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How Residential Mortgage-backed Securities is affecting Financial Performance of Listed Commercial Banks in Kenya

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ABSTRACT

Mortgage-backed security is a type of marketable security that is issued through notes and collateralized by mortgage receivables. These receivables are sold to investment banks who pack the loans together into securities that investors buy. However, a rise in interest rates in Kenya has caused the cost of borrowing to increase. This has reduced the demand for mortgages hence low returns on mortgage backed securities. The purpose of this study was to investigate the influence of mortgage-backed securities on financial performance of listed commercial banks in Kenya. The study used descriptive survey research design to carry out the investigation. The respondents of the study were 64 credit managers and relationship managers from the eleven listed commercial banks in Kenya. They were sampled using purposive sampling method whereby the participants specifically approached based on their job roles especially in direct interaction with mortgage securities. 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 indicated that there was a statistically significant positive relationship between mortgage-backed securities and financial performance. This was because of the fact that the respondents agreed majorly that mortgage backed securities lowered cost of credit; had to some extent played a vital role of enhancing gross profit; were cost-effective and had less expenditure attributed to them, hence, improving the net profit some extent; 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 mortgage backed securities. The study recommended that there should be development of policies by the government to guide Kenyan banks from going bankrupt due to default by borrowers. Banks should provide more public awareness to enable people understand the intrigues of mortgage backed securities. There should be more investigations on the least expensive sources of fund through securitization so as to pass the advantages to the home loan clients. There ought to be establishment of many securities assessment offices so as to defeat boundaries of performance of home loan upheld securities.

Keywords: mortgage backed securities, financial performance, listed commercial banks

1. INTRODUCTION

Financial performance is defined as any income generated by an organization after it has utilized the available resources (Delaney, McManus & Lamminmaki, 2016). Over the years as commercial banks have been in pursuit for even higher profits in their commerce function, banking market globalization has tremendously increased, exposing them into different forms of financial risks, such as, risks from credit, risks from interest rates, risks from foreign exchange, risks from commodities, risks from operations and systemic risks amongst others (Ogbonna, 2018). Commercial banks in developed nations have had numerous challenges which have greatly affected their financial performances. For example, American bank's tariff wars, presence of shadow banks, market risks, liquidity risks, (Center for American Progress, 2019; Deloitte, 2020). European banks have had an experience of retrenchment from international markets as banks become smaller, impaired policy making processes, debt sustainability concerns, and decreased customer margins (Deloitte, 2020). Declining loan growth from small banks, deteriorating asset quality and non-performing loans of home mortgage borrowers have affected Asian banks in China (McKinsey, 2019; Shahid, Gul, & Naheed, 2019).

In Africa, banks in West African countries like Nigeria have had issues on computer and internet frauds, slow adaptation of financial innovations and system breakdowns (Price Waterhouse Cooper, 2019). South African banks have suffered low financial performance due to shadow financial services (Sheunesu, & Tewari, 2019). In northern Africa, a country like Egypt faces problems relating to non-banking mortgage competitors, high operational costs and high regulation on banking business models (African Business Magazine, 2019). Looking at East African banks, there have been difficulties in low deposits and attenuation of loanable funds (Waithaka & Ngugi, 2013). In Kenya, low financial performance has still been a menace to many commercial banks. The problems experienced include issues related to technological fraud, competition from unregulated mobile lenders, non-performing home-loans, credit risks, and market risks (Chepkorir, 2018). These concerns amongst others are forcing banks in Kenya to substitute outdated banking approaches with other financial innovations like mobile banking, internet banking, and selling of different types of securities at the capital markets to increase their financial performances (Cheruiyot, 2016). These types of securities include asset backed securities and collateralized debt obligations amongst other types of securities. Mortgage backed securities have not been so common among the securities traded.

