

**PERFORMANCE OF CORPORATE BONDS, GOVERNMENT BONDS AND EQUITIES
AT THE NAIROBI SECURITIES EXCHANGE**

BY

OELLO COLLINS ODOUR

D61/84441/2016

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR AWARD OF DEGREE OF MASTER OF BUSINESS
ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

NOVEMBER, 2018

DECLARATION

This research project is my original work and has not been submitted anywhere for a degree in this University or any other University/College for academic purposes.

Signature: **Date:**

COLLINS ODUOR OKELLO

D61/84441/2016

This research project has been submitted for Examination with my approval as the University Supervisor.

Signature: **Date:**

Supervisor.....

Department of Accounting and Finance

School of Business

University of Nairobi

TABLE OF CONTENTS

DECLARATION	2
LIST OF TABLES	5
ABSTRACT.....	7
CHAPTER ONE: INTRODUCTION.....	8
1.1 Background of the study	8
1.1.1 Corporate Bonds.....	9
1.1.2 Government Bonds.....	9
1.1.3 Equities.....	10
1.1.4 Performance of the Corporate, Government Bonds and Equities	11
1.1.5 Nairobi Securities Exchange	12
1.2 Research Problem.....	12
1.3 Objective of the Study.....	14
1.4 Relevance of the study	14
CHAPTERTWO: LITERATURE REVIEW	15
2.1 Introduction	15
2.2 Theoretical Literature	15
2.2.1 Efficient Market Hypothesis Theory.....	15
2.2.2 Expected Default Loss Theory	15
2.2.3 Bond Yield Spreads.....	16
2.2.4 Estimating Default Premium.....	16
2.2.5 Inflation	17
2.3 Empirical Literature	18
CHAPTER THREE: RESEARCH METHODOLOGY	21
3.1 Introduction	21
3.2 Research Design.....	21
3.3 Population and sample.....	21
3.4 Data Collection.....	21
3.5 Data Analysis	21
3.5.1 Research Model.....	22
3.5.2 Statistical Analysis	23
CHAPTER FOUR: RESESRCH FINDINGS AND DISCUSSION	25
4.1 Introduction	25

4.2 Descriptive Statistics	26
4.2.1 Equity Dividends	27
4.2.3 Equity Dividend Yields	28
4.2.4 Comparing Yields of Government Bonds, Corporate Bonds and Equity yield	29
4.3 Estimated or Empirical Model	29
4.4 Discussion of the Findings	30
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	33
5.1 Introduction	33
5.2 Summary of the Findings	33
5.3 Conclusion.....	34
5.4 Recommendations	34
5.5 Limitations of the Study	35
5.6 Suggestion for Further Studies	35
REFERENCES	36

LIST OF TABLES

Table 4. 1: Means and Standard Deviation.....	29
Table 4.2 Dividends earned on equity.....	30
Table 4. 3: Dividend Yields on equity.....	31
Table 4. 4: Descriptive Statistics Bonds and Equities.....	32
Table 4. 5: Multiple Regression Analysis (ANOVA).....	32
Table 4. 5: Measures of Association.....	32

ABBREVIATIONS AND ACRONYMS

APT	Arbitrage Pricing Theory
CAPM	Capital Asset Pricing Model
CMA	Capital Markets Authority
EMH	Efficient Market Hypothesis
ME	Market Equity
NSE	Nairobi Securities Exchange
GDP	Gross Domestic Products

ABSTRACT

Investors are assumed to be rational and risk averse and those investors choose investments in line with their expected return and risk absorption capacity. Investments are then classified into risk classes such as high, low and medium risk. The difference between equities and bond is a critical factor in the portfolio, even though bonds typically yield a lower return than equities in the long run, the inclusion on bonds and other fixed income instruments in a portfolio may help investors hold a diversified portfolio. The purpose of this study was to compare performance of corporate bonds, government bonds and equities trading at the Nairobi securities Exchange. Specifically, the study sought to determine the difference between the return on equities and the return on bonds at Nairobi Securities Exchange (NSE), and to determine the difference between the risk on equities and the risk on bonds at Nairobi Securities Exchange (NSE). The study was adopted descriptive research design targeting firms that had issued bonds on NSE from 2014 to 2016. The study collected secondary data and the analysis was done using SPSS software. The analysed findings were presented in form of Tables and Figures. The study established that there was a difference between the return on equities and the return on bonds at Nairobi Securities Exchange (NSE). This difference was significant because the p value was less than 0.05. There was statistically significant difference between the risk on equities and the risk on bonds at Nairobi Securities Exchange (NSE). The study concluded that the difference between return on equities and the return on bonds at Nairobi Securities Exchange (NSE) was significant. There was significant difference between risk on equities and the risk on bonds at Nairobi Securities Exchange (NSE). The study recommends that investors at NSE should largely invest both in bonds and equities to achieve maximum returns. Before committing their funds in these securities however, investors ought to carry out detailed analysis and comparison. Investors should give risks associated with securities the first priority before investing their wealth in any securities. The study recommends that such asset managers should carry out detailed analysis of the outcomes with deep comparisons for proper decision making and also a policy change in terms of government borrowing which we noted that has overcrowded private companies through offering better returns which is implicated in the reverse yield.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The essential idea behind performance evaluation is to compare returns of alternative assets that have been chosen. This evaluation should be on a relative basis and not absolute basis and in this case, we will compute the yield on the bonds (both corporate and government) against return on equities. Return being a key aspect of asset performance, a way has to be found to account for the asset's exposure to risk. Risk averse investors expect to be compensated for risk. The implication is that variation in asset returns is attributed to variation in those assets risk. Therefore, in efficient markets where assets are properly priced, assets similar in risk should post identical returns.

Investors with long investment horizons usually take the long view and invest a greater portion of wealth in equities than in debt securities. Such investments are held to the time diversification idea that risk can be reduced if portfolios that have high risk and high expected returns are held over long periods of time (Kirt et al, 1991). The decision on what to invest in is based on identifying and selecting the best alternatives according to investor preference. Leibowitz and Langetiegs (1989) defined the potential result of different investment strategies. It is also important to monitor asset performance since return variables and risk premiums do not appear to be constant over time, so extrapolations from past data must be tempered with while considering the existence of prevailing market conditions. Capital market history presents an objective foundation on which to base forecasts of future investment performance, especially for the long holding period. (Kirt et al, 1991) One faith in investment mythology is that a steadfast adherence to assets with the highest average growth rate will produce superior performance or returns unfortunately risk persists at surprisingly higher levels (Leibowitz, et al, 1989).

In financial markets, it is typical to determine the price of financial instruments in proportion to similar investments (Sand, 2000). To arrive at the price of a bond, it's prudent to use the market rate of similar bonds as the base, and price components that are unique to the selected bonds, for example, yield on a corporate bond can as well have its price be determined the same way as the yield on a government bond of the same similarities and same duration with a premium corresponding to risks (credit and liquidity risk) that are known with the corporate

bonds. When valuing equity different models available to investors include dividend's valuation, capital asset pricing, and arbitrage pricing.

1.1.1 Corporate Bonds

Corporate bonds are debt securities issued by individually owned corporation or public corporations (Roldos et al, 2004). The holder does not have ownership in the issuing firm unlike the shareholder of firms' stocks (Reszat, 2003). The corporations issue bonds in order to raise funds for the different purpose in the organizations such as purchase of a facility, expanding the business function. The corporate bonds are traded at the NSE since 2006; this means the market price of such bonds is readily available thus making it possible to calculate bond yields. The corporate bond usually gives the creditor specific rights in the borrower organization, such as the right to receive interest and refund of the principal amount before dividends are paid to shareholders. In some cases, the bonds are security backed and covenants driven; therefore, corporate bonds are considered less risky than equity.

The debt market participants are institutional investors, individual investors, government and trading entities, in which there is an existence of primary and secondary market. The primary, market involves issuance and selling of the bonds for the first time through IPOs (Initial Public Offers) while in the secondary market exiting, bonds are traded. There are non-zero and zero-coupon bonds. Bond yields are majorly influenced by liquidity, default risks and taxes. The changes in default and liquidity risk on these bonds yields increase with maturity and credit risk (Junbo Wang, 2006)

Bonds can be unsecured or secured. Unsecured bond is usually issued in trust to repay the debts without providing collateral while the secured bonds require collateral in terms of assets that the issuing entity must provide to the investor. The unsecured bonds usually have a higher risk. Therefore, pays higher returns. Fixed interest bond is a bond that has a constant interest rate until maturity while floating interest is the bond in which the interest rates vary over time its life span usually fixed to the economic indicators like fluctuation or Treasury bill rates.

