RELATIONSHIP BETWEEN CORPORATE BONDS AND LIQUIDITY GROWTH OF COMMERCIAL BANKS IN NAIROBI COUNTY 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 in any other university for award of any degree.

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Recommendation

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DEDICATION

This work is dedicated to my wife Lavina and my daughter Bosibori. Thank you for the great support you offered in helping me write this thesis document.

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ABSTRACT

As a substitute way of getting funding for proper functional of banking operations, commercial banks issue these bonds to clients. They do this with a promise that the bank will be paying interest after a certain duration of time depending on the type of corporate bond being issued. For the bond market to efficiently develop, conditions such as a developed money market, suitable trading structure, rules and laws that are favorable and realistic macroeconomic policies have to be put into place. However, despite the presence of corporate bonds, growth was limited. This study scrutinized the relationship between corporate bond and liquidity growth of commercial banks in Nairobi County Kenya. The objectives of the study were to determine the influence of fixed-rate bonds, flexible-rate bonds, zero-coupon bonds and convertible bonds on liquidity growth of commercial banks in Nairobi County Kenya. Four theories that were adopted included segmented markets theory, pure expectation theory, liquidity premium theory and preferred habitat theory to steer fixed-rate bonds, floating rate bond, zero-coupon bond and convertible bonds respectively. This research applied descriptive research design when gathering data by closed ended questionnaires on 39 commercial banks in Nairobi County Kenya. Overall operations managers, marketing managers and general managers were the respondents. Census technique was consulted. Pre-testing questionnaires was issued to branch marketing managers, operational managers and assistant managers in simple randomly selected five commercial banks located in Meru county Kenya. SPSS data analysis software was be consulted for quantitatively using the descriptive statistics such as mean, percentage and standard deviation. Tables, graphs and detailed explanations was used to present the final results of the study. The study found out that there was a statistically significant positive relationship between fixed-rate bonds, floating rate bonds, zero-coupon bonds, convertible bonds and liquidity growth of commercial banks in Nairobi. However, the strength of their relationship varied depending on the type of bonds. Zero-coupon bonds proved to have the weakest relationship in the study. It was therefore concluded that between fixed-rate bonds, floating rate bonds, zero-coupon bonds and convertible bonds can dictate the liquidity growth of banks. The study recommended that more types of customized bonds should be issued and public awareness should be raised. The study recommended that policies should be developed by government through the central bank whereby bank customers can obtain bonds more often just like the way mobile loan apps are common. This would promote more market for the bonds. Commercial banks should also indemnify various types of bonds with insurance firms so that any misfortune of events like the recent covid-19 pandemic would have minimal impact on the various types of fixed-rate bonds. The study contributed new knowledge when the relationship between corporate bonds and liquidity growth of commercial banks in Nairobi was established.

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
BIS	Bank for International Settlement
CBK	Central bank of Kenya
CV	Convertible bonds
FLB	Floating rate bond
FRB	Fixed rate bond
GSE	Ghana Securities Exchange
IMF	International Monetary Funds
KBA	Kenya Bankers Association
NSE	Nairobi Securities Exchange
PWC	Price Water-house Cooper
SPSS	Statistical Package for Social Sciences
ZCB	Zero coupon bond

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In the awake of the year 1980's and 1990's, third world nations began invigorating capital markets to promote access to long-term resources inform of capital categorized as debt instruments. Development of government bonds market was crucial in paving way for development of corporate bonds market. The Kenyan government bonds which preceded the corporate bonds in 1980s and 1990's respectively was short-term in nature. Due to their short-term nature, government bond's growth on the one hand was inhibited making the government think on allowing long-term bonds in 2001. However, on the other hand there was instability in corporate bonds growth for ten years (10) after their inception in 1990's as there were very few corporate bonds in Nairobi Securities Exchange market (Ngugi, 2006).

Therefore, the positive impact that long-term capital played towards economic growth motivated Kenya to enhance both government and corporate bonds market in the Nairobi Securities Exchange. Corporate bonds markets verbosed tensions on the banking industry by varying risks such as operational risks transversely in the economy; sourced enduring resources for long-lasting venture desires; delivered long-lasting venture products for long-lasting term investments and reduced capital expenses by seizing a performance premium; also bequeathed banking products with elasticity to sort out the explicit desires of investors and budge investment more competently (International Monetary Fund, 2017).

In addition, as a substitute way of getting funding for proper functional of banking operations, commercial banks issued these bonds to clients. They did this with a promise that the bank will be paying interest after a certain duration of time depending on the type of corporate bond being issued. For the bond market to efficiently develop, conditions such as a developed money market, suitable trading structure, rules and laws that were favorable and realistic macroeconomic policies had to be put into place.

1.1.1 Corporate bonds

A corporate bond was a debt instrument issued to investors to raise funds for financing normal operations of a business entity and also expand the business as a way of ensuring that the business entity remained as a going concern (McGee, 2002). The basic four types of corporate bonds in a bank were fixed-rate bonds, floating-rate bonds, zero-coupon bonds, convertible bonds (Himo & Akter, 2017). Fixed-rate bonds were the most common types of corporate bonds whereby the bond had a stipulated return for a fixed amount of interest (Standard Bank, 2020). Floating rate bonds were bonds that had a flexible coupon similar to a money market reference rate (Standard Bank, 2020). Zero-coupon bonds were type of bond's whose interest was paid at the maturity of the bond (Standard Bank, 2020). That was, it did not have any periodic interest payments before the bond matured. Convertible bonds had the ability to be changed into shares or money as the bond holder wished (Standard Bank, 2020).

Exclusively, a bank normally prioritized to internally fund their operations and projects but the more their operations grew, the more internal funding became insufficient to fully cater for everything hence necessitating external funding through sources such as a corporate bond. A bond as a way of raising equity did not allow bond holders to have stake

in form of ownership in the bank but they became creditors who expected to receive periodic payments in form of interests pegged on a specific period of time. The bank that had issued the corporate bonds had prospects that it would benefit from intended project before the bond reached its maturity date to be able to fulfill its financial obligations to the corporate bond owners.

Based on different opposing internal and external factors, banks who were corporates in general had been having a rough time in fulfilling their part leading to corporate bonds defaults. This made them less attractive to investors who were naturally risk averse. Assessment of these bonds also poised a challenge to many investors who had limited knowledge about the bonds and the business entity as a going concern. A sound firm's capital structure therefore stroked a balance between combining debt and equity options to fund its operations and projects hence able to meet its financial obligations as they arose. Commercial banks issued bonds to investors who were supposed to buy from them through the capital market or directly in order for the bank to raise debt capital. Once cash was received, the bank became liquid and was able to perform various intended banking functions.

1.1.2 Liquidity growth

Liquidity is defined as the ability of a business entity that had adequate money to meet their financial obligations as they arose (Arif & Anees, 2012). Price water-house cooper (2020) defined liquidity as measure of money and other readily available assets that a bank uses to effectively pay financial obligations as they arise. Growth is the capacity of a firm to produce goods and services above its cost of capital (Turegun, 2019). In this study,

liquidity growth is defined as the ability of a bank to continually and efficiently cater for expenses as they came by, through utilization of the bank's resources such as its assets that met the threshold of being above its cost of capital. Organizations quantify liquidity growth differently. In technological firms, they use current ratio, quick ratio, cash ratio (Price water-house cooper, 2020). Current ratio is used to measure the ability of a firm to pay obligations that were less than one year (Price water-house cooper, 2020). Quick ratio is the ability of a firm to immediately pay expenses as they were deemed due (Price water-house cooper, 2020). Cash ratio is the total cash available in relation to current liabilities (Price water-house cooper, 2020).

Nevertheless, construction industries measures liquidity growth by cash ratio and debt capacity utilization ratio while hospitality industries measure liquidity growth by cash ratio and quick ratio (Karpenko & Blokhina, 2019; Turegun, 2019). Liquidity growth in this study was measured by current ratio, quick ratio, cash ratio, net working capital ratio and sales ratio. This was because they were recognized by central bank of Kenya as aspects to note when one wants to know whether there was liquidity growth in a commercial bank in Kenya (Central bank of Kenya, 2018).

Globally, Liquidity management is inversely related to the performance of commercial banks (Berrios, 2013). A liquidity management crisis was evident in Global financial crisis of 2007–08 (Bhattacharyya, 2011). This was the worst financial crisis raising fundamental questions about liquidity management (Banks, 2005). During the crisis, banks were hit hardest by liquidity management pressures cutting back sharply (CBK, 2016). In many areas, the economy faced a huge financial blow, resulting in house evictions, foreclosures and prolonged unemployment (Basel Committee on Banking

Supervision, 2013). The crisis underscored the role of liquidity management to commercial banks (Basel Committee on Banking Supervision, 2013).

Liquidity is a precondition to ensure that financial institutions are able to meet its short-term obligations. The liquidity position in a company is measured based on the 'current ratio' and the 'quick ratio'. The current ratio establishes the relationship between current assets and current liabilities. Normally, a high current ratio is considered to be an indicator of the firm's ability to promptly meet its short-term liabilities (Beck &Hesse, 2006). The quick ratio establishes a relationship between quick or liquid assets and current liabilities. An asset is liquid if it can be converted into cash immediately or reasonably soon without a loss of value. Low liquidity leads to the inability of a company to pay its creditors on time or honour its maturing obligations to suppliers of credit, services and goods. This could result in losses on account of non-availability of supplies and lead to possible insolvency. Also, the inability to meet the short-term liabilities could affect the company's operations and, in many cases, it may affect its reputation as well (Egesaand Abuka, 2006). Inadequate cash or liquid assets on hand may force a company to miss the incentives given by the suppliers of credit, services, and goods as well. Loss of such incentives may result in higher cost of goods which in turn affects the profitability of the business (De-Young & Rice, 2004). Every stakeholder has interest in the liquidity position of a company. Suppliers of goods will check the liquidity of the company before selling goods on credit. Employees should also be concerned about the company's liquidity to know whether the company can meet its employee related obligations, i.e., salary, pension, provident fund, etc.

Thus, a company needs to maintain adequate liquidity (Deger&Adem, 2011). In today‟s society, financial institutions hold a considerable market share, with the IMF estimates that

across all banking sector assets in developing countries, the market share of co-operative finance was equivalent to 14 percent in 2004 (Goddard et al., 2004). Previous research on financial institutions during crisis indicates that they tended to fare better than investor-owned savings and loans institutions, as they pursue more conservative investment policies (Hoffmann, 2011). For instance, analysis from the IMF indicates that co-operative banks in developed countries tend to be more stable than commercial banks, especially during financial crisis, as their investment patterns tend to be less speculative and returns are therefore less volatile (Iannotta et al., 2007).

In a study carried out by Macaulay (2008) to investigate the effectiveness of liquidity management risk management best practices in the United States reported that over 70% of the financial institutions have adopted the best practices in the country. There has been an increased concern regarding effective credit risk management due to the fact that inadequate credit risk policies are the main source of vital problems in most of the financial institutions. An effective credit risk management policy must therefore aim at maximizing an institution's rate of return. Kasekende and Ating-Ego (2003) in a study in Ghana found no positive relationship between liquidity trend and profitability and concluded that there is a negative relationship between liquidity and profitability in the Ghana banking sector. Havrylchyk and Emilia (2006) findings suggested that the adaptation of liquidity strategies do not have a significant impact on ROA. Only increased use of liquidity forecasting and short-term financing during financial crisis had a positive impact on ROA. Moreover, it was found that the importance of key ratios, which monitors company's liquidity have not changed between the studied time points. Kasman et al. (2010) found that the result for

liquidity on profitability is mixed and not significant, indicates that conclusion about the impact of liquidity remains questionable and further research is needed.

Lee and Lee (2006) found a weak positive relationship between the liquidity and the profitability of the listed banks in Ghana in their 2013 study. Matama (2008) in their study in Nigeria concluded that for the success of operations and survival, commercial banks should not compromise efficient and effective liquidity management and that both illiquidity and excess liquidity are "financial diseases" that can easily erode the profit base of a bank as they affect bank's attempt to attain high profitability-level. A study in Canada by Rahaman (2010) suggest that a nonlinear relationship exists, whereby profitability is improved for banks that hold some liquid assets, however, there is a point beyond which holding further liquid assets diminishes banks' profitability, all else equal. At the same time, estimation results provided some evidence that the relationship between liquid assets and profitability depends on the bank's business model and the risk of funding market difficulties. Adopting a more traditional (i.e., deposit and loan based) business model allows bank to optimize profits with a lower level of liquid assets.

Likewise, when the likelihood offending market difficulties is low (proxied by economic growth), banks need to hold fewer liquid assets to optimize profits. Commercial banks in Uganda that have faced a number of liquidity management problems have reported poor profitability (Mutibwa, 2013). Poor liquidity management affect earnings and capital. In extreme cases it leads to insolvency and bank failure (Mugume, 2010). Distressed banks can only access funds from the market at high interest rate (Mpuga, 2002). This eventually causes a decline in the banks' earnings. Moreover, a bank's further borrowing to meet depositors' demand may place the bank's capital at stake (Nanyonjo, 2002).

However, a bank may ration credit if it feels that the liquidity management need of the bank is quite poor. Therefore, poor liquidity management reduces the capacity of the bank to effectively compete (Mathuva, 2010). Olongo (2013) investigated the relationship between liquidity and profitability for companies listed at the NSE. The study established that cash conversion period and the current ratio as liquidity measures negatively affected the profitability of the firms listed in the NSE over the 5-year period while the quick ratio as a liquidity measure did not significantly affect the profitability of the firms listed in the NSE over the 5-year period.

Notably, commercial bank's liquidity growth in the first world country like America was inhibited by several issues such as liquidity risks, high leverage unrealistic funding requirements, higher standards for risk reporting (McKinsey & Company, 2015). In Asia there were liquidity risks in a country like Pakistan; regulatory tough encounters and poor asset quality in a Singapore and Japan (McKinsey, 2019; Arif & Anees, 2012). In Africa, commercial banks located in countries like Egypt, Algeria, Nigeria and Malawi were experiencing more difficult loan-loss provisioning necessities, intensifying operational expenses and passive corporate development prospects linked to weak financial development; poor asset quality in a country like Ghana (Moody Analytics, 2020; Price water house coopers, 2019). In East Africa, there had been low liquidity and deterioration of the quality of credit offered in a country like Rwanda; abridged profitability in a country like Uganda (Businge, 2017; Ntuite, 2015).

In Kenya, stiff competition from non-banking lenders; low quality of assets whose value kept on declining as time goes on; high loan defaults; high interest rates and unfavorable policies were facing commercial banks in Kenya. This had caused banks to

now consider alternative ways of ensuring liquidity growth was enhanced like applying financial innovations like derivatives practices, credit card banking; asset securitization, mobile banking and internet banking. However corporate bond issuance was still not fully utilized in Kenyan commercial banks. This was because of weak covenant protection, weak corporate earnings, high default rate mean (JPMorgan Chase & Co, 2020).

