

**EFFECT OF TAX AVOIDANCE ON VALUE OF FINANCIAL  
FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE**

**LONG'OLE PETER APUA**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL  
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF  
THE DEGREE OF MASTER OF SCIENCE IN FINANCE,  
SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

**OCTOBER, 2019**

## **DECLARATION**

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**LONG'OLE PETER APUA**

**D63/79939/2015**

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

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**DR. CYRUS IRAYA**

Senior Lecturer, Department of Finance and Accounting

School of Business, University of Nairobi

## **ACKNOWLEDGEMENT**

To God, who made all this possible. All glory unto him.

I would like to thank Dr. Cyrus Iraya, first and foremost, for agreeing to be my supervisor. I am grateful for his systematic guidance, constructive criticism, open door policy and above all for his time and effort as he supervised me throughout the project process.

I would like to acknowledge my workmates and classmates for their encouragement throughout the study process.

Finally but not least I would like acknowledge my family members for their endurance and understanding throughout the study period.

## **DEDICATION**

This research project is dedicated to my parents, wife and children. I love you all

## **TABLE OF CONTENTS**

<b>DECLARATION.....</b>	<b>ii</b>
-------------------------	-----------

<b>ACKNOWLEDGEMENT.....</b>	<b>iii</b>
<b>DEDICATION.....</b>	<b>iv</b>
<b>LIST OF TABLES .....</b>	<b>vii</b>
<b>LIST OF ABBREVIATIONS .....</b>	<b>viii</b>
<b>ABSTRACT.....</b>	<b>ix</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>11</b>
1.1 Background of the Study.....	11
1.1.1 Tax Avoidance.....	12
1.1.2 Firm Value .....	13
1.1.3 Tax Avoidance and Firm Value .....	14
1.1.4 Financial Firms Listed at the Nairobi Securities Exchange .....	15
1.2 Research Problem .....	16
1.3 Research Objective .....	18
1.4 Value of the Study.....	18
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>20</b>
2.1 Introduction.....	20
2.2 Theoretical Framework .....	20
2.2.1 Tax Planning Theory.....	20
2.2.2 Trade-off Theory of Capital Structure and Taxes .....	21
2.2.3 Agency Cost Theory .....	22
2.3 Determinants of Firm Value .....	24
2.3.1 Tax Avoidance .....	24
2.3.2 Liquidity of a Firm .....	25
2.3.3 Capital Structure .....	25
2.3.4 Firm Size.....	26
2.3.5 Dividend Payout Ratio.....	27
2.3.6 Macro-Economic Variables .....	27

2.4 Empirical Review .....	28
2.4.1 Global Studies.....	28
2.4.2 Local Studies .....	30
2.5 Conceptual Framework .....	32
2.5 Summary of the Literature Review and Research Gaps .....	33
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>35</b>
3.1 Introduction .....	35
3.2 Research Design.....	35
3.3 Target Population .....	35
3.4 Data Collection .....	36
3.5 Diagnostic Tests .....	36
3.6 Data Analysis .....	37
3.6.1 Tests of Significance.....	38
<b>CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS .....</b>	<b>39</b>
4.1 Introduction .....	39
4.2 Descriptive Analysis .....	39
4.3 Diagnostic Tests .....	39
4.4 Correlation Analysis .....	42
4.5 Regression Analysis .....	43
4.7 Discussion of Research Findings .....	45
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS</b> <b>.....</b>	<b>48</b>
5.1 Introduction .....	48
5.2 Summary of Findings.....	48
5.3 Conclusion .....	49
5.4 Recommendations .....	51
5.5 Limitations of the Study.....	51

5.6 Suggestions for Further Research .....	52
<b>REFERENCES.....</b>	<b>54</b>
<b>APPENDICES .....</b>	<b>60</b>
Appendix I: Financial Firms Listed at the Nairobi Securities Exchange.....	60
Appendix II: Research Data .....	61

