EFFECT OF TAXATION AND PORTFOLIO STRUCTURE ON PORTFOLIO INCOME: A CASE OF NATIONAL BANK OF KENYA

BY

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DECLARATION

Declaration by the Candidate

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DEDICATION

I wholesomely dedicate this research project to God who guarded me, my beloved wife Juliet Jepkorir and son Meshack Kiplagat and to my brothers and my parents. May God bless all of you abundantly, above and beyond for the full support they gave me throughout the writing of this project and pursuing my Master's Degree achievement.

ABSTRACT

At the heart of portfolio planning is portfolio incomes which are basically determined by portfolio capital and the tax impact. The need to hold portfolios by doing portfolio analysis to take account the scarce resource of capital and the nature of taxes. The Bank has major investments in five portfolios that include; Cash and Cash equivalents, Loans and Advances, Government Securities, Foreign Exchange and Rental Income. The study aimed to evaluate the effect of taxation on portfolio income, examine the effect of capital on portfolio income and assess the simultaneous effect of tax and capital on portfolio income of the Commercial Banks. The study was guided by Arbitrage Pricing Models, Modern Portfolio Theory, Optimal Taxation Theory and Static Trade-off Model. The study used descriptive research design. The data were extracted from the Annual Financial Reports for the years 2009 to 2013. The data extracted were quantitative in nature. This study employed the use of data tables to extract secondary data from the Annual Financial Reports. Data collected was analyzed using Linear and multiple regression analysis. In addition correlation analysis was employed to show the association among the income, tax and capital. Findings showed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -0.15$ (p-value = 0.012 which is less than $\alpha = 0.05$). The findings also showed that the standardized coefficient beta and p value of capital were positive and significant (beta = 0.940, $p < 0.05$). Also, for each unit increase in capital, there is 0.940 unit increases in income. The study concludes that taxes reduce portfolio income while capital does not have an effect on income. The Commercial Banks should invest in tax efficient assets that have optimal taxes and optimal capital employment.

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LIST OF ABREVIATIONS AND ACRONYMS

CDS:	Central Depository System
GDP:	Gross Domestic Product
KPMG:	Klynveld Peat Marwick and Goerdeler
KRA:	Kenya Revenue Authority
NSE:	Nairobi Stock Exchange
OECD:	Organisation for Economic Co-operation and Development
STO:	Static Trade-off Model
UNRV	United Nations of Roma Victrix
VAT:	Value-added Tax

OPERATIONAL DEFINITION OF TERMS

Portfolio refers to a collection of portfolios investments that are held by a bank, for example in cash and bank balances, loans and advances, government securities, foreign exchange and rental property, Author (2013).

Portfolio income is income from portfolios that include; cash and bank balances, loans and advances, government securities, foreign exchange and rental property, Author (2013)

Portfolio Structure is a grouping of financial assets that include; cash and bank balances, loans and advances, government securities, foreign exchange and rental property, Author (2013).

Post-tax income/loss is the profits or losses made by the bank in its trading activities using the portfolio structure for a year, Author (2013)

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

The chapter covered the background of the study, statement of the problem, objectives of the study, the significance of the study, the research questions and scope and delimitation of the study.

1.1 Background of the Study

Countries that tax income generally use one of two systems: territorial or residential. In the territorial system, only local income from a source inside the country is taxed. In the residential system, residents of the country are taxed on their worldwide (local and foreign) income, while nonresidents are taxed only on their local income. In addition, a very small number of countries, notably the United States, also tax their nonresident citizens on worldwide income, (Deloitte, 2012).

Countries do not necessarily use the same system of taxation for individuals and corporations. France uses a residential system for individuals but a territorial system for corporations, while Singapore does the opposite, and Brunei taxes corporate but not personal income, (Deloitte, 2012). Corporation tax is a tax levied in the United Kingdom on the profits made by companies and on the profits of permanent establishments of non-UK resident companies and associations that trade in the European Union, (Horstman, 2003). The amount of income recognized is generally the value received or which the taxpayer has a right to receive, (Porter, 2013). Certain types of income are specifically excluded from gross income. The time at which gross income becomes taxable is determined under federal tax rules. This may differ in some cases from accounting rules, (Porter, 2013).

In the early days of the Roman Republic, public taxes consisted of modest assessments on owned wealth and property. The tax rate under normal circumstances was 1% and sometimes would climb as high as 3% in situations such as war. These modest taxes were levied against land, homes and other real estate, slaves, animals, personal items and monetary wealth. The more you had in property, the more tax you paid. Taxes were collected from individuals, (UNRV, 2014)

Portfolios are held by banks and are designed according to the investor's risk tolerance, time frame and investment objectives. The monetary value of each asset may influence the risk/reward ratio of the portfolio and is referred to as the asset allocation of the portfolio,(Investopedia, 2011). These proportions of various assets are carefully chosen in order to maximize portfolio expected return for a given amount of portfolio risk, or equivalently minimize risk for a given level of expected return, (Emanagedfutures, 2011). (Bakija, 2000) acknowledges that different types of assets are subject to widely varying effective tax rates. Taxes on assets differ substantially and have the potential to alter what assets investors hold, how they finance their investments and the types of accounts they choose for their investments as reaffirmed by (Desai, 2008).

The decision to purchase certain investments within either tax-advantaged and/or taxable accounts, known as asset allocation, is a valuable tool to increase potential after-tax returns. This can be achieved by placing tax- efficient assets in taxable accounts and tax-inefficient assets in tax-advantaged accounts, (Donaldson and Ambrosio, 2007).

Income taxes are used in most countries around the world. The tax systems vary greatly and can be progressive, proportional, or regressive, depending on the type of tax. Comparison of tax rates around the world is a difficult and somewhat subjective enterprise. Tax laws in most countries are extremely complex, and tax burden falls

differently on different groups in each country and sub-national unit. Of course, services provided by governments in return for taxation also vary, making comparisons all the more difficult, (Deloitte, 2012).

Countries that tax income generally use one of two systems: territorial or residential. In the territorial system, only local income – income from a source inside the country is taxed. In the residential system, residents of the country are taxed on their worldwide (local and foreign) income, while nonresidents are taxed only on their local income. In addition, a very small number of countries, notably the United States, also tax their nonresident citizens on worldwide income, (Deloitte, 2012).

Countries do not necessarily use the same system of taxation for individuals and corporations. France uses a residential system for individuals but a territorial system for corporations, while Singapore does the opposite, and Brunei taxes corporate but not personal income, (Deloitte, 2012).

(Bergstresser and Pontiff, 2010) notes that taxes have a first-order impact on portfolio returns in that they reduce portfolio returns. Taxes represent a very large drag on performance often larger than transaction costs, management fees, or inflation. Failing to consider the impact of taxes on investment decisions can be expensive, especially over the long term, (Stein and Garland, 1998). Corporate investors should take into account taxes and capital while constructing a portfolio structure that has optimal tax deductions and objective placement of capital for investment which is a limited resource. (Guiso, Haliassos and Jappelli, 2001) illustrates that there is a wide variation in the potential impact of tax rules on portfolio choice. (Basu, Turvey and Verhoeven, 2012) agree that there are embedded tax liabilities in portfolio choice. (Auerbach, 2002) noted that the impact of taxation on corporate financial policy starts from a basic characterization of the

classical corporate income tax and its effects. The analysis focuses on choices regarding ownership structure and organizational form. (King and Auerbach, 2001) say that portfolio behavior of investors differs with respect to both tax rates and risk aversion. (Gordon, 2002) shows that when uncertainty is taken into account explicitly, taxation of corporate income can leave corporate investment incentives basically unaffected in spite of the sizable tax revenues collected.

(Turvey, 2011) argues that taxes are important component of investing that is often overlooked in both the literature and in practice such that many understand that taxes will reduce an investments return, but less understood that is the risk sharing nature of taxes that also reduces the investments risk. (Merton, 1970) notes that each Portfolio investment is independent and does not depend on the preexisting portfolio structure. (Zayimtsyan, 2006) suggests that an optimal portfolio structure can be built with consideration of investor's sensitivity to risk and expected return that corporate investor is willing to undertake.

(Gordon and Hines, 2002) found out that corporate income is taxed at high rates by wealthy countries and most countries either exempt foreign source income of domestic multinationals from tax or else provide credits rather than deductions for taxes paid abroad. The work of (Richman, 1963) noted that countries have incentives to tax the foreign incomes of their residents while allowing tax deductions for any foreign taxes paid such that double taxation treaties are enacted to preserve cross border investments by offering double taxation relief incentive. The tax on interest, dividends, and capital gains represent a sort of "double taxation", and should be zero as argued by (Sumner and Diamond, 2012). (Mirrlees, 1971) authorizes in his paper clearly that a uniform tax should be applied on capital gains at the same rate as interest and dividends.

There are many types of portfolios including the market portfolio and the zero-investment portfolio, (Grinblatt, Titman and wermers, 1995). A portfolio's asset allocation may be managed utilizing any of the following investment approaches and principles: equal weighting, capitalization-weighting, price-weighting, risk parity, the capital asset pricing model, arbitrage pricing theory, the Jensen Index, the Treynor ratio, the Sharpe diagonal (or index) model, the value at risk model, modern portfolio theory and others, (Grinblatt, Titman and wermers, 1995)..

There are several methods for calculating portfolio returns and performance. One traditional method is using quarterly or monthly money-weighted returns, however the true time-weighted method is a method preferred by many investors in financial markets, (Grinblatt, Titman and wermers, 1995). There are also several models for measuring the performance attribution of a portfolio's returns when compared to an index or benchmark, partly viewed as investment strategy, (Grinblatt, Titman and wermers, 1995).

(Mankiw, Weinzierl and Yagan, 2009) points out that capital should not be taxed because it is the input of production and facilitates the generation of income. (Fama and French, 2007) assert that portfolio decisions depend only on the properties of the return distributions of portfolios and do not take into account the tax effect.

(Hungerford, 2012) points out that advocates of lower tax rates argue that reduced rates would increase economic growth, increase saving and investment, and boost productivity. (Hungerford, 2012) reaffirms that taxes affect investment through the income and acts as insurance for risky investments by reducing the losses as well as the gains by decreasing the variability of investment returns.

Under the Kenya Income Tax Cap 470, corporate entity is tax resident if it is incorporated under Kenyan law, if management and control of its affairs are exercised in Kenya or if the Minister of Finance declares the entity to be tax resident in a notice published in the Kenya Gazette. Resident corporate entities are subject to tax on all income accruing in or derived from Kenya..

