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Long-term Bond Investments and Revenue Growth of Microfinance Banks in Nairobi County, Kenya

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Abstract: *Microfinance banks have been reporting declining revenues particularly in years 2019 and 2020. Over the same period of time, increase in non-performing loans and low credit uptake were recorded. Though the latter could have occasioned drop in revenues, it would have been important to understand the extent to which portfolio diversification affected revenue growth of the microfinance banks in Kenya. It is against this backdrop that the present study was conducted. The objective was to examine the extent to which long-term bond investments affected revenue growth. Descriptive research design was adopted. The 14 licensed microfinance banks operating in Kenya constituted the unit of analysis as well as the unit of observation. A structured questionnaire and data collection sheet were employed to collect primary and secondary data respectively. The collected data were analyzed with the facilitation of the Statistical Package for Social Sciences. Descriptive and inferential statistics were used to analyze the collected data. Frequencies, percentages, means, and standard deviations constituted descriptive statistics while correlation and regression analyses were the inferential statistics. According to the study findings, it was revealed that long-term bond investments were positively correlated with revenue growth. Treasury bonds were concluded to be the long-term bonds invested by microfinance banks. The study recommended that the microfinance banks in Kenya should reduce their overdependence on loan portfolio. Besides the treasury bonds, the MFBs are encouraged to consider other long-term bond investments such as mutual funds and corporate bonds.*

Keywords: *Long-term bond Investments, Revenue Growth, Microfinance Banks*

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1. Introduction

Long-term bond investments are key components of portfolio diversification (Cremers, Pareek, & Sautner, 2017). Long-term investments are held for a period of more than a year (Afonso & Khan, 2019). Investment in government securities, particularly, treasury bonds constitutes a long-term investment (Afonso & Khan, 2019). Acquisition of government bonds entail a form of lending to the governments and the company earn coupons on the investment. Government bonds are associated with low risks (Janda & Svarovska, 2013). Microfinance banks focus their attentions at diverse investment solutions in a bid to grow their revenues (Olweny & Omondi, 2011). They invest in mutual funds to increase potential revenue returns through access to capital markets. Investment in debentures is also an avenue for generating revenue among microfinance banks (De Haan, Schoenmaker, & Wierts, 2020). Debentures are unsecured and the default risks associated with them is reduced through combination with other long-term assets like bonds.

Revenue growth illustrates revenue increases over time indicating trends in the business performance. The annual growth rate in revenue of a microfinance banks indicate their operational sustainability and ability to achieve the core goal of value maximization on a consistent manner (Afonso & Khan, 2019). The growth of microfinance banks is of vital importance to the owners and stakeholders, and revenue growth is used in this instance to measure the business expansion rate. Revenue growth avails opportunities for short-term and long term financial strategies among microfinance banks (Kassim, Hassan, & Kassim, 2018). Revenue growth in microfinance banks depend on the type of assets that they have invested in (Hermes, Lensink, & Meesters, 2018).

In Kenya, the revenues generated from alternative investments by microfinance banks account for only 2.4% of their overall revenue (CBK, 2017). The CBK's bank supervisory report for the financial year ended December

31, 2020 indicated that lending was still the single largest financial activity carried out by MFBs in Kenya. Statistically, 59% of their total assets was the loan portfolio (Central Bank of Kenya, 2020). It is, however, not clear whether or not portfolio diversification has contributed towards declining revenue collection by the microfinance banks in Kenya. As at December 31, 2020, these banks reported a combined loss before tax of Ksh 2.2 billion compared to a similar loss of Ksh 339 million reported the preceding year. Only 4 of the 14 MFBs posted profit before tax. Essentially, these statistics are indicative of the declining revenue generally reported by the microfinance banks in Kenya in the past two financial years (2019 and 2020) consecutively with the situation aggravating over time (Central Bank of Kenya, 2020). Whereas the latter year's decline in revenue could have partly been attributed to the effects of Corona Virus Disease (Covid-19) pandemic, other factors were at play in 2019. The fact that the losses reported were almost entirely linked to aspects of loans such as increased non-performing loans (NPLs) and low credit uptake (CBK, 2020), is a clear indication that portfolio diversification in terms of long-term bond investments was given a wide berth relative to the revenue growth of the MFBs in Kenya.