## **LIST OF TABLES**

Table 4.1: Descriptive Statistics .....	39
---	----

Table 4.2: Multicollinearity Test for Tolerance and VIF .....	40
Table 4.3: Normality Test.....	40
Table 4.4: Autocorrelation Test .....	41
Table 4.5: Stationary Test.....	41
Table 4.6: Correlation Analysis .....	42
Table 4.7: Model Summary .....	43
Table 4.8: Analysis of Variance.....	44
Table 4.9: Model Coefficients .....	44

## **LIST OF ABBREVIATIONS**

<b>BTD</b>	Book Tax Differences
<b>CMA</b>	Capital Markets Authority



<b>ETR</b>	Effective Tax Rate
<b>IPO</b>	Initial Public Offer
<b>MNC</b>	Multi-National Corporation
<b>NSE</b>	Nairobi Securities Exchange
<b>PwC</b>	PricewaterhouseCoopers
<b>ROA</b>	Return on Assets
<b>ROE</b>	Return on Assets
<b>SPSS</b>	Statistical Package for Social Sciences

## **ABSTRACT**

While tax consequences are an inspiring factor in most corporate resolutions, managerial actions that are only designed to decrease corporate tax duties are perceived as a rising significant aspect of corporate activities. Tax avoidance may be inspired by various reasons but the magnitudes of such acts can either be negative or positive. The goal for the research study was assessing effect of tax avoidance on value of financial firms on the NSE. The population for the research was all 17 financial firms of the NSE. Predictor variable in this research was tax avoidance,

evaluated, by effective tax rate (tax expense divided by gross profit). The control variables for this study were liquidity as measured by current ratio, leverage and evaluated by debt ratio and dividend payout ratio as measured by the ratio of dividend per share to earnings per share on an annual basis. Firm value was the dependent variable and was measured by the ratio of market value of equity to book value of equity. Secondary data was collected over five years (January 2014 - December 2018) annually. Descriptive cross-sectional research design was used for the research to assess the association between the variables. Data analysis was done using SPSS software. The results of the study produced R-square value of 0.243, meaning that 24.3 percent of change of value among financial companies can be explained by the four selected independent variables while 75.7 percent in the variation in value of financial firms listed at the NSE was associated with different frameworks which are not highlighted. This research showed independent variables had a moderate association with firm's values ( $R=0.493$ ). ANOVA results indicate the F statistic was substantial at 5% level with  $p=0.000$ . In summary, the framework was the best for explaining the correlation among the chosen variables. Findings also showed liquidity gave positive and statistically significant values for the research. Tax avoidance, dividend policy and leverage produced statistically insignificant values for this study. This research suggests that listed financial companies ought to focus on liquidity positions as liquidity was found to substantially affect the value of financial companies listed in NSE.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of Study

While tax consequences are an inspiring aspect of many corporate resolutions, managerial actions that are only designed to decrease corporate tax duties are perceived as a rising significant aspect of any corporate engagement. Tax avoidance may be inspired by various reasons but the magnitudes of such acts can either be negative or positive (Desai & Dharmapala, 2009). Tax avoidance may either bring administrative value-maximizing character or a bigger ability for agency struggles between managers and shareholders (Wang, 2012). In addition, numerous studies give exciting perceptions into why certain companies avoid more tax than others. Rego (2003) argued that ability of a firm to avoid tax can enhance the value of a firm as it reduces the tax expense.

This study was based on three theories. Tax planning that argued that due to the refined nature of tax procedure and assemblies, gaps in the legal scheme are unavoidable permitting taxpayers to profit on the tax positions. The hypothesis reinforced organizations conveying corporate earnings to other organization uses than going to authorities of government (Hoffman, 1961). Trade-off hypothesis of capital structure and taxes discusses that organizations have advanced preference for debt to equity as an outcome of the tax shield borrowing profit. Myers (2001) asserts that firm borrowing is possible up to the level where the tax shields' marginal price on extra credit is settled by rise of current value of likely financial anguish costs. The agency cost hypothesis is also the base of this research since it clarifies how managers may pervert an organization by performing tax planning policies so as to reorganize corporate capital for particular advantage (Jensen & Meckling, 1976).