1.1.3 Commercial banks

A commercial bank is any business entity that allow deposits and issued loans to borrowers. The government of Kenya has dispensed directive to Central bank of Kenya (CBK) to supervise forty-two commercial banks, one mortgage finance company, thirteen microfinance banks, nine representative offices of foreign banks, seventy-four foreign exchange bureaus, nineteen remittance providers and three credit reference bureaus (Central bank of Kenya, 2018). Commercial banks are the largest financial services providers in Kenya and hence their liquidity status was key in directing and financing the economy towards attainment of vision 2030 (Kenya Bankers Association, 2019).

The banking industry in Kenya has been very vibrant with majority of banks recording good performance as measured by increasing customer base and financial performance based on profitability. This can be attributed to good governance mechanisms which emanate from strategic steering through the board of directors. According to CBK (2014), the Kenyan banking sector registered improved performance in 2013 despite the marginal economic growth. The sector registered a 15.9 percent growth in total net assets from Kshs 2.33 million in December 2012 to Kshs 2.70 trillion in December 2013.Equally, customer deposits grew by 13.5 percent from Kshs 1.71 trillion in December 2012 to Kshs 1.94 trillion in December 2013.Commercial banks in Kenya help in deposits, process loans,

and provide other financial services, such as international banking, documentary collection, and trade financing (Central Bank of Kenya, 2011). Commercial banks are responsible for adding customer deposits in a safe and liquid form and lending the proceeds to worthy commercial, industrial, governmental and nonprofit institutions.

Banks provide consulting and advisory services to customers as well as safekeeping and trust. Kenya's commercial banks play a crucial role in ensuring Kenya's economic progress. Kenya's commercial banks like any other organization are open systems operating in a turbulent environment. Their continued survival depends on the ability to secure a "fit" with the environment (Central Bank of Kenya, 2010). The commercial banks in Kenya are liable to many forms of risk which have triggered occasional systemic crises. These include liquidity risk (where many depositors may request withdrawals in excess of available funds), credit risk (the chance that those who owe money to the bank will not repay it), and interest rate risk (the possibility that the bank will become unprofitable, if rising interest rates force it to pay relatively more on its deposits than it receives on its loan (Central Bank of Kenya, 2011). All these risks are directly transferable to corporate bonds banks issue to investors. Therefore, investors are very keen when buying corporate bonds and cannot buy them if the commercial bank's profile is risky.

1.1.4 Nairobi County Kenya

Nairobi County being the heart and the capital city of Kenya harbored all the forty-two commercial banks in Kenya making it suitable for this study. Apart from that, Nairobi county contained all national and Nairobi county government offices, all embassies offices in Kenya, businesses, hotels, game reserves, multibillion companies and transport

industries amongst others who did their financial transactions through commercial banks. Commercial banks were therefore at a better position to issue corporate bonds on large scale to their clients. There had been numerous concerns that investors who bought these corporate bonds had been avoiding them at the capital market. These developments gave the need to look at what exactly was the relationship between corporate bonds issuance and liquidity growth in commercial banks in Nairobi County Kenya.

1.2 Statement of the problem

Developments made concerning corporate bonds in America included steps related on emphasis of quality bond issuance; availability of green bonds issuance; relaxed bonds issuance for firms; growing availability of choices for investors; guaranteed proficiency of transactional intermediation; promotion of new systems of trading; guaranteed transparency of data and enlightened guide and dogma outline in America and Europe (European Commission, 2017; United Nations 2017). In Asia, there were enhancement of originations capacity of dealings and systems; improved appreciation of the level of new market prospects; upsurge of market share in over-populated bonds in overseas moneys; availability of parameters to ease idea development and remain competitive (S&P Global Inc, 2018).

Nevertheless, in Africa there had been efforts to expand the financial structures related to corporate bonds which were subjugated by banks, corporate bond governing transformations in a country like South Africa; there had been issuance of more types of corporate bonds and improvement of the length of corporate bonds issuance in Ghana; reduction of regulatory costs on bonds in Zambia and Egypt (Musah & Acquah, 2019; Mu, Phelps & Stotsky, 2011; Standard Bank, 2009).

Remarkably, corporate bonds in Kenya has been operative and functional. Their presence of formation of a fixed income securities exchange section at the Nairobi Securities Exchange; tax enticements to decrease the operation charges of the bonds; divergence of the corporate bond's maturities and the modernization of the bond market in Kenya were developments made to ensure banks issue corporate bonds without a hitch (Ngugi & Agoti, 2004). Commercial banks accounted for highest proportion of financial systems in Africa as a whole and also in Kenya, hence they always had strong liquidity that was ever growing. This was supported by Millikan (1938) who came up with the liquidity preference theory of interest. This finance theory states that an investor should demand a higher interest rate or premium on securities with long-term maturities that carry greater risk because, all other factors being equal, investors prefer cash or other highly liquid holdings

However, escalating liquidity risks caused by increase in non-performing loans had been a menace to the future of commercial bank's liquidity growth in Kenya (Central Bank of Kenya, 2018). In 2018, non-performing loans increased from 264.6 billion in 2017 to 316.7 billion depicting 19.6 percent increase (Central Bank of Kenya, 2018). This made the asset quality of commercial banks to decline with 0.4 percent between 2017 and 2018. (Central Bank of Kenya, 2018). When the quality of commercial bank's assets declined, the value of corporate bonds which derived their worth from the assets of the bank, deteriorated rendering them worthless hence becoming less attractive to investors. Commercial banks globally were putting up measures to curb the concerns engulfing corporate bonds.

A study such as Rizzello and Kabli (2020) depicted that bonds can be a sure way of financing the Kenyan vision 2030 sustainable development goals. This is through sustainable financial partnerships that gives mutual benefit to the investors, bond originators and the country in general. Rizzello and Kabli (2020) further contended that when bonds had a social impact to the investors, liquidity growth was inevitable.

Previous studies such as Musah and Acquah (2019); Businge (2017); Ntuite (2015); Arif and Anees (2012); and Mu et al. (2011) categorically debated on the problems engulfing corporate bonds issuance in various international nations. However, in Kenya, no study had been done pertaining the relationship between corporate bonds issuance and liquidity growth of commercial banks in Nairobi county Kenya. This proved that few information was known concerning the corporate bonds issuance. A lot of stakeholders did not clearly comprehend on what exactly happened in the process hence the main motivation of the study on the relationship that existed between corporate bonds issuance and liquidity growth of commercial banks in Nairobi county Kenya.

1.3 Research objectives

1.3.1 General objective

The general objective of the study was to examine relationship between corporate bonds and liquidity growth of commercial banks in Nairobi County Kenya.

1.3.2 Specific objectives

i. To assess the influence of fixed-rate bonds on liquidity growth of commercial banks in Nairobi County Kenya.

ii. To examine the influence of floating-rate bonds on liquidity growth of commercial banks in Nairobi County Kenya.

iii. To evaluate the influence of zero-coupon bonds on liquidity growth of commercial banks in Nairobi County Kenya.

iv. To determine the influence of convertible bonds on liquidity growth of commercial banks in Nairobi County Kenya.

1.4 Research Hypothesis

Ho1: There was no significant relationship between fixed-rate bonds and liquidity growth of commercial banks in Nairobi County Kenya.

Ho2: There was no significant relationship between floating-rate bonds and liquidity growth of commercial banks in Nairobi County Kenya.

Ho3: There was no significant relationship between zero-coupon bonds and liquidity growth of commercial banks in Nairobi County Kenya.

Ho4: There was no significant relationship between convertible bonds and liquidity growth of commercial banks in Nairobi County Kenya.

1.5 Significance of the study

Commercial banks being the main beneficial agents from this study learnt the implications of having a deteriorating asset quality portfolio and the recommended solutions that helped them in ensuring that they improved their assets quality to be able to sell corporate bonds to investors. Non-banking institutions such as non-governmental institutions who were interested in knowing more about corporate bonds so as to improve their knowledge found this study useful especially in knowing the weaknesses and strength

of corporate bonds. Financial regulators got more information of challenges commercial banks were facing pertaining corporate bonds issuance hence formulate favorable laws that boosted corporate bonds issuance in banks.

In addition, bank clients who did not grasp the type of corporate bonds that their banks issue got enlightened hence made informed investment decisions and also paid-up their loans if they had any because they understood the damage loan default was causing in the banks and the economy as a whole. External investors who had an appetite for investment in bonds got sharp skills on how and when to invest in Kenyan banks corporate bonds. The study also added knowledge in the finance field when relationship between corporate bonds issuance and liquidity growth of commercial banks in Nairobi County Kenya was known. This study also added information on the bond's topic for any future reference by scholars.

1.6 Scope of study

The study was steered in Nairobi county in Kenya. The main data collected was on fixed-rate bonds, floating-rate bonds, zero-coupon bonds, convertible bonds and liquidity growth of the 39 commercial banks located in Nairobi County Kenya. Primary information was given by top-most managers in charge of branch banking operations, managers in charge of branch marketing operations and the overall branch managers while fiscal reports published by the banks was used for secondary data particularly when evaluating bank's liquidity growth from 2016-2018.

1.7 Limitations of the study

The selected respondents in the same commercial bank branch gave contradicting responses on the influence of the types of corporate bonds on liquidity growth. This caused the study not have a comprehensive conclusion in specific questions. The study accorded different questionnaires to each respondent whereby they had specific questions based on their expertise. Their response in each question was equated to the views of that branch for comprehensive conclusion

The second limitation was the latest developments of banks being merged to become one while others had changed their names. This became hard in reporting the established results. In minimizing the second limitation, the study adopted positively the changes of the banks and offered proper explanation when reporting the findings.

1.8 Assumptions of the study

An assumption that the selected respondents in this study delightedly and truthfully replied to the inquiry forms for thorough data scrutiny guided the study. This enabled in acknowledging whether there was really any relationship between corporate bonds issuance and liquidity growth of commercial banks in Nairobi County Kenya. The study had also had another assumption of validity of measurement as highlighted in financial theory and reviews. The study will assume that the theories guiding the study will articulate effectively the study's objectives.

1.10 Definition of Terms

Corporate bond: A debt instrument dispensed to investors to raise funds for financing normal operations of a business entity and also expand the business as a way of ensuring that the business entity remained as a going concern (McGee, 2002).

Fixed rate bond: is a debt instrument with a level interest rate over its entire term, with regular interest payments known as coupons (Standard Bank, 2020)

Floating rate bond: A bond that has flexible token similar to a money market proportion (Standard Bank, 2020).

Zero coupon bond: a bond that is issued at a deep discount to its face value but pays no interest (Standard Bank, 2020).

Convertible bond: is a fixed-income corporate debt security that yields interest payments, but can be converted into a predetermined number of common stock or equity shares (Standard Bank, 2020).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discussed the theoretical background of the study, the empirical review of each variable, summary of the gaps, the conceptual framework and then ended with operational framework.

2.2 Theoretical Framework

This study was guided by three theories; Segmented markets theory, pure expectation theory, liquidity premium theory and preferred habitat theory. Segmented markets theory guided fixed rate bonds; pure expectation theory guided floating rate bonds. Liquidity premium theory guided zero-coupon bonds and preferred habitat theory guided convertible bonds.

2.2.1 Segmented markets theory

Segmented markets theory guided the fixed-rate bonds issuance. The segmented markets theory was developed by John Mathew Culbertson in 1957 (Culbertson, 1957). The theory stipulated that stakeholders and debtors had robust maturity partialities which they attempted to achieve by investing in fixed rate bonds (Culbertson, 1957). As a consequence of these partialities, the capital markets which were broken down into a numerous minor market were anchored on supply and demand aspects that regulated the evenness profits for each market (Culbertson, 1957). Segmented markets theory was adopted because the key aspects that regulated the interest rate for maturity of a bond

market were supply and demand environments exceptional to that bond market. The call for short or long-time bonds by investors and the supply of such bonds by commercial banks was in due course regulated by the interest rate offered on the short-term corporate bonds. That was to say, every market rate of specific group was never affected by the other market rates of a different group of bonds. The theory was criticized that segmenting using profitability complicated source and outcome (Dolnicar et al., 2018).

2.2.2 Pure expectations theory

Pure expectations theory guided the floating rate bonds. The pure expectations theory was developed by Fredrick Lutz in 1940 (Lutz, 1940). The theory which automatically apprehended what should be well-thought-out as ordinary market behavior stipulated that interest rates on bonds of different maturities were expressed in evenness where oblique forward rates were equivalent to projected spot rates (Lutz, 1940). That was, if investors were expecting to earn more in future based on reasons such as economic growth, long-term bond investors bought the bonds now so that they stood a chance to gain more in a period coming (Lutz, 1940). This theory was adopted because the increase or decrease in demand for long-term floating rate bonds by investors aided in improving or reducing long-term bond values and profits which integrated expectations as a vital capricious in elucidation the structure of interest rates. The theory was criticized as the projected outcomes did not always contest the real situations result from bond investment and investors buying the bonds were not always attracted to profits only but other factors such as constant income for a long time (Piet, 2009).

2.2.3 Liquidity premium theory

Liquidity premium theory guided the zero-coupon bond. The Liquidity premium theory was advanced by John Maynard Keynes in 1936 (Keynes,1936). The theory stipulated that there was more liquidity returns for long-term bonds compared to short-term bonds (Keynes,1936). Based on the theory, risk antagonistic nature of investors necessitated extra profits for them to purchase long-term bonds as an alternative of short-term bonds (Keynes,1936). The theory was adopted because since zero coupon bonds paid profits at the end of the bond maturity period, they required to motivate investors with more profits so as to get investors agreeing to purchase the zero-coupon bonds. If there were no profits to motivate investors and compensate them for extra volatility issues, they presumed from purchasing long-term bonds, then the demand for long-term bonds declined. This theory was criticized that it was monetary based theory that did not consider aspects such as frugality, peripheral output of capital and asceticism required for saving.

2.2.4 Preferred habitat theory

Preferred habitat theory guided the convertible bonds issuance. The preferred habitat theory was developed by Franco Modigliani and Richard Sutch in 1966 (Modigliani & Richard, 1966). The theory stipulated that investors abandoned their anticipated maturity sectors if there were comparatively better rates to pay them (Modigliani & Richard, 1966). Meaning that investors were made to relinquish their seamless ideal bond tenures when supply and demand situations in diverse bond markets did not match (Modigliani & Richard, 1966). For instance, investors invested in short-term corporate bonds due to their nature of being risk averse which was a problem to commercial banks need of having

capital for longer duration due to their projects causing excess supply of long-term bonds by banks and excess demand of short-term bonds by investors. This theory was used because in any market due to various economic conditions, investors wished to change from their current bond plans to other investment options available in a commercial bank such as other types of bonds, cash or even shares. When that happened, there was need to have an equilibrium by both demand and supply sides for the market to be perfectly matched. The theory was criticized because in most cases, investors were enthusiastic to change their partialities if more profit was assured in other investment option which was not normally the case.