1.1.2 Government Bonds

A government bond is issued by the state to raise funds required to support government programs. A government bond is, usually issued in the domestic currency, in which it includes the treasury bonds, savings' bonds among others. Government bonds are termed to be medium to long term state securities. In Kenya, the government sells the government

securities through central bank of Kenya (CBK) on behalf of the treasury as stipulated in Section 4 (A) (1) of the CBK Act (Cap 491) which envisaged that it shall become the advisor to and as fiscal agent of the government (<http://www.centralbank.go.ke/securities/default.aspx>).

The government bonds form part of the money and capital markets which together with money markets constitutes the financial market. These bonds were first traded in Kenya in the 1980s. The market has experienced a number of challenges that have limited its development, until the year 2001, when the government took a deliberate effort to shift domestic debt to long term instruments (Rose W. Ngugi & Justus Agoti, 2016). In the case of the treasury bonds primary markets the interest rates depend on the competitive prices otherwise also known as “off-the –run” (Mbewa et al., 2007).

Interests derived from bonds are charged 15% withholding tax for institutions and individuals. Investors are required to assess the inflation risk, nation risk, interest rate risks and political risk before purchasing the government bonds, although the government bonds do not have credit risk since the government can increase the taxes or print more money in order to compensate the bond when it falls due or matures. The risk implication is that government bonds have a lower risk than corporate bonds and therefore, the rate of return on these bonds should be lower relative to corporate bonds.

1.1.3 Equities

Equity is a share in the ownership of a company. It represents a claim on the company’s assets and earnings. The more investors purchase equity, the effect is that their stake in the business increases. (“Stock Definition”. Investopedia. Retrieved 25 February 2012).

The downside of equities is that they tend to be riskier than bonds. Even though the long-term returns on equities are better than what investors have gotten from bonds and other investment assets, equity investments do face massive losses. Equity capital is referred to as residual capital because nothing is payable to them until all claims of bond holders are settled in full. This explains why investments in corporate shares are considered one of the riskiest investments. The required return by equity holders should therefore be higher than that of debt holders.

1.1.4 Performance of the Corporate, Government Bonds and Equities

At NSE, there exist both the corporate and government bonds. The corporate bonds can be classified as floating or fixed bonds. The floating-rate coupons are tied to the 91-day Treasury bill mean rate. In 2016, there was the considerable increase in secondary bond trading activity at the NSE. Bonds issued through CBK 75 percent of the global capital are in the bonds while stocks comprise 25 percent showing the essential of the bond to the global economy. Kenya being a corporate bond market, there is an increasing factor on an increasing proportion of the issuance on domestic and local currency.

The value of the corporate bond markets grew from 18 percent of emerging countries' GDP in 2005 to 23 percent in 2015, while internationally issued emerging corporate bond grew from 4 percent to 6 percent respectively (Ngugi and Njenga, 2005). In recognition to the development of bond market, Kenya started to revitalize its securities market toward the end of 1980, and it began to revive the bonds' market in 2000 by making the government bonds' market stronger. However, despite the acting, the stock market that has been existing for more than 50 years has not been well actualized. The bonds' market is also in its development stage evoking more of the government bond compared with corporate bonds (Ngugi and Njenga, 2005). Ocholla (2012) noted that the bond market has tripled in size from Sh7.3 billion in 2003 with only 4 issuers then to approximately Sh20 billion with 12 Issuers at the end of 2011.

Equity prices reflect the return a company has achieved and the dividends it pays to the shareholder, which can be affected by different factors. The NSE (Nairobi Securities Exchange) 20 share index determines the return of the equities market. The NSE has two markets, namely the equities and bonds' market. The NSE 20 Share Index is a price weight index calculated as a mean of the shares of 20 public, listed companies. They are selected based on a market performance during the period under review based on trading activity; profitability and dividend record among others the results are then weighted. (<https://abacus.co.ke/author/mutuma/>).

Investors look at bonds as a way to compensate some of the volatility in their equity portfolio. Bonds don't give investors an opportunity to grow in value, but they do provide

regular and predictable portfolio income. Bonds are vulnerable to price fluctuations. That inherent promise provides stability to bonds in a way that stocks can't match. On the other hand, the other hand Government bonds are considered to be safer investment heavens in the global financial markets.

1.1.5 Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) is a leading African Exchange. Founded in 1954, NSE has a six-decade heritage in listing equity and debt securities. NSE encourages investment and savings in the economy of Kenya. It operates under Capital Market Authority (CMA). It is an affiliate of the World Federation of Exchange and the East African Securities Exchange Association, which is also a member of the Association of Futures Market and is a partner exchange in the United Nation-Lead Initiative.

It offers an automated platform of the trading and listing of the multiple securities. It facilitates, develops and supports on the transaction of a security exchange. It is categorized into interest rate's market, interest income, cash equities, derivatives and other incomes. The cash equities and interest rate market category comprises of the bond trading fees, application fees, listing fees and equities. The derivatives category comprises of income earned in the future trading, and other incomes include rental income, brokers' fees and data fees.

In the NSE there are 68 government bonds issued by the government and 11 corporate bonds issued by 8 companies. The combined value of all listed bonds at the NSE is approximately Kshs. 360 Billion of the NSE debt market capitalisation which consists of 350 billion and 10 billion for the government and corporate bonds respectively.

The bond market in Kenya is not well developed, for most of the listed companies at the Nairobi Securities Exchange (NSE) have shield away from raising debt capital through market. The performance of the bond market have been shown by a decline of 18.75% from Kshs. 40.1 billion to a turnover of only Kshs. 34.1% in 2016. During the stipulated period the Kenya's was growing but the debt market was still stagnant. This trend point out to the risk analysis problem in regard to the performance of bond market (NSE Handbook, 2015-2016).

1.2 Research Problem

Investors are taken to be rational and risk averse and those investors choose investments in line with their expected return and risk absorption capacity. Investments are then classified

into risk classes such as high, low, medium risk. Stocks are considered riskier than bonds and investors expect higher returns from shares, compared to bonds as additional compensation for increased risk. It is shareholders that bear the bulk of the risk as they impact upon the value to the business. Risk, return and time are the key concepts in investment.

Therefore, the fundamental concern of investors who choose to invest in financial securities such as equities and bonds is how to price risk in these two competing securities. High-risk investment should be matched with high return and vice versa (Agbeji, 2009). Government bonds are considered a risk free because governments are not expected to default on their debt obligation. Stocks are expected to be volatile than bonds and therefore, tend to offer higher returns to compensate for the additional risk Gobbi (2005). The difference between equities and bond is a critical factor in the portfolio, even though bonds typically yield a lower return than equities in the long run, the inclusion on bonds and other fixed income instruments in a portfolio may help investors hold a diversified portfolio (Michagan, 2009).

The finance theory tells us that when securities' prices are stable, the yield gap between equity and bonds is usually positive and that a greater yield on equities is needed to compensate equity holders for their relative risk. However, during high inflation as experienced in Kenya recently, there could be a reverse yield, which is a situation where bonds can earn higher returns than equity, nevertheless, at NSE it is not clear whether the returns from bonds are significantly different from return from securities and whether a reverse yield existed or not.

That stock are riskier than bonds and therefore, should post higher returns than bonds lend itself to experimental substantiation in order to establish how NSE is efficient in rewarding investors for the risk they assumed. Mbewa et al (2007) argued that for an economy to benefit maximally from its bond market then it must be that this market is efficient, liquid and less volatile in the pricing of its assets. He further noted that the Kenyan bond market faced challenges that are microstructure in nature; low liquidity, inefficiency, and high volatility that affected the performance of bonds in the market.

Markets too have different levels of efficiency, which means that a market could be correctly or incorrectly pricing of assets, a state that can only be examined empirically. In summary, returns on financial assets are assumed to be directly related to risk; therefore, we expect a different return from securities of different risk classes. This study intends to respond to the following research questions: What is the difference in return between shares and bonds?

What is the difference in returns between the corporate bond and government bonds? What risks exist between shares and bonds? Is there a significant risk between corporate bond and government bonds?