Mortgage-backed security is a type of marketable security that is issued through notes and collateralized by mortgage receivables (Dong, 2017). These receivables are sold to investment banks who pack the loans together into securities that investors buy. There are two types of mortgage-backed securities such as, residential mortgage-backed security and commercial mortgage-backed security (Dong, 2017; Mbugua, 2014). The mortgage backed securities are arranged into different tranches based on the potential risk of the loan (Deloitte, 2014). The highest tranches are paid first while the lowest tranches are paid last in case of a loan default (Association for Financial Markets in Europe (AFME), 2017). As Africa was growing into an investment hub for investors from developing and developed economies, there were developments made to foster mortgage securitization growth in African countries. In 2018, African Development Bank (AfDB) made an announcement to transfer risk entrenched, that was, US$ 1 billion in loans already made by the AfDB to a group of investors, for a fee (African development Bank Group (AfDB), 2019). This was seen as a remarkable step towards securitization growth in Africa although it was under-utilized as 98 percent of securitization instruments were 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 borrower's default on a high rate inhibiting mortgage securitization growth (Persistent Energy Capital, 2016; Hossain & Chowdhury, 2015). In Kenya, there are 11 listed commercial banks which are governed by the central bank. The listed commercial banks are categorized by Central bank of Kenya as large banks. In 2018, they comprised 70 percent of the total banking industry deposit base and net asset value base (CBK, 2018). Their financial performance is therefore very significant since they had the capacity to securitize their assets largely on capital markets. However, an increasing trend in rate of losses from defaulted mortgage loans which were the main banks assets raised concerns of the future of asset securitization in Kenya (CBK, 2018; 2017). This had resulted to poor performance causing bank run in large banks such as Chase bank (Kamande et al., 2016).

Statement of the problem

By issuing securitized assets through mortgage-backed notes, investors are expected to purchase the securities notes thereby freeing up bank capital assets such as long-term loans. This allows banks to issue more credit (IMF, 2019). If pooled assets liquidate fast, a special purpose vehicle issuer is granted access to utilize revenue generated from the pool of assets to buy more assets from commercial banks, hence, increased financial performance in banks (Persistent Energy Capital, 2016).

However, a rise in interest rates in Kenya has caused the cost of borrowing to increase. This has reduced the demand for mortgages hence low returns on mortgage backed securities (Irung'u 2014). The reason being due to poor operational facilities

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including solitariness to trading daises, underprivileged trading structures, feeble trading guidelines and lack of dominant counterparty (Kaneza, 2016). Apart from that, non-banks firms such as hedge funds have provided competition to commercial banks as they attract banks' market shares and profitability in mortgage loan securities making banks to adopt some of their practices which are very challenging and risky. The Kenya's markets show 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 shows 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. Although commercial banks have been securitizing, the quality and quantity of assets is wanting in Kenya.

Purpose of the study

To investigate the influence of mortgage-backed securities on financial performance of listed commercial banks in Kenya.

Hypothesis

H_0: Mortgage-backed securities do not significantly influence financial performance of listed commercial banks in Kenya.

Theoretical review

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 stated that when accessible provisions of the product were great and the employed portfolios of marketable customers of that product were consequently held to the least, instability of current and futures values were likely to be little, and futures payments increased to the full charge of storage. When provisions were constricted, there was instability of currency and the nearby futures values increased due to unfriendly future deals.

Convenience yield was adopted in informing this study because mortgage backed securities contributed to solution of shortage matter of collaterals with high quality. Bank for International Settlements (BIS) (2019) disclosed that mortgage backed securities turned credit assets with lower liquidity into standard assets with high liquidity. The standardized assets with stable value according to BIS did not get affected by heterogeneous risk and satisfied the demand of collaterals with high quality. In the context of this study, the theory held that there was demand of collaterals with high quality results from mortgage backed securities trading, buyback transactions and settlements, which eventually improved the preference of mortgage backed securities. This resulted to investors having a choice to buy today and sell in future when the prices were favorable.

Convenience yield theory has been criticized that the matters resulting from the convenience yield theory, such as maturity mismatching and repeat pledge, led 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 effects, responded to the negative shock. However, this did not affect the current study since mortgage backed security was currently practiced in Kenya under small scale.

Empirical review

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 securities. 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 was invested in commercial papers backed by mortgages from Lehman brothers (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 was the main cause of 2008 financial crisis in the world (Chadha, 2016). 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 into when securitizing.