The hitherto empirical studies have fallen short of shedding enough light on the aforesaid subject (long-term bond investments and revenue growth) amongst the MFBs in Kenya. For example, a study by Ndungu and Muturi (2019) examined the effect of portfolio diversification on financial performance of commercial banks in Kenya whereas Mutega's (2015) study assessed the effect of asset diversification on financial performance of commercial banks in the country. It is apparent that majority of these studies have focused on commercial banks and have also fallen short of linking long-term bond investments to revenue growth particularly in the microfinance sector. In the wake of the identified knowledge and research gaps and clear declining revenues amongst MFBs, this study was conducted with the ultimate goal of evaluating the extent to which long-term bond investments influence revenue growth of the aforementioned financial institutions in Kenya.

2. Objective of the Study

The objective of the study was to assess the effect of long-term bond investments on revenue growth of microfinance banks in Nairobi County.

3. Review of Literature

Long-term bond investments have been used by financial institutions as a means of diversifying portfolios with aim of promoting revenue growth (Véron & Wolff, 2016). Long-term bond investments have long-term maturities, beyond one year. Financial institutions hold and trade in long-term bonds with objective of growing stabilizing revenues (Albul, Jaffee, & Tchistyi, 2015). Long-term investments are also applied as capital appreciation tools for banking institutions. Microfinance banks operate in an environment of risks and uncertainties. Therefore, portfolio diversification through long-term bond investments hedges the institutions against economic downturns and keep on generating revenue for long-term sustainability (Musembi & Jagongo, 2018).

Long-term investments include the corporate and treasury bonds that influence revenue growth through payments of coupons (Otieno & Moronge, 2014). Therefore, they are important diversification tools that supplement loan interest payments and also cover the losses emanating from loan defaults. Bonds enable microfinance banks to grow revenues and stabilize their financial positions. Coupon returns from bonds could be reinvested for strengthen the revenue avenues for the microfinance banks. Long-term investments are contributors to capital appreciation of microfinance banks as they offer opportunities for optimal returns' investment (Véron & Wolff, 2016). They act as defensive tools against loss of revenue since they are associated with low volatility in relation to stocks. As such, investments in bonds and mutual funds forms a diversification that reduce volatility and risks in microfinance banks (Mutega, 2015).

Effective financial management regarding portfolio diversification is essential in microfinance banks (Albul *et al*., 2013). All long-term bond investments are associated with risks and if such risks materialize, the company suffer through loss of investment value. This is detrimental to revenue growth among banking institutions. The most visible risks that affect long-term bond investments include; market risks, inflation risks, credit risks and liquidity risks (Chandra, 2017). These risks affect returns from mutual funds as well as corporate bonds. The revenues of the microfinance banks are influenced by fluctuations in coupons and interests and eventually the revenue growth. Expected outcomes of portfolio diversification involving long-term bond investments may not be achieved with in absence of sound investment decisions (Musembi & Jagongo, 2018). The financial institutions, especially the microfinance banks therefore require an extensive analysis on investment returns and risks (Chepkorir, 2018). It is imperative for microfinance to avoid over-diversification and under-diversification of portfolios. Over-diversification in long-term investments affect the returns negatively. It means that combination of correlated long-term assets, whereby, they lose value at the same time hence impacting on revenue growth negatively (Mutega, 2015).

The expectations theory addresses long-term income investments such as bonds which are part of portfolio diversification. The theory provides an explanation on movement of returns in long-term securities and this is of great importance to the microfinance banks. The main aim of microfinance banks is to maximize returns and minimize risks. In tandem with the modern portfolio theory, the MFBs should prioritize investing in portfolios which have minimal risks and maximum returns. Consequently, the theory can be employed to describe the aspect of portfolio diversification in long-term bond and equity investments through combination of uncorrelated asset returns.

A study carried out by Ndichu (2014) examined the effect of interest rate spread on financial performance of deposit taking microfinance banks in Kenya. The study applied descriptive research design. Multiple regression model was employed in data analysis. Results from analysis indicated that increase in interest rate spread led to decline in financial performance of the MFBs. According to the results of correlation analysis, financial performance was positively influenced by leverage, non-performing loans, and liquidity ratio. The study concludes that the balance between interest on loans and interest payments to debts determine the financial performance of microfinance banks.