2.3 Fixed rate bonds and liquidity growth of commercial banks

A debt instrument that had a long-term duration and paid constant coupon rates for the period of the bond was referred to as a fixed rate bond (Standard Bank, 2020). For instance, when an investor invested one million shilling in a fixed rate bond which paid 12.5 % for ten years payable semiannually, that meant after every six months the investor was receiving Kshs 62,500. In Kenya when a tax of 15% was applied, this investor received Kshs 53,125 for the next ten years and in the tenth year the final pay was Kshs 53,125 and the Kshs 1,000,000 principle. The basic advantage of a fixed rate was that it gave an investor an assurance of known certain level of income till the bond matured. The types of fixed rate bonds were semi-annual, annual fixed rate bonds, 5-year fixed rate and 10-year fixed rate (International Monetary Funds, 2017; Sambira, 2015; Ghana Securities Exchange, 2015). Annual fixed rate bonds were the type of bonds that paid interest income after twelve months or one year. Semi-annual fixed rate bonds were the type of bonds that paid interest income after six months or half a year. Quarterly fixed rate bonds were the

type of bonds that paid interest income after three months or a quarter of a year. This study considered annual and semi-annual fixed rate bonds because they were most common types of fixed rate bonds issued in many Kenyan banks (Chartered Institute for Securities & Investments, 2016).

Notably, the indicators of fixed rate bonds in commercial banks were issuance volume, roll-over volumes and outstanding volumes (World Bank, 2017). The issuance volume was the number of fixed rate bonds that had been allotted and the payments done. Roll-over volumes was the number of almost matured fixed rate bonds had been converted as new bonds. Outstanding volume was the remaining bonds that had not yet been issued due to various reasons such as low markets. An effective fixed rate bond therefore had a recognizable average to time maturity, duration, average maturity and average life. Average to time maturity entailed the typical outstanding time to a maturity of specific securities comprised in the bond.

For example, the average to time maturity of a fixed rate bond in a bank that was backed by a mortgage loan that took ten years of payments to be completely paid, was ten years. The duration of a bond was the normal maturity of a bond subjected to its cash flows. That was the weighted average period of time till cash flows of the securities (in our case mortgage loan repayments) were acknowledged by the bank. Average maturity of a bond was the remaining period in terms of years till full principal settlement date weighted by the principal settlement sum was done. That was the duration till the bond expired. The average life of a bond was the period at which the principle compensation was projected to be unsettled. That was how long investors waited till they got their investment back.

Prior literature in developed nations such as America done on fixed rate corporate bonds, indicated that in the fourth quarter of 2019, was generally commendable (Bloomberg Barclays Indices, 2019). This was after consideration of the poor prior performance of the fixed-rate bonds. UBS Group (2020) titled as year ahead insinuated that an approximate 79 per cent of investors believed that there was high interest instability, low growth, intensifying risks, yields that were low, uncertainty caused by elections and weakening of the American currency comparing to safer and developed yielding currencies especially in debt instruments. In support of this, Goldman Sachs which was an investment company in 2020 on their weekly global fixed income report, pinpointed the problem of corona virus that had been a global concern. American rates were affected to a point that 10-year fixed rates and other countries bond markets deteriorated.

Looking into Europe, Vassalloa et al. (2018), elaborated that due to the prior different financial crisis that Europe had undergone, greatly influenced more sterner actions making commercial banks struggle in their ability to provide monetary backing towards projects that were infrastructure in nature. This made the European Union to introduce Europe 2020 project bonds. However, this bonds initiative had been encompassed with issues such as competition assumption by banks thinking capital markets were out to put them out of business; distress of susceptibility linked to capital markets by borrowers hence not committing fast; and bond investors being less motivated to partake risks related with the building phase, choosing to undertake risks solitary in the operative stage.

Adding to the construction bonds, sovereign green bond issuance had been advancing quickly in in Europe with countries such as Belgium, Ireland and Lithuania

being pioneers in issuing them (Organization for Economic Co-operation and Development, 2019). That notwithstanding there had been concerns that some self-governing issuers realized a prerequisite to be extra upbeat and open in giving statistics to stakeholders. There was therefore need to look at Kenya's fixed-rate bonds relationship with Nairobi commercial banks in Nairobi County to understand what developments had been done on bonds and the challenges they faced.

In developing nations, a country such as South Africa there was successful issuance of green bonds by different investment banks such as Nedbank Limited (Johannesburg Stock Exchange, 2019). This being a good step towards fixed rate bonds issuance in Africa, the challenge remained on openness of regular usage of income gotten from the green bonds and full revelation on measures applied to appraise the worthiness of the green bonds projects (Sambira, 2015). Looking in Western Africa, a country such as Ghana through its securities exchange market developed Bloomberg e-bond transaction and market observation structure, which was a newfangled automated trading system, for Ghanaian fixed proceeds securities such as fixed rate bonds (Ghana Securities Exchange, 2015).

However, technology had its limitations such as cyber-attacks and did not always work as required (Australian Computer Society, 2016). In northern Africa, a nation like Algeria who's reserved in the oil equilibrium endowment were almost depleted and constricted liquidity situations in the banking sector, the financial backing situation had become more tougher hence fixed rate bonds became even more risky in that nation (International Monetary Fund, 2017). In East Africa, Rwandan franc dominated bond was able to appear in an international market such as London stock exchange through the help

of world bank (World Bank, 2020). This was a boost for Rwanda to achieve its 2050 country goal of having a prosperous nation.

In Kenya, the capital market authority permitted the issuance of Kenya's first unlisted green bond by Acorn Project (Two) Limited Liability Partnership (Capital Market Authority, 2019). This was seen as a major step on growing the Kenyan financial system whereby investors had a chance and variety of forms of fixed rate bonds to consider. This study therefore had an aim of looking at the developments made concerning fixed rate corporate bonds issuance and liquidity growth of banks.

2.4 Floating rate bonds and liquidity growth of commercial banks

This was a type of corporate bond that had flexible coupon similar to a money market reference rate (Standard Bank, 2020). That was, the interest rate applied to make periodic payments varied significantly with the market rate hence not fixed. For instance, when an investor invested one million shilling in a floating rate bond which was paid at commencement had 12.5 % for ten years payable semiannually. That meant that after every six months the investor was receiving varying amounts based on the current interest rate less withholding tax of 15% for the preceding ten years and in the tenth year the final pay was inclusive with the principle amount invested. This type of bond had the advantage that one reaped maximumly when the interest rates went up with low amount of principle investment. The types of floating rate bonds were callable and non-callable floating rate bonds, iShares Fund, Van Eck market vectors investment grade floating rate bond and pacific asset enhanced floating rate (Bank for International Settlement, 2016; Munene, 2015; Andrianaivo & Yartey, 2010; Grandes & Peter, 2007). Therefore, this study

considered the two because they were the most common types of floating rate bonds available in Kenya.

Outstandingly, the main indicators of floating rate bonds in commercial banks were issuance volume, roll-over volumes and outstanding volumes (World Bank, 2017). The issuance volume was the number of floating rate bonds that had been allotted and the payments done. Roll-over volumes was the number of almost matured floating rate bonds that had been converted as new bonds. Outstanding volume was the remaining floating rate bonds that had not yet been issued due to various reasons such as low markets. An effective floating bond consequently carried less interest rate risk and quoted as a spread over the reference rate (Soni, 2014).

Literature available about floating rate type of corporate bonds in developed nations such as Europe included Clifford Chance (2020) who reviewed on challenges faced on securitizations and note issuers. According to Clifford Chance (2020), a declared move by the U.K.'s Financial Conduct Authority (FCA) to no longer force various banks to make available the prices that were applied in the creation of LIBOR by 2021. This move put at risk the outcomes in LIBOR rates of not being made available any longer and likelihood that FCA deciding that it did not epitomize the basic market. The controllers of main financial markets had articulated a penchant to transfer from LIBOR to near risk-free rates, secured in lively, liquid basic markets. America was now calling upon of recognition of other reference rates to US Dollar LIBOR, such as the Secured Overnight Financing Rate (SOFR).

Adding to literature, S&P Global Inc (2019) shed more light on the state of the unsettled debt instruments from Americans firms, justified for 48 percent of international corporate debt. Constricting funding circumstances subsidized a 24 percent deterioration in issuance of America's corporate bond in 2018. In Asia the continuing financial re-harmonizing in China, strategy ingenuities to progressively deleverage and permit market factors to control financial market chastisement were some of the developments made to encounter loan commitments, predominantly in contrast to the framework of decelerating economic progress (State Street Global, 2019). State Street Global (2019) put forward that more onshore bond defaults were expected, low yields in countries such as Thailand recording a decline of 1.54 percent. This study looked at the default rates of the Kenyan corporate bonds by looking at the relationship between corporate bond issuance and liquidity growth of commercial banks in Nairobi County.

Exclusively in developing nations on average, organizations increased their capital by corporate bonds and collective loans at maturities to some extent lengthier than those dispensed by developed nation's organizations (World Bank, 2017). These third world nations had been relying recently on domestic markets more than international markets, giving a rise of domestic debts issued in developing countries. This was because of development of the structure for bond trading such as taxation improvements, prudently custom-made allotting strategy to handle the desires of secondary market function and lesser inflation rate of developing countries issuing these bonds.

That notwithstanding, there was a concern that debt markets such as floating rate bonds were still struggling with liquidity, conflicting management objectives and sensitivity of local markets to unpredictability in universal capital markets (Bank for

International Settlement, 2016). For a debt instrument such as floating rate bond to improve liquidity, Smaoui, Grandes and Akindele (2017) stipulated that operational, fiscal and institutional factors, commercial size, trade candidness, investment outline, administrative excellence, size and attention of banking structures have to be in place. In Africa and other developing nations, apart from South Africa, Egypt, Chile and Mexico the rest of the financial markets were considered not be developed hence affecting floating rate bonds market as well (Andrianaivo & Yartey, 2010; Grandes & Peter, 2007). This study therefore established whether in the midst of undeveloped markets, corporate bonds such as floating rate bonds had any relationship with liquidity growth of commercial banks in Nairobi County?

Notably, a study by Munene (2015) in Kenya, acknowledged that a floating rate bond was among the determinant towards treasury bonds acceptance. A support by Olabisi and Stein in 2015 indicated that African nations recompensed higher-than-normal coupon rates on these sovereign bonds markets. This revelation encouraged that corporate bonds played a significant role towards other bonds uptake. The study complained of investors taking longer to resolve to participate in the bond hence were cut out when the issuance time elapsed. This study therefore added more information on significant role of corporate bonds by looking at the relationship between corporate bond issuance and liquidity growth of banks.

2.5 Zero coupon bonds and liquidity growth of commercial banks

Zero-coupon bonds were type of bond's whose interest was paid at the maturity of the bond (Standard Bank, 2020). Zero coupon is one of the most traded security. According to Lartey et al. (2019) zero-coupon, forward, and standard yield bends for the Nigerian

security advertise since it was one of the most fluid money related markets in Africa. That is, it did not have any periodic interest payments before the bond matures. For instance, when an investor invested one million shilling in a zero-coupon bond which paid 12.5 % for ten years payable semiannually, that meant after ten years the investor received Kshs 2,250,000. This was including Kshs 1,250,000 as total installments and Kshs 1,000,000 which was the principle investment. Once a withholding tax was deducted the investor received a net income of Kshs 1,912,250. The types of zero-coupon bonds were inflation indexed and face value zero coupon bonds.

In addition, the types of zero-coupon rate bonds were inflated indexed, face value zero coupon bonds, corporate zero, strips and municipal zero (Asian Development Bank, 2019). This study therefore considered all the types. The indicators of zero-coupon bonds in commercial banks were issuance volume, roll-over volumes and outstanding volumes (World Bank, 2017). The issuance volume was the number of zero-coupon bonds that had been allotted and the payments done. Roll-over volumes was the number of almost matured zero-coupon bonds had converted as new bonds. Outstanding volume was the remaining zero-coupon bonds that had not yet been issued due to various reasons such as low markets.

Past investigation done by Deng in 2015 on the most proficient method to esteem an American put alternative on zero-coupon bond in a bounce expanded Cox–Ingersoll–Ross (CIR) model. Deng (2015) got a moved toward estimation of an American put alternative on a delinquency - free, zero-coupon bond utilizing the two-GJ technique established on joining a European put choice and a Bermudan choice with twofold likely exercise times. Shut structure results for singular alternative were gotten by methods for multivariate Fourier changes and recognizing jobs. The precision and adequacy of the estimation were

examined by applying the least-square Monte Carlo recreation as the measuring sticks. Another investigation by Najafi, Mehrdoust and Shirinpour (2018) moved toward the issue contrastingly by taking a gander at the American put choice on zero-coupon security, when the loan fee model was managed by a partial CIR (FCIR) financing cost model while applying the activity cost to annihilate the exchange. Prominent drawback as indicated by Kovachev in 2014, CIR model was described by proposition of flawless relationship.

Focusing our attention to Europe, an investigation done by Diaz, Jareño and Navarro (2012) specified that the delinquent of approximating the unconventionality of zero-coupon security financing cost depended expressively on the informational index. Money related industry frequently applies regularly zero-coupon yield bends as commitment for testing hypotheses, esteeming resources or dealing with hazard. Notwithstanding, the hints of the strategy and of the model decision measures applied to assess the zero-coupon security yield term framework on the ensuing flightiness of spot rates with differing developments set up relevant changes in monetary standings when volatilities were applied to esteem zero-coupon security subsidiaries. Baviella et al. (2019), understood an honest shut strategy for illiquid corporate coupon security esteems when fluid securities with tantamount physiognomies that were existing in the market for the indistinguishable backer.

Further, Baviella et al. (2019), exhibited that illiquid securities gave an additional liquidity spread that rely on release time separated from credit and loan fee limitations. This study used few parameters such as discharge time, credit and interest rate aspects hence the study was unexhaustive to make a solid valid conclusion. According to a report by Asia Development Bank in 2019, the bond market in Asia was not doing well. Sovereign

cash government bond profits were lesser in Asia amongst a failing worldwide development viewpoint, weakening fiscal postures, and sensitive investor risk repugnance. According to the report, the trade disagreement between China and America sustained weight on worldwide development. Other issues included deteriorated equity markets, broadened risk perks, a bourgeoning trade fight between Japan and Korea, local moneys losing value in comparison with American money and impending qualms fermented investor sentimentality.