The financial institutions investment income is considered business income. Rental income is assessed separately from the other income. Dividends from a Kenyan company are not subject to additional tax other than what is deducted at source. Attributable expenses are disallowed as deductions. Dividends from a foreign company are not taxable in Kenya.

Capital gains generally are not taxable in Kenya since there is capital gains legislation that suspended it since 1985. Recent legislation has introduced a form of capital gains tax of 5% withheld at source on the transfer of shares or property in a natural resources concern. The rates are 10% for resident entities and 20% for nonresidents. The general corporate income tax rate is 30%, with branches of foreign companies taxed at 37.5%. Newly listed companies enjoy a reduced rate for three to five years following the year of listing, the rate (20% - 27%) and period depend on the percentage of capital listed (more than 20%).

Foreign taxes paid are treated as an allowable expense, except where a tax treaty applies, in which case a tax credit is granted. There is no withholding tax is imposed if the recipient is a qualifying Kenyan financial institution or if the resident recipient company controls 12.5% or more of the capital of the payer, (Deloitte, 2013).

Sometimes it is impractical to hold an asset because the associated tax cost is too high. In such cases appropriate constraints must be imposed on the portfolio optimization process. Thus (Alan, Atalay, Crossley and Jeon, 2009) agree that there is effect of taxation and capital on portfolio income that has long been an important question facing researchers and policy makers.

1.2 Statement of the Problem

Capital for investment is a scarce resource and it needs planning and control in order to invest in assets that achieve the bank profit and wealth maximization. Thus, there is need for capital allocation in viable assets. These assets will have the obligation of generating income which are subjected to taxes. The government imposes taxes and the bank need to hold portfolios that are tax-advantaged or have tax deferred to a future so that profits generated can be ploughed back to business for growth and expansion. Taxes command a negative impact on income in the long run. Changing the capital structure and adding other portfolio will be necessitated if portfolios are analyzed with taxes and capital. Overt time taxes grow and capital for investment become minimal. Thus the study focuses on how portfolios behave with taxes and capital for investment hence the need for the study.

1.3 Objective of the Study

1.3.1 The Main Objective

The main objective of this study was to evaluate the effect of taxation and capital structure on portfolio income for commercial banks in Kenya: A case of National Bank of Kenya limited.

1.3.2 Specific Objectives

The specific objectives for the study were;

i. To evaluate the effect of taxation on portfolio income;

ii. To examine the effect of capital on portfolio income and

iii. To assess the simultaneous effect of tax and capital on portfolio income.

1.4 Hypotheses

H_{o1}: There is no significant effect of taxation on portfolio income.

H_{o2}: There is no significant effect on capital on portfolio income.

H_{o3}: There is no significant simultaneous effect of capital and tax on portfolio income.

1.5 Significance of the Study

The proper allocation of capital for investment and will enhance the growth of the banking industry. The growth of the banking will be expanding since optimal taxes will be deducted from the bank leaving a lot of revenue to be ploughed back into business.

The banking industry will be a fertile ground for major investments and investors. The results that would be posted in the annual financial reports will show the bank being an investment that has attractive returns.

1.6 Scope and Delimitations of the Study

The study covered the National Bank of Kenya headquarters in Nairobi Kenya. The data was extracted from the Annual Financial Reports that are prepared by the banks annually as per the requirement of the Kenyan Law and to show the performance of the bank and

presentation for presentation in annual general meeting.. The data extracted was only for portfolio capital outlay, portfolio income and tax burden that impacts each portfolio. The data extracted was quantitative in nature for the periods 2009 to 2013.

1.7 Assumptions

The assumption of the study is that the data tables would be collect all data in the format needed for best results and presentation. Also the Annual Financial Reports is relied upon to have accurate and up to date information.

1.8 Limitation of the Study

The results might not be applied to predict the capital and tax impact on portfolio income of other Banks, hence lack of generalizing the recommendations.

National Bank is both Government owned and privately thus it was chosen strategically to give a true picture of the banking industry.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a critical literature review on studies undertaken with respect to taxation, capital and portfolio income.

2.1 Theoretical Review

The study was guided by, Arbitrage Pricing Theory (APT), Modern Portfolio Theory (MPT), Static Trade-off Theory (STO) and Optimal Taxation Theory (OPT) theories.

2.1.1 Arbitrage Pricing Theory (APT)

(Chen and Ingersoll, 1983) say that in finance, APT is a general theory of asset pricing that holds that the expected return of a financial asset can be modeled as a linear function of various macro-economic factors or theoretical market indices, where sensitivity to changes in each factor is represented by a factor-specific beta coefficient. The theory was developed and fathered by (Stephen Ross, 1976). The theory is used to price portfolios, risky asset returns are said to follow a factor intensity structure if they can be expressed as, Roll and Ross (1980):

$$r_j = a_j + b_{j1}F_1 + b_{j2}F_2 + \cdots + b_{jn}F_n + \epsilon_j$$

Where:

- a_j is a constant for asset j
- F_k is a systematic factor
- b_{jk} is the sensitivity of the jth asset to factor k, also called factor loading,
- And ϵ_j is the risky asset's idiosyncratic random shock with mean zero.

The general idea behind APT is that two things can explain the expected return on a financial asset: 1) macroeconomic/security-specific influences and 2) the asset's sensitivity to those influences. This relationship takes the form of the linear regression formula above, (Burmeister and Kent, 1986). The APT states that if asset returns follow a factor structure then the following relation exists between expected returns and the factor sensitivities, (Roll and Ross, 1980):

$$E(r_j) = r_f + b_{j1}RP_1 + b_{j2}RP_2 + \cdots + b_{jn}RP_n$$

where

- RP_k is the risk premium of the factor,
- r_f is the risk-free rate,

(Chen and Ross, 1986) point out that there are an infinite number of security-specific influences for any given security including inflation, production measures, investor confidence, exchange rates, market indices or changes in interest rates. It is up to the analyst to decide which influences are relevant to the asset being analyzed. (Chen, Ross and Roll, 1986) points out that APT is very useful for building portfolios because it allows managers to test whether their portfolios are exposed to certain factors. The benefits of APT it is not as restrictive as the Capital Asset Pricing Model in its analysis requirement about individual portfolios and it allows multiple sources of risk, (Viking.som.yale.edu, 2013).

2.1.2 Modern Portfolio Theory (MPT)

The Modern portfolio theory which was fathered by (Harry Markowitz, 1952 & 1959) postulates that an investor wants to maximize a portfolio's expected return contingent on any given amount of risk, with risk measured by the standard deviation of the portfolio's rate of return. For portfolios that meet this criterion, known as efficient portfolios,

achieving a higher expected return requires taking on more risk, so investors are faced with a trade-off between risk and expected return. This risk-expected return relationship of efficient portfolios is graphically represented by a curve known as the efficient frontier. All efficient portfolios, each represented by a point on the efficient frontier, are well-diversified as mathematically calculated and presented in his paper by (Merton, 1972).

(Turvey, 2011) expresses that balancing risk and returns is a cornerstone of modern portfolio theory. (Markowitz's, 1952, 1959) seminal work derived measures for calculating expected returns and expected risk of a portfolio. Markowitz makes a number of important assumptions (Reilly & Brown, 2009,): (a) Each asset has a set of probable outcomes which can be thought of as a probability distribution. (b) Investors aim to maximize their single period utility of wealth. (c) Investors are risk averse, (d) Investors can estimate risk based on the variability of returns. (e) Investors only base their investment decisions on the first and second moments of the distribution – expected return and variance. (f)For any given level of risk, the investor prefers a higher expected return. Similarly, for any given expected return, the investor prefers a lower level of risk.

2.1.3 Optimal Taxation Theory

Optimal tax theory or optimal taxation is the study and implementation of how best to design a tax to minimize distortion and inefficiency subject to increasing set revenues through distortionary taxation in the market as defined by (Sargent, 2000). (Murray, 1970) asserts that a neutral tax is a theoretical tax which avoids distortion and inefficiency completely and can be administered with convenience and rigor it deserves.

The theme of generating a sufficient amount of revenue to finance government activities is arguably the most important purpose of the tax system in any country in the world. The taxes are collected by the government from corporate investor for spending on public administration and social welfare expenditures, (Jochen, 2004). The government imposes taxes on all avenues of income by spreading the tax net so as to maximize revenue collection. However, (Golosov and Tsyvinski, 2005) point out that it is possible to implement Pareto optimal allocations without any government intervention at all (except through the enforcement of long-term contracts). These secret trades allow agents to engage in wealth tax arbitrages, and so all agents must face uniform wealth taxes.

The major stakeholders whom the tax incidence lie on their shoulders as per (Fox, Donlad and Deskins, 2005) point out that taxes should not have inequality. The corporations who have the most inelastic demand curve bear the brunt of the excess burden curve. However, the trade-off of placing larger taxes on inelastic goods is that the higher tax will lead to lower quantity exchanged causing a dead weight loss of reduced revenue as postulated by (Fox, Donlad and Deskins, 2005)

(Holcombe, 2006) discusses that lump-sum tax does not create large excess burden on the corporate investor. Corporate Income Tax is a tax imposed by the government of Kenya under the Income Tax Act Cap 470 on the income of a corporation that they accrue in a financial year. The income is reported in the Annual Financial Reports and that it is a requirement that the reported profit/loss have been audited for tax purposes and it can be used for other purposes of the bank. (Harberger, 1962) attempted to provide a theoretical framework to understand the effects that income tax on corporations. In his model he theorizes that by redistributing the economies resources the market will move toward a constant equilibrium in the long-run.

(Feldstein, 2008) argues that policy makers should analyze the net effect of the changes of the efficient corporate tax rates into the Bank's tax returns by focusing on the vital difference between real and nominal capital income. (William Fox and LeAnn Luna, 2002) determined that, because the effective corporate income tax rate has fallen by one-third in two decades, the effective tax rate decline is the result of a tax base that is eroding in relation to a corporation's income.

The concept of a corporate tax system incorporating deductions for 'normal' profits has gained some attention as a tax system which could minimize the distortionary effect of corporate taxation on the level of investment, without reducing total taxation revenue. (Slemrod, 1990) proposes the theory of optimal tax systems a phrase he uses to refer to the normative theory of taxation and he advocates this theory because not only does it take into account the preferences of individuals, but also the technology involved in tax collecting.