A related study by Mutega (2015) centred on the effect of asset diversification on the financial performance of commercial banks in Kenya. The study was guided by Black Litter Man Theory. A descriptive research design was adopted. Regression analysis findings showed coefficient of determination of R^2=0.646. This was interpreted to mean that 64.6% of variation in financial performance of commercial banks was jointly accounted for by asset diversification aspects (other investments, financial assets, cash and cash equivalent and loans). The model predicting the relationship between asset diversification and financial performance of commercial banks was statistically significant. It was further revealed that there existed a statistically significant relationship between asset diversification and financial performance of the aforesaid banks. Based on the findings, it was concluded that commercial banks still lacked an appropriate plan on assets' diversification and alignment of investments, hence leading to fluctuations in banks' financial performance.

A study conducted by Chepkorir (2018) investigated the influence of portfolio diversification on financial performance of commercial banks listed on Nairobi Securities Exchange. The study applied correlation and multiple regression in data analysis. The study findings indicated that real estate finance had a positive and strong relationship with financial performance of the banks. The results of correlation analysis indicated that bancassurance had weak relationship with financial performance while mobile banking had a positive though weak correlation with financial performance. According to results of the regression analysis, 48.7% of changes in financial performance were explained by variation in portfolio diversification. Therefore, it was concluded that financial performance trends depended on the asset allocations and investment returns.

4. Research Methodology

The current study applied descriptive research design. Descriptive research design helped in description of revenue growth in microfinance banks. Descriptive research design also enhanced description of portfolio diversification aspect of long-term bond investments. The study target population was the fourteen licensed microfinance banks in Kenya as at December 2020 (Central Bank of Kenya, 2020). The specific study area was Nairobi City County where headquarters of the microfinance banks are located. Primary data were collected from representatives of the 14 licensed microfinance banks in Kenya using a structured questionnaire. On the other hand, secondary data were collected from the 13 hitherto licensed MFBs in Kenya. The study used panel data over six-year period (2014 to 2019) to examine the influence of long-term bond investments on revenue growth of microfinance banks in Kenya. The Statistical Package for Social Sciences (SPSS) was used to execute data analysis. Data was analyzed using both descriptive and inferential methods. In descriptive analysis, frequencies, percentages, means and standard deviations were used to illustrate the views of the respondents regarding long-term bond investments and revenue growth of microfinance banks in Kenya. On the other hand, inferential statistics encompassed the Pearson Product Moment Correlation Coefficient (PPMCC) and simple linear and multiple linear regression to establish the relationship between long-term bond investments and revenue growth.

5. Results

This section presents the descriptive and inferential findings that demonstrate the influence of long-term bond investments on revenue growth of microfinance banks in Nairobi County.

5.1 Long-term Bond Investments and Revenue Growth

The study sought to determine the of long-term bond investments on revenue growth of microfinance banks in Nairobi County. Results from descriptive analysis are illustrated on Table 1.

Table 1: Descriptive Statistics for Long-term Bond Investments

	Percentage						
	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev**
The long-term bonds are very sensitive to changes in interest rates due to their fixed-income nature	0.0	7.1	0.0	50.0	42.9	4.29	.825
Over the past 6 years, our microfinance bank has increased investment in mutual funds	7.1	21.4	7.1	50.0	14.3	3.43	1.222
Over the past 6 years, our microfinance bank has invested considerably in corporate bonds	7.1	42.9	14.3	28.6	7.1	2.86	1.167
Over the past 6 years, our microfinance bank has consistently increased investment in treasury bonds	7.1	57.1	7.1	21.4	7.1	2.64	1.151
Long-term bond investments constitute a significant portfolio of our microfinance bank	21.4	35.7	7.1	35.7	0.0	2.57	1.222

According to the results shown in Table 1, it is apparent that there was a general consensus amongst the surveyed staff that the long-term bonds were very sensitive to changes in interest rates given their fixed-income nature (mean = 4.29; std dev = 0.825). It was established that 64.3% of the respondents agreed that their MFBs had increased investment in mutual funds, although 28.5% others refuted the assertion. It was disputed by a majority of the surveyed staff that the MFBs had invested considerably in corporate bonds (disagreed = 50.0%), and that these financial institutions had consistently increased their investment in treasury bonds (disagreed = 64.2%). It was generally unclear whether or not long-term bond investments constituted a significant portfolio of the MFBs (mean = 2.57; std dev = 1.222). The findings relates to findings by Ngumo, Collins, David (2020). The results revealed a positive and statistically significant relationship between operational efficiency, capital adequacy and financial performance of microfinance banks in Kenya.

