GENERAL INFORMATION

1: Bank Particulars

Name of the Bank (Optional).....

How long has the bank been in operations (tick as appropriate)

No	Duration	Tick as appropriate
1.	Less than 10 yrs	
2.	Between 11-20 yrs	
3.	Between 21-30 yrs	
4.	Above 31years	

**SECTION B: INFLUENCE OF ASSET BACKED SECURITIES (ABS) ON
FINANCIAL PERFORMANCE**

This section has statements regarding the influence of asset backed securities on financial performance. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (√) or cross mark (x).

No	Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		1	2	3	4	5
Automobile securities						
1.	Automobile securities have improved gross profit of the bank					
2.	Automobile securities have had a positive effect on increasing net income of the bank					
3.	Automobile securities have lowered cost of credit					
4.	Automobile securities have led to overall total equity capital growth of the bank					
5.	Automobile securities have expanded total assets of the bank					
Credit card securities						
1.	Credit card securities have improved gross profit of the bank					
2.	Credit card securities have had a positive effect on increasing net income of the bank					
3.	Credit card securities have lowered cost of credit					
4.	Credit card securities have led to overall total equity capital growth of the bank					
5.	Credit card securities have expanded total assets of the bank					

No	Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		1	2	3	4	5
Royalty securities						
1.	Royalty securities have improved gross profit of the bank					
2.	Royalty securities have had a positive effect on increasing net income of the bank					
3.	Royalty securities have lowered cost of credit					
4.	Royalty securities have led to overall total equity capital growth of the bank					
5.	Royalty securities have expanded total assets of the bank					
Corporate debt securities						
1.	Corporate debt securities have improved gross profit of the bank					
2.	Corporate debt securities have had a positive effect on increasing net income of the bank					
3.	Corporate debt securities have lowered cost of credit					
4.	Corporate debt securities have led to overall total equity capital growth of the bank					
5.	Corporate debt securities have expanded total assets of the bank					
Insurance receivables / securities						
1.	Insurance receivables / securities have improved gross profit of the bank					
2.	Insurance receivables / securities have had a positive effect on increasing net income of the bank					

3.	Insurance receivables / securities have lowered cost of credit					
4.	Insurance receivables / securities have led to overall total equity capital growth of the bank					
5.	Insurance receivables / securities have expanded total assets of the bank					

SECTION C: INFLUENCE OF MORTGAGE BACKED SECURITIES (MBS) ON FINANCIAL PERFORMANCE

This section has statements regarding the influence of mortgage backed securities on financial performance. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (√) or cross mark (x).

No	Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		1	2	3	4	5
Residential mortgage backed securities						
1.	Residential mortgage backed securities have improved gross profit of the bank					
2.	Residential mortgage backed securities have had a positive effect on increasing net income of the bank					
3.	Residential mortgage backed securities have lowered cost of credit					
4.	Residential mortgage backed securities have led to overall total equity capital growth of the bank					
5.	Residential mortgage backed securities have expanded total assets of the bank					
Commercial mortgage backed securities						
1.	Commercial mortgage backed securities have improved gross profit of the bank					

2.	Commercial mortgage backed securities have had a positive effect on increasing net income of the bank					
3.	Commercial mortgage backed securities have lowered cost of credit					
4.	Commercial mortgage backed securities have led to overall total equity capital growth of the bank					
5.	Commercial mortgage backed securities have expanded total assets of the bank					
Collateralized mortgage obligations						
1.	Collateralized mortgage obligations have improved gross profit of the bank					
2.	Collateralized mortgage obligations have had a positive effect on increasing net income of the bank					
3.	Collateralized mortgage obligations have lowered cost of credit					
4.	Collateralized mortgage obligations have led to overall total equity capital growth of the bank					
5.	Collateralized mortgage obligations have expanded total assets of the bank					

SECTION D: INFLUENCE OF COLLATERALIZED DEBT OBLIGATIONS (CDOs) ON FINANCIAL PERFORMANCE

This section has statements regarding the influence of collateralized debt obligations on financial performance. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (√) or cross mark (x).

No	Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		1	2	3	4	5
Collateralized loan obligations						
1.	Collateralized loan obligations have improved gross profit of the bank					
2.	Collateralized loan obligations have had a positive effect on increasing net income of the bank					
3.	Collateralized loan obligations have lowered cost of credit					
4.	Collateralized loan obligations have led to overall total equity capital growth of the bank					
5.	Collateralized loan obligations have expanded total assets of the bank					
Collateralized bond obligations						
1.	Collateralized bond obligations have improved gross profit of the bank					
2.	Collateralized bond obligations have had a positive effect on increasing net income of the bank					
3.	Collateralized bond obligations have lowered cost of credit					
4.	Collateralized bond obligations have led to overall total equity capital growth of the bank					
5.	Collateralized bond obligations have expanded total assets of the bank					
Collateralized credit derivatives						
1.	Collateralized credit derivatives have improved gross profit of the bank					

2.	Collateralized credit derivatives have had a positive effect on increasing net income of the bank					
3.	Collateralized credit derivatives have lowered cost of credit					
4.	Collateralized credit derivatives have led to overall total equity capital growth of the bank					
5.	Collateralized credit derivatives have expanded total assets of the bank					

SECTION E: FINANCIAL PERFORMANCE OF LISTED COMMERCIAL BANKS

This section has statements regarding the financial performance of listed commercial banks. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (√) or cross mark (x).