2.1.4 Static Trade-off (STO) Model

STO model can be traced to the works of (Modigliani and Miller, 1958, 1963) posits that optimal capital structure balances the costs of financial distress versus the net benefit of corporate tax savings from interest deductibility minus the costs of taxes incurred by capital investors (Miller, 1977) and (Bradley, Jarrel and Kim, 1984).) The theory suggest that the capital tax cost for the marginal investor will depend upon which portfolio strategy the marginal investor is following.

The understanding of the STO model is that, debt structure choice depends on the relative benefits and costs of debt. As pointed out by MM, a primary benefit of debt is the tax shield effect while on the cost side bankruptcy (among other things) may act as a

significant countervailing force. The classical version of the hypothesis goes back to (Kraus and Litzenberger, 1973) who considered a balance between the dead-weight costs of bankruptcy and the tax saving benefits of debt.

The important purpose of the theory is to explain the fact that corporations usually are financed partly with debt and partly with equity in relation to shareholders and the capital is used to finance investments which accrue the corporation income which are sensitive to taxation. The portfolios should be analyzed in relation to tax impact, tax assessment and risk sharing nature, reduction of investment risk and reduction of investment return. Since the MM studies, research on portfolio structure theory has been refined to include the effects of non-debt tax shield, personal taxes, agency costs, asymmetric information costs, input/product market factors and others. The Portfolio theory authored by (Markowitz, 1952) and (Merton, 1971) established that an investor selects a number of assets based on two criteria that is expected return and risk which are not tax inclusive and this is exactly where portfolio is chosen according to tax. The measures of risk being mean standard deviation and beta. The investor will then distribute his financial assets between the risky and non-risky assets following the efficient frontier.

The introduction of Modern Portfolio theory has been designed to include tax as risk /liability that affects the portfolio analysis and the construction of portfolio structure. In finance (Sejourne, 2006) points out that the impact of tax treatment is hard to identify with typically complex tax regimes which create openings for arbitrages. The simple models that consider a non-risky assets without introducing time dimension and conclude that the investors choice is determined by expected return and covariance(net of tax in both cases) offer a flawed reflection of reality (Poterba, 2002). Non participation of investors in the market could be attributed to strong risk aversion but investors need to

define maximum acceptable risks which depends on the excess return on risky assets over the risk free rate argues, (Sejourne, 2006).

Although debt tax shield plays such a central role in the STO model, there are few studies that examine explicitly the effects of corporate tax on the capital structure choice, (Myers, 1984).

One problem is that the research is largely cross-sectional in nature and unless there is significant cross-sectional variation in marginal tax rates, the effect of taxes on capital structure choice would be difficult to detect. Consequently most studies that model the cross-sectional behavior of debt structure do not even include an explicit measure of the tax effect, (Bradley, Jarrell, and Kim, 1984), and (Titman and Wessel's, 1988). A second problem is that even in the few studies that attempt to calculate the marginal tax rate, trying to back out the marginal tax rate from accounting data can be a daunting exercise, (Graham, 1996). Finally, some studies examine changes in debt structure following tax law changes, but these are beset with problems associated with adequately controlling for other macro-economic effects that may have a bearing on the debt structure choice decision and problems with the stickiness of leverage over time.

2.2 Critics of the Theories

2.2.1 Criticism of Arbitrage Pricing Theory

The benefits of APT also come with drawbacks. The APT demands that investors perceive the risk sources, and that they can reasonably estimate factor sensitivities. In fact, even professionals and academics can't agree on the identity of the risk factors, and the more betas you have to estimate, the more statistical noise you must live with, (Viking.som.yale.edu, 2013).

2.2.2 Criticism of MPT

Despite its theoretical importance, critics of MPT question whether it is an ideal investing strategy, because its model of financial markets does not match the real world in many ways, (Damghini, 2013).

Efforts to translate the MPT theoretical foundation into a viable portfolio construction algorithm have been plagued by technical difficulties stemming from the instability of the original optimization problem, (Mol, Giannone and Loris, 2009).

2.2.3 Criticism of the Optimal Taxation Theory

(Feldstein, 2008) contradicts (Harberger's, 1962) assumptions by arguing that one of Harberger's theories great shortcomings is that up until the point he was writing the article about policy makers, that in determining tax changes for corporate income tax he focused solely on the effects in personal income tax.

(Chamberlain, 2005) pose one criticisms of optimal tax theory that among other things it prescribes that each good in an economy should be taxed at a separate rate, higher for necessities and lower for things with good substitutes and that it ignores the administrative costs of tax systems

2.2.4 Criticism of STO model

(Miller, 1977) for example compared this balancing as akin to the balance between horse and rabbit content in a stew of one horse and one rabbit. Taxes are large and they are sure, while bankruptcy is rare and, according to Miller, it has low dead-weight costs. Accordingly he suggested that if the trade-off theory were true, then firms ought to have much higher debt levels than we observe in reality. (Myers, 1984) was a particularly fierce critic in his Presidential address to the American Finance Association meetings in

which he proposed what he called "the pecking order theory". (Welch, 2002) has argued that firms do not undo the impact of stock price shocks as they should under the basic trade-off theory and so the mechanical change in asset prices that makes up for most of the variation in capital structure . The tradeoff theory assumes that there are benefits to leverage within a capital structure up until the optimal capital structure is reached. (Fama and French, 2002) criticized the theory that it recognizes the tax benefit from interest payments without taking into consideration other income from a range of portfolios.

2.3 Concept of Portfolio Income

The concept of portfolio income is less commonly known source of revenue that results from investments, (Thornton, 2008). Specifically, it involves money earned from investing in the assets held by the financial institutions that include stocks, bonds, mutual funds and other investment instruments, (Kelly, 2009).

2.4 Concept of Taxation and Capital

The concept of portfolio capital refers to any collection of financial assets such as cash and cash equivalent and property, (Grenblatt, Titman and Wermers, 1995). Portfolios may be held by financial institutions and are managed by financial professional and the generally accepted principle that a portfolio is designed according to the investor's risk tolerance, time frame and investment objectives. The monetary value of each asset may influence the risk and reward ratio of the portfolio and is referred to as the asset allocation of the portfolio, (Grenbatt, Titman and Wermers, 1995) when determining a proper asset allocation one aims at maximizing the expected return and minimizing the risk.

There are several methods for calculating portfolio returns and performance. One traditional method is using quarterly or monthly money-weighted returns, however the true time-weighted method is a method preferred by many investors in financial markets, (Grenbatt, Titman and Wermers, 1995). There are also several models for measuring the performance attribution of a portfolio's returns when compared to an index or benchmark, partly viewed as investment strategy.

The Government imposes taxes on the income of business entities that include financial Instituitions. The impact is on net profits from business, net gains, and other income. Computation of income subject to tax may be determined under accounting principles used in the jurisdiction, which may be modified or replaced by tax law principles in the jurisdiction, (Mclure, 2015). The incidence of taxation varies by system, and some systems may be viewed as progressive or regressive. Rates of tax may vary or be constant (flat) by income level, (Mclure, 2015).

2.5 Link Between Concept of Taxation and Capital and Portfolio income

(Bradley and Crane, 1975) point out that commercial banks have substantial holdings of various types of investment portfolios. Commercial banks hold a portfolio of assets and, given the characteristics and distribution of the liabilities, they attempt to structure their portfolio of assets in such a manner so as to yield the greatest return, subject to the tax and capital constraints.

The portfolio income is reduced by taxation while capital for investment when increased will facilitate investments growth.

2.5.1 To evaluate the effect of taxation on portfolio income

Taxes can consume a substantial portion of returns in a firms' portfolio income in the long run. Considering assets on an after-tax basis is important for two reasons; first, it allows us to find a firms' optimal portfolio which may vary significantly amongst portfolios. Second, it allows us to estimate the future value of a portfolio, (Turton, 2008)

Active tax management is more than just realizing losses; it is paying attention to the trade-off between risk, return, and taxes whenever an investment decision is made and whenever assets go through a transition. Examples of decisions that have taxable components include when to sell an investment, changing benchmarks, changing managers, charitable gifting, and rebalancing the asset allocation, (White Paper, 2010)

Most research mistakenly assumes that portfolios command similar tax burdens, or that tax burdens are proportional to dividend yields, (Bergstresser and Pontiff, 2010). Taxes vary according to the type of portfolio the bank has held since their incomes are subjected to various taxes according to the Income Tax Act. (Mconnel and Hennen, 2004) advise the investor that they are required to do what we call tax-favored investing where tax environment is articulated and investor after tax returns is maximized. Investors know all too well the pain of the income tax burden. Commissions and brokerage fees pale in comparison to how taxes can deflate overall portfolio performance. A basic strategy to combat the effect of current taxes is to maximize tax-deferred portfolio accounts. Although this remains a valid approach, consideration should be given to taxable investing as well. Recent tax law changes have created favorably suspension of tax on capital gains andqualified dividends—rates that do not apply to investments held inside tax-deferred accounts. Professionals who take their time to identify and hold investments

in the proper accounts will minimize tax costs while maximizing the after-tax performance of their portfolios.

(Samwick, 2000) also uses SCF data and provides estimates that corroborate a cross-sectional relationship between tax rates and portfoliostructures. However, considering changes to portfolio shifts at income quartiles, he finds that changes in tax rates explain little of the changes in portfolio allocations over time. (Poterba, 2002), consider the effect of taxes on household portfolio structures. Most analyses are based on a single cross-section of data. Models of the choice over where to locate assets, i.e., in taxable or tax-deferred accounts, suggest that individuals will house their most heavily taxed investmentsin tax-deferred accounts,(Shoven and Sialm, 2000).

(Sialm and Starks, 2009) find that portfolio managers with more defined contribution money appear to run their funds in a less tax-efficient manner. Our results add to the literature on tax-deferred retirement investing, (Shoven and Sialm, 2003) by suggesting that some investors should consider the tax burdens that different equity trading strategies induce in determining whether to hold particular assets inside of or outside of tax-deferred accounts

The tax environment of the bank portfolio in Kenya is summarized by the audit firms who offer consultancy services on tax matters on the tax burden for each portfolio and this tax burden in the long run affect the portfolio gains and portfolio income. Taxes have an upper hand in the portfolio income and the audit firms are always engaged in the determination of taxes to be levied on the income of their clients. The Audit firms help their clients to know which income is tax allowable and which income are non-allowable. Taxes thus are very silent and not well understood and without consideration of taxes the

bank can generate a lot of taxes by investing in portfolios that generate high income and high taxes at the same time. The Board of Directors managers who play the role of determining bank investments should be trained on taxation and its effects so that they can have an understanding of the taxes and how the taxes affect the bank portfolio structure through capital gains and its income.