In developing nations for example, in Africa, Lartey et al. (2019), utilizing piecewise cubic Hermite procedure, the piecewise cubic spline strategy and the Nelson–Siegel–Svensson strategy, built up that the piecewise cubic Hermite technique was proper for making the Nigerian standard and zero-coupon yield bends. This study was however relying on secondary data from financial market dealer's quotation over the counter website. This raised concerns on accuracy of the data collected. A report by International Monetary Fund (2019) argued that government debt reforms were professed as perpetrating huge losses to owners of the bonds. Though, many bonds had high coupons payments and frequently displayed robust post-crisis recaptures. International Monetary Fund (2019) showed that income relied on what strategy of investment was used. If an investor disposed their bonds in a financial crisis, he earned more losses than an investor who did not dispose. There was therefore a gap to look at the corporate bond's issuance phenomenon in commercial banks to know whether investors behaved the same way the government bonds investors behaved.

2.6 Convertible bonds and liquidity growth of commercial banks

Convertible were the types of bonds had the ability to be changed into shares or money as the bond holder wished (Standard Bank, 2020). For instance, when the bond holder wished to change the bonds into shares, he or she did so without contradicting any commercial bank's regulation. Vanilla, mandatory, reversible, packaged, contingent and foreign currency were the types of convertible bonds (Fisch asset management, 2019; Karpenko & Blokhina, 2019; Chang et al., 2019). The indicators of convertible bonds in commercial banks were issuance volume, roll-over volumes and outstanding volumes (World Bank, 2017). The issuance volume was the number of convertible bonds that had been allotted and the payments done. Roll-over volumes was the number of almost matured convertible bonds that had been converted as new bonds. Outstanding volume was the remaining convertible bonds that had not yet been issued due to various reasons such as low markets. An effective convertible bond offered more profits than normal stock but less profits than conventional corporate bonds.

Further, a report made by Fisch asset management (2019) agreed that there were developments such as growing of new convertible bonds issuance anchored on a variety of securities in developed nations. The report pinpointed engulfing concerns in convertible bonds such as increased market unpredictability in America; low growth in China convertible bonds, prospects of global economic depression due to yield curves capsizing, universal demand decelerating and products prices plummeting. Huerga and Monroy (2019) on mandatory convertible notes as a sustainable corporate finance instrument confirmed that despite the fact that debt securities were an acknowledged source of finance in a corporate, excessive of debts taken was one of the causes of the financial crisis of 2008.

The study stipulated that mandatory convertible bonds were a hybrid that was issued and in which they had almost similar characteristics as equity and also conventional bonds.

In addition, a review in Russia done by Karpenko and Blokhina (2019) on convertible bonds for companies' investment process's, reviewed different approaches used by corporations while issuing bonds. The study established that convertible bonds which were currently popular in Russian market were utilized by the corporations with truncated investment prospects for funding investment ventures, lure of inexpensive monetary backing and also for payment of coupon of the previous releases of bonds. Chang et al. (2019), conquered that there were few studies that had been done on the effect of corporations' performances after issuance of corporate bonds in developed nations and the ones that existed painted a negative picture on the bonds. The study informed us that most of the firm's performance declined after issuance of corporate bonds.

Adding to that, Asian Development Bank report (2019b) on the great practices for building up a neighborhood cash security showcase hypothesized that by a country not having a local market prompted gigantic money related dangers in the nation. The examination gave a clarification that Asian nearby money security markets were basic to convey a substitute spring of funding to unfamiliar cash designated bank advances in order to lessen the money and development ambiguities that had made the province powerless to the unforeseen hitch of capital streams. This gave this examination motivation to take a gander at the achievement or disappointments of corporate securities which were items exchanged Nairobi protections trade. This examination tied down on business banks corporate securities.

In developing nations, Ecobank Transnational Incorporated (ETI) dispensed $150 million convertible bond on London's International Securities Market (ISM) (London Securities Exchange, 2020). The convertible bond was a five-year period payable twice a year and with a coupon interest rate of 6.46 % annually above three-month U.S. dollar LIBOR. This branded it the foremost African convertible bond to list in an international market such as London. Convertible bond issuance in Africa was generally at its early stages, probably because of valuing difficulty and vagueness on change activated (Liebenberg et al., 2016). According to Liebenberg et al. (2016), the valuing of convertible bonds was explored and the effect of domestic environments are examined. The investigation set up that the high loan fees and value shakiness likened with the state in cutting edge economies brands convertible bonds for the most part striking instruments for the simultaneous lessening of obligation and the improvement of capital. International Finance Corporation (2017) report on solutions offered in debt market verified that regulation changes in convertible bonds were needed on high issuance charges, local markets experiencing instability in global funding sources and ways of attracting global investors. These problems among others were the motivating factors of this study to look in Kenyan commercial banks whether there was any relationship between corporate bond such as convertible bond and liquidity growth.

Summary of the gaps

Developed nation's fixed rate bonds had challenges such as high interest instability, low growth, rising risks, low yields, uncertainty due to elections and weakening of the American currency comparing to safer and developed yielding currencies especially in debt instruments. Complications of corona virus were a worldwide alarm where American rates

were affected to a point that 10-year fixed rates and other countries bond markets deteriorated; European Union long-term bond project being engulfed with issues such as competition assumption by banks thinking capital markets were out to put them out of business; distress of susceptibility linked to capital markets by borrowers hence not committing fast; and bond investors being less motivated to partake risks related with the building phase. Lack of transparency and not being proactive also inhibited the growth of fixed rate types of bonds.

Perused literature about issues surrounding floating rate type of corporate bonds in developed nations such as Europe include LIBOR rates of not being made available any longer and likelihood that Financial Conduct Authority in United Kingdom deciding that it did not epitomize the basic market was a concern. There was also been constricting financing circumstances which subsidized to a 24 percent deterioration in issuance of America's corporate bond in 2018. In developing nations, floating rate bonds were having issues such as liquidity, conflicting management objectives and sensitivity of local markets to unpredictability in universal capital markets.

Further, problems facing zero-coupon rate included: sovereign cash government bond profits were lesser in Asia amongst a failing worldwide development viewpoint, weakening fiscal postures, and sensitive investor risk repugnance. According to the report, the trade disagreement between China and America sustained weight on worldwide development. Other issues included deteriorated equity markets, broadened risk perks, a bourgeoning trade fight between Japan and Korea, local moneys losing value in comparison with American money and impending qualms fermented investor sentimentality.

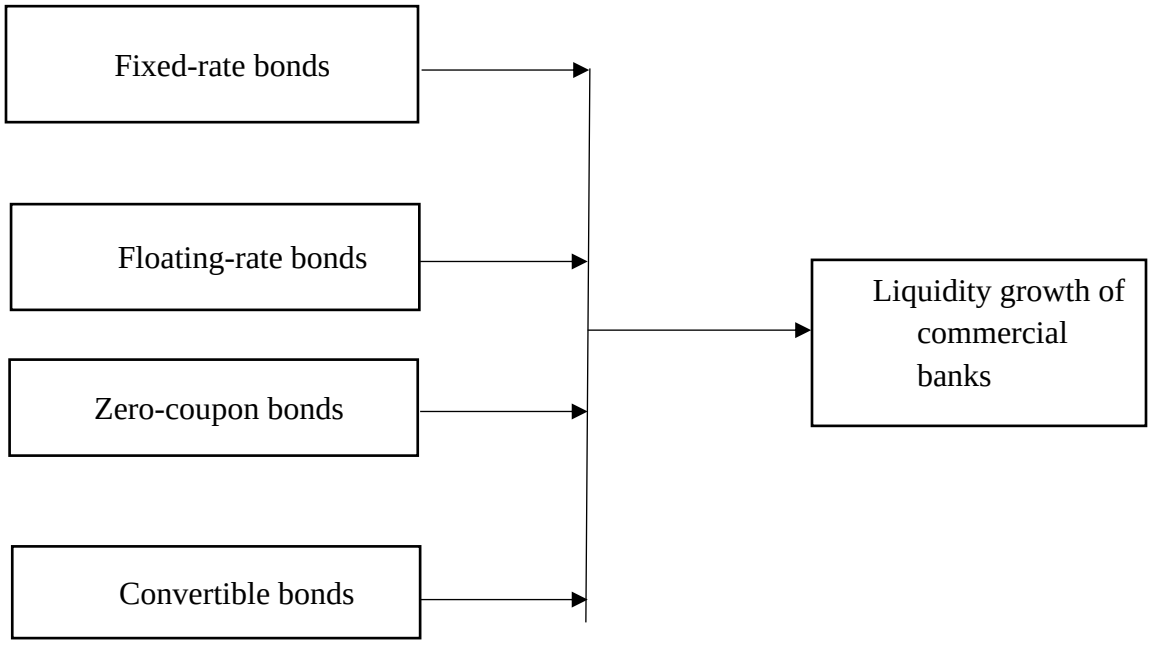
In addition, gaps noticed in convertible bonds included aspects such as increased market unpredictability in America; low growth in China convertible bonds, prospects of global economic depression due to yield curves capsizing, universal demand decelerating and products prices plummeting. Convertible bonds which were currently popular in Russian market were utilized by the corporations with truncated investment prospects for funding investment ventures, lure of inexpensive monetary backing and also for payment of coupon of the previous releases of bonds; few studies that had been done on the effect of corporations' performances after issuance of corporate bonds in developed nations and the ones that existed painted a negative picture on the bonds.

2.6 Conceptual frame work

Figure 2.1 was a diagram that was used to elucidate the variables under review. It demonstrated dependent variable on the right and independent variables on the left. The dependent variable was liquidity growth whereas the independent variables entailed fixed-rate bonds, floating rate bonds, zero-coupon bonds and convertible bonds.

Figure 2.1

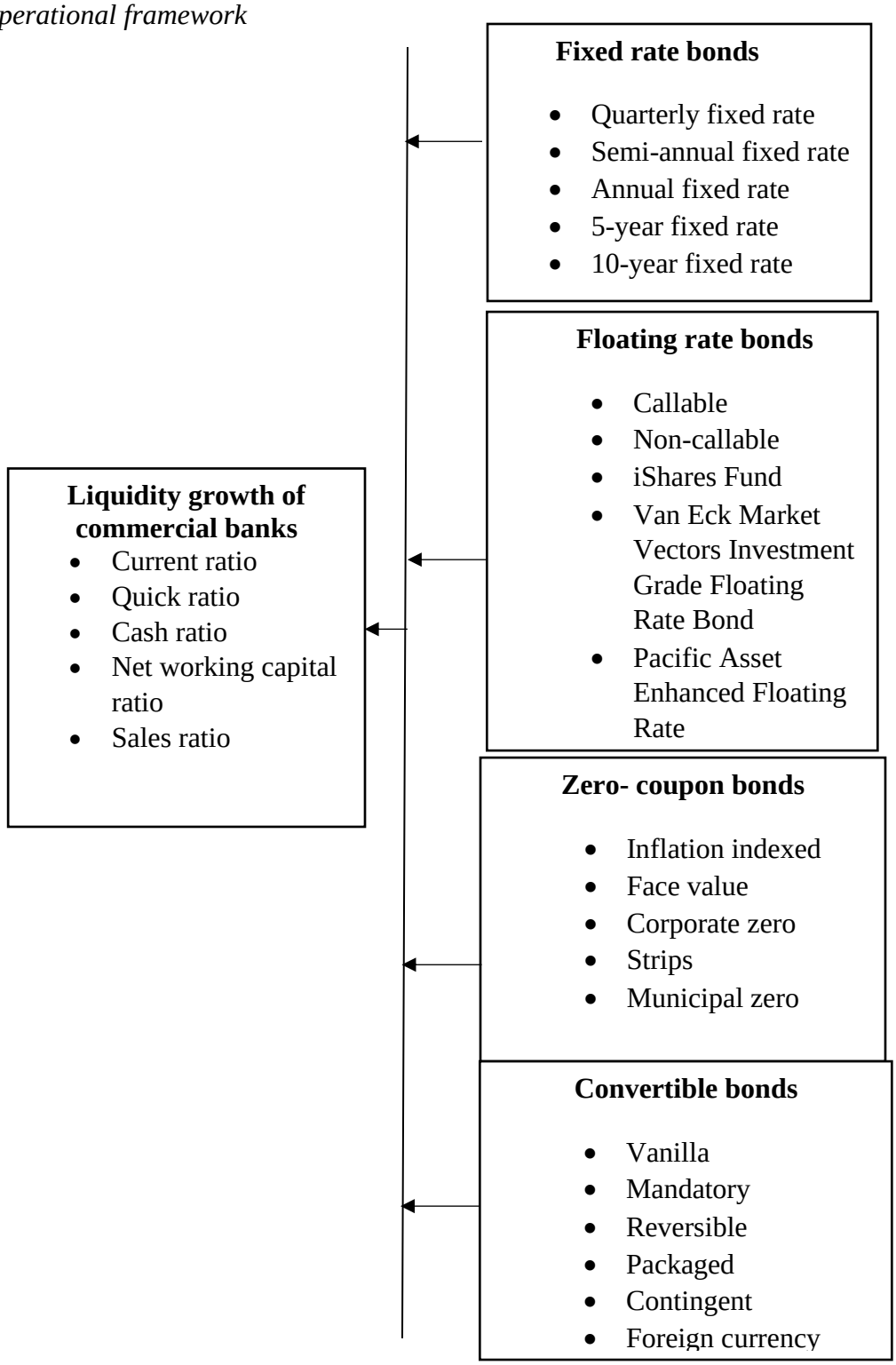
Conceptual framework



2.6.1 Operational framework

Figure 2.2

Operational framework



Liquidity growth was the dependent variable in this study. Current ratio, quick ratio, cash ratio, net working capital ratio and sales ratio were used to measure liquidity growth in commercial banks in Nairobi County. The independent variables explored included the Fixed rate bonds, floating rate bonds, zero coupon bonds and convertible bonds. The pointers of fixed rate bonds were semi-annual, annual fixed rate bonds, 5-year fixed rate and 10-year fixed rate (International Monetary Funds, 2017; Sambira, 2015; Ghana Securities Exchange, 2015). The pointers of floating rate bonds were callable and non-callable floating rate bonds, iShares Fund, Van Eck market vectors investment grade floating rate bond and pacific asset enhanced floating rate (Bank for International Settlement, 2016; Munene, 2015; Andrianaivo & Yartey, 2010; Grandes & Peter, 2007). The pointers of zero-coupon bonds were inflated indexed, face value zero coupon bonds, corporate zero, strips and municipal zero (Asian Development Bank, 2019). Vanilla, mandatory, reversible, packaged, contingent and foreign currency are the types of convertible bonds (Fisch asset management, 2019; Karpenko & Blokhina, 2019; Chang et al., 2019).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter specifically discussed the methodology that was used to carry out the study, it included research design, location, target population, sample size and sample selection. It also deliberated the research instruments, pre-testing, reliability and validity of instruments, data collection procedure, data analysis techniques and ethical considerations.