1.3 Objective of the Study

General Objective

Comparing the performance of corporate bonds, government bonds and equities currently trading at the Nairobi securities Exchange

Specific Objectives

(i) To determine the return on equities against the return on bonds at Nairobi Securities Exchange (NSE).

(ii) To establish the difference between the risk on equities and the risk on bonds at Nairobi Securities Exchange (NSE).

1.4 Relevance of the study

Investors will benefit from the study for it will enable them to understand the functionality of the bond market and thus be able to make informed decisions before making investments in the bond market.

The study is also meant to supplement existing knowledge on factors that have led to the development of both corporate and government bonds amongst investors and companies listed in the NSE which will be of great help to students and researchers.

The study is also meant to guide policy makers to design rules and regulations that can be adhered to in strengthening the bond market which will be useful to the capital markets regulatory authority and investors.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter entails reviewing literature that forms the basis of the research study. It explores the theoretical frameworks that are pertinent for the research study. A review of empirical studies that will guide the research by creating a platform for understanding the concept and principles of bond investment and provide a comprehensive analysis on the performance of the government bonds, corporate bonds and equity.

2.2 Theoretical Literature

There are various theoretical frameworks that form the basis of valuation of securities (Bondt, 2002). Theories that anchor variation in returns across securities include the efficient market hypothesis theory, expected default theory, corporate yield spread and estimating default premium theory.

2.2.1 Efficient Market Hypothesis Theory

Fama's (1970) influential article on efficient capital markets set out to prove that security's markets efficiently reflected the information about securities and the stock market in totality. The efficient market hypothesis (EMH) statement is that, subsequent price changes represent unspecified departures from previous prices. The EMH theory posits that the securities prices have already incorporated all the relevant information and it is not profitable trading on such information (Fama, 1970). The EMH theory has been highly disputed and creates a controversial discussion by different researchers and scholars (Lo and MacKinlay, 1999, Samuel Dupernex, 2007). The EMH implies that it is not prudent to look for undervalued securities or predict trends in the financial market through technical and to some extent, fundamental analysis (Fama, 1970). Many economists believe that stock prices are to some extent partially predictable (Lo, Mamaysky & Wang, 2000). In this study, the assumption is that security prices are correct in the EMH sense such that variations between bonds and equity returns are explained by risk.

2.2.2 Expected Default Loss Theory

The expected default loss is the economic loss occurring when an obligor defaults (Fredrik, 2014). It is expressed in percentage of the defaulted amount. The defaulted amount is equal to the principal amount and overdue interest payments. This is consistent with the finding of Andritzky (2005) that the core legal claim consists of the nominal value and is often referred to as the recovery of face value assumption. In accordance with the Basel framework the

default estimates are based on the economic loss and include workout costs arising from collecting the exposure (BIS, 2006, 460).

The theory recognizes that sometimes the company fails to honor to their promise to pay the periodic interest and principal in a particular time due to some factors that include liquidity, bankruptcy and macroeconomic changes in the environment that impact adversely on business. The expected default theory explains the share of assets that is lost if the borrower does not fulfil the promise of the repayment of the interest and the principal amount in this case the corporate firms for the corporate bonds and the government for the government bonds. The chances of default can be manifested in the value of the firm when the debt matures will be less than the amount the equity holders have to repay (Jakubík and Seidler, 2008). Therefore, this is a source of variation in return between government and corporate bonds and to some extent, equity.

2.2.3 Bond Yield Spreads

Bond yield spreads are the difference between the yield to maturity on a coupon-giving corporate bond (Index of coupon-paying corporate bond) and the yield to maturity on a coupon-paying government bond of the equivalent maturity (Farlex Financial Dictionary, 2012). The spread is also defined as the disparity between yields to maturity of zero-coupon bonds and yield to maturity on zero government coupon bonds of the same maturity Spot rates are used to reduce cash flow on risk free coupon-paying security to investors taking advantage of changing prices.

For the same promised cash flows, less liquid bonds will trade less often, realize lower prices, and display higher yield spreads. Therefore, liquidity is expected to be contained in yield spreads (Renault, 2002; Longstaff et al., 2005; and Long Chen et al, 2007). It is commonly represented that the yield spread, as a whole, shows a default risk thus explaining variations in security's returns. Investors require high returns for less liquid assets to reward them for the liquidity risk (Amihud and Mendelson, 1986). This means that low liquid assets will have lower prices.

2.2.4 Estimating Default Premium

The theory aims at estimating the magnitude of the yield of the corporate bonds against government bonds to establish the differences in tax neutrality and those that arise as a result of taxation and also to investigate for both the government bonds and corporate bonds (Ross Stephens, 2008).

The default premium can also be described as the sum added to a riskless bond to protect the investors for assuming the risk of failing to honor obligations; the premium is often paid by entities that have unfavourable credit histories as they are more likely to fail to honor its loans and similarly with companies that have high debt/income ratios, default premiums are included in order to persuade the lenders into purchasing their bonds. Thus, the risk is compensated by the bond's higher yield earned by the investors.

(<http://www.investorwords.com/11553>).

As for government bonds the default premium would represent a promised yield that is meant to compensate the investors for risk existing in purchasing bonds that have an element of default most cases their premium is measured as the yield above government bond yield that have same maturities (Harvey, 2012).

2.2.5 Inflation

Inflation is the burgeoning in the price of goods and services within an economy over time (Abel & Bernanke, 1995). When the prices rise, each monetary unit acquires few and far goods and services; therefore, inflation is a reflection of the shrinkage in the purchasing power per unit of money, a loss of value through the medium of exchange and unit of account within the economy (Walgenbach, et al, 1973; Kenny, 2017). Inflation is measured by the inflation rate which is the change in price index, usually the consumer price index, over time (Mankiw 2002, pp. 22–32). The opposite of inflation is deflation.

Rising inflation can cause the government to raise interest rates in the short run in order to decrease the demand for credit and help stop the economy from being unable to keep pace with growing aggregate demand. When interest rates in the short run both intermediate and longer-term rates also tend to go up considering the fact that the prices of bond and yields move in completely different directions, increased yields mean decreasing prices – and a lower principal value for your fixed-income investment. (Mankiw 2002, pp. 238–255). The impact of inflation on the value of bonds could be different from that on equity; therefore inflation could be a factor that explains difference in securities yields. Inflation affects corporate earnings and the returns that accrue to shareholders.

2.3 Empirical Literature

The performance of bonds is largely depends to the transparency of trading activities', availability of all relevant information and market liquidation. Both global and local researchers have carried out studies related to the performance of the government and corporate bonds and this includes: Scholtens (2010) studied the implication of using variety of the factors to assess the sustainability performance of the Dutch government bonds and the findings showcased that the indicators are not necessary to reflect on the performance of the government bonds. The study continues by suggesting that the financial market should ensure market efficiency in terms of transparency of all the relevant information about their non-financial performance in order to allow investors to make prudent decisions in terms of the purchase of the bonds. Besides, Carriero, Marcellino & Kapetanios (2010) suggested a new model by ensuring information availability from yield to accurately predict the term structure of interest rates. The study continues by suggesting that the yield changes reflects the performance changes of the corporate and government bonds, the study was also confirmed by Zhao (2011) who applied the Bayesian Model Averaging (BMA) to forecast the government bond yield changes. Through implied volatility from equity index options to provide an objective, observable, and dynamic measure of stock market uncertainty. Stock and bond returns to move together during periods of low uncertainty in the market (Chris Stivers and Licheng Sun, 2002). However, both stock and bond exhibit a minimal or no relationship during instances increased uncertainty.

Campbell and Ammer, 1993 indicated that the changes in return co-movements of stock and bonds might be due to changing principles ,hedging effects related to time differentials on economic uncertainty and system changes(Veronese, 1999 and 2001).The notion that uncertainty in the economy and unpredictability of system or government changes may be of importance in understanding the dynamics of return is related to the idea that investors sell what they consider to be risky investments and purchase low risk investments (flight to quality). This idea also posits that during instances of increased equity uncertainty: government bonds prices most likely increase, in relation to equity; and the return movement between stocks and bonds becomes slightly skewed towards a positive correlation (or in adverse situations negatively correlated).

Understanding stock and bond market co-movements has important practical implications in several areas. First and foremost, asset allocation between stocks and bonds is one of the most fundamental decisions that portfolio managers and individual investors need to make.