According to Part II of the Income Tax Act (2008) imposition of Income Tax Act stipulates that: Subject to , and in accordance with, this Act, a tax to be known as income tax shall be charged for each year of income upon all the income of a Commercial Bank, whether resident or non-resident, which accrued in or was derived from Kenya. The incomes that accrue from investment and trading activities are subject to tax. These include income from dividends, interest, income from lease of land, plant and property, government bonds and treasury bills and other investments.

From the Annual Financial Reports the current taxation is provided on the basis of the results for the year 2011 as adjusted for tax allowable items in accordance with the tax legislation. Deferred taxation is provided, using the liability method, for all temporary differences arising between the tax bases of assets and liabilities and their carrying values for financial reporting purposes. Currently enacted tax rates are used to determine deferred income tax. A deferred tax asset is recognized to the extent that it is probable that future taxable profits will be available against which the unused tax credits can be utilized.

The investment universe is diverse and the Nairobi stock Exchange is no more limited to the borders of Kenya alone but has moved it borders into the whole world. Securities are traded day and night using the Central Depository System (CDS). This involves paperless

office where NSE has come with a networked trading floor for the securities that an investors wishes to hold.

2.5.2 To examine the effect of capital structure on portfolio income

A common error in portfolio construction is that of choosing specific investments that may appear to be worthwhile individually, but make little sense when combined in a portfolio. In the end, this collection of investments does not necessarily form a coherent asset allocation or sub-asset allocation that matches the investor's objectives and risk tolerance, (Donaldson & Ambrosio, 2007)

(Bradley and Crane, 1975) articultae that, at the heart of the portfolio-planning problem is the question of what distribution of portfolios to hold during the next period and over the planning horizon in general. The difficulty of managing an investmentportfolio stems not only from the uncertainty in future tax rate movements but from the conflicting uses made of the portfolio.

The market segmentation view suggests that tax preferences for banks have effectively segmented this market so that changes in tax preferences would have lasting effects on bank portfolios. The "excess flow" view, on the other hand, suggests that banks purchase bonds only when they have excess funds due to decreased loan demand. With this view, the tax law change would be expected to have little impact on bank portfolios,(Dickinson, Karel and Prakash, 1994).

(Mankiw, Yagan and Weinzierl, 2009) points out that capital gain should not be taxed because it is an input of production. Capital facilitates the production of income to corporate investor therefore capital for investment and capital for investment should not be taxed.

Portfolio analysis is a useful tool, but is not without limitations. The work of (Harry Markowitz, 1952) on portfolio selection using the mean variance on individual security explains how an investor should analyse risk and determine an optimal portfolio. (Stein, 1998) investigated the impact of taxes on the optimum portfolio composition of investors and he demonstrated that even if the investor believes that the standard form of the Capital Asset Pricing Model is an exact description of returns in the market, he might not hold a market portfolio if he must pay taxes. The investigation found that the properties of that portfolio will hold in less than market proportions. The results indicate that if investors look at post-tax returns the market is unlikely to clear at prices set by the standard Capital asset pricing model. The derivation of post-tax Capital asset pricing model demonstrated the optimum portfolio holdings for investors if this model describes returns in the market. Under the post-tax capital asset pricing model as under the standard Capital asset pricing model, the optimal portfolio holdings of investors becomes a function of the investor's tax rate, the dividend yield on alternative securities, and the risk characteristics of alternate securities.

(Pettit and Stanley, 1977) used survey data on firms investor portfolio composition to analyze whether taxes influence portfolio structure. Consistent with the predictions of this analysis, they find that there is a significant relationship between investor tax rates and portfolio structure.

(Pettit and Stanley, 1977) judiciuosly explains that,what's wrong with a an unanalysed portfolio structure is that, it hurts investors by generating excessive portfolio income taxes. The alarm is rarely sounded unless the advisor goes back and reviews aggregate performance and discovers that it was, after taxes and after all, not all that terrific. The ignoring of taxes will thus hamper the portfolio returns without even a minimal concern.

There are differences between institutional tax-exempt investing and private investing: private investors have a more limited lifespan, have higher borrowing costs, and need to pay advisory costs that are a greater proportion of their assets. In addition, they pay taxes, and this, especially, changes the investment management landscape. The advisor who practices tax-efficient portfolio management will think in terms of a buy-and-hold portfolio which delays the realization of capital gains, will comprehend the value of active tax management, and will choose the right investment vehicle. However, even this is not enough. (Osgood, 2008) postulates the nature of tax imposed on the income of an investment it will ultimately affect its investment on that asset.The tax efficient advisor also must understand the hidden taxes that capital structure exacts.

2.5.3 To assess the simultaneous effect of tax and capital on portfolio income

(Blumenthal, 2010) asserts that a Sound investment strategy typically starts with a foundation in asset allocation. Technology has allowed novices and professionals alike to build allocations quite easily using assumptions about the future. We find that these assumptions, developed in a pre-tax world, are rarely adjusted for the real world, which is impacted by taxes. By adjusting the assumptions to consider taxes, an investor may construct superior portfolios leading to greater wealth potential.

After considering both pre-tax and after-tax portfolio construction, investors may reach a point of “tax equilibrium.” This is a state wherein an investor is in balance between tax considerations and other factors; where he or she neither overreacts nor underreacts to the impact of taxes in portfolio construction and maintenance. Investors’ tax equilibriums should change when the tax environment changes. For example in America, (Blumenthal, 2010) points out that in 2003, ordinary rates of of tax were lowered from 38.6% to 35% and capital gain rates lowered from 20% to 15%. As legislated, these rates “sunset”

December 31, 2010, and move back to the prior rates. Often forgotten in the tax discussion is the impact of property taxes.

(Hanson, Pesaran, Hashem and Til, 2008) suggests that if firm parameters come from different sectors, there will be further scope for risk diversification by changing the portfolio weights, even in the case of sufficiently large portfolio. The portfolios that form the portfolio should be changed according to the tax liability to ensure the bank portfolio structure meets the effect of tax preference. Investors can do portfolio diversification in relation to tax. A properly diversified portfolio can help smooth out potential rough spots brought about by tax volatility. History suggests that the long-term performance of an investment portfolio is largely dependent upon asset allocation. A delicate balance must be struck between risk tolerance and investment return. Striking this balance can propel invetors toward their financial and organisation goals.

Portfolio analysis authored by (Black and Scholes, 1973) is a useful tool in evaluating how company investment portfolio is performing in terms of rate of return and risk. This feat is accomplished by looking not only how company individual portfolio investments perform but also how they perform together. An analysis can identify underperforming or excessively risky assets and provide guidance as to where changes in the investment allocations should be made to keep the company on track to meet its company investment objectives. Although each individual portfolio has its own goals in terms of performance, a routine analysis is useful for any portfolio regardless of its strategy.

2.6 Conceptual Framework

The tax and capital are factors that affect the income output by the commercial banks. The commercial banks do invest in assets that have about equal and high tax impact. Other investment assets that have efficient tax and capital employment have not been

explored. The bank needs to assess the portfolios in tax efficiency and the amount of capital to be employed for maximization of shareholder profit and wealth.

Capital for investment is a limited resource and should be objectively used so as to generate optimal income. The capital should be placed in portfolios that have been analyzed in accordance with tax rates. These will aid the bank to select portfolios that are tax efficient and have tax shield. The bank will generate optimal a portfolio that has optimal tax and optimal income.

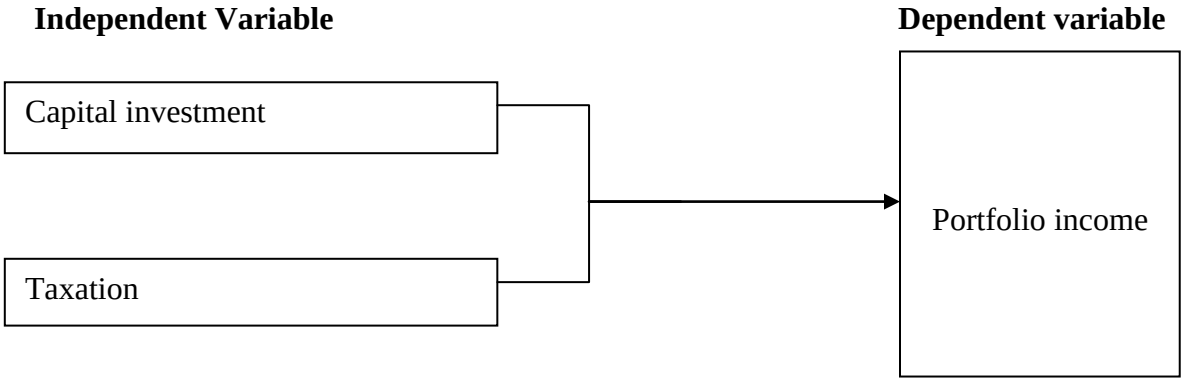

Figure 1: Conceptual framework

(Source: Author, 2013)

2.7 Chapter Summary and Knowledge Gap

From the discussions, it is noted that most of the studies done on the effect of tax and capital on portfolio income have not analyzed clearly and completely the issue of the nature of taxes and objective placement of capital for investment for optimal report of optimal income by the Bank. This study aimed at filling the knowledge gap by focusing on National Bank of Kenya and is hypothesized that information that will be outputted from the research study will result in formation of a portfolio structure that has optimal tax impact, capital is objectively placed and there is an optimal generation of income that maximize shareholder wealth and profit.

CHAPTER THREE

MATERIALS AND METHODS

3.0 Introduction

The chapter covered the study area, research design, Research instrument data table, pilot study and data analysis.

3.1 Study Area

The study area was chosen specifically since the bank is Government owned and a privately owned. Thus, it will give a spread out picture of the banking industry. The study area chosen was significant for the research to be done since it is the hub of all information emanating from branches all over the country. The National Bank Headquarters prepare the financial statements that portray a true and fair view as per the Auditors report and Management reports. The study was conducted in National bank of Kenya in Nairobi Headquarters.

3.2 Research Design

The research design that was used to guide the study was descriptive research design in agreement with, (Koul, 1984) and consistent with (Mugenda and Mugenda, 2003). According to (Kothari, 2011), explains research design as the formidable problem that follows the task of defining the research problem. Descriptive research design is used to describe the data and characteristics of quantitative data that was collected. The idea behind descriptive research design is to apply the statistical calculations of analyzing data and this include, linear, multiple regressions and correlations, (Shields and Rangarjan, 2013). Descriptive research was mainly done so that the researcher can gain a better understanding of a topic and that is, the analysis of the past as opposed to the future,

(Shields and Tajalli, 2013). Descriptive research is the exploration of the existing certain phenomena that include data in in the Annual Financial Reports.