3.2 Research Design

Schwartz-Shea and Yanow (2013) articulated that a research design as a plot that directed the study in the procedure of amassing, evaluating and construing annotations. Therefore, an effective research design did have an evidently distinct goal and have steadiness amid the asked research queries and the anticipated research technique (Almalki, 2016). This study espoused a descriptive research design. Wyk (2012) asserted that a research design was appropriate when the intention of the researcher was investigating the notch to which the variables were related and creating forecasts concerning the manifestation of social or physical phenomena. Descriptive research design was consequently more suitable because the study sought to build an outline on the relationship between corporate bond issuance and liquidity growth of commercial banks in Nairobi County.

3.3 Location of the Study

The location of the study was in Nairobi County. This gave this study an exhaustive horizon on what exactly was the relationship between corporate bonds issuance and liquidity growth of commercial banks in Nairobi county. The other fact was that commercial banks in Nairobi County were almost all centrally placed in the central business district giving this study a breakthrough to conduct the study within a small proximity area using the shortest time possible.

3.4 Target Population

A population is the whole assortment of rudiments in which an investigator desires to use (Mohsin, 2016). The target population included all 39 commercial banks in Nairobi County. A versatile population of commercial banks in Nairobi gave this study a rich phenomenon to really establish the challenges affecting corporate bond in Kenya. The respondents of the questionnaires included all the overall marketing managers, operations managers and general managers. These managers were involved in ensuring the bond lifecycle was accomplished such that bond holders received their quarterly, semi-annual, annual interests and also ensuring the principle was paid back in full at the maturity of the bond (Turegun, 2019; Soni, 2014).

Table 3.1

Target Population

	No
General managers	**39**
Marketing managers	**39**
Operations managers	**39**
Total	**117**

3.5 Sampling Techniques and Sample Size

According to Cooper and Schindler (2012) and Babbie (2014), this is a method through which a researcher chose a sample to represent whole population and which would be viable in a study. The study used census sampling technique. This meant that all 39 commercial banks in Nairobi county were measured in the study. Data was collected from all the overall general, marketing and operations managers without excluding any of them. Census sampling technique was used to involve all the managers of the commercial banks.

3.5.1 Sample size

The study included all the 117 overall general, marketing and operations managers in the study who were issued with questionnaires for response. This was so because the number was not high and could be manageable when collecting data during the study. All these respondents played a very important role in the bond cycle process.

3.6 Data collection and procedure

Data gathering was vital in a study since it consented for diffusion of precise information and expansion of evocative plans (Kombo & Tromp, 2009). An introductory letter from Kenya Methodist University was required. The study then presented the introductory letter to National Commission for Science, Technology and Innovation (NACOSTI), to be allowed to collect data from commercial banks in Nairobi County. A total of 4 research assistants services were gotten to help during the research process. The researcher offered training to the research assistants on confidence in presenting and explaining facts on the intention of the questionnaires, maintaining discretion and high level of professionalism during the entire research process.

Further, the research assistants distributed the questionnaires in commercial banks in Nairobi where they located the respondents based on the articulation method provided for in this study. They introduced themselves and issue questionnaires to respondents. Once this was done, they informed the respondents that they would collect the questionnaires after one week to ensure all questionnaires were answered to perfection. After one week, the research assistants proceeded to collect the filled in questionnaires for data analysis. The research assistants then thanked the respondents and left with the questionnaires.

3.7 Research instrumentation

Closed ended questionnaires was used in this study. The three types of managers answered different sections on the questionnaires that they were well versed with. The questionnaires had a 5-point tabular Likert scale just like (Ng'eno, 2019) successfully applied in the study. Multiple choice questions in the questionnaires gave respondents direction on what to reply the questions relating to fixed rate bonds, floating rate bonds,

zero-coupon bonds and convertible bonds. This ensured harmony on the respondent's responses for data analysis.

3.7.1 Pre-testing of Questionnaire

Questionnaires were pre-tested to ensure that the questions asked articulated correctly the variables in the study and would achieve the intended purpose during the final study. The researcher selected randomly select five commercial banks located in Meru. The selected banks in Meru were not included in final studies. The respondents were branch marketing managers, operational managers and assistant managers. The respondents were issued with questionnaires to answer and critique them in case they found vague questions.

3.7.2 Reliability of Research Instruments

To ensure reliability of the questionnaires, the study did a pre-test to facilitate calculation of Cronbach alpha constant value in ensuring the resoluteness of the instruments. According to Cooper and Schindler (2014), the reply frequency had to have a least Cronbach alpha constant frequency of 0.7 or above which expressed high steadfastness in research. Reliability was normally important to determine if a research instrument could be trusted to deliver the intended goals. That was, the suitability of the instrument to answer the research problem and derive the study's objectives.

3.8 Data Analysis and presentation

Collected data was eviscerated and all half-finished questionnaires sorted out for analysis. Statistical Package for Social Sciences (SPSS) software were utilized to code the data for the analysis. Descriptive statistics such as means, standard deviation and frequency distribution were premeditated from the coded data. Data demonstration were done by use

of frequency distribution tables, bar graphs and pie charts. The multiple regression analysis was used to study the relationship between the corporate bond issuance and liquidity growth of commercial banks in Nairobi County The model was as follows:

$$Growth = CO + \beta 1FXBi, t + \beta 2FLBi, t + \beta 3ZCBi, t + \beta 3CVBi, t + \varepsilon i,t$$

Where;

FXB = Fixed rate bond (independent variable)

FLB = Floating rate bond (independent variable)

ZCB =Zero-coupon bond (independent variable)

CVB = Convertible bonds (independent variable)

CO = constant coefficient (intercept)

β = slope coefficient of independent variables

i = number of commercial banks in Nairobi Kenya

t = time duration

Ɛ= error term

Other qualitative data that involved liquidity growth measures such as current ratio, quick ratio and cash ratio was derived from the financial statements such as the statement of affairs of various commercial banks in Nairobi from 2016-2018. This was used in analyzing using the formula in section 3.8.

3.8.1 Analysis of documents (qualitative data)

Horizontal analysis technique will be utilized in analyzing secondary data in this study. This is an analysis method that relates two or more years of an individual organization's financial information which is articulated in percentage form. Horizontal analysis technique will be applied in this study because financial performances for 3 years beginning from the year 2016 to 2018 of various individual commercial banks in Nairobi county is required. The study will concentrate on financial reports such as statement of affairs and the income statement as secondary data constitutes. The study however will not consider other analysis techniques such as vertical analysis technique because it involves comparison of two or more organization's information which will not be required in this study (Lakada et al., 2017). This study will not compare Nairobi county's commercial bank's financial performances against each other but will be comparing how the financial performances of each listed commercial banks have fared in a three-year period.

3.9 Ethical consideration

Dooley (2007) relied ethics as the study of correct and incorrect behavior. As an assurance to guarantee supreme attention of ethical aspects in the study, individual respondents and people related to banking authority were copiously informed about the study. That was, permission to conduct the research was sought for preceding to the commencement of the study. The introduction letter from Kenya Methodist University (KeMU) was part of acting proof that the institution had allowed the researcher to undertake the academic study. The same introduction letter was used to apply research permit from NACOSTI. Relevant permissions were sought to conduct the study from the commercial banks' management in Nairobi county. Once the permission was given, the

respondents were informed that confidentiality would be adhered to during the study through an introductory letter (see appendix I). To validate this, respondents were not obliged to designate individual credentials particulars when replying to the questionnaires. Once the questionnaires were collected by the research assistants, they were forwarded for data analysis. The researcher ensured that the analyzed questionnaires were stored in a very safe place.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, results were indicated as per the study's objectives. The reason behind the study was to discover the relationship between corporate bonds and liquidity growth of commercial banks in Nairobi County Kenya. The response rate was given, reliability test, background profile of the respondents, various diagnostics tests such as normality, linearity, heteroskedasticity and multicollinearity. Later on, various descriptive description of the questionnaires responses was indicated, trailed by model summary. ANOVA and regression coefficients were last in this chapter.

4.2 Response rate

The study had a main purpose of investigating the relationship between the connection between corporate bonds and liquidity growth of commercial banks in Nairobi county Kenya. There were questionnaires which were supposed to be filled by overall marketing managers, overall operations managers and overall general managers in the 39 commercial banks in Nairobi county. The total number of the respondents were 117 as per the study's intention. That not-withstanding, various factors beyond the respondent's capability to handle affected the total number of returned questionnaires. Table 4.1 indicated the response rate of the study.

Table 4.1

Response Rate

Category	Frequency	Percent	Cumulative Percent
Response	102	90	90
Non-response	15	10	100

Results in Table 4.1 showed that out of 117 issued questionnaires, the total returned questionnaires were 102. That meant that the study had a 90 percent return rate. This was an excellent return rate according Mugenda and Mugenda (2003). According to them when questionnaires returned had a 50-60 percent the return rate was fair; 61-70 percent the return rate was good; 71-80 percent the return rate was very good; while over 81 percent indicated an excellent rate.

4.3 Reliability test

To ensure that the research instrument used could be depended upon to deliver what it was meant to deliver, the study subjected the pre-test response rates on Cronbach alpha test. The pre-test was done on five randomly selected commercial banks in Meru County which were Family bank, Co-operative bank, Kenya Commercial Bank, Standard chartered bank and Equity bank. These selected banks had their branch marketing managers, operational managers and assistant managers respond to the pre-tests. The results from the pre-test indicated that the research instruments were reliable since they gathered a Cronbach alpha value of 0.85. Bhattacherjee (2012) conformed that when a study has a Cronbach alpha value of 0.7 to 1, it could be relied upon to deliver when used in the main study. Table 4.2 showed the results derived.

Table 4.2

Reliability Statistics

Instrument	Cronbach's Alpha	N of Items
Questionnaire	.85	15
Average	**0.857**	

4.4 Demographic profiles of the respondents

At the commencement of the questionnaires, the study had inquired about the length of stay in their current bank. By getting to know how long a respondent had stayed in the bank, gave the researcher the knowledge on whether the respondent would be able to really relate with the inquiries used in the study. The results are indicated in Table 4.3.

Table 4.3

Demographic Profile of the Respondents

Category	Frequency	Percent	Cumulative Percent
Less than 1 year	43	41	41
2-5 years	52	50	91
Over 6 years	10	9	100
Total	**105**	**100**	

The results in Table 4.3 indicated that many respondents had stayed in their banks for a period of 2-5 years which had the highest number of 52 (50%). This was followed by respondents who has stayed in their banks for a period of less than a year who were 43 of them translating to 41%. The last group of 10 (9%) respondents showed that they stayed in their current banks for more than 6 years. These results further explained elaborated that most bankers had not stayed long in their banks. The reason could partly be attributable to

bankers always shifting from one bank to another to look for a better payment structure. This was confirmed by Dolnicar et al. (2018), who explained as a result of market segmentation, firms such as banks, insurance firms and forex firms were in need of new fresh ideas to remain competitive in the job market. As a result, they tended to offer the best bargain when tapping new experienced personnel. This increased shift of jobs withing the same field or different similar fields by employees.

4.5 Diagnostics test

To verify that the collected data was statistically stable to be anchored in support of the objectives and purpose of the study, the researcher did various diagnostics tests. These tests were normality test, linearity test, heteroskedasticity test and multicollinearity test. They were further explained in details in section 4.5.1 to section 4.5.4 below.

4.5.1 Normality test

A normality test was utilized to decide if test information had been drawn from a normally distributed population. The importance of this test was on the grounds that various measurable tests, for example, such as the one-way and two-way ANOVA required a normally distributed sample population. Various methods are used to test normality such as Kolmogorov-Smirnov Test, Lilliefors test, Shapiro–Wilk test, Pearson's chi-squared test, Jarque–Bera test and Anderson–Darling test among others (Mishra, Pandey, Singh, Gupta, Sahu, and Keshri, 2019). They are all used based on various reasons. For example, a reason such as the size of the sampled population. In this study the study adopted Kolmogorov-Smirnov test because the population was 105 which was greater than fifty (Mishra et al., 2019). If it was less, the study would have considered a study such as

Shapiro–Wilk test. The results of the Kolmogorov-Smirnov test were indicated in Table 4.4.

Table 4.4

Kolmogorov-Smirnov Test

		Liquidity growth	Fixed-rate bonds	Floating-rate bonds	Zero coupon bonds	Convertible bonds
N		102	102	102	102	102
Normal Parameters[a,b]	Mean	16.6765	22.2255	21.4902	13.3725	24.6765
	Std. Deviation	2.19433	2.06770	2.64292	3.60396	2.67427
Most Extreme Differences	Absolute	.186	.215	.221	.096	.150
	Positive	.145	.148	.221	.096	.094
	Negative	-.186	-.215	-.211	-.068	-.150
Kolmogorov-Smirnov Z		1.879	2.168	2.228	.967	1.520
Asymp. Sig. (2-tailed)		.632	.740	.542	.807	.520

a. Test distribution is Normal.
b. Calculated from data.

From the results in Table 4.4, it was clear that both the Kolmogorov-Smirnov test and Asymp. Sig. (2-tailed) were greater than 0.05. When they are greater than 0.05, it shows that the data was normally distributed (Mishra et al., 2019). For example, in Liquidity growth the p value was 0.632; fixed rate bonds' p value was 0.740; floating rate bonds' p values was 0.542; zero coupon rate bonds' p-value was 0.807; and convertible bonds' p-value was 0.520.

4.5.2 Linearity Test

The study was also interested in assessing what was the linear connection between fixed rate bonds, floating rate bonds, zero coupon rate bonds, convertible bonds and

liquidity growth. According to Schober, Boer and Schwarte (2018) the results should be above 0.05. The results were indicated in Table 4.5.