Secondly, understanding volatility links and conditional correlations also has a role in risk management and derivative valuation (Chris Stivers, et al, 2002). Changes in interest rates leads to a positive relation between stock and bond earnings considering the fact that the prices of bonds and equity are affected by discount rate changes and also movement in inflation leads to a negative correlation between stock and bond returns since increases in inflation are not favourable for bonds and lead to ambiguity in terms of news for the stock market.

In appraising Volatility there is a connection between the stock and bond markets.

Information affects assumptions and value of stock and bonds. Secondly, there may exist cross market hedging effect, which is defined as the change in the demand for bonds, given the rise of information that changes the anticipation around stock returns. The movement in demand for bonds may be experienced when there are no movements in apprehensions about interest rates (Fleming, Kirby, and Ostdiek, 1998), it's also estimated that the model that proceeds to accounts for both effects and established that information correlation in the stock and bond markets may be higher than earlier imagined. Further Evidence has been provided that rapid changes in the timing had economic value. (Busse (1999) and Fleming, Kirby, and Ostdiek 2001

Fama and French (1988, 1989), Campbell and Shiller (1998), and others, have established that the dividend yield on the market portfolio of stocks has the ability to predict stock market returns and that this increases as forecasting horizon increases .Studies by Sorenson and Arnott (1988), Cole, Helwege, and Laster (1996), Lander, Orphanides, and Douvogiannis (1997), Campbell and Shiller (1998), and others, have found that the market earnings to price has power to predict the returns. Bernstein (1993), Ilmanen (1995), Bogle (1995), and others, have shown that bond yield levels have the ability to predict future bond returns.

Most of the studies showed that the performance of the treasury bonds generates huge returns through controlled of yields however on the other hand; it shows decreased performance over the corporate bonds. The liquidity level in the government bonds markets shows the coefficient of skewness positively, which means that the chances of increased negative return in excess is likely in a fairly liquid market (Fujiwara, Korber, Nagakura (2013)).In the same

context a positive return is associated with a minimal chance of an extensive and negative return in the future

Ferson, Henry and Kisgen (2006) in their study stated that most government bonds returns were underperforming indicating below low performance evaluation fixed mutual funds from 1986 to 2000. The results were also confirmed by Comer and Rodriguez (2006) who studied on the performance of high value corporate bonds, medium or normal value corporate bonds, government bonds across the 1994 to 2004. The findings indicate a considerable variance in the performance as corporate bonds against government bonds on a risk-adjusted model. The study however suggested there is need of the performance results on some alternative evaluation criteria.

Fearnely (2002) in the investigative study on the stock and government bond returns, the study showed a multivariate form of the capital assets pricing model during the period of 1993-2001. Fearnely looked at the time element of the price of market risk analysis within the framework, allowing for changes in the market and currency risk respectively. The findings showed it is better to invest in the corporate bonds other than the government bonds for the corporate outperformed the government bonds. Since government bonds are highly liquid and possess zero risk, they are more favourable than the corporate bonds although the investors stand a chance of getting a higher yield as opposed to government bonds. (Ramasamy, Munisamy and Mohd Helmi (2011),

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter entails the procedures that were undertaken in conducting the research study, these included the research design, target population, data collection technique, data analysis and proposed research model

3.2 Research Design

This study employed a descriptive research design. A descriptive research design involves observation and description of the subject matter without manipulation of any kind (Kothari, 2004). The descriptive research design assisted the researcher in identifying the factors that determines the performance of corporate and government bonds in Kenya in relation to risk analysis, the differences between the return on shares against the return on bonds and bond market efficiency.

3.3 Population and sample

The population of the study was companies that had issued bonds at the Nairobi Securities Exchange (NSE) in the short run from 2014-2017. The study covered the period between years 2014-2017. The equities were the equities included in the NSE 20 share index.

3.4 Data Collection

The research was based on data obtained from the data center of the Nairobi Securities Exchange this data was short period data covering the period from 2014 to 2017 and it include both corporate and government bond trading data as well as shares listed in the NSE 20 share Index for a similar period.

3.5 Data Analysis

Data analysis involves “working with data, organizing it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be

learned, and deciding what you will tell others” (Bogdan & Biklen, 1982). Monthly stock (listed on the NSE 20 Share index) and bond prices will be used to calculate monthly yield.

3.5.1 Research Model

$$E[R] = \sum_{i=1}^n R_i P_i \dots\dots\dots (3.1)$$

Where

R i is the return in scenario i

P i is the probability for the return R i in scenario i; and

N is the number of scenarios

This model sought to establish the return on equities. The returns of the portfolio consisting of shares in the 20 share NSE simply the weighted average of returns of all assets in the portfolio. However, the calculation of the risk/standard deviation is not the same, because calculating the variance takes into account the covariance between the assets in the portfolio. If the assets are perfectly correlated, then the simple weighted average of variances will work. The return on equity will be calculated as follows:

$$ROE = \frac{\text{EndingPrice} - \text{BeginningPrice} + \text{Dividends}}{\text{BeginningPrice}} \dots\dots\dots (3.2)$$

For Bond the yield or return will be calculated as follows:

$$P_b = \frac{I_1}{(1+Y)^1} + \frac{I_2}{(1+Y)^2} + \dots + \frac{I_N}{(1+Y)^N} + \frac{M}{(1+Y)^N} \dots\dots\dots (3.3)$$

Pb = Current Price of the Bond

I = Interest on bond

M = Maturity value of the bond

N = Years to maturity

N= Maturity period

Y = Yield to maturity or estimated return from the yield.

Standard deviation will be used as an indicator of the total risk the portfolio will have had during the time interval under review. The funds whose actual returns turn out to be higher than expected returns will be considered to be superior or well performing to those whose actual returns are less than expected returns

$$SD = \sqrt{\frac{\sum_{i=1}^N (X_i - \bar{X})^2}{N - 1}}$$

..... (3.4)

Where

\bar{X} : Mean

X_i Individual returns

N Number of returns

3.5.2 Statistical Analysis

Chi Square Test was conducted to establish the differences in returns and risks. The analysis was done at 5% level of significance.

P_b = Current Price of the Bond

I = Interest on bond

M = Maturity value of the bond

N = Years to maturity

N= Maturity period

Y = Yield to maturity or estimated return from the yield.

Standard deviation will be used as an indicator of the total risk the portfolio will have had during the time interval under review. The funds whose actual returns turn out to be higher than expected returns will be considered to be superior or well performing to those whose actual returns are less than expected returns

..... (3.4)

Where

Mean

Xi Individual returns

N Number of returns

Statistical Analysis

The One-Way ANOVA procedure will be used to analyse data. This procedure produces a one-way analysis of variance for a quantitative dependent variable by a single factor (independent) variable. Analysis of variance is used to test the hypothesis that several means are equal. The focus on this study is whether the returns from corporate bonds,, government bonds and equity are significantly different. The dependent variable well be returns while the independent variable will security type (Equity = 0; Corporate Bonds = 1; Government Bonds = 2); i.e. while dependent variable covariate, independent variable = factor (categorical variable).

For each group: number of cases, mean, standard deviation, standard error of the mean, minimum, maximum, and 95% confidence interval for the mean. Levene's test for homogeneity of variance, analysis-of-variance table and robust tests of the equality of means for each dependent variable will all be reported.

CHAPTER FOUR: RESESRCH FINDINGS AND DISCUSSION

4.1 Introduction

The objective of this study was to compare performance of government bonds, corporate bonds and equities listed at Nairobi Securities Exchange. This was done by calculating the daily yields on the three securities. Theoretically, the three securities differ in terms of risk and are therefore expected to post different yields. The government bonds are expected to be of least risk and lowest return. The equities are of the highest risk and finance theory tells us that they should have the highest return. The returns from corporate bonds should be between returns from corporate bonds and returns from equity.

The data was collected over the period 2013 to 2018 for the two types of bonds and equities. The particular information captures to enable calculation of yields are daily bond and equity prices, coupon rate, face value of bonds and dividends. Bonds have different maturities, but it makes sense to compare bonds of identical maturity; and this explains why on bonds that mature within five years were selected. As shown in the table below, the usable observations were 945 data points out of a possible 1101 data point.