3.3 Research Instruments

The research instrument used was data tables. The data tables are very useful in collecting quantitative data. The data that was extracted were secondary data from the Annual Financial Reports for the years 2009 to 2013. The data table was used record the type of assets the bank held and their corresponding capital investment, income they generate and the tax that was applied accordingly.

3.4 Data Tables

(Kombo and Tromp, 2006) notes that data tables are research instruments that can be of benefit to collect numerical data over a span of time. The data table was used to collect quantitative information regarding the portfolio structure that include; Cash and Cash Equivalents, Loans and Advances, Government Securities, Foreign Exchange and Rental Property of National Bank of Kenya. The data table is very useful in presenting data in a table format. The data extracted regards to capital for investment, income and tax impact.

3.5 Validity and Reliability of Instruments

3.5.1 Validity

(Cooper and Schindler, 2003) explains that validity is concerned about the issue of the authenticity of the cause-and-effect relationships and their generalizability to the external environment. Construct validity was used and (Cooper and Schindler 2003), notes that it determines the appropriateness of inferences made on the basis of measurements, that is test scores used and specifically whether a test measures the intended construct. The

constructs are created by researchers in order to conceptualize the variables, which are the cause of scores on a given measure. Construct validity, (Drew and Rosenthal, 2003), examines the question: Does the measure behave like the theory says a measure of that construct should behave?

The researcher gave a copy of the data table to the supervisor to check if it represented all the objectives of the study.

3.5.2 Reliability

Reliability is the extent to which any measuring procedure results in the same findings on repeated trials Zeller, (1999). The researcher observed if that instrument measured the research phenomena consistently i.e. the data table stability over time hence reliability test. The research instrument was able to give the information on test and retest process.

The data were extracted from the Annual Financial Reports by filling on the data table on pilot test and checked if the same data can be extracted once again.

3.6 Pilot Testing

Pilot testing was conducted to detect weakness in design and instrumentation and to provide proxy data for selection. To ensure the reliability of the data table that was used in this study, a pilot test was carried in order to identify gaps, ambiguities and determining how the data table would filled from the secondary data and how it would be analyzed.

The pilot test was carried out in National Bank and quantitative data relating to capital, tax and income were collected and analyzed using the linear and multiple regressions.

3.7 Model Specification

The model that was used to interpret the results is outlaid as follows:

$Ps = f(Tax, Income, Capital)$

$Y_{Cash\ and\ Cash\ Equivalents} = B_0 + B_1K_1 + B_2T_2 + \ldots + B_\infty X_\infty + \in$

$Y_{Loans\ and\ Advances} = B_0 + B_1K_1 + B_2T_2 + \ldots + B_\infty X_\infty + \in$

$Y_{Government\ Securities} = B_0 + B_1K_1 + B_2T_2 + \ldots + B_\infty X_\infty + \in$

$Y_{Foreign\ Exchange} = B_0 + B_1K_1 + B_2T_2 + \ldots + B_\infty X_\infty + \in$

$Y_{Rental\ Property} = B_0 + B_1K_1 + B_2T_2 + \ldots + B_\infty X_\infty + \in$

Where;

Y – Portfolio Income (dependent variable)

B_0 – constant {Extraneous variables}

B_1B_2 are regression co-efficient of independent variables (Capital and Tax)

K_1 -Capital

T_2 -Tax

3.8 Data Analysis

The study applied linear regression analysis techniques to analyze the secondary data. This ensured that the data were analyzed in a systematic way in order to came to some useful collection, and recommendation. The tool used to aid the analysis of data was the Statistical Package for the Social Sciences (SPSS). Regression analysis was applied to the three objectives. The data regression provided descriptive, Coefficient of determination, t test, p value and VIF. Also Correlation was used to test the relationship amongst the variables.

The objectives were regressed as follows:

Objective 1 was to evaluate the effect of taxation on portfolio income of National Bank of Kenya. The sources used to derive income were Cash and Cash Equivalents, Loans and Advances, Government Securities, Foreign Exchange and Rental Property. The

cyclical tax effect and the fluctuating tax rates, impact on the assets unequally, this is being due to the Income Tax Act Cap 490.

$Y_{Cash\ and\ Cash\ Equivalents}=B_0+B_2T_2+\ldots+B_\infty T_\infty+$ ……..…Equation 1

$Y_{Loans\ and\ Advances}=B_0+B_2T_2+\ldots+B_\infty T_\infty+$ ……..……Equation 2

$Y_{Government\ Securities}=B_0+B_2T_2+\ldots+B_\infty T_\infty+$ ……..……..…..……Equation 3

$Y_{Foreign\ Exchange}=B_0+B_2T_2+\ldots+B_\infty T_\infty+\in_J$…..……..…….……Equation 4

$Y_{Rental\ Property}=B_0+B_2T_2+\ldots+B_\infty T_\infty+$…….……..……Equation 5

Objective 2 was to examine the effect of capital on portfolio income of National Bank of Kenya. The investment were made on the following assets in order to derive income; Cash and Cash Equivalents, Loans and Advances, Government Securities, Foreign Exchange and Rental Property. These objective measures how income behave on the provision of capital for investment.

$Y_{Cash\ and\ Cash\ Equivalents}=B_0+B_1K_1+\ldots+B_\infty K_\infty+\in$…….…..…..…Equation 6

$Y_{Loans\ and\ Advances}=B_0+B_1K_1+\ldots+B_\infty K_\infty+\in$……..……..……Equation 7

$Y_{Government\ Securities}=B_0+B_1K_1+\ldots+B_\infty K_\infty+\in$…..……..……Equation 8

$Y_{Foreign\ Exchange}=B_0+B_1K_1+\ldots+B_\infty K_\infty+$…….……..……Equation 9

$Y_{Rental\ Property}=B_0+B_1K_1+\ldots+B_\infty K_\infty+\in$…..…….……Equation 10

Where:

Y = Income

K = Capital

Objective 3 dealt with assessing the simultaneous effect of taxation and capital on portfolio income of National Bank of Kenya. The objective was applied to demonstrate how income behaves on the simultaneous effect of injection/reduction of capital and the fluctuating rates of tax on portfolios. This was applied to Cash and Cash Equivalents,

Loans and Advances, Government Securities, Foreign Exchange and Rental Property portfolios.

$Y_{Cash\ and\ Cash\ Equivalents}$=$B_0$+ B_1K_1 + B_2T_2 + … + $B_\infty X_\infty$ + ∈……..…..…Equation 11

$Y_{Loans\ and\ Advances}$ =B_0+B_1K_1+ B_2T_2 + … + $B_\infty X_\infty$ + ∈……..……Equation 12

$Y_{Government\ Securities}$=$B_0$+ B_1K_1 + B_2T_2 + … + $B_\infty X_\infty$ + ∈……..……Equation 13

$Y_{Foreign\ Exchange}$=B_0+B_1K_1+ B_2T_2 + … + $B_\infty X_\infty$ + ∈..……Equation 14

$Y_{Rental\ Property}$=B_0+B_1K_1+ B_2T_2 + … + $B_\infty X_\infty$ + ∈……..……..……Equation 15

Where;
Y = Income
K = Capital
T = tax rate

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents results of this study based on the formulated objectives and hypotheses as presented in chapter one. The chapter analyzes the variables involved in the study and estimate the conceptual model described in chapter two In the first two sections data description and analysis is presented. The model estimation and the analysis of the results are then interpreted. Finally concluding remarks are made. Data description involved a discussion on the sources of data and definitions of the dependent and the independent variables. Data collected was quantitatively analyzed and presented in tables in the first two sections data description and analysis is presented. The model estimation and the analysis of the results are then interpreted. Hypothesis are also tested with the study accepting or failing to accept them depending to the p values and t test value

4.1 To evaluate the effect of taxation on portfolio income

4.1.1 Cash and cash equivalents

The results in Table 4.1 show the linear regression model had a coefficient of determination (R^2) of about 0.746. This means that 74.6% variation of the independent variable is explained by tax. The significance value is 0.012 which is less than 0.05 and the F critical (value = 2233.550), thus the model is statistically significance in predicting income. The results of Linear regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = 0.5899$ (p-value = 0.012 which is less than $\alpha = 0.05$). This means that for each unit increase in tax, there are 6.315 decreases in income

Y =2.336 - 6.315T…..……see equation 1

Table 4.1: **Linear Regression on effect of tax on income for Cash and Cash Equivalents**

Cash and Cash Equivalents					
		B	Std. Error	Beta	t test
(Constant)		2.336	17.071		47.260
Tax		-6.315	0.049	-0.589	-0.370
R squared	0.746				
R adjusted	-0.558				
F test	2233.550				
P value	.012				
Std Error	2.43786				
VIF	1.000				

4.1.2 Loans and advances

The results in Table 4.2 show the linear regression model had a coefficient of determination (R^2) of about 0.758. This means that 75.8% variation of the independent variable is explained by tax. The significance value is 0.045 which is less than 0.05 and the F critical (value = 674.81), thus the model is statistically significance in predicting income. The results of Linear regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -0.674$ (p-value = 0.045 which is less than $\alpha = 0.05$). This means that for each unit increase in tax, there are 1.850 decreases in income

Y = 2.334 - 1.850T….……..……..see equation 2

Table 4.2: Linear Regression on effect of tax on income for Loans and Advances

Loans and Advances					
		B	Std. Error	Beta	t test
(Constant)		2.334	1.023		0.002
Tax		-1.850	0.001	-1.568	-1.808
R squared	0.758				
R adjusted	-.674				
F test	674.81				
P value	0.045				
Std Error	0.85629				
VIF	1.000				

4.1.3 Government securities

The results in Table 4.3 show the linear regression model had a coefficient of determination (R^2) of about 0.859. This means that 85.9% variation of the independent variable is explained by tax. The significance value is 0.004 which is less than 0.05 and the F critical (value = 369.759), thus the model is statistically significance in predicting income. The results of Linear regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -.145$ (p-value = 0.004 which is less than $\alpha = 0.05$). This means that for each unit increase in tax, there are -.224 decreases in income

Y = 2.353 - .224T……..……..see equation 3

Table 4.3: Linear Regression on effect of tax on income for Government Securities

Government Securities					
		B	Std. Error	Beta	t test
(Constant)		2.353	3.460		608.121
Tax		-.224	.004	-.145	-.556
R squared	.859				
R adjusted	-.568				
F test	369.759				
P value	.004				
Std Error	.42144				
VIF	1.000				

4.1.4 Foreign exchange

The results in Table 4.4 show the linear regression model had a coefficient of determination (R^2) of about 0.995. This means that 99.5% variation of the independent variable is explained by tax. The significance value is 0.002 which is less than 0.05 and the F critical (value = 275.881), thus the model is statistically significance in predicting income. The results of Linear regressions, revealed that tax has a negative and significant

effect on income with a beta value of β1 = -0.995 (p-value = 0.002 which is less than α = 0.05). This means that for each unit increase in tax, there are .850 decreases in income.