This resulted to decline in bank's mortgage securities 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 number of securities which previously provided various incentives to commercial banks to improve their financial performance, have kept banks' profits low

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even after financial crisis 2008 (BIS, 2018). That notwithstanding, productivity enhancement and spread of risk to different stakeholders in securities market are some of the efforts that have been applied to restore mortgage securitization (Mersch, 2017). There have been 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 have been experienced (Association for Financial Markets in Europe ; Securities Industry and Financial Markets Association, 2019). Cheap funding of Asian banks in Korea, India, and China has been made possible through trading mortgage-backed securities and collateralized debt obligations securities (IMF, 2019).

Eurobonds issuance by African banks in Nigeria, Ghana, Zambia Gabon, Rwanda and Kenya has been evidenced (Acharya & Steffen, 2015; AfDB, 2014). Mortgage-backed securitization has over time changed the structure of financial intermediation and is shaping the future of traditional commercial banking. The significance of commercial banks originating mortgage loans to form pool of assets that are used in securities in capital market cannot not be undermined since they are the main sources of mortgage financing (Hass Consult Limited, 2014). 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 has been considered for massive mortgages take-ups in Kenya (AfDB, 2019).

2. RESEARCH METHODOLOGY

The study used descriptive survey research design to carry out the investigation. The respondents of the study were 64 credit managers and relationship managers from the eleven listed commercial banks in Kenya. They were sampled using purposive sampling method whereby respondents selected based on the job roles that were of keen interest in this study especially in direct interaction with mortgage securities. 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

3. RESULTS AND DISCUSSIONS

Response rate

The study issued 64 closed ended questionnaires to the credit managers and relationship managers from the listed commercial banks in Kenya. However, only 34 of the questionnaires were returned by the respondents. This was 53% responses rate. This rate was caused by the fact that most of the bank staff had been sent home due to the covid-19 pandemic. This meant that there were only few respondents to respond and send back the questionnaires.

Background profiles of the respondents

The study inquired on the education level of the respondents. The results were tabulated as shown in Table 1.

Table 1: Education level

Years	Frequency	Percent	Cumulative Percent
Diploma level	12	35.3	35.3
Bachelor's degree	16	47.1	82.4
Masters	6	17.6	100.0
PhD and above	0	0	100.0
Total	**34**	**100.0**	

The results as presented in Table 1 indicated that most of the credit and relationship managers had a bachelor's degree as they were 16(47.1%). This was followed by 12(35.3%) of the respondents who had a diploma degree, and 6 (17.6%) who had master's degree. Interestingly none had a PhD or above academic qualifications. Since the whole process of mortgage securitization is complicated, it requires personnel who have sharp minds and grab concepts quickly for replicability and decision making. In Kenya, it has been previously established that there was a positive relationship between level of education and decision-making

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process (Hyuncheol, Syngjoo, Booyuel & Cristian, 2018). The educational level of the managers was one way the study wished to ascertain whether managers were at par in making very quick but knowledgeable decisions on selling mortgage securities.

Descriptive analysis of mortgage-backed securities

The main objective was to examine the influence of Mortgage Backed Securities (MBS) on financial performance in listed banks in Kenya. There were statements that the respondents were supposed to indicate their response using Likert scale; (Firmly approve – 5; Approve – 4; Neutral – 3; Disapprove – 2; Firmly Disapprove–1) on how mortgage backed securities had influenced various financial performance indicators. The study was specifically interested to know how 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 shown in Table 2.

Table 2: Descriptive Analysis of Mortgage Backed Securities

Statements N=34	**1**	**2**	**3**	**4**	**5**	**Mean**	**Std. Dev**
Mortgage backed securities improved gross profit of the bank	5(11.4%)	10(22.7%)	17(38.6%)	8(18.2%)	4(9.1%)	**2.9091**	**1.12**
Mortgage backed securities had a positive effect on increasing net income of the bank	3(6.8%)	9(20.5%)	21(47.7%)	6(13.6%)	5(11.4%)	**3.0227**	**1.05**
Mortgage backed securities lowered cost of credit	2(4.5%)	11(25.0%)	17(38.6%)	10(22.7%)	4(9.1%)	**3.0682**	**1.02**
Mortgage backed securities led to overall total equity capital growth of the bank	2(4.5%)	9(20.5%)	22(50%)	7(15.9%)	4(9.1%)	**3.0455**	**0.96**
Mortgage backed securities expanded total assets of the bank	4(9.1%)	12(27.3%)	15(34.1%)	10(22.7%)	3(6.8%)	**2.9091**	**1.07**
Aggregate Mean& Std dev						**2.9909**	**1.04410**