Again, the data consist of two government bonds whose data is used to calculate the yield on government securities and as mentioned above each of these bonds have a maturity period of five years. For each bond, four variables are extracted: face value, market value, and coupon rate and coupon interest in shillings. The corporate bonds included in the study were issued by Britam, NIC and CIC and these bonds have a maturity period of five years and therefore, comparable to government bonds and equities trading over a similar period.

The shares included in the study are the ones that constitute the NSE 20share index; this is the oldest index at Nairobi Securities and is fairly visible. However, because we are focusing on securities yield shares in companies that did not pay a dividend continuously are excluded; even so, when a company missed dividends but paid a dividend more than three times over the period of this study, interpolation was used to estimate the missing dividends.

4.2 Descriptive Statistics

This section presents the means and standard deviations;

SECURITY	CODE		Average Price	Standard Deviation	Coefficient Of Variation
GOVERNMENT 5 YEAR BOND	GB6704	Market Price	100.56	5.45	0.05
	GB6704Int	Coupon Rate	12.89	12.89	12.89
	GB6704Yld	Yield	12.86	0.79	0.06
		Face Value	100		
BRITAM	BRITAM	Market Price	97.92	4.86	0.05
	BRITAMIn	Coupon Rate	13	13	13
	BRITAMYld	Yield	13.31	0.76	0.06
		Face Value	100		
NIC Group Plc	NIC.BD.09	Market Price	98.41	2.19	0.02
	NIC.BD.09In	Coupon Rate	12.5	12.5	12.5
	NIC.BD.09Yld	Yield	12.71	0.29	0.02
		Face Value	100		
CIC insurance Group	CIC	Market Price	98.91	4.2	0.04
	CICIn	Coupon Rate	13	13	13
	CICYld	Yield	13.17	0.61	0.05
		Face Value	100		
GOVERNMENT 5 YEAR BOND	GB9013	Market Price	97.54	1.99	0.02
	GB9013In	Coupon Rate	10.87	10.87	10.87
	GB9013Yld	Yield	11.15	0.23	0.02
		Face Value	100		

Table 4. 1: Means and Standard Deviation

Table 1 present statistics for the period 1914 to 1918. The coupon rates ranged and from 10.87 percent to 12.89 percent for government securities. Britam bond coupon rate was 13 percent, NIC group PLC was 12.5 percent, and CIC insurance group was 13% see [TABLE 1]. The yields except for the first government [see table 1] were higher than the coupon rate.

This means that over the period of the study the fuse year bonds were priced below their face values that is they were selling at a discount.

The market prices at this market are almost flat, and exhibit low variability; see the low standard deviations of bond market prices and bond yields in table one above. The standard deviation for market prices of government bonds ranges from 2[1.99] to 5.45 and for corporate bonds, the range is 2.19 to a higher 4.86 in Britam.

4.2.1 Equity Dividends

Table 4. 2: Dividends earned on equity

Table 2 Dividends							
Company	2013	2014	2015	2016	2017	Average	StDev
ARM	0.60	0.60	-	-	-	0.24	0.33
BAMB	11.00	12.00	13.00	12.00	4.00	10.40	3.65
SASINI	0.25	0.25	0.25	1.00	1.50	0.65	0.58
BBK	0.70	1.00	1.00	1.00	1.00	0.94	0.13
EQUITY	1.50	1.80	2.00	2.00	2.00	1.86	0.22
KCB	2.00	2.00	2.00	3.00	3.00	2.40	0.55
NMG	10.00	10.00	10.00	10.00	10.00	10.00	-
KENGEN	0.60	0.40	0.65	-	-	0.33	0.32
KENOL	0.10	0.20	0.20	0.45	0.60	0.31	0.21
KPLC	0.35	0.30	0.50	0.50	0.50	0.43	0.10
BRITAM	0.25	0.30	0.30	0.30	0.35	0.30	0.04
ICDC	-	-	-	-	-	-	-
SCBK	14.50	17.10	17.00	20.00	17.00	17.12	1.95
COOP	0.50	0.50	0.80	0.80	0.80	0.68	0.16
KQ	-	-	-	-	-	-	-
EABL	5.50	5.50	7.50	12.00	7.00	7.50	2.67
SAFCOM	0.31	0.47	0.64	0.76	0.97	0.63	0.26
CFC	4.80	6.25	6.15	8.20	9.38	6.96	1.82
SCAN	0.40	0.50	0.50	0.50	0.75	0.53	0.13
BAT	37.00	42.50	46.00	43.00	26.00	38.90	7.91

Table 2 captures the dividend used in calculating the yields from shares listed at Nairobi Securities Exchange. The Dividends are assumed to overlap until the next years dividends are payable. It appears the companies sampled adhere to stable dividend's policy.

4.2.3 Equity Dividend Yields

Table 4. 3: Dividend Yields on equity

Table 3 Equity Dividend Yields				
Security	Average Yield%	St. Dev. Yield	Highest Yield%	Lowest Yield%
ARM	0.71	0.04	0.82	0.62
BAMB	6.20	2.24	8.63	2.01
SASINI	2.93	1.86	9.26	1.10
BBK	8.29	2.48	13.99	3.85
EQUITY	4.85	1.09	8.51	3.05
KCB	6.10	2.57	13.04	3.08
NMG	6.81	2.84	13.51	3.08
KENGEN	3.84	3.56	12.04	-
KENOL	2.83	0.99	4.94	0.97
KPLC	4.24	1.99	7.94	1.63
BRITAM	1.68	0.51	2.66	0.68
ICDC	-	-	-	-
SCBK	7.45	2.08	20.99	4.49
COOP	4.19	1.36	8.21	2.08
KQ	-	-	-	-
EABL	2.92	1.18	5.63	1.57
SAFCOM	3.74	0.52	4.96	2.35
CFC	8.35	3.11	14.14	3.24
SCAN				
BAT	5.05	1.06	7.33	3.07
Average - Equity Yield	4.91	1.20	7.62	3.25

Table 4.3 captures the dividend yields from shares listed at Nairobi Securities Exchange to show the earnings on stock considering only the returns in the form of total dividends declared by each company (listed at the NSE) during the year

4.2.4 Comparing Yields of Government Bonds, Corporate Bonds and Equity yield

Table 4. 4: Risks Descriptive Statistics Bonds and Equities

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
AvGovYld	1101	10.84	13.46	12	0.496	1.025	0.074	2.72	0.147
AvCorpYld	945	12.7	14.15	13.055	0.345	1.739	0.08	2.155	0.159
EquityYld	1101	3.25	7.62	4.911	1.205	0.196	0.074	-1.081	0.147
Valid N (listwise)	945								

AvGovYld = Average Yield of Government Bonds; AvCorpYld = Average Yield of Corporate Bonds; EquityYld = Average Yield of Equities (20 NSE Index)

4.3 Estimated or Empirical Model

4.3.1 Multiple Regression Analysis

Table 4. 5: *Multiple Regression Analysis (ANOVA)*

			Sum of Squares	df	Mean Square	F	Sig.
Yield * Type	Between Groups	(Combined)	41651.12	2	20825.56	33075.62	.000
		Linearity	27664.08	1	27664.08	43936.71	.000
		Deviation from Linearity	13987.04	1	13987.04	22214.52	.000
	Within Groups		1979.57	3144	.63		
Total			43630.69	3146			

Table 4. 6: *Measures of Association*

	R	R Squared	Eta	Eta Squared
Yield * Type	-.796	.634	.977	.955

Table 4 is summary statistics for the averages of securities sampled. The differences in yield between government bonds and corporate bonds are not pronounced; their mean yields are 12% and 13% respectively. The mean yield for equities is the lowest, and could have ever been lower if the capital losses are to be considered, because over the period of the study, there were declines in share prices. This data tells us that holders of corporate and government bonds earn superior returns compared to equity holders over the period of the study. The shrewdness and kurtosis's reported in table 4 are not large showing that the distribution follow normal distribution

The mean procedure is used to compare group means of the three securities government bonds, corporate bonds and equities. The mean procedure is useful in analysing scale variables. ANOVA provide linearity tests and affiliation measures useful in understanding the formation and backbone of relationship between groups and their means. The results are presented in Table 5, i.e. ANOVA and tests of linearity. The result showed that test of linearity has a significant value smaller than 0.05, that is, 0.000; Therefore, the data tell us that there is a linear relationship between type of security and yield. The test of deviation also confirmed the difference in yields. Table 6 shows that the squared association measures are large with an r-square of 0.635 confirming that yields vary across security types.