Y = 1.676 - .850T..…….see equation 4

Table 4.4: Linear Regression on effect of tax on income for Foreign Exchange

		Foreign Exchange			
		B	Std. Error	Beta	t test
(Constant)		1.676	.564		2.970
Tax		-.850	.111	-.995	-16.610
R squared	.995				
R adjusted	-.486				
F test	275.881				
P value	.004				
Std Error	.29993				
VIF	1.000				

4.1.5 Rental Property

The results in Table 4.5 show the linear regression model had a coefficient of determination (R^2) of about 0.998. This means that 99.8% variation of the independent variable is explained by tax. The significance value is 0.000 which is less than 0.05 and the F critical (value = 1996.914), thus the model is statistically significance in predicting income. The results of Linear regressions, revealed that tax has a negative and significant effect on income with a beta value of β1 = -.999 (p-value = 0.000 which is less than α = 0.05). This means that for each unit increase in tax, there are 2.367 decreases in income

Y = .600 - 2.367T…….see equation 5

Table 4.5: Linear Regression on effect of tax on income for Rental Property

		Rental Property			
		B	Std. Error	Beta	t test
(Constant)		.600	.735		.816
Tax		-2.367	.053	-.999	-44.687
R squared	.998				
R adjusted	-.677				
F test	1996.914				
P value	.000				
Std Error	.22640				
VIF	1.000				

4.2 To examine the effect of capital on portfolio income

4.2.1 Cash and cash equivalents

The results in Table 4.6 show the linear regression model had a coefficient of determination (R^2) of about 0.505. This means that 50.5% variation of the independent variable is explained by capital. The significance value is 0.178 which is more than 0.05 and the F critical (value = 3.066), thus the model is statistically insignificant in predicting income. The results of Linear regressions, revealed that capital has a positive and insignificant effect on income with a beta value of $\beta 1 = .711$ (p-value = 0.178 which is more than $\alpha = 0.05$). This means that for each unit increase in capital, there are.055 increase in income

Y = 668.037 + 0.055K……see equation 6

Table 4.6: Linear Regression on effect of Capital on Income for Cash and Cash Equivalents

Cash and Cash Equivalents					
		B	Std. Error	Beta	t test
(Constant)		668.037	77.575		8.612
Capital		.055	.031	.711	1.751
R squared	.505				
R adjusted	.341				
F test	3.066				
P value	.178				
Std Error	46.80931				
VIF	1.000				

4.2.2 Loans and advance

The results in Table 4.7 show the linear regression model had a coefficient of determination (R^2) of about 0.958. This means that 95.8% variation of the independent variable is explained by capital. The significance value is 0.000 which is less than 0.05 and the F critical (value = 262.64), thus the model is statistically significant in predicting income. The results of Linear regressions, revealed that capital has a positive and significant effect on income with a beta value of $\beta 1 = .815$ (p-value = 0.000 which is less than $\alpha = 0.05$). This means that for each unit increase in capital, there are.087 increase in income

Y = 180.102 + 0.087K…….see equation 7

Table 4.7: Linear Regression on effect of Capital on Income for Loans and Advances

		Loans and Advances			
		B	Std. Error	Beta	t test
(Constant)		180.102	992.724		.181
Capital		.087	.035	.815	2.439
R squared	0.958				
R adjusted	0.946				
F test	262.64				
P value	.000				
Std Error	.96990				
VIF	1.000				

4.2.3 Government securities

The results in Table 4.8 show the linear regression model had a coefficient of determination (R^2) of about 0.758. This means that 75.8% variation of the independent variable is explained by capital. The significance value is 0.686 which is more than 0.05 and the F critical (value = .198), thus the model is statistically insignificant in predicting income. The results of Linear regressions, revealed that capital has a positive and insignificant effect on income with a beta value of $\beta 1 = .249$ (p-value = 0.686 which is more than $\alpha = 0.05$). This means that for each unit increase in capital, there are.009 increase in income

Y = 2311.733 + 0.009K……see equation 8

Table 4.8: Linear Regression on effect of Capital on income for Government Securities

Government Securities					
		B	Std. Error	Beta	t test
(Constant)		2311.733	520.137		4.444
Capital		.009	.021	.249	.445
R squared	.758				
R adjusted	.759				
F test	.198				
P value	.686				
Std Error	143.30338				
VIF	1.000				

4.2.4 Foreign exchange

The results in Table 4.9 show the linear regression model had a coefficient of determination (R^2) of about 0.653. This means that 65.3% variation of the independent variable is explained by capital. The significance value is 0.515 which is more than 0.05 and the F critical (value = .542), thus the model is statistically insignificant in predicting income. The results of Linear regressions, revealed that capital has a positive and insignificant effect on income with a beta value of $\beta 1 = .391$ (p-value = 0.515 which is more than $\alpha = 0.05$). This means that for each unit increase in capital, there are.006 increase in income

Y = 12.023 + .006K…..……..see equation 9

Table 4.9: Linear Regression on effect of Capital on Income for Foreign Exchange

Foreign Exchange					
		B	Std. Error	Beta	t test
(Constant)		12.023	2.065		5.821
Capital		.006	.008	.391	.736
R squared	.653				
R adjusted	.629				
F test	.542				
P value	.515				
Std Error	2.66133				
VIF	1.000				

4.2.5 Rental Property

The results in Table 4.10 show the linear regression model had a coefficient of determination (R^2) of about .716. This means that 71.6% variation of the independent variable is explained by capital. The significance value is 0.071 which is more than 0.05 and the F critical (value = 7.5825), thus the model is statistically insignificant in predicting income. The results of Linear regressions, revealed that capital has a positive and insignificant effect on income with a beta value of $\beta 1 = .846$ (p-value = 0.178 which is more than $\alpha = 0.05$). This means that for each unit increase in capital, there are.006 increase in income

Y = 15.024 + 0.006K……see equation 10

Table 4.10: Linear Regression on effect of Capital on Income for Rental Property

Rental Property					
		B	Std. Error	Beta	t test
(Constant)		15.024	6.292		2.388
Capital		.006	.002	.846	2.754
R squared	.716				
R adjusted	.622				
F test	7.582				
P value	.071				
Std Error	3.11242				
VIF	1.000				

4.3 To assess the simultaneous effect of tax and capital on portfolio income

4.3.1 Cash and cash equivalents

The results in Table 4.11 show the multiple regression model had a coefficient of determination (R^2) of about 0.999. This means that 99.9% variation of the independent variable is predicted by joint contribution of capital and tax. The significance value is 0.001 which is less than 0.05 and the F critical (value = 934.221) thus the model is statistically significance in predicting income. The results of multiple regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -0.983$ (p-value = 0.001 which is less than $\alpha = 0.05$). Therefore, it is accepted that for each unit increase in tax, there is 2.298 unit decrease in income. The results also showed that the standardized coefficient beta and p value of capital were positive and significant (beta = 0.23, $p < 0.05$). Thus, it is accepted that, capital has a positive and significant effect on income. Also, for each unit increase in capital, there is 0.002 unit increases in income

Y = 2.452 - 2.298T + .002K…..…….see equation 11

Table 4.11: Linear Regression for the Simultaneous effect of Capital and Tax on Income for Cash and Cash Equivalents

Cash and Cash Equivalents					
		B	Std. Error	Beta	t test
(Constant)		2.452	22.349		.110
Tax		-2.298	.079	-.983	-30.381
Capital		.002	.002	.023	.713
R squared	.999				
R adjusted	.998				
F test	934.221				
P value	.001				
Std Error	2.66579				
VIF	1.959				

4.3.2 Loans and advances

The results in Table 4.12 show the multiple regression model had a coefficient of determination (R^2) of about 0.665. This means that 66.5% variation of the independent variable is predicted by joint contribution of capital and tax. The significance value is 0.003 which is less than 0.05 and the F critical (value = 5.949) thus the model is statistically significance in predicting income. The results of multiple regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -1.000$ (p-value = 0.003 which is less than $\alpha = 0.05$). Therefore, it is accepted that for each unit increase in tax, there is 2.334 unit decrease in income. The results also showed that the standardized coefficient beta and p value of capital were positive and significant (beta = 0.000, $p < 0.05$). Thus, it is accepted that, capital has a positive and significant effect on income. Also, for each unit increase in capital, there is 4.649 unit increases in income

Y = 2.196 - 2.334T + 4.64K…..……..…….see equation 12

Table 4.12: Linear Regression for the Simultaneous effect of Capital and Tax on Income Loans and Advances

Loans and Advances					
		B	Std. Error	Beta	t test
(Constant)		2.196	1.303		1.686
Tax		-2.334	.002	-1.000	-17.208
Capital		4.649	.000	.000	.582
R squared	.665				
R adjusted	.553				
F test	5.949				
P value	.003				
Std Error	743.20184				
VIF	2.981				

4.3.3 Government securities

The results in Table 4.13 show the multiple regression model had a coefficient of determination (R^2) of about 0.989. This means that 98.9% variation of the independent variable is predicted by joint contribution of capital and tax. The significance value is 0.000 which is less than 0.05 and the F critical (value = 2467.62) thus the model is statistically significant in predicting income. The results of multiple regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -0.999$ (p-value = 0.000 which is less than $\alpha = 0.05$). Therefore, it is accepted that for each unit increase in tax, there is 2.351 unit decrease in income. The results also showed that the standardized coefficient beta and p value of capital were positive and significant (beta = 0.003, $p < 0.05$). Thus, it is accepted that, capital has a positive and significant effect on income. Also, for each unit increase in capital, there is 0.000 unit increases in income.