Table 4.5

Person Correlation: Linearity Test

		Liquidity Growth	Fixed-rate bonds	Floating-rate bonds	Zero-coupon bonds	Convertible bonds
Liquidity growth	Pearson Correlation	1	.848**	.482**	.207*	.732**
	Sig. (2-tailed)		.242	.101	.337	.200
	N	102	102	102	102	102
Fixed-rate bonds	Pearson Correlation	.848**	1	.737**	.176	.792**
	Sig. (2-tailed)	.242		.000	.017	.000
	N	102	102	102	102	102
Floating-rate bonds	Pearson Correlation	.482**	.737**	1	.101	.645**
	Sig. (2-tailed)	.101	.000		.011	.000
	N	102	102	102	102	102
Zero-coupon bonds	Pearson Correlation	.207*	.176	.101	1	.180
	Sig. (2-tailed)	.337	.017	.011		.000
	N	102	102	102	102	102
Convertible bonds	Pearson Correlation	.732**	.792**	.645**	.180	1
	Sig. (2-tailed)	.200	.000	.000	.000	
	N	102	102	102	102	102

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the Table 4.5, fixed-rate bonds had a significant influence on liquidity growth of r=.848, p=.242. Floating-rate bonds had a significant influence on liquidity growth of r=.482, p=.101. Zero coupon--rate bonds had a significant influence on liquidity growth of

r=.207, p=.337. Convertible bonds had a significant influence on liquidity growth of r=.732, p=.200. From these values, it was obvious that all p-values were above than 0.05 implying that there was a linear relationship between each independent variables and dependent variable (Schober et al., 2018).

4.5.3 Heteroskedasticity test

The study also had an intention to measure the heteroskedasticity test. Presence of heteroscedasticity in regression analysis nullified statistical tests of significance that assumed that the all modelling errors have the same variance (Li &Yao, 2019). For a data set to be free of heteroskedasticity problem, the significance value ought to be above 0.05 (Li &Yao, 2019). Table 4.6 gave the results obtained.

Table 4.6

Heteroskedasticity Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.445	2.222		3.351	.201
Fixed rate bonds	.025	.183	.024	.137	.891
Floating rate bonds	.117	.114	.141	1.020	.310
Zero coupon bonds	.088	.057	.144	1.537	.128
Convertible bonds	.202	.125	.247	1.613	.110

a. Dependent Variable: liquidity growth

Table 4.16 results showed that all variables had a significance of more than 0.05 proving that there was no heteroskedasticity problem. Fixed-rate bonds had a significance of 0.891; Floating-rate bonds had a significance of 0.310; Zero-coupon rate bonds had a significance of 0.128; and convertible bonds had a significance value of 0.110.

4.5.4 Multicollinearity test

The study also wanted to know whether the independent variables were statistically significant and if they had high correlation between them. Presence of multicollinearity would cause high standard error in a regression coefficient thereby undermining the variables (Wanjiku, 2019). The study used variance inflation factor (VIF) and tolerance levels (Wanjiku, 2019). For a study to be multicollinearity free, the tolerance level should be more than 0.2 and VIF less than 5 (Wanjiku, 2019). Table 4.7 showed the results of multicollinearity test.

Table 4.7

Multicollinearity Test

Model	**Collinearity Statistics**	
	Tolerance	**VIF**
(Constant)		
Fixed-rate bonds	.283	3.530
Floating-rate bonds	.446	2.243
Zero-coupon bonds	.962	1.040
Convertible bonds	.362	2.761

From the Tables 4.7, all the independent variables in the study had a tolerance value which was above 0.2 while all the VIF were less than 5 depicting no multicollinearity issue in the study according to (Wanjiku, 2019).

4.6 Influence of Fixed-Rate Bonds on Liquidity Growth

The first objective was to assess the influence of fixed-rate bonds on liquidity growth of commercial banks. Fixed-rate bonds had several indicators such as quarterly fixed rate,

semi-annual fixed rate, annual fixed rate, 5-year fixed rate and 10-year fixed rate. There were statements that the respondents were required to either 1-Strongly disapprove, 2-disapprove, 3- Neutral, 4- Approve, 5- Strongly approve on what influence fixed-rate bonds had on liquidity growth of banks. Table 4.8 showed the response rates of the respondents.

Table 4.8

Descriptive Statistics of Fixed-Rate Bonds

Statements N=102	**1**	**2**	**3**	**4**	**5**	**Mean**	**Std Dev**
There is a positive effect on current ratios the bank	0(0%)	0(0%)	0(0%)	11(10.5%)	91(87%)	**4.89**	**.31**
There has been improved quick ratio due to huge income	0(2.7%)	5(4.8%)	1(1%)	11(10.5%)	85(81%)	**4.73**	**0.72**
Quarterly fixed-rate bonds have led to overall cash growth	1(1.0%)	0(0%)	0(0%)	8(8%)	93(91%)	**4.88**	**0.42**
Sales ratio has advanced due to presence of 5year fixed rate bonds	10(12%)	17(16%)	1(1%)	47(45%)	27(26%)	**3.63**	**1.30**
10-year fixed rate bonds have boosted the long-term net working capital ratio	0(0%)	12(12%)	2(2%)	52(50%)	36(36%)	**4.10**	**.92**
Average						**4.45**	**0.74**

The results in Table 4.8 had an average mean of 4.45 and a standard deviation of 0.74. The respondents cohesively agreed that annual fixed-rate bonds had a positive effect on current ratios the bank. It had a mean of 4.89 and a standard deviation of .312. They however seemed to disagree that sales ratio had advanced due to presence of 5year fixed rate bonds. With a mean of 3.63 and a standard deviation of 1.304, the respondents did not seem to see any sales ratio improvement. Bank for International Settlement (2016) seemed to share the same sentiments when they evaluated the progress of bond markets in developing nations. The report complained that most investors were risk averse and fearful of what would happen to their investments after long-time investment durations. Therefore, BIS (2016) indicated that investors avoided long-term fixed rate bonds due to uncertainties. This was later confirmed in a report by Bloomberg Barclays Indices (2019) which showed that long-term bonds were dragging behind as compared to other types of bonds in the market.

4.7 Influence of Floating-Rate Bonds on Liquidity Growth

The second objective was to examine the influence of floating-rate bonds on liquidity growth of banks. Fixed-rate bonds had several indicators such as callable and non-callable floating rate bonds, iShares Fund, Van Eck market vectors investment grade floating rate bond and pacific asset enhanced floating rate. There were statements that the respondents were required to either 1-Strongly disapprove, 2-disapprove, 3- Neutral, 4- Approve, 5-Strongly approve on what influence floating-rate bonds had on liquidity growth of banks. Table 4.9 showed the response rates of the respondents.

Table 4.9

Descriptive Statistics of Floating-Rate Bonds

Statements N=102	**1**	**2**	**3**	**4**	**5**	**Mean**	**Std Dev**
Callable floating-rate bonds have had a positive effect on current ratios the bank	1(1.0%)	1(1.0%)	0(0%)	12(19%)	88(81%)	**4.81**	**.58**
There has been improved quick ratio due to huge income	0(0%)	20(19.6%)	0(0%)	53(52%)	29(28.4%)	**3.89**	**1.03**
iShares Fund has led to overall cash growth	13(13%)	0(0%)	0(0%)	52(51 %)	37(36%)	**4.11**	**0.93**
Sales ratio has advanced	0(0%)	5(4.9%)	0(0%)	52(51%)	45(44.1%)	**4.34**	**0.72**
There has been a boost on the long-term net working capital	0(0%)	5(4.9%)	0(0%)	53(52%)	44(43.1%)	**4.33**	**0.72**
Average Mean						**4.29**	**0.79**

The results in Table 4.9 had an average mean of 4.29 and a standard deviation of 0.79. The respondents generally agreed that Callable floating-rate bonds have had a positive effect on current ratios the bank. It had a mean of 4.81 and a standard deviation of .58. That notwithstanding, respondents had a contradicting opinion on the presence of improved quick ratio due to huge income derived from non-callable floating-rate bonds which reduced liabilities of the bank. This question had a mean of 3.89 and 1.03. Based on these findings, there was proof that floating-rate bonds had improved various assets of the banks such as working capital, cash availability but not reducing the liabilities of the banks. Previous studies such as European Commission (2017) however got a different feedback that floating rate bonds indeed reduced liabilities of the bank. It was noted that European nations have a very stable economic bloc that closely regulates the functions of bond market in the region no wonder the results.

4.8 Influence of Zero-Coupon Bonds on Liquidity Growth

The third objective was to evaluate the influence of zero-coupon bonds on liquidity growth of banks. Zero-coupon bonds had several indicators such as inflated indexed, face value zero coupon bonds, corporate zero, strips and municipal zero. There were statements that the respondents were required to either 1-Strongly disapprove, 2-disapprove, 3-Neutral, 4- Approve, 5- Strongly approve on what influence zero-coupon bonds had on liquidity growth of banks. Table 4.10 showed the response rates of the respondents.

Table 4.10

Descriptive Statistics of Zero-Coupon Bonds

Statements N=102	**1**	**2**	**3**	**4**	**5**	**Mean**	**Std Dev**
Inflation bonds have had boosted current ratios	13(13%)	45(44%)	0(0%)	44(43%)	0(0%)	**2.74**	**1.15**
Quick ratio has advanced due to huge income from face value bond	11(11%)	42(41%)	2(2 %)	43(42%)	4(4%)	**2.87**	**1.19**
Corporate rate has led to overall cash growth	43(42%)	20(20%)	16(16%)	10(9%)	13(13%)	**2.31**	**1.43**
Sales ratio has advanced due to presence of strips bonds	40(39%)	20(20%)	11(11%)	18(18%)	13(12%)	**2.45**	**1.47**
Municipal bonds have boosted the long-term net working capital	7(7%)	41(40%)	3(3%)	47(46%)	4(4%)	**3.00**	**1.14**
Average Mean						**2.67**	**1.28**

The results indicated in Table 4.10 showed that the responses on zero-coupon bonds had an average mean of 2.67 and a standard deviation of 1.28. This was the lowest average mean in the study. On the one hand, the respondents were in agreement that the municipal zero-coupon rate bonds had boosted the long-term net working capital ratio of the bank. This had a mean of 3.0 and standard deviation of 1.14. On the other hand, the respondents did not agree that corporate zero-coupon rate bonds have led to overall cash growth of the bank resulting to boosted cash ratio. This query had a mean of 2.31 and a standard deviation of 1.43. A replica of these results was however seemed to be noted in other prior studies. For example, Deng (2015) who came up with a CIR model to determine how prices of American put option on zero-coupon bond should be peg the pricing to regulation of interest rates in the economic period. In agreement Diaz et al. (2012) indicated that one of the main reasons why zero-coupon bonds were really not marketable was because of high interest rates causing price volatility. The prices and interest rate level could a major issue that affected the outcome of this study on the influence of zero-coupon bonds to liquidity growth.

4.9 Influence of Convertible Bonds on Liquidity Growth

The last objective was to measure the influence of convertible bonds on liquidity growth of banks. Convertible bonds had several indicators such as Vanilla, mandatory, reversible, packaged, contingent and foreign currency. There were statements that the respondents were required to either 1-Strongly disapprove, 2-disapprove, 3- Neutral, 4-Approve, 5- Strongly approve on what influence convertible bonds had on liquidity growth of banks. Table 4.11 showed the response rates of the respondents.

Table 4.11

Descriptive Statistics of Convertible Bonds

Statements N=102	**1**	**2**	**3**	**4**	**5**	**Mean**	**Std Dev**
Vanilla bonds have boosted current ratios the bank	0(0%)	36(43%)	0(0%)	48(57%)	0(0%)	**4.37**	**1.12**
Mandatory bonds have reduced liabilities	3(3.6%)	34(41%)	0(0%)	45(54%)	2(1.4%)	**4.73**	**0.72**
Reversible bonds have led to overall cash growth	32(38%)	16(19%)	12(15%)	11(13%)	13(15%)	**4.54**	**0.95**
Sales ratio has advanced because packaged bonds	34(41%)	16(19%)	8(10%)	14(17%)	12(13%)	**3.63**	**1.30**
Contingent bonds have boosted the long-term net working capital ratio	5(6%)	32(38%)	0(0%)	46(55%)	1(1%)	**4.10**	**0.92**
Foreign currency bonds have improved income of the bank	5(6.0%)	32(38%)	0(0%)	46(55%)	1(1%)	**3.31**	**1.29**
Average Mean						**4.94**	**1.26**

Convertible bonds results had the highest average mean in this study of 4.94 and a standard deviation of 1.26. This showed that most of the respondents had interacted with these types of bonds and they had seen the influence they had on various aspects of liquidity growth. The most agreed statement in the convertible bonds sections was that there has been improved quick ratio due to huge income derived from mandatory convertible bonds which reduced liabilities of the bank. It had a mean of 4.73 and a standard deviation of 0.72. Fisch asset management (2019) agreed that convertible bonds were a major source of revenue since they gave bond holders the liberty to change them to shares whenever they wanted to. This attracted more investments especially from investors who did not want their investment to be held constantly in one portfolio of a bank.

In the same section of convertible bonds in the questionnaires, there seem to be a disagreement by respondents whether the foreign currency convertible bonds had in any way improved income of the bank. This query had a mean of 4.94 and a standard deviation of 1.26. Chang et al. (2019) shed more light on this when they identified that local investors were always cautious of investing in foreign firm's bonds that they knew the originating bank well. This was because over recent times, most firms were suffering from lack of finances which caused them to pay very low returns on convertible bonds.

4.10 Liquidity Growth of Commercial Banks

The study measured how all the four variables affected liquidity growth of commercial banks. There were statements that the respondents were required to either 1- Strongly disapprove, 2-disapprove, 3- Neutral, 4- Approve, 5- Strongly approve on what influence various types of bonds had on liquidity growth of banks. Table 4.12 showed the response rates of the respondents.

Table 4.12

Descriptive Statistics of Liquidity Growth of Banks

Statements N=102	**1**	**2**	**3**	**4**	**5**	**Mean**	**Std Dev**
Fixed-rate bonds have improved the liquidity growth of the bank	1(1.0%)	3(2.9%)	0(0%)	10(9.8%)	88(86.3%)	**4.77**	**0.69**
Floating-rate bonds have improved the liquidity growth of the bank	1(1.0%)	15(14.7%)	0(0%)	35(34.3%)	51(50.0%)	**4.18**	**1.08**
Zero-coupon bonds have improved the liquidity growth of the bank	6(5.9%)	42(41.2%)	0(0%)	54(52.9%)	0(0%)	**3.00**	**1.09**
Convertible bonds have improved the liquidity growth of the bank	2(2.0%)	3(2.9%)	0(0%)	11(10.8%)	86(84.3%)	**4.73**	**.79**
Average Mean						**4.17**	**0.73**

The results in Table 4.12 showed that various types of bonds had significantly affected liquidity growth. The section had an average mean of 4.17 and a standard deviation of 0.73. The respondents agreed that fixed-rate bonds had improved liquidity growth in the highest with a mean of 4.77 and a standard deviation of 0.69. Zero-coupon bonds

improvement of liquidity growth was the least in this study. They had a mean of 3.0 and a standard deviation of 1.09. Concurrent with the results Goldman Sachs (2020) named fixed rate bonds as one of the top most profitable bonds in the fixed securities categories globally.

4.10.2 Liquidity Growth of Commercial Banks Indicators

The study analyzed reports from commercial banks dating from 2016-2018. The specific indicators of liquidity growth that the researcher assessed were the current ratio, quick ratio, cash ratio, net working capital ratio and sales ratio. Table 4.13 gives the results gotten.