4.4 Discussion of the Findings

The study revealed that there was a difference between the return on equities and the return on bonds at Nairobi Securities Exchange (NSE). This difference was significant because the p value was less than 0.05. Based on this finding, it is therefore possible for investors to leverage on these differences in returns equities and bonds to maximize their wealth. This is however inconsistent with the Efficient Market Hypothesis. According to (Fama, 1970), securities prices have already incorporated all the relevant information and it is not profitable trading on such information.

The significant difference between return on equity and return on bonds shows that investors should equally invest both in bonds and equities. This finding is consistent with Chris Stivers and Licheng Sun (2002) who stated that stock and bond returns move in a specified direction or manner during instances of lower uncertainty in the stock market. Similar results were sought by Comer and Rodriguez (2006) who studied on the performance of corporate bonds and government bonds over the period of 1994 to 2004 and showed a significant variance between in the performance as corporate bonds performed better than government bonds on a risk-adjusted basis.

While deciding on whether to invest in bonds or equities, investors be clear on the type of bonds either treasury or corporate. According to Fearnely (2002) who showed it is better to invest in the corporate bonds other than the government bonds for the corporate outperformed the government bonds. However, Ramasamy, Munisamy and Mohd Helmi (2011), suggested that considering the government bonds were more likely to be resold and purchased and were without risk, they were better than the corporate bonds although the corporate investors will get a better returns compared to government bonds and at a lower rate.

The findings of the study further indicated that there was statistically significant difference between the risk on equities and the risk on bonds at Nairobi Securities Exchange (NSE). This difference was significant because the p value was less than 0.05. There are several types of risks that securities trading on NSE face different risks; but the most significant one is the degree of default of one party. While government treasury is seen as risk free securities, corporate bonds on the other hand are risky as corporations are more likely to default as compared to government institutions. This gives rise to these differences in risks of bonds and equity. This argument is supported by Jakubík and Seidler (2008) in the Expected Default Loss Theory.

Understanding of risk between bonds and equity is one way of maximizing the wealth of shareholders. According to Chris Stivers, et al, (2002), asset allocation between stocks and bonds is one of the most essential and critical decisions that investment managers and investors need to formulate. Campbell and Ammer (1993) takes the argument further by suggesting that understanding volatility links and conditional correlations is critical in the management of risk and the valuation of derivatives.

The study noted that the difference between risks of bonds and equities was significant. According to Mbewa et al (2007), equities are riskier than bonds and therefore, should post higher returns than bonds but in this case we have noted that the bonds we analysed earned superior returns compared to equities this might have been occasioned by the presence of high performance bonds which do offer higher earnings to compensate investors for higher risk involved because of lower credit ratings Which can result in higher returns, and lends itself to experimental substantiation in order to establish how NSE is efficient in rewarding investors for the risk they assumed since for these investors in bonds to earn the high returns they have to be willing to deal with a greater risk. (Agbeji, 2009) on the other hand suggests that high-risk investment should be matched with high return and vice versa. In view of Gobbi (2005), stocks are expected to be volatile than bonds and therefore, tend to offer higher returns to compensate for the additional risk.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the key findings of the study in view of the objectives. Conclusion is drawn from these key findings of the study while linking with literature. There are also recommendations for policy makers with limitations of the study and suggestions for further studies.

5.2 Summary of the Findings

The purpose of this study was to compare performance of government bonds, corporate bonds and equities listed at Nairobi Securities Exchange. The study was guided by the following specific objectives: to determine the difference between the return on equities and the return on bonds at Nairobi Securities Exchange (NSE); and to determine the difference between the risk on equities and the risk on bonds at Nairobi Securities Exchange (NSE).

From the analyzed findings; descriptive statistics indicated that there was a difference between the return on equities and the return on bonds at Nairobi Securities Exchange (NSE). This difference was significant because the p value was less than 0.05.

The findings of the study further indicated that there was statistically significant difference in yields as illustrated by the high r – square of 0.635 which shows disparity in yields for the various securities traded at Nairobi Securities Exchange (NSE).

5.3 Conclusion

The difference between return on equities and the return on bonds at Nairobi Securities Exchange (NSE) was significant. Return on equity was measured on the basis of share prices while return on bonds was measured by the average annual yield on the bond over its period. According to the Efficient Market Hypothesis, it is not prudent to look for undervalued securities or predict trends in the financial market through technical and to some extent, fundamental analysis (Fama, 1970).

There was significant difference between risk on equities and the risk on bonds at Nairobi Securities Exchange (NSE). Risk in this context was measured by standard deviation. Standard deviation was used because it indicates the spread of an observation. One of the risks posed by securities and especially bonds is default rate. According to the expected default theory, the share of assets that is lost if the borrower does not fulfill the promise of the repayment of the interest and the principal amount in this case the corporate firms for the corporate bonds and the government for the government bonds. The chances of failing to pay(default) can be conveyed as the likelihood that the value of the firm on the debt maturity date will be less than the amount the equity holders have to repay (Jakubík & Seidler, 2008).

5.4 Recommendations

The study suggests that investors at NSE should largely invest both in bonds and equities to achieve maximum returns. Before committing their funds in these securities however, investors ought to carry out detailed analysis and comparison. This can be achieved through use of past data, charts and other relevant information.

Investors should give risks associated with securities the first priority before investing their wealth in any securities. One common way of minimizing risk in finance is through diversification. Therefore, investors operating on NSE should leverage on diversification by

investing in both bonds and equities. This way, the risks are spread and minimized while returns are maximized.

Asset managers play a significant role in growing wealth of investors. In doing so, they require up to date information on risks and returns of bonds and equities so as to properly advise their clients. The study recommends that such asset managers should carry out detailed analysis of the outcomes with deep comparisons for proper decision making.

5.5 Limitations of the Study

Bonds are usually issued over a relatively longer period of time. Taking a five year bond issued today by a company indicates that it extends up to around 2022. In this context, some companies had issued bonds that extended in future; and this differed with information on share prices. Therefore, the analysis was only done covering only the bonds that had a maturity of 5 years against shares for a similar period which restricted our analysis to five years.

5.6 Suggestion for Further Studies

The current study was done using secondary data; future scholars should carry out similar studies either empirically or combining both primary and secondary data. There was no proper model that could combine both corporate and treasury bonds; but future scholars should examine if this is possible. The current study was done among firms on NSE; future scholars should examine similar studies on a wider range for example among firms cross listed on East Africa Security Exchange.

REFERENCES

- Agbeji, J. (2009). Domestic Debt Markets in Sub-Saharan Africa, *IMF Working Paper WP/04/64, African Department*.
- Abel & Bernanke 1995 (Glossary) 1995.MACROECONOMICS. 2d Ed
- Alworth, J. (2007). Fixed income analysis for the Chartered Financial Analyst, 72-102. John Wiley & Sons Inc.
- Alworth, Julian S. And Claudio E. V. Bono, 1993, "Commercial Paper Markets: A Survey," BIS Economic Papers No. 37 (Basle: Bank for International Settlements).
- Amante, A & Jeanneau, S. (2007). The search for liquidity in the Brazilian domestic government bond market. *BIS Quarterly review, 2007*.
- Amihud Yakov, Haim Mendelson: Asset pricing and the Bid Ask Spread, 1986
- Athanassakos, G. and Carayannopoulos, P. (2001). *An empirical analysis of the relationship of bond yield spreads and macro-economic factors*, Applied Financial Economics, 11, 197-207.
- Asian Development Bank (2002) Bond Market Development in East Asia: Issues and Challenges, Regional Economic Monitoring Unit, Manila, Philippines
- Banimadhu, S. (2003). Regional snapshot of government bond markets in Africa and challenges of developing active bond markets. Available: http://info.worldbank.org/etools/library/view_p.asp?lprogram=4&objectid=83615
- Banoke, L. (2004). Trading and Exchanges: Market Microstructure for Practitioners. *Financial Management Association Survey and Synthesis Series*, Oxford University Press
- Barr, T. (2009). The Term Structure of Bond Market Liquidity. *Journal of Financial and Quantitative Analysis*, 46 (1), 111-139
- Berry, J. (2011), "Commercial Paper Markets: A Survey," BIS Economic Papers No. 37 (Basle: Bank for International Settlements)
- Bernstein, Peter L. 1993. Volatility: Two Views, Two Signals. Newsletter. (November 15).
- Bii, V. K., (2009), a study of the underlying Impediments to issuance of Corporate Bonds through NSE. *Unpublished MBA Project: University of Nairobi*.
- Bogdan, R. C., & Biklen, S. K. (1982). Qualitative research for education: An introduction to theory and methods
- Bogle, John C. 1995. "The 1990s at the Halfway Mark." *Journal of Portfolio Management*, vol. 21, no. 4 (Summer):21-31.