Table 2: Long-term Bond Investments for FY 2014 to FY 2019

Year	Amount Invested (Ksh Billions)	Deviation (Ksh Billions)	Deviation (%)
2014	1,004		
2015	721	-0.283	-28.19
2016	1.769	1.048	145.35
2017	2.500	0.731	41.32
2018	1.886	-0.614	-24.56
2019	3.484	1.598	84.73

In respect of long-term bond investments, it was revealed as shown in Table 4.5, that MFBs had the largest investment in FY 2019 followed by FY 2017. The two years reflected Ksh 3.484 billion and Ksh 2.5 billion respectively. Indeed, FY 2019 indicated the largest deviation in absolute value (Ksh 1.598 billion). However, in FY 2016, the MFBs in Kenya reported the highest proportionate deviation (145.35%) in the amount they invested in long-term bonds. It is also apparent that in FY 2015 and FY 2018 the long-term bond investment dropped considerably by a margin of 28.19% and 24.56% respectively.

5.2 Correlation Analysis

The PPMCC analysis was employed to determine the relationship between long-term and revenue growth of microfinance banks in Kenya. The pertinent results are presented in Table 3.

Table 3: Results of PPMCC

		Revenue Growth
Long-term Bond Investments	Pearson Correlation	.427
	Sig. (2-tailed)	.399
	n	6

According to the results of correlation analysis shown in Table 3, it was revealed that there existed a positive, moderately strong, though not statistically significant relationship between long-term bond investments and revenue growth of MFBs ($r = 0.427$; $p = 0.399$). This mean that albeit the fact that increasing investment in long-term bonds, for instance, treasury bonds was bound to occasion a moderate increase in revenue growth, which at p-value = 0.05, was considered not to be significant.

5.3 Simple Linear Regression Analysis

Simple linear regression analysis was conducted to establish the effect of long-term bond investments on the revenue growth of MFBs in Kenya. The results to this effect are presented on Tables 4 and 5.

Table 4: Model Summary of Long-term Bond Investments against Revenue Growth

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate
1	.427[a]	.182	-.022	816.39307

a. Predictors: (Constant), Long-term Bond Investments

The result shown in Table 4.17 (r^2 = 0.182) indicate that long-term bond investments could explain 18.2% variability in revenue growth of microfinance banks in Kenya. The remaining proportion (81.8%) could be attributed to other factors besides the aforestated investments. The results relates to results of Omar (2015) which revealed that operating efficiency and logarithm of assets had a statistically significant relationship with financial performance of microfinance banks in Kenya.

Table 5: ANOVA of Long-term Bond Investments against Revenue Growth

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	593879.435	1	593879.435	.891	.399[b]
	Residual	2665990.565	4	666497.641		
	Total	3259870.000	5			

a. Dependent Variable: Revenue Growth

b. Predictors: (Constant), Long-term Bond Investments

It was established by the analysis of variance shown in Table 4.18 that the results of F-statistic ($F_{1,4}$ = 0.891; p = 0.399) were not statistically significant at p-value = 0.05. Interpretively, the sample data could not fit the simple linear regression model, $Y= \beta_0 + \beta_1 X_1 + \varepsilon$, where Y and X represent revenue growth and long-term bond investments respectively. The results were in agreement with the null hypothesis which stated that, there is no significant effect of long-term bond investments on revenue growth of MFBs in Nairobi County. The findings further implied that it was not feasible to use the data to accurately determine the effect of the stated investments on revenue growth.

6. Conclusion

In conclusion, the study inferred that long-term bonds were very sensitive to changes in interest rates. This was attributed to their fixed nature. Treasury bills were concluded to be the long-term bonds invested by microfinance banks. Although their investment had increased significantly over the six-years period ending 2019, the investment in these treasury bills was concluded to undergo considerable fluctuations. It was deduced that financial years 2015 and 2019 witnessed the largest drop in bonds investments by microfinance banks. Moreover, it was concluded that investment in treasury bills and long-term bonds was largely inconsequential to revenue growth of microfinance banks in Kenya.

7. Recommendation

The study recommended that the microfinance banks in Kenya should reduce their overdependence on loan portfolio. As such, they ought to not only diversify into other portfolios but also ensure that they direct their resources and energies to their successful adoption. Besides the treasury bonds, the MFBs are encouraged to consider other long-term bond investments such as mutual funds and corporate bonds. Due diligence ought to be carried out before the financial institutions settle on the most appropriate portfolios to diversify into. It is important for the MFBs to assess the factors that contribute towards fluctuation of their portfolios with the view of addressing them and possibly lead to increased revenue growth.

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