Table 4.13

Liquidity Growth Indicators

Variable	**N**	**Mean**	**Std Dev**
Current ratio	39	3.94	1.98
Quick ratio	39	4.98	2.23
Cash ratio	39	3.45	1.86
Net-working capital ratio	39	3.63	1.91
Sales ratio	39	4.21	2.05
Average		**4.04**	**2.01**

According to Table 4.13, the liquidity growth indicators had an average mean of 4.04 with a standard deviation of 2.01. Most of the reports derived indicated that Quick ratio had the highest mean of 4.98 while cash ratio had the lowest mean of 3.45. The results

indicated that the liquidity of the 39 commercial banks were ranging between high and medium. This is to confirm that by the 39 commercial banks being located in a very busy environment where bank customers were highly engaging in monetary transactions, this turned out to be a boost to the banks. Another fact was that these commercial banks engaged in all types of bonds scrutinized in this study implying that there was a high likelihood that bonds played a significant-roles towards ensuring liquidity growth was stable enough in Nairobi County. A report by Kenya Bankers Association (2019) agrees to that various commercial banks in Nairobi county had a medium liquidity growth as compared to other banks in the Kenya banking industry.

4.11 Linear Regression Analysis

To found the relationship that really existed between corporate bonds and liquidity growth of commercial banks, linear regression was required. The level of relationship between fixed-rate bonds, floating rate bonds, zero-coupon bonds and convertible bonds was necessary so that the study can measure its objectives and hypotheses. This was expressed through a model summary and analysis of variance.

4.11.1 Model Summary

When assessing the influence of fixed-rate bonds on liquidity growth of banks, hypotheses were quantified. The first hypothesis stated that there was no significant relationship between fixed-rate bonds and liquidity growth of commercial banks in Nairobi County Kenya. Fixed-rate had an R value of .848 and an R square value of 0.719. This proved that fixed-rate bonds predicted 71.9% of the changeability in the liquidity growth. The results are given in Table 4.14

Examining the influence of floating-rate bonds on liquidity growth of banks, hypotheses were quantified. The second hypothesis stated that there was no significant relationship between floating-rate bonds and liquidity growth of commercial banks in Nairobi County Kenya. Floating-rate had an R value of .482 and an R square value of 0.232. This proved that fixed-rate bonds predicted 23.2% of the changeability in the liquidity growth. The results are given in Table 4.14

During the evaluation of the influence of zero-coupon bonds on liquidity growth of banks, hypotheses were quantified. The third hypothesis stated that there was no significant relationship between zero-coupon bonds and liquidity growth of commercial banks in Nairobi County Kenya. Zero-coupon had an R value of .207 and an R square value of 0.043. This proved that zero-coupon bonds predicted just 4% of the changeability in the liquidity growth. The results are given in Table 4.14

Determining the influence of convertible bonds on liquidity growth of banks, hypotheses were quantified. The fourth hypothesis stated that there was no significant relationship between convertible bonds and liquidity growth of commercial banks in Nairobi County Kenya. Convertible had an R value of .732 and an R square value of 0.536. This proved that convertible bonds predicted 53.6% of the changeability in the liquidity growth. The results are given in Table 4.14.

Table 4.14

Model Summary of the Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Fixed rate	.848[a]	.719	.702	2.067
Floating rate	.482 [a]	.232	.221	2.080
Zero-coupon	.207[a]	.043	.040	2.157
Convertible	. 732[a]	.536	.533	2.308

b. Predictors: (Constant), fixed-rate bonds, floating-rate bonds, zero-coupon rate bonds, convertible bonds

4.11.2 Analysis of Variance (ANOVA)

ANOVA was used to evaluating the exact relationship between fixed, floating, zero-coupon, convertible bonds and liquidity growth of commercial banks. The study considered the significance value which were gotten for various variables. For example, fixed rate bonds had a significance value of 0.000; floating rate bonds had a significance value of 0.001; zero-coupon bonds had a significance value of 0.037; convertible bonds lastly had a significance value of 0.000. These values were indicated in the ANOVA Table 4.15. Therefore, since all the independent variables had a significance value of less than 0.05, the researcher rejected all the null hypotheses of various variables.

In hypothesis one, the study rejected the null hypothesis and accepted alternate hypothesis that there was no significant relationship between fixed-rate bonds and liquidity growth of commercial banks in Nairobi County Kenya. In hypothesis two, the study rejected the null hypothesis and accepted alternate hypothesis that there was no significant relationship between floating-rate bonds and liquidity growth of commercial banks in Nairobi County Kenya. In hypothesis three, the study rejected the null hypothesis and

accepted alternate hypothesis that there was no significant relationship between zero-coupon bonds and liquidity growth of commercial banks in Nairobi County Kenya. In hypothesis four, the study rejected the null hypothesis and accepted alternate hypothesis that there was no significant relationship between convertible bonds and liquidity growth of commercial banks in Nairobi County Kenya.

Table 4.15

ANOVA for linear relationship of the variables

Model		Sum of Squares	Df	Mean Square	F	Sig.
Fixed rate bonds	Regression	848.871	1	848.871	13.773	.000[b]
	Residual	427.452	100	4.275		
	Total	486.324	101			
Floating rate bonds	Regression	482.444	1	482.444	12.346	.001[b]
	Residual	432.879	100	4.329		
	Total	486.324	101			
Zero-coupon bonds	Regression	207.827	1	207.827	4.474	.037[b]
	Residual	465.496	100	4.655		
	Total	486.324	101			
Convertible bonds	Regression	732.913	1	732.913	17.071	.000[b]
	Residual	415.410	100	4.154		
	Total	486.324	101			

a. Dependent Variable: liquidity growth

b. Predictors: (Constant), fixed-rate bonds, floating-rate bonds, zero-coupon rate bonds, convertible bonds

4.12 Multiple Regression Analysis

The study also analyzed the overall model of all the independent variables in relation to the dependent variable. This was done by analyzing the model summary, ANOVA and regression coefficients of all the variables.

4.12.1 Model Summary of Corporate Bonds

The model summary of the variables was analyzed and the results presented in Table 4.16.

Table 4.16

Model summary of corporate bonds

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.623[a]	.379	.345	2.02908

a. Predictors: (Constant), Fixed rate bonds, Floating rate bonds, Zero coupon rate bonds, convertible bonds

Corporate bonds had an R value of .623 and an R square value of 0.379. This proved that corporate bonds predicted 37.9 % of the changeability in the liquidity growth.

4.12.2 ANOVA of Corporate Bonds

The analysis of variance of the four types of corporate bonds was also analyzed and the outcome tabulated as shown in Table 4.17.

Table 4.17

ANOVA of Corporate Bonds

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	86.957	4	21.739	5.280	.001[b]
	Residual	399.367	97	4.117		
	Total	486.324	101			

a. Dependent Variable: liquidity growth

b. Predictors: (Constant), Fixed rate bonds, Floating rate bonds, Zero coupon rate bonds, Convertible bonds

Table 4.17 showed that corporate bonds were significant towards liquidity growth of commercial banks.

4.12.3 Regression Coefficients of Corporate Bonds

The regression coefficients of various variables of the study indicated that the Fixed rate bonds had a β=.202, P=011; floating rate bonds had a β=.088, P=041 Zero-coupon bonds had a β=.025, P=.022; while convertible bonds had a β=.117, P=010. That was to indicate that separately the four study's variables were vital however combining them together they all became insignificant and only fixed-rate bonds was significant. The results are indicated in Table 4.18.

Table 4.18

Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.445	2.222		3.351	.001
	Zero-coupon bonds	.025	.183	.024	.137	.022
	Convertible bonds	.117	.114	.141	1.020	.010
	Floating-rate bonds	.088	.057	.144	1.537	.041
	Fixed-rate bonds	.202	.125	.247	1.613	.011

a. Dependent Variable: liquidity growth

The multiple model of the study was liquidity growth = CO + β1FXBi, t + β2FLBi, t + β3ZCBi, t + β3CVBi, t + Ɛi,t where FXB was Fixed-rate bonds; FLB was Floating rate bonds; ZCB was zero-coupon bond; and CVB was convertible bonds. Replacing them with the values from Table 4.16, the model was: Liquidity growth=7.445CO+ 0.202FXB +0.88FLB +0.025 ZCB +0.117CVB. The model showed that by growing a unit of either FXB, FLB, ZCB or CVB, liquidity growth increased by 7.445+ 0.202+0.88+0.025+0.117.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter was a summary of the whole thesis whereby all the results gotten were summarized in a nutshell. The chapter was organized in a way that summary of the results was given. That was, the general outcome of fixed-rate bonds, floating-rates bonds, zero-coupon bonds and finally the convertible bonds. Conclusion of the study based on the investigated variables was also indicated trailed by the recommendation. Suggestion of future study completed the document.

5.2 Summary of the results

The summary given in this section was closely guided by the four objectives of the study. However, in general the study established that there was relationship between corporate bonds and liquidity growth of commercial banks in Nairobi County, Kenya. Specific results were documented in sub-sections 5.2.1 to 5.2.4.

5.2.1 Fixed-rate bonds

The first objective of the study was to assess the influence of fixed-rate bonds on liquidity growth of commercial banks in Nairobi County Kenya. Fixed-rate bonds had several indicators such as quarterly fixed rate, semi-annual fixed rate, annual fixed rate, 5-year fixed rate and 10-year fixed rate. The results on fixed-rate bonds had an average mean of 4.446 and a standard deviation of 0.74. The respondents cohesively agreed that annual fixed-rate bonds had a positive effect on current ratios the bank. It had a mean of 4.89 and a standard deviation of .312. They however seemed to disagree that sales ratio had

advanced due to presence of 5year fixed rate bonds. With a mean of 3.63 and a standard deviation of 1.304, the respondents did not seem to see any sales ratio improvement. The first hypothesis stated that there was no significant relationship between fixed-rate bonds and liquidity growth of commercial banks in Nairobi County Kenya. Fixed-rate had an R value of .848 and an R square value of 0.719. This proved that fixed-rate bonds predicted 71.9% of the changeability in the liquidity growth. Fixed rate bonds had a β=.202, P=110.

5.2.2 Floating-rate bonds

The second objective of the study was to examine the influence of floating-rate bonds on liquidity growth of commercial banks in Nairobi County Kenya. Fixed-rate bonds had several indicators such as callable and non-callable floating rate bonds, iShares Fund, Van Eck market vectors investment grade floating rate bond and pacific asset enhanced floating rate. The results indicated that floating rate bonds had an average mean of 4.29 and a standard deviation of 0.79. The respondents generally agreed that Callable floating-rate bonds have had a positive effect on current ratios the bank. It had a mean of 4.81 and a standard deviation of .576. That notwithstanding, respondents had a contradicting opinion on the presence of improved quick ratio due to huge income derived from non-callable floating-rate bonds which reduced liabilities of the bank. This question had a mean of 3.89 and 1.033. Based on these findings, there was proof that floating-rate bonds had improved various assets of the banks such as working capital, cash availability but not reducing the liabilities of the banks. The second hypothesis stated that there was no significant relationship between floating-rate bonds and liquidity growth of commercial banks in Nairobi County Kenya. Floating-rate had an R value of .482 and an R square value of

0.232. This proved that fixed-rate bonds predicted 23.2% of the changeability in the liquidity growth. Floating rate bonds had a β=.088, P=128.

5.2.3 Zero coupon bonds

The third objective of the study was to evaluate the influence of zero-coupon bonds on liquidity growth of commercial banks in Nairobi County Kenya. Zero-coupon bonds had several indicators such as inflated indexed, face value zero coupon bonds, corporate zero, strips and municipal zero. Responses on zero-coupon bonds had an average mean of 2.67 and a standard deviation of 1.28. This was the lowest average mean in the study. On the one hand, the respondents were in agreement that the municipal zero-coupon rate bonds had boosted the long-term net working capital ratio of the bank. This had a mean of 3.0 and standard deviation of 1.143. On the other hand, the respondents did not agree that corporate zero-coupon rate bonds have led to overall cash growth of the bank resulting to boosted cash ratio. This query had a mean of 2.31 and a standard deviation of 1.428. The third hypothesis stated that there was no significant relationship between zero-coupon bonds and liquidity growth of commercial banks in Nairobi County Kenya. Zero-coupon had an R value of .207 and an R square value of 0.043. This proved that zero-coupon bonds predicted just 4% of the changeability in the liquidity growth. The fourth hypothesis stated that there was no significant relationship between convertible bonds and liquidity growth of commercial banks in Nairobi County Kenya. Convertible had an R value of .732 and an R square value of 0.536. This proved that zero-coupon bonds predicted 53.6% of the changeability in the liquidity growth. Zero-coupon bonds had a β=.025, P=.891.

5.2.4 Convertible bonds

The last objective of the study was to measure the influence of convertible bonds on liquidity growth of commercial banks in Nairobi County Kenya. Convertible bonds had several indicators such as Vanilla, mandatory, reversible, packaged, contingent and foreign currency. Convertible bonds results had the highest average mean in this study of 4.94 and a standard deviation of 1.26. This showed that most of the respondents had interacted with these types of bonds and they had seen the influence they had on various aspects of liquidity growth. The most agreed statement in the convertible bonds sections was that there has been improved quick ratio due to huge income derived from mandatory convertible bonds which reduced liabilities of the bank. It had a mean of 4.73 and a standard deviation of .72. The fourth hypothesis stated that there was no significant relationship between convertible bonds and liquidity growth of commercial banks in Nairobi County Kenya. Convertible had an R value of .732 and an R square value of 0.536. This proved that convertible bonds predicted 53.6% of the changeability in the liquidity growth. Convertible bonds had a β=.117, P=310

5.3 Conclusion of the study

The study concluded that indeed there is a connection between corporate bond and liquidity growth of commercial banks in Nairobi County, Kenya. That is, fixed-rate bonds, floating-rate bonds, zero coupon bonds and convertible bonds in one way or another, influenced how liquidity grew in commercial banks. On the first hypothesis of the study, the study rejected the null hypothesis that there was no significant relationship between fixed-rate bonds and liquidity growth. It was established that there was a statistically significant relationship between fixed-rate bonds and liquidity growth. This meant that

when banks offered semi-annual, annual fixed rate bonds, 5-year fixed rate and 10-year fixed rate bonds, there was income generation that boosted liquidity growth of commercial banks.

On the second hypothesis of the study, the study rejected null hypothesis that there was no significant relationship between floating-rate bonds and liquidity growth. It was established that there was a statistically significant relationship between floating-rate bonds and liquidity growth. The study however noticed that this relationship was lower than that of the fixed-rate bonds. When commercial banks were able to issue floating types of bonds such as callable and non-callable floating rate bonds, iShares Fund, Van Eck market vectors investment grade floating rate bond and pacific asset enhanced floating rate, revenue was generated though it was low as compared to other types.