- Boyles, M. (2010). Multi-Market Trading and Liquidity: Theory and Evidence. *American Finance Association Journal of Finance*, 62(5), 2169-2200
- Bolton, P. and Freixas, X. (2000). Equity, bonds and bank debt: capital structure and financial market equilibrium under asymmetric information, *Journal of Political Economy*, 108, 2, 324-351.
- Bondt, G. D., (2002). *European Central Bank, working paper Series, Working Paper No.164, Euro Area Corporate Debt Securities Market: First Empirical Evidence*, August 2002
- Burnside, C. (2004). The Effect of Economic News on Bond Market Liquidity. *Bank of Canada*,
- Calmes, Christian, 2004, "Regulatory Changes and Financial Structure: *The Case of Canada*," *Working Paper 2004-26, Bank of Canada*.
- Campbell, John Y., & John Ammer, 1993, what moves the stock and bond markets? A variance decomposition for long-term asset returns, *The Journal of Finance* 48, 3-37
- Campbell, John Y., and Robert J. Shiller. 1998. "Valuation Ratios and the Long-Run Stock Market Outlook." *Journal of Portfolio Management*, vol. 24, no. 2 (Winter):11–26.
- Capulong, Ma. Virginita, David Edwards, David Webb and Juzhong Zhuang (2000) *Corporate Governance and Finance in East Asia, (Manila: Asian Development Bank)*.
- Corporate Yield Spreads and Bond Liquidity, LONG CHEN, DAVID A. LESMOND, and JASON WEI*
- Carriero, A., Kapetanios, G. and Marcellino, M. G. (2012), Forecasting Government Bond Yields with Large Bayesian Vector Auto regressions. *Journal of Banking & Finance*, Vol. 36, pp. 2026–2047
- Central Bank of Kenya (2013-2015). Monthly economic review. *Central bank of Kenya*
- Cha, Hyeon-Jin, 2002, "Analysis of the Sluggish Development of the Secondary Market for Korean Government Bonds, and Some Proposals" (unpublished; Seoul: *The Bank of Korea, Financial Markets Department, May*).
- Chris Stivers and Licheng Sun ;Stock Market Uncertainty and the Relation between Stock and Bond Returns Sun Working Paper 2002-3, March 2002
- Cifuentes, Rodrigo, Jorge Desormeaux and Claudio Gonzalez (2002) "*Capital Markets in Chile: From Financial Repression to Financial Deepening*," in *The Development of*

Bond Markets in Emerging Economies, BIS Paper No. 11, (Basel: Bank for International Settlements).

Clifford S. Asness; Stocks versus Bonds: Explaining the Equity Risk Premium Financial Analysts Journal Vol. 56, No. 2 (Mar. - Apr., 2000), pp. 96-113

Cole, Kevin, Jean Helwege, and David Laster. 1996. "Stock Market Valuation Indicators: Is This Time Different?" Financial Analysts Journal, vol. 52, no. 3(May/June):56–64.

Collin-Dufresne, P., Goldstein, R.S. and Martin, J.S. (1999), *the determinants of credit spread changes*, Mimeo, November 9.

Cornish, R. (2007). *Mathematics learning support center*; Statistics: 3.3 Factor Analysis

Comer, G. and Rodriguez, J. (2006), Corporate and Government Bond Funds: An Analysis of Investment Style, Performance, and Cash Flows. Available from: <http://ssrn.com/abstract=929490> (accessed 20 August 2017).

Cooper, Neil and Cedric Scholtes (2001): "Government bond market evaluations in an era of dwindling supply". *BIS Paper no. 5*, October 2001.

Cooper, D. R. & Schinder, P. S. (2008). *Business research methods*. 10th Ed. New York: McGraw Hill

Cooper, T. (2008). An Anatomy of Corporate Bond Markets: Growing Pains and Knowledge Gains. *IMF Working Paper 5 (152)*

Davis, E.P. and C.P. Mayer, (1991). *Corporate finance in the Euromarkets and the economics of intermediation*, CEPR Discussion Paper, 570

Dunne, G. Moore, J. & Portes, R. (2002). Defining Benchmark Status: An application Using Euro-Area Bonds. *National Bureau of Economic Research, Working Paper 9087*

EMEAP, 2002, "Payment Systems in EMEAP Economies," Available via the internet: <http://www.emeap.org/redbook2/redbook.pdf>

Eugene F. Fama; Efficient capital markets: Review of theory and Empirical Work, 1970

Ekanshi Gupta; Preetibedi and Poonamlakra, 2014: Efficient Market Hypothesis Vs Behavioural Finance

J Seidler, P Jakubík Estimation of Expected Loss Given Default Czech National Bank: Financial Stability Report 2008 2009, 102-109

Fredrik Dahlin, Samuel Storkitt Royal Institute of Technology Stockholm, Sweden 2014 Estimation of Loss Given Default for Low Default Portfolios

- Fabella, R. and Madhur, S., (2003); *Bond market development in East Asia: Issues and Challenges*. [Online], Available: <http://www.adb.org/Economics/default.asp>.
- Fabozzi, Frank J. Modigliani, Franco and Ferri, Michael G., 1994, *Foundations of Financial Markets and Institutions* (Englewood Cliffs NJ. Prentice Hall)
- Ferson, W. E., Henry, T. R. and Kisgen, D. J. (2003), Evaluating Government Bond Fund Performance with Stochastic Discount Factors, *In: 14th Annual Conference on Financial Economics and Accounting (FEA)*. September 10, 2003
- Fleming, Jeff, Chris Kirby, & Babara Ostdiek, 2001, The economic value of volatility timing, *The Journal of Finance* 56, 329–352.
- Fujiwara, I., Körber, L. M. and Nagakura, D. (2013), Asymmetry in Government Bond Returns *Journal of banking and finance*, pp. 3218-3226
- Gobbi, S (2005), interdependence between Stock and Bond Market Return, *Corporate Finance Swiss Banking Institute University of Zurich, Executive Summary* pp. 3218-3226
- Gruber, J. W. and Kamin, S. B. (2011); Fiscal Positions and Government Bond Yields in OECD Countries. *FRB International Finance Discussion Paper 1011*
- GoK. (2015). Security Market: *Economic Review*
- Harris, G. (2008). *Estimating the price of default risk*. Review of financial studies.
- House, J. (2011). “*Analysis of the Sluggish Development of the Secondary Market for Korean Government Bonds, and Some Proposals*” (unpublished; Seoul: The Bank of Korea, Financial Markets Department.
- IImanen, Antti. 1995. “Time-Varying Expected Returns in International Bond Markets.” *Journal of Finance*, vol. 50, no. 2 (June):481–506.
- Ilyina, Anna, 2004, “The Role of Financial Derivatives in Emerging Markets,” in *Emerging Local Securities and Derivatives Markets, World Economic and Financial Surveys* (Washington: *International Monetary Fund*).
- IMF, 2005, Global Financial Stability Report, *World Economic and Financial Surveys*, (Washington, forthcoming, April)
- International Monetary Fund (2001) *International Capital Markets: Development, Prospects, and Key Policy Issues, World Economic and Financial Surveys*, (Washington, August).