Y = 15.097 - 2.351T + 0.000K……..……..……see equation 13

Table 4.13: Linear Regression for the Simultaneous effect of Capital and Tax on Income for Government Securities

Government Securities					
		B	Std. Error	Beta	t test
(Constant)		15.097	1.160		13.012
Tax		-2.351	.001	-.999	-2150.651
Capital		.000	.000	.003	6.165
R squared	0.989				
R adjusted	0.988				
F test	2467.62				
P value	.000				
Std Error	.11541				
VIF	1.065				

4.3.4 Foreign exchange

The results in Table 4.14 show the multiple regression model had a coefficient of determination (R^2) of about 0.989. This means that 98.9% variation of the independent variable is predicted by joint contribution of capital and tax. The significance value is 0.011 which is less than 0.05 and the F critical (value = 92.162) thus the model is statistically significance in predicting income. The results of multiple regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -0.997$ (p-value = 0.011 which is less than $\alpha = 0.05$). Therefore, it is accepted that for each unit increase in tax, there is 1.854 unit decrease in income. The results also showed that the standardized coefficient beta and p value of capital were positive and significant (beta = 0.005, $p < 0.05$). Thus, it is accepted that, capital has a positive and significant effect on income. Also, for each unit increase in capital, there is 8.011 unit increases in income

Y = 1.640 - 1.854T + 8.011K……..……..see equation 14

Table 4.14: Linear Regression for the Simultaneous effect of Capital and Tax on Income for Foreign Exchange

Foreign Exchange					
		B	Std. Error	Beta	t test
(Constant)		1.640	.879		1.865
Tax		-1.854	.149	-.997	-12.482
Capital		8.011	.001	.005	.066
R squared	.989				
R adjusted	.979				
F test	92.162				
P value	.011				
Std Error	.36694				
VIF	1.188				

4.3.5 Rental Property

The results in Table 4.15 show the multiple regression models had a coefficient of determination (R^2) of about 0.999. This means that 99.9% variation of the independent variable is predicted by joint contribution of capital and tax. The significance value is 0.001 which is less than 0.05 and the F critical (value = 670.096) thus the model is statistically significant in predicting income. The results of multiple regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -0.994$ (p-value = 0.001 which is less than $\alpha = 0.05$). Therefore, it is accepted that for each unit increase in tax, there is 2.355 unit decrease in income. The results also showed that the standardized coefficient beta and p value of capital were positive and significant (beta = 0.006, $p < 0.05$). Thus, it is accepted that, capital has a positive and significant effect on income. Also, for each unit increase in capital, there is 4.279 unit increases in income

Y = 0.555 - 2.355T + 4.278K……..…….see equation 15

Table 4.15: Linear Regression for the Simultaneous effect of Capital and Tax on Income for Rental Property Income

	Rental Property			
	B	Std. Error	Beta	t test
(Constant)	.555	.976		.568
Tax	-2.355	.121	-.994	-19.456
Capital	4.279	.000	.006	.116
R squared	.999			
R adjusted	.997			
F test	670.096			
P value	.001			
Estimate Error	.27636			
VIF	3.505			

4.4 Summary of Regression

Table 4.16: Multiple Regressions for the Five Portfolios

	Tax		Capital	
Portfolio Structure	Beta	T test	Beta	T test
Cash and cash Equivalents	-.983	-30.381	.023	.713
Loans and Advances	-1.000	-17.208	.000	.582
Government Securities	-.999	-215.651	.003	6.165
Foreign Income	-.997	-12.482	.005	.066
Rental Property	-.994	-19.456	.006	.116

4.5 Testing the Hypotheses

H_{o1}: There is no significant effect of taxation on portfolio income of National Bank of Kenya.

The results of Table 4.17 Linear regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -1.000$, $p < 0.05$. Therefore, we reject the null hypothesis and accept that for each unit increase in tax, there is 2.333 unit decrease in income.

Table 4.17: The Hypothesis for Tax on Income for the Effect of Tax on Income for the Overall Portfolios

	Total Portfolio			
	B	Std. Error	Beta	t test
(Constant)	1.747	.623		2.802
Tax	-2.333	.001	-1.000	-2491.187
R squared	.870			
R adjusted	-.865			
F test	6206014.116			
P value	.001			
Estimate Error	2.24183			
VIF	1.00			
Decision: Reject the null hypothesis				

H_{o2}: There is no significant effect on capital on portfolio income of National Bank of Kenya

The results of Table 4.18 Linear regression analysis showed that the standardized coefficient beta and p value of capital were positive and significant (beta = 0.933, $p < 0.05$). Thus we reject the null hypothesis and accept that, capital has a positive and significant effect on income. Also, for each unit increase in capital, there is 0.083 unit increase in income.

Table 4.18: The Hypotheses for the Effect of capital on Income for the Overall Portfolios

	Total Portfolio			
	B	Std. Error	Beta	t test
(Constant)	135.691	113.104		1.200
Capital	.083	.007	.933	12.415
R squared	.870			
R adjusted	.865			
F test	154.130			
P value	.000			
Estimate Error	419.62655			
VIF	1.000			
Decision				

H_{o3}: There is no significant simultaneous effect of capital and tax on portfolio income of National Bank of Kenya

The results in Table 4.19 of multiple regressions, revealed that tax has a negative and significant effect on income with a beta value of $\beta 1 = -0.15$, $p < 0.05$. Therefore we reject the null hypothesis and accept that for each unit increase in tax, there is 0.15 unit decrease in income. The results also showed that the standardized coefficient beta and p value of capital were positive and significant (beta = 0.940, $p < 0.05$). Thus, the researcher rejects the null hypothesis and it is accepted that, capital has a positive and significant effect on income. Also, for each unit increase in capital, there is 0.940 unit increases in income.

Table 4.19: The Hypotheses for the Simultaneous Effect of Capital and Tax on Income for the Overall Portfolios

	Total Portfolio			
	B	Std. Error	Beta	t test
(Constant)	1.755	.551		3.185
Tax	-2.328	.002	-.015	-1015.202
Capital	.000	.000	.940	2.723
R squared	1.00			
R adjusted	1.000			
F test	3968691.467			
P value	.012			
Estimate Error	1.98230			
VIF	4.663			
Decision				

4.6 Correlation Statistics for the Five Portfolios

Study results in Table 4.20 reveals that tax was positively correlated to cash and cash equivalents (Pearson product-moment correlation = 0.999), this correlation between tax and cash and cash equivalents was indicated to be significant at 0.01 (confidence

interval).In addition, tax was revealed to be positively correlated to loans and advances (Pearson product-moment Correlation = 989), this relationship was strong and significant at 0.05 confidence interval.

Moreover, tax was also positively correlated to government securities (Pearson product-moment Correlation = 998, this relationship was also strong and significant at 0.01 confidence level. Also, findings revealed that tax was positively and significantly associated with foreign exchange ($r = 0.995$, $\rho<0.01$). Further, tax was positively and significantly correlated to rental property ($r = 0.999$, $\rho<0.01$).On the other hand, capital was positively correlated with cash and cash equivalents ($r = 0.771$).This relationship was strong and significant at 0.01 confidence level.

Additionally, capital was indicated to positively relate with loans and advances ($r = 0.815$) at 0.05 confidence level. Furthermore, capital was revealed to be positively correlated to government securities (Pearson product-moment Correlation = .249), this relationship was significant at 0.01 confidence interval. Also, findings revealed that capital was positively and significantly associated with foreign exchange ($r = 0.391$, $\rho<0.01$). Finally, capital was positively correlated to rental property (Pearson product-moment Correlation = .846, $\rho<0.01$).

Table 4.20: Correlation Statistics for the Five Portfolios

	Income				
	Cash and cash equivalents	Loans and advances	Government securities	Foreign Exchange	Rental Income
Tax	.999**	.989**	.998**	.995**	.999**
Capital	.771**	.815**	.249**	.391	..846**

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

4.7 Overall Correlations

Pearson's product moment correlation analysis was used to assess the relationship between the variables. Correlations results in Table 4.21 showed that tax was positively and significantly correlated with income ($r=0.750$, $\rho<0.01$).Finally, capital was highly positive and significantly correlated with income($r=0.975$, $\rho<0.01$).

Table 4.21: Overall Correlations

		Income	Tax	Capital
Income	Pearson Correlation	1		
	Sig. (2-tailed)			
Tax	Pearson Correlation	.750**	1	
	Sig. (2-tailed)	0.000		
Capital	Pearson Correlation	.975**	.813**	1
	Sig. (2-tailed)	0.000	0.000	

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

CHAPTER FIVE

DISCUSSIONS

5.0 Introduction

This chapter discusses the results that were found out during the data collection and presentation of the results in Chapter Four.

5.1 Effect of Taxation on Portfolio Income

The results (Table 4.1 show) for Cash and Cash Equivalents show the impact of tax on the portfolio has a negative influence on the income that it generates in that it is reduced significantly. This is consistent with the illustration by (Basu, Turvey and Verhoeven, 2012) that there is wide variation of taxes that affects portfolio income and in agreement with the work of (Hungerford, 2012) that this portfolio income is grossly affected by taxes.

The results (Table 4.2) for Loans and Advances show that taxes have an adverse effect on portfolio income held by the National bank consistent with the work of Turton, (2008) that taxes consume a substantial portion of portfolio income thereby reducing the income. This is consistent with Income Tax Cap 470 which specifically states that a corporate entity is taxed on the income from the trading activities. The Loans and advances is major portfolio that commercial banks hold and have invested a lot of capital.

The results in (Table 4.3) for Government Securities show minimal active management where taxes are analyzed continuously in accordance with the capital invested in that portfolio and in agreement with white Paper, (2010) it explains that tax has an adverse effect on the portfolio income.

The results in (Table 4.4) for Foreign Exchange show the negative aspect tax that it commands on portfolio income. This is consistent with the work of (Bergstresser and Pontiff, 2010) who outlined that taxes reduce the portfolio income.

(Bergstresser and Pontiff, 2010) acknowledges that not all portfolios impact the same tax burden and this being availability of wide variation of taxes (Guiso, Haliassos and Jappelli, 2001). The results in (Table 4.1) and (Table 4.5) show that Cash and Cash Equivalents and Rental Property respectively command a large negative tax impact followed by results of (Table 4.2) for Loans and advances. Thus taxes are varied according to the type of portfolio the bank has held since their incomes are subjected to various taxes according to the Income Tax Act Cap 470 and per Bergstresser and Pontiff, (2010). The results also show that the bank has not done Mconnel and Hennen, (2004) tax-favored investing, where tax environment is articulated and investor after tax returns is maximized as is shown by the results of (Table 4.3) for Government securities and results In (Table 4.4) for Foreign Exchange. Thus the bank has not known the pain of the income tax burden for portfolios held that include Cash and Cash equivalents, Rental Property and Loans and advances.