On the third hypothesis, the study rejected null hypothesis that there was no significant relationship between zero-coupon bonds and liquidity growth. It was established that there was a statistically significant relationship between zero-coupon bonds and liquidity growth. The study however noticed that this relationship was very weak as compared to various types of bonds such as fixed-rate bonds, floating rate bonds and convertible bonds. When commercial banks were able to dispense inflated indexed, face value zero coupon bonds, corporate zero, strips and municipal zero, income was gotten.

The study gathered facts was able to reject the last hypothesis of the study. The study rejected null hypothesis that there was no significant relationship between convertible bonds and liquidity growth. It was established that there was a statistically significant strong relationship between convertible bonds and liquidity growth. By commercial banks

being able to sell vanilla, mandatory, reversible, packaged, contingent and foreign currency and other types of convertible bonds, revenue was heavily generated.

This shows that commercial banks in Nairobi have been on front-row towards ensuring that corporate bonds are incorporated into banking products. However, the expenses such as taxation that commercial banks face as a result of venturing in corporate bonds is very high. This has resulted towards a significant decline in net profits as compared to what they have been generating as gross profits.

5.4 Recommendation of the study

After various results were gotten from the study, the study was therefore able to contribute new knowledge to the field of finance when the relationship between corporate bonds and liquidity growth was known through this study. Therefore, based on various objectives of the study, there were recommendations that were proposed by the study. The recommendations of the fixed-rate bonds were that commercial banks need to develop more customized bonds that gave bond holders the liberty to pick from. There should also be balance between the time frame on bonds and the interest payment that is proposed on the bonds for them to be attractive. Policies should be developed by government through the central bank whereby bank customers can obtain fixed-rate bonds more often just like the way mobile loan apps are common. This would promote more market for the bonds. Commercial banks should also indemnify various types of bonds with insurance firms so that any misfortune of events like the recent covid-19 pandemic would have minimal impact on the various types of fixed-rate bonds.

The recommendations given on the floating rate types of bonds was that commercial banks should ensure that they offer more competitive interest rates on the floating-rate bonds for the to attract customers. There should be a difference between a floating type of bond and fixed deposit account in a bank. That is, the floating rate type of bonds should have more interest payment as compared to fixed deposit account. Policies should be developed whereby bank customers are well versed on the security of their investments in case of uncertainties. Public should be informed more on the various types of floating rate types of bonds for them to participate in their purchases.

The recommendations given on zero-coupon bonds was that there should be public awareness on what they are and how they operate. Banks should customize more zero-coupon bonds to be relatable to our country Kenya. The process of purchasing should be simplified to avoid complications for new customers. The commercial banks should also have more experienced personnel through refresher and internal training in the organization to facilitate any customers.

The recommendations given on convertible bonds was that Kenyan commercial banks should have a massive drive towards improving the types of convertible bonds. There should be training once in a while for stakeholders to fully understand why convertible bonds are important. This is because, these types of bonds showed potential to fully boost liquidity growth in our Kenyan banks through this study. Commercial banks should maximize on the types of bonds that are working to make them even better.

5.5 Suggestion of future research

The study covered on only few types of various bonds. Future studies should concentrate on other types of bonds that were not covered in this study. The study was only done in Nairobi County. Future studies may take advantage and explore the relationship between various corporate bonds not just in banking field but also other firms in different counties in Kenya. There should also be studies dwelling on other types of bonds apart from corporate bonds and their influence of not only commercial banks but other companies as well.

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APPENDICES

Appendix I: Introduction letter

Dear Participant,

I am a student currently enrolled in the masters of science in finance and investments program at Kenya Methodist University school of Business and Economics and I am in the process of writing my research project. I invite you to participate in a research study entitled as the relationship between corporate bond issuance and liquidity growth of commercial banks in Nairobi County Kenya.

Your responses will remain confidential and anonymous. Data from this study will be kept under secure systems and reported as a collective effort. If you agree to participate in this study, please answer the questions on the questionnaire as best you can. However, your participation in this study is completely voluntary. Please return the questionnaire on completion.

Sincerely Yours.

NAME: Ernest Misat Obong'o

SIGNATURE:

Date_____

Appendix II: Questionnaire for overall marketing managers, operations managers and general managers

Instructions

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

Section A: General information

How long have you been working in this bank? (tick as appropriate)

No	Duration	Tick as appropriate
1.	Less than 1 year	
2.	Between 2-5 years	
3.	Over 6 years	

Section B: Influence of fixed-rate bonds on liquidity growth

This section has statements regarding the influence of fixed-rate bonds on liquidity growth. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (√) or cross mark (x).

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree

No	Statement	1	2	3	4	5
1.	Annual fixed-rate bonds have had a positive effect on current ratios the bank					
2.	There has been improved quick ratio due to huge income derived from semi-annual fixed-rate bonds have reduced liabilities of the bank					
3.	Quarterly fixed-rate bonds have led to overall cash growth of the bank hence boosted cash ratio					
4.	Sales ratio has advanced due to presence of 5year fixed rate bonds					
5.	10- year fixed rate bonds have boosted the long-term net working capital ratio of the bank					

Section C: Influence of floating-rate bonds on liquidity growth

This section has statements regarding the influence of floating-rate bonds on liquidity growth. 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	Neutral	Agree	Strongly agree
		1	2	3	4	5
1.	Callable floating-rate bonds have had a positive effect on current ratios the bank					
2.	There has been improved quick ratio due to huge income derived from non-callable floating-rate bonds have reduced liabilities of the bank					
3.	iShares Fund has led to overall cash growth of the					

	bank hence boosted cash ratio					
4.	Sales ratio has advanced due to presence of Van Eck Market vectors investment grade floating rate bond					
5.	Pacific asset enhanced floating rate-bonds have boosted the long-term net working capital ratio of the bank					

Section D: Influence of zero-coupon bonds on liquidity growth

This section has statements regarding the influence of zero-coupon bonds on liquidity growth. 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	Neutral	Agree	Strongly agree
		1	2	3	4	5
1.	Inflation indexed zero-coupon rate bonds have had a positive effect on current ratios the bank					
2.	There has been improved quick ratio due to huge income derived from face value zero-coupon rate bonds have reduced liabilities of the bank					
3.	Corporate zero-coupon rate bonds have led to overall cash growth of the bank hence boosted cash ratio					
4.	Sales ratio has advanced due to presence of strips zero-coupon rate bonds					
5.	Municipal zero-coupon rate bonds have boosted the					

	long-term net working capital ratio of the bank					

Section E: Influence of convertible bonds on liquidity growth

This section has statements regarding influence of convertible bonds on liquidity growth. 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	Neutral	Agree	Strongly agree
		1	2	3	4	5
1.	Vanilla convertible bonds have had a positive effect on current ratios the bank					
2.	There has been improved quick ratio due to huge income derived from Mandatory convertible bonds have reduced liabilities of the bank					
3.	Reversible convertible bonds have led to overall cash growth of the bank hence boosted cash ratio					
4.	Sales ratio has advanced due to presence of packaged convertible bonds					
5.	Contingent convertible bonds have boosted the long-term net working capital ratio of the bank					
6.	Foreign currency convertible bonds have improved income of the bank					

Section F: Liquidity growth in banks

This section has statements regarding liquidity growth in 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	Neutral	Agree	Strongly agree
		1	2	3	4	5
1.	Fixed-rate bonds have improved the liquidity growth of the bank					
2.	Floating-rate bonds have improved the liquidity growth of the bank					
3.	Zero-coupon rate bonds have improved the liquidity growth of the bank					
4.	Convertible bonds have improved the liquidity growth of the bank					

Thank you for your feedback

Appendix III: Secondary data collection instrument

Secondary data for the commercial banks in Nairobi Kenya from 2016- 2018 will be collected as follows:

Name of the bank…….

Variable	**Description**			
		2016	2017	2018
Current ratio	Current Assets			
	Current liabilities			
Quick ratio	Current Assets- Inventory			
	Current liabilities			
Cash ratio	Cash and cash equivalents			
	Current liabilities			

Appendix IV: 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

Our ref: NAC/ MBA/1/2020/12

27th JUly 2020

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

Dear Sir/ Madam,

RE:ERNEST MISAT OBONGO (BUS-3-8966-2/2018)

This is to confirm that the above named is a bona fide student of Kenya Methodist University, undertaking masters in Business Administration. He is conducting a research titled: **RELATIONSHIP BETWEEN CORPORATE BOND AND LIQIDITY GROWTH OF COMMERCIAL BANKS IN NAIROBI, KENYA.**

We confirm that this thesis 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 masters dissertation.

Any assistance accorded to him will be appreciated.

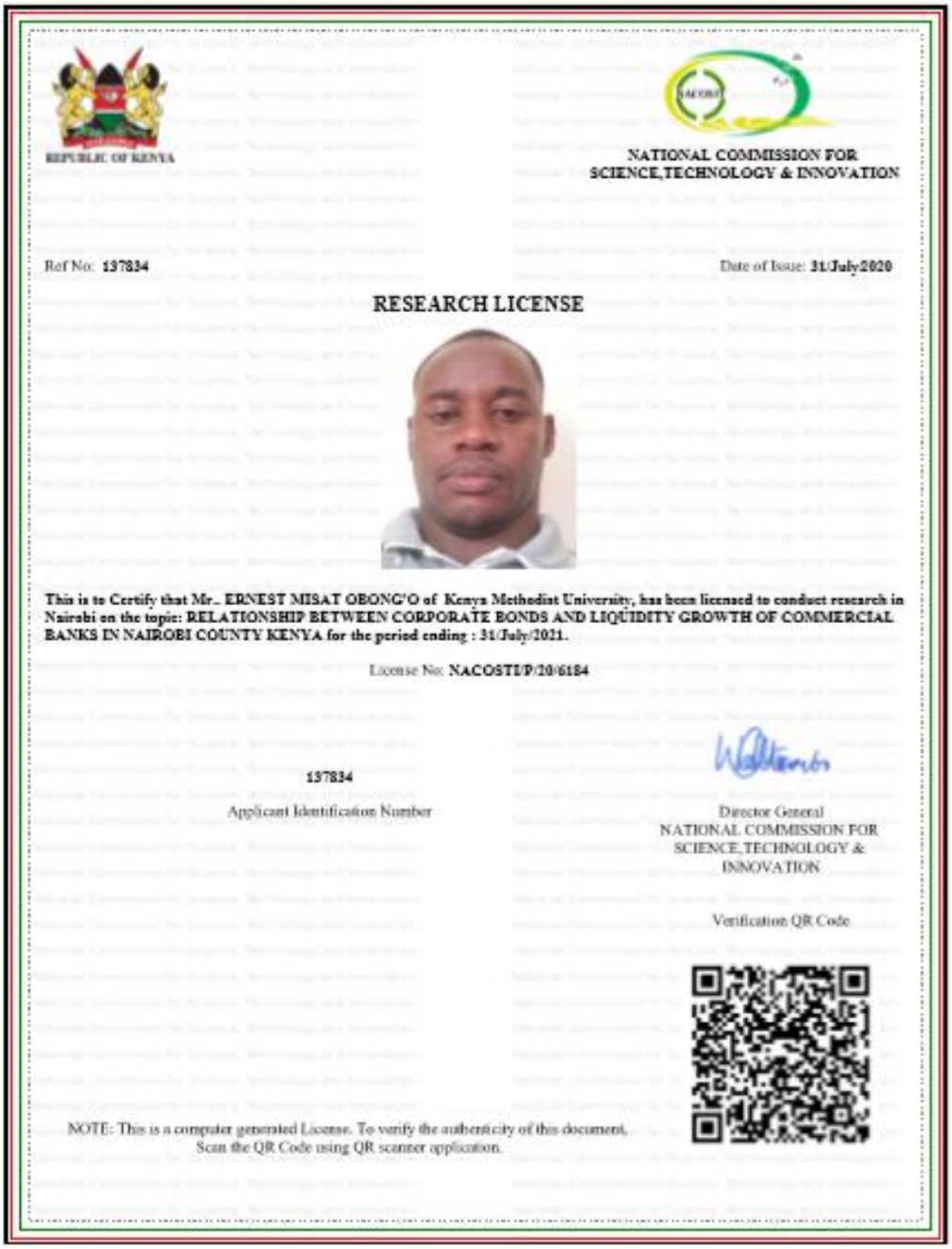
Yours faithfully,

PROF. Evangeline Gichunge, PhD.
ASS DIRECTOR POSTGRADUATE STUDIES

Encl.

KENYA METHODIST UNIVERSITY
Dean
27 JUL 2020
BOARD OF POSTGRADUATE STUDIES
P.O. Box 45240-00100, NAIROBI

Appendix V: Nacosti Research Permit



REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **137834**

Date of Issue: **31/July/2020**

RESEARCH LICENSE

This is to Certify that Mr.. ERNEST MISAT OBONG'O of Kenya Methodist University, has been licensed to conduct research in Nairobi on the topic: RELATIONSHIP BETWEEN CORPORATE BONDS AND LIQUIDITY GROWTH OF COMMERCIAL BANKS IN NAIROBI COUNTY KENYA for the period ending : 31/July/2021.

License No: **NACOSTI/P/20/6184**

137834

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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Appendix VI: List of commercial banks in Nairobi County in Kenya

Number	Bank
1.	ABC Bank (Kenya)
2.	Absa Bank Kenya Plc
3.	Bank of Africa
4.	Bank of Baroda
5.	Bank of India
6.	Citibank
7.	Consolidated Bank of Kenya
8.	Cooperative Bank of Kenya
9.	Credit Bank
10.	Development Bank of Kenya
11.	Diamond Trust Bank
12.	Dubai Islamic Bank
13.	Ecobank Kenya
14.	Equity Bank
15.	Family Bank
16.	First Community Bank
17.	Guaranty Trust Bank Kenya
18.	Guardian Bank
19.	Gulf African Bank
20.	Habib Bank AG Zurich

21.	Housing Finance Company of Kenya
22.	I&M Bank
23.	Jamii Bora Bank
24.	Kenya Commercial Bank
25.	Mayfair Bank
26.	Middle East Bank Kenya
27.	M Oriental Bank
28.	National Bank of Kenya
29.	NCBA Bank Kenya
30.	Paramount Universal Bank
31.	Prime Bank (Kenya)
32.	SBM Bank Kenya Limited
33.	Sidian Bank
34.	Spire Bank
35.	Stanbic Bank Kenya
36.	Standard Chartered Kenya
37.	Transnational Bank
38.	United Bank for Africa
39.	Victoria Commercial Bank