No	Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1.	Asset backed securities have improved the financial performance of the bank					
2.	Mortgage backed securities have led to improved financial performance of the bank					
3.	Collateralized debt obligations have improved financial performance of the bank					

Thank you for your feedback

Appendix IV: Secondary data collection instrument

Secondary data for the listed commercial banks in Kenya from 2014- 2018 will be collected as follows:

Name of the bank.....

Variable	Description	Years				
		2014	2015	2016	2017	2018
ROE	Net income before tax					
	Total equity capital					
ROA	Net income before tax					
	Average total assets					
NIM	Interest income					
	Interest paid to creditors relative to asset value					

Appendix V: Introduction Letter



KENYA METHODIST UNIVERSITY

P. O. Box 267 Meru - 60200, Kenya
Tel: 254-064-30301/31229/30367/31171

Fax: 254-64-30162
Email: info@kemu.ac.ke

6th March 2020

Commission Secretary,
National Commission for Science, Technology and Innovations,
P.O. Box 30623-00100,
NAIROBI.

Dear sir/ Madam,

RE: STEPHEN NDUNGU (MFI-3-9226-2/2018)

This is to confirm that the above named is a bona fide student of Kenya Methodist University, Department of Business Administration undertaking a Degree of Master of Science in Finance and Investment. He is conducting research on, *'Relationship between asset securitization and financial performance of listed commercial banks in Kenya'*.

We confirm that his Research proposal has been defended and approved by the University.

In this regard, we are requesting your office to issue a permit to enable him collect data for his research.

Any assistance accorded to him will be appreciated.

Thank you.

06 MAR 2020






Dr. John Muchiri, PHD.

Director Postgraduate Studies

Cc: COD, Business Administration

Dean, SBUE

Appendix VI: NACOSTI research permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 868805	Date of Issue: 28/March/2020
RESEARCH LICENSE	
	
<p>This is to Certify that Mr. Stephen Ndungu Ndungu of Kenya Methodist University, has been licensed to conduct research in Nairobi on the topic: RELATIONSHIP BETWEEN ASSET SECURITIZATION AND FINANCIAL PERFORMANCE OF LISTED COMMERCIAL BANKS IN KENYA for the period ending : 28/March/2021.</p>	
License No: NACOSTI/P/20-4473	
868805 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code
	
<p>NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.</p>	

Appendix VII: Details of variables

Dependent variable	Measurement	Formula
Financial performance	Return on Assets (ROA)	$\frac{\text{Net income before tax}}{\text{Total assets}}$
	Return on Equity (ROE)	$\frac{\text{Net income before tax}}{\text{Total equity capital}}$
	Net interest Margin (NIM)	$\frac{\text{Interest income}}{\text{Interest paid to creditors relative to asset value (cost of credit)}}$

Independent variables	Measurement	Scale	Instrument
Asset Backed Securities (ABS)			
Automobile securities	Likert Ordinal	5-point Likert scale	Questionnaire
Credit card securities	Likert Ordinal	5-point Likert scale	Questionnaire
Royalty securities	Likert Ordinal	5-point Likert scale	Questionnaire
Corporate debt securities	Likert Ordinal	5-point Likert scale	Questionnaire
Insurance securities	Likert Ordinal	5-point Likert scale	Questionnaire
Independent variable	Measurement	Scale	Questionnaire

Mortgage Backed Securities (MBS)

Residential mortgage backed securities	Likert Ordinal	5-point Likert scale	Questionnaire
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Commercial mortgage backed securities	Likert Ordinal	5-point Likert scale	Questionnaire
Collateralized mortgage obligations	Likert Ordinal	5-point Likert scale	Questionnaire
Independent variable	Measurement	Scale	Instrument
Collateralized Debt Obligations (CDOs)			
Collateralized loan obligations	Likert Ordinal	5-point Likert scale	Questionnaire
Collateralized bond obligations	Likert Ordinal	5-point Likert scale	Questionnaire
Collateralized credit derivatives	Likert Ordinal	5-point Likert scale	Questionnaire

Appendix VIII: List of listed commercial banks in Kenya

Number	Listed commercial banks in Kenya
1.	Barclays Bank
2.	Stanbic Holdings Plc
3.	I&M Holdings
4.	Diamond Trust Bank Kenya
5.	HF Group
6.	KCB Group
7.	National Bank of Kenya
8.	NIC Plc Group
9.	Standard Chartered Bank
10.	Equity Group Holdings
11.	Co-operative Bank of Kenya