The results in (Table 4.5) for rental property show that taxes affect adversely the gains made from this portfolio. This is in agreement with (UNRV, 2014)) which points out that taxes on assets is large when you hold more property. This taxes arise from the nature of capital that is being invested and the timefarame it takes the assets to generate income.

5.2 Effect of Capital on portfolio Income

The results in (Table 4.6) for Cash and Cash equivalents shows the effect of capital for investment on portfolio income and consistent with the work of Donaldson and

Ambrosio, (2007) they point out that an error in portfolio construction is that of choosing specific investments that may appear to be worthwhile individually, but make little sense when combined in a portfolio. The yield of these portfolios at the end does not form a coherent asset allocation as justified by Donaldson and Ambrosio (2007).

The results in (Table 4.7) consistent with (Investopedia, 2011) point out that the monetary value of each asset influences the risk or reward on the investment of that portfolio. This being in tandem with, (Emanagedfutures, 2011) that a carefully chosen portfolio with a given amount of risk with an optimal expected will enhance the bank investment and return with added value. This type of old portfolio has been a major source of revenue for the bank and it generates more than 50% of income.

The results in (Table 4.8) for Government securities is a traditional portfolio held by the bank due to its natures that the government does not default on its payments, the bank invets alot of capital in this portfolio in agrreement with (Devani, 2009).

The investment of portfolio in (Table 4.9) for Foreign Exchange show an insignificatnt change in output of portfolio income which show in accordance with the findings of Bradley and Crane (1975) who articultae that in portfolio-planning the problem faced is the question of what distribution of portfolios to hold during the next period and over the planning horizon in general in order to choose specific investments that appear to be worthwhile when put together, Donaldson and Ambrosio, (2007) .

5.3 Simultaneous Effect of Taxation and Capital on Portfolio Income

The results in (Table 4.10) for Rental Property shows that the bank has not yet invested alot of capital in this type of investment and consistent with (Stein, 1998) he notes that

the impact of capital for optimum portfolio composition is the essence of holding portfolios that achieve the bank profit and wealth maximization and agreement with (Pettit and Stanley, 1977).

The results in (Table 4.11) for Cash and Cash Equivalents show a minimal change in income when capital is employed which does not agree with Blumenthal, (2010) who asserts that a Sound investment strategy typically starts with a foundation in asset allocation for which technology has enabled all novices and professionals alike to build allocations quite easily using assumptions about the future.

The results in (Table 4.12) fro Loans and advances show extensive change in income when capital has been invested. This indicates that the portfolio can generate alot of income when it is invested in. This concur with Blumenthal, (2010) points out that capital for investment and tax rates vary according to the portfolio income that it is generated. There is adverse effect of tax on portfolio income and a positive significant effect of portfolio capital on portfolio income consisntent with Hanson, Pesaran, Hashem and Til, (2008), that if firm parameters come from different sectors, there will be further scope for risk diversification by changing the portfolio weights, even in the case of sufficiently large portfolio.

The results in (Table 4.13) for Government securities show that there is no effect in the change of capital but a reaction by tax affects the portfolio. Thus the results does not agree with Black and Scholes, (1973) that the bank has not used portfolio analysis which is a useful tool in evaluating how company investment portfolio is performing in terms of rate of return and risk and this feat is achieved by looking not only how company individual portfolio investments perform but also how they perform together.

The results in (Table 4.14) for Foreign exchange show a huge change in income when capital is inputted. This shows that this being the modern portfolios a lot of income is generated with a minimal tax impact since there are incentives in agreement with (Turvey, 2011).

The results in (Table 4.15) for Rental property shows no change in income when capital is employed and tax cut is realized on income. This is in agreement with (Osgood, 2008) that notes that the nature of tax imposed on the income affect the investment in that asset and an understanding on hidden taxes should be done.

The results in (Table 4.20) show that a strong positive relationship exist amongst portfolio income, portfolio capital and portfolio income nature of tax shows which is in agreement with (White Paper, 2010) that there is a relationship that subsist amongst tax, capital and income.

The results in (Table 4.21) show the correlation of portfolio income versus tax and capital is is in agreement with Samwick, (2000) that there is a cross-sectional relationship between tax rates, portffolio capital for investment and portfolio income and consistent with the work of Poterba (2002) that when we consider changes to portfolio shifts at income quartiles, findings show that changes in tax rates explain little of the changes in portfolio allocations over time. This concludes according to Poterba, (2002) theier is an effect of taxes and capital on the bank portfolio income.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter provides the conclusions and recommendations of the study based on the objectives of the study.

6.1 Conclusions

Taxes have an adverse effect on portfolio income. The reason is that taxes consume a portion of income annually and in the long run accumulated to millions of shillings in paid up taxes. There is need for the bank to do tax-favored investing whereby the bank allocates its capital for investment objectively on portfolios that has optimal tax impact. This is shown by negative effect of tax on Cash and Cash Equivalents, Loans and advances and Rental Property. It is therefore evident that taxes deflate overall portfolio performance. As such, the banks lack flexible taxation in some portfolio it would be prudent to add other portfolios to the portfolio structure.

At the heart of portfolio planning there is need for capital allocation that is felt to increase portfolio income extensively. The objective employment of capital for investment was not done as is evident in Government Securities, Foreign Exchange and Rental Property where capital outlay is large but minimal portfolio income is not large. Also, portfolio income is reduced by taxes.

Capital and taxes do impact positively and negatively respectively to portfolio income. Thus, there is need for the bank to do portfolio diversification in their attempt to achieve optimum portfolio structure.

6.2 Recommendations

6.2.1 Recommendations for Management

In light of the foregoing, the following recommendations are made:

1. The bank needs to analyze portfolio with tax for optimal tax deductions. This will enhance large income retention for ploughing back into the business and act as buffer against any systematic and unsystematic risks.
2. Capital is a scarce resource and banks need to utilize this resource for objective employment of capital and invest in portfolios that can optimal income.
3. The combination analysis of portfolio capital and tax impact on portfolio income should be done so that portfolios can be selected wisely and their performance can be known structurally.

6.2.2 Recommendations for Further Studies

This study was conducted to evaluate the effect of taxation and capital on portfolio income that facilitates an investment in assets that accrue high income and wealth to shareholders and minimize taxation in the National Bank of Kenya portfolio structure. Also it will necessitate objective placement of capital

This study included only three factors, there could be some other relevant factors that may be perceived as important but were excluded from this study. Future researches, therefore, need to know what portfolios to be held in tax advantaged accounts and how to invest their capital in tax efficient portfolios to achieve tax equilibrium. Moreover, including moderator factors can also be made in the research models of the new research by other scholars.

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APPENDICES

APPENDIX I: DATA TABLES

YEAR	Cash and Cash Equivalents			Loans and Advances			Government Securities			Foreign Exchange			Rental Property		
	Income	Tax	Capital	Income	Tax	Capital	Income	Tax	Capital	Income	Tax	Capital	Income	Tax	Capital
2009															
2010															
2011															
2012															
2013															

APPENDIX II: RESEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
Mobile: 0713 788 787 , 0735 404 245
Fax: 254-020-2213215
When replying please quote
secretary@ncst.go.ke

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: NCST/RCD/14/013/147

Date: 13th March, 2013

Kering Abednego Kimeli
Chepkoilel University College
P.O.Box 1125-30100
Eldoret.

RE: RESEARCH AUTHORIZATION

Following your application dated ***8th February, 2013*** for authority to carry out research on "***Effect of taxation in portfolio structure of corporate investors: A comparative study of Equity Bank and National Bank of Kenya in Nairobi, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi Province** for a period ending **31st December, *2013.***

You are advised to report to **the Chief Executive Officers, Equity Bank and National Bank of Kenya** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR M.K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:

The Chief Executive Officers
National Bank of Kenya
Equity Bank.

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development".

PAGE 2

THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Kering Abednego Kimeli
of (Address) Chepkoilel University College
P.O.Box 1125-30100, Eldoret.
has been permitted to conduct research in

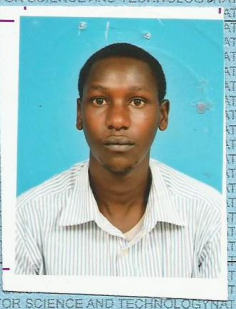
Location
District
Nairobi
Province

on the topic: Effect of taxation in portfolio struct re of corporate investors: A comparative study of E quity Bank and National Bank of Kenya in Nairobi, Kenya.

for a period ending: 31st December, 2013.

PAGE 3

Research Permit No. *NCST/RCD/14/013/147*
Date of issue *13th March, 2013*
Fee received *KSH. 1,000*



Applicant's Signature

Secretary
National Council for
Science &Technology

CONDITIONS

1. You must report to the District Commissioner and the District Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officers will not be interviewed with-out prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2)/ four(4) bound copies of your final report for Kenyans and non-Kenyans respectively.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

GPK6055t3mt10/2011

REPUBLIC OF KENYA

RESEARCH CLEARANCE PERMIT

(CONDITIONS–see back page)

APPENDIX III: RESEARCH WORKPLAN

S/NO	ACTIVITY	AUG. 2012	SEPT. 2012	OCT. 2012	NOV. 2012	DEC. 2012	JAN. 2012
1.	Proposal Writing						
2.	Defending Proposal						
3.	Piloting the Instrument						
4.	Administering Instrument and Data Collection						
5.	Data Analysis						
6.	Writing the Thesis						
7.	Defending the Thesis						

APPENDIX IV: RESEARCH BUDGET

S/NO	PARTICULARS	UNITS	QUANTITY	UNIT COST	AMOUNT
1.	Travels in Nairobi	Within Nairobi	20	100.00	2,000.00
2.	Meals - Breakfast	Local	10	400.00	4,000.00
	- Lunch	Local	10	400.00	4,000.00
	- Dinner	Local	10	400.00	4,000.00
3.	Print–Research Proposal	sheets	3x 70	250.00	750.00
	-Research Report	Sheets	3 x 200	750.00	2,250.00
	-Book Binding	Pieces	3	1,500.00	4,500.00
	-Questionnaires	Sets	160	21.00	3,360.00
	-Photocopies	Sheets	1,000	3.00	3,000.00
4	Spiral Binding	copies	3	50.00	150.00
5	Research Assistants	-	3	10,000.00	30,000.00
	Sub-Total	-	-		**58,010.00/=**
6	Contingency (10%)				5,801.00
	Total				**63,811.00**