The findings in Table 2 indicate an average mean of 2.9909 and standard deviation of 1.04410. The respondents agreed majorly that mortgage backed securities lowered cost of credit. This statement had the highest mean of 3.0682. The respondents comparatively disagreed that mortgage backed securities improved gross profit of the bank and expanded total assets of the bank in

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which both had the lowest means of 2.9091 in this section. Most responses in Table 2 showed that they were neutral with all of the statements.

These outcomes indicated that the sales of securities which derived their values from mortgage loans issued, had to some extent played a vital role of enhancing gross profit; were cost-effective and had less expenditure attributed to them, hence, improving the net profit some extent; 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 mortgage backed securities. Bakri et al. (2015) reported a similar outcome when they discovred 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 prior evidence that majority of mortgage securities were leading to substantial amount of losses as compared to other types securities that were traded on capital markets.

Financial performance indicators

The study analyzed how listed commercial banks have been faring for 3 financial years from 2017-2019. The results showed that the average mean was 3.799 with a standard deviation of 1.051. The study was keen to note that there was more return to equity as compared to return on assets of the banks. Return on equity had a mean of 3.952 while return on assets had a mean of 3.645.

Hypothesis testing

In establishing the relationship between asset securitization and financial performance of listed commercial banks in Kenya, the study tested the null hypothesis. The hypothesis stated that mortgage-backed securities did not significantly influence financial performance of listed commercial banks in Kenya. The results in Table 3 show R value of .850 which shows a high positive correlation between the variables.

Table 3: Residential Mortgage-Backed Securities Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.850[a]	.723	.716	.61429

a. Predictors: (Constant), Mortgage backed securities

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 securities. This observation were regarded as fit of the data as shown in Table 4.

Table 4: 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	32	.377		
	Total	57.182	33			

a. Dependent Variable: Financial performance

b. Predictors: (Constant), mortgage-backed securities

The output on Table 4 indicated that the *p*-value was 0.000 which was less than 0.05 at 0.05 significance level. This implied that the relationship 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. Similar results were also reported by Dabas (2018) who confirmed that securitization was performing better when mortgage classes of securities were added into the profitability model in Malaysia. Garmaise and Mark (2013) also noted 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.

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Regression coefficients

The regression coefficients presented in Table 5 indicated that mortgage backed securities statistically and significantly influenced financial performance of listed banks ($\beta = 0.092$, $t = 10.466$, $p<.05$).

Table 5: Mortgage Backed Securities Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	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 study used unstandardized coefficients beta score and not the standardized coefficient because the p-value of constant is significant (.004). 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. 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 the robustness of a financial structure of a financial institution.

4. CONCLUSION

The findings showed a positive relationship and statistically significant between mortgage-backed securities and financial performance. Results indicated that the sales of securities which derived their values from mortgage backed securities had to 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. Listed commercial banks were able to achieve their goal of ensuring that the shareholder's wealth is maximized and to some extent become a going concern by selling mortgage backed securities. This indicated that when listed commercial banks keep on selling mortgage backed securities, their profitability will improve over time.

RECOMMENDATIONS

The study recommended for broader mortgage backed securities to enhance financial performance in the banks. 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. Banks should provide more public awareness to enable people understand mortgage backed securities. The banks ought to designate more assets in contract financing since almost none of the banks are close to the revised limit of 40% of the center cash-flow to guarantee most the potential mortgage holders can claim homes. There should be more investigations on the least expensive sources of fund through securitization so as to pass the advantages to the home loan clients. There ought to be establishment of many securities assessment offices so as to defeat boundaries of performance of home loan upheld securities.

Conflict of interest

The authors declare that they have no conflict of interest.

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Ethical approval

This article does not contain any studies with human participants performed by any of the authors.

Data and materials availability:

All data associated with this study are present in the paper.

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