- IOSCO (2002) *The Development of Corporate Bond Markets in Emerging Market Countries, The Emerging Markets Committee of the International Organization of Securities Commissions, May.*
- IOSCO, 2004, *Transparency of Corporate Bond Markets, Report of the Technical Committee of the International Organization of Securities Commissions, May.*
- IPAR discussions paper no 048/2004: Capital market policies in Kenya: Historical trends & challenges - By Munyundo Masinde & Thomas Kibua.
- IPAR discussions paper no. 063/2005: Prospects for Developing a Regional Bond Market in Eastern Africa - By Thomas Kibua; Munyundo Masinde and Monyoncho Maina
- Karp, Edward W & Koike, Akira, 1990, “*The Japanese Corporate Bond Market,*” in *The Japanese Bond Markets*, Frank J. Fabozzi (ed.) (London: McGraw-Hill).
- Kilby, C. (2010). *Investment Analysis and Portfolio Management*. (6th Edition), Dryden Press
Kirt C Butler & Dale L Domian; risk Diversification and the Investment Horizon (1991)
- Kothari, S. (2008). *Business research methods*. 4th Ed. Nairobi: Macmillan publisher.
- Krishnan Sharma, September 2000. *The Underlying Constraints on Corporate Bond Market Development in Southeast Asia; United Nations - Department of Economic and Social Affairs (DESA). United Nations DESA Working Paper No. 14.*
- Kumar, M. S. and Okimoto, T. (2011), Dynamics of International Integration of Government Securities’ Markets, *Journal of Banking & Finance*, Vol. 35, pp. 142–154.
- Kunt, A. and Levine, R. (1996). “*Stock market development and financial intermediaries: Stylized facts,*” *The World Bank Economic Review*, 10(2): 341-369
- Lander, Joel, Athanasios Orphanides, and Martha Douvogiannis. 1997. “Earnings Forecasts and the Predictability of Stock Returns: Evidence from Trading the S&P.” *Journal of Portfolio Management*, vol. 23, no. 4 (summer):24–35.
- Lee, P. (1998). Liquidity in an Emerging Bond Market: A Case Study of Corporate Bonds in Malaysia. *Bank of International Settlements*
- Longstaff, F., S. Mithal, and E. Neis, 2005, *Corporate yield spreads: Default risk or liquidity? New evidence from the credit-default swap market*, *Journal of Finance* 60, 2213–2253.
- Macharia, P. (2012). “*The Impact of Default Risk on the Prices of Options and Other Derivative Securities,*” Working Paper, Faculty of Management, University of Toronto

- Martin L Lebowitz & Terence C Langeting, 1989; Shortfall risk and asset allocation decision: A simulation analysis of stock & bond risk profile
- Mathieson, Donald J. and Jorge E. Roldos, (2004) “*Local Securities and Derivatives Markets in Emerging Markets: Selected Policy Issues,*” in *Emerging Local Securities and Derivatives Markets, World Economic and Financial Surveys*(Washington: International Monetary Fund).
- Mbewa, M. &Kithinji A. (2007): Developing of Bond Market: Kenya’s Experience. *KIPPRA Working Paper, 15*
- McCormick, H. (2008). “*Fixed-Income Markets in the United States, Europe, and Japan: Some Lessons for Emerging Markets,*” IMF Working Paper No. WP/98/173, (Washington: International Monetary Fund).
- Mendelson, P. (1997). *The Development of Domestic Markets for Government Bonds: The Future of Capital Markets in Developing Countries.* The Brookings Institution
- Ministry of Finance- Kenya, (2009).*Medium Term Debt Management Strategy*
- Missale, V. (2000). Developing Bond Markets in Emerging Economies: Issues and Indian Experience, *Keynote address at the Asian Bond Conference at Bangkok*
- Muga, R. (1974). European Government Bond Markets: Transparency, Liquidity, and Efficiency. Centre for Economic Policy and Research
- Mugenda, (2008).*Building theories from case study research.* Academy of Management Review, 14(4): 532-550.
- Mugenda, (2003) *Building theories from case study research.* Academy of Management Review, 14(4): 532-550.
- Mankiw 2002 pp 22-32
- Mwangi, R. W. (2013). *Microstructure Elements of the Bonds Market in Kenya.* School of Economics, University of Nairobi and KIPPRA.
- Nairobi Securities Exchange, (2017). *Monthly statistical bulletin*
- Ngugi, R.&Agoti, J. (2007). Microstructure Elements of the Bonds Market in Kenya. *KIPPRA Discussion Paper 71*
- Njuguna, A. (2010). Developing of Bond Market: Kenya’s Experience.*KIPPRA Working Paper, 15*
- Njuguna, J. (2010). Microstructure Elements of The Bonds Market in Kenya. *KIPPRA Discussion Paper 71*
- NSE, (2003). Measuring Treasury Market Liquidity: *Economic Policy Review 9 (3)*
- Ochenge, R. O. (2014). *Essays on the Microstructure of Government Bonds Market in Kenya*

- Polit, D.F., Hungler, B.P. (1999) *Nursing Research: Principles and Methods* (6th edn). Philadelphia: J.B. Lippincott
- Polit, D. and Hungler, B. (1997).*Essentials of nursing research: methods, appraisal, and utilization* (4th Ed). J.B.Lippincott Company: Philadelphia, Pennsylvania, USA.
- Ramasamy, R., Munisamy, S. and Mohd Helmi, M.H. (2011); Relative Risk of Islamic Sukuk Over Government And Conventional Bonds, *Global Journal of Management and Business Research*, Vol. 11, No. 6, pp. 1-9.
- Reszat, Beate, (2003), “Japan’s Financial Markets: The Lost Decade,” Hamburg Institute of International Economics Discussion Paper No. 231.
- Roldos, Jorge E., (2004), “Pension Reform, Investment Restrictions, and Capital Markets,” *IMF Policy Discussion Paper PDP/04/4*, (Washington: International Monetary Fund).
- Roldos, Jorge E., 2004a, “Emerging Local Bond Markets,” in Emerging Local Securities and Derivatives Markets, *World Economic and Financial Surveys* (Washington: International Monetary Fund).
- Ross, Stephen, Westerfield, Randolph and Jordan, Bradford. *Essentials of Corporate Finance*. 6. New York: McGraw Hill-Irwin, 2008.
- Rose W Ngugi & Roline Njiru (2012), *Growth of the Nairobi Stock Exchange; Primary Market*.
- Rose W. Ngugi & Justus Agoti; Microstructure Elements Of The Bonds Market In Kenya
- Rwegasira D.G. and Mweha, F. M. (2003), “Public Debt and Macroeconomic Management in Sub-Saharan Africa”, In: UNCTAD, Management of Capital Flows: *Comparative Experiences and Implications for Africa*, United Nations, New York/Geneva, April.
- Samuelson, Paul A. 1994. “The Long-Term Case for Equities and How It Can Be Oversold.” *Journal of Portfolio Management*, vol. 21, no. 1 (Fall):15–26.
- Sharma, K., (2000), “The Underlying Constraints on Corporate Bond Market Development in Southeast Asia,” *United Nations Department of Economic and Social Affairs Discussion Paper no. 14 (September)*.
- Smith, R. and Todd. R. (1995), Markets for Corporate Debt Securities International Monetary Fund, *Working Paper No. 95/67*, Washington.

- Stulz, R., (2000). Does financial structure matter for economic growth? A corporate finance perspective, *Paper Presented at World Bank Conference on Financial Structure and Economic Development, February 10-11, Washington D.C.*
- Schinasi, Garry J. and R. Todd Smith (1998), “Fixed-Income Markets in the United States, Europe, and Japan: Some Lessons for Emerging Markets,” *IMF Working Paper No. WP/98/173, (Washington: International Monetary Fund*
- Scholtens, B. (2010), The Environmental Performance of Dutch Government Bond Funds, *Journal of Business Ethics, Vol. 92, No. 1, pp. 117-130*
- Paul H. Walgenbach, Norman E. Dittrich and Ernest I. Hanson, (1973), *Financial Accounting, New York: Harcourt Brace Javonovich, Inc. Page 429.*
- Veronesi, P., 1999, *Stock market overreaction to bad news in good time: A rational expectations equilibrium model, The Review of Financial Studies 12, 957–1007.*
- Veronesi, P., 2001, *Belief-dependent utilities, aversion to state-uncertainty and asset prices, Working Paper, University of Chicago*
- Weber, R.P. (1990). *Basic Content Analysis.* Newbury Park, CA: Sage Publications.
- Wurgler, J., (2000). Financial markets and the allocation of capital, *Journal of Financial Economics, 58, 1- 2, 187-214*
- Zervos, Sara, 2004, “*The Transactions Costs of Primary Market Issuance: The Case of Brazil, Chile and Mexico,*” *Whither Latin American Capital Markets, LAC Regional Study (Washington: World Bank).*
- Zhou, H. (David) (2011), Incorporating Model Uncertainty and Model Instability in Forecasting Bond Risk Premia and Term Structure of Government Bond Yield – *A Bayesian Model Averaging Approach*, doi: 10.2139/ssrn.1948869.