According to Ayako, Kungu and Githui (2015), many of these firms experienced enhanced economic improvement however, and some deteriorating treasures which has been accredited to the fact that corporate bosses and other specialists lack satisfactory direction that is essential to achieve ideal choices. The goal of an organization is producing high profits and exploit on shareholders' capital which is attainable through enhanced performance. Many corporations use various tax planning methods such as tax avoidance mechanisms as a way to maximize their profits. According to PwC (2013) some Kenyan firms have been able to report high earnings due to efficient tax management practices.

### **1.1.1 Tax Avoidance**

Vasanthi (2015) defines tax avoidance as the planning of an individuals' financial affairs without violating the law or as per the stipulated requirements. Complete privileges are taken to allow exemption of taxes, tax discounts, rebates, allowances, concessions, deductions, and other benefits or reliefs stipulated as per the Income Tax Act. Tax planning is used by businesses and individuals in the payment of pending taxes to local, federal and other tax agencies. This process entails elements such as the management of tax implications, understanding type of expenses subjective to tax under the current regulations, and effective planning of tax collection practices to ensure prompt payments. The application of the prevailing tax laws in the when handling tax related matters is a fundamental aspect with regard to tax.

According to Loretz and Moore (2009), the competitive environment yields planning decisions which are in line with the operational decisions of the firm. Needham (2013) noted that there are many methods employed for tax reduction purposes. For developed countries, the methods are well explained, although reliable and consistent

data is not clearly available. For developing countries these methods are not well comprehended. Methods used include: transfer pricing, profit shifting strategy payments for services, shell holding firms, corporate debt equity, hybrid entities and firm specific tax rulings.

According to several researchers, two procedures have been used to quantify tax avoidance. The first method is the book-tax difference which is the difference between financial revenue and taxable revenue (Desai & Dharmapala, 2009). The second method is effective tax rate (ETR) which is the ratio of current income tax expense and income before tax (Bradshaw et al., 2013). The BTD measures both tax avoidance and earnings management while the ETR scheme only weighs tax evasion. In this study, the focus will be on ETR as a proxy for tax evasion given its reputation, accuracy and ease in gauging tax avoidance.

### **1.1.2 Firm Value**

As per Modigliani and Miller (1961), the value of a firm is a financial measure indicating the valuation by the market for the entire firm. It is the total of claims from all the investors, that is, both secured and unsecured creditors and both preferred and common equity holders. Value of the firm can also be defined as the discounted cash flows from assets and future growth, discounted using the cost of capital (Damadoran, 2002). The strategic purpose of any firm is to ensure maximization of the firm's value or shareholder's wealth (Berle & Means, 1932). Dalborg (1999) explained value is generated from shareholder's earnings, in share price as well as dividend grows and becomes more than the return risk-adjusted rate necessary for the stock market. His study explained further and noted that the total return to the shareholder needs to be higher compared to the cost of equity for creation of value. Copeland (2000) indicated

that in the market value is created through earning a yield to the investment (return) more compared to the opportunity of capital cost. This indicates that growth will generate more value when the yield on the capital surpasses the cost of capital.

Value of firm explains past, present as well as the firm's performance in the future together with the long-term expectations of the investors who are the stakeholders as well as the shareholders. All the investors and financial analysts appraise the value of firm before investing their money in the firm. There will be no creation of value for investors when the firm is not capable to make profit for investors. Earlier stock price was used in explaining the firm value but in the present world of finance, the focus by researchers and financial experts has been shifted towards studying the firm (enterprise) value to explain firm value (Oladele, 2013).

Firm's value can be measured through different means for example total assets, net sales, capital employed, paid-up-capital and so on (Sharma, 2011). The expectation is that the value has to show values of both tangible and intangible assets. A common tool for measuring firms' value is Tobin's Q. This tool is the percentage of market value of a firm to replacement cost of a firm's assets (Taslim, 2013). Tobin Q measures firm value on the basis of book as opposed to market based measures. Under q proposition, a firm is said to create more value if investment returns are greater than investment cost (Taslim, 2013).

### **1.1.3 Tax Avoidance and Firm Value**

Tax avoidance strategies create positive impact on cash flow and value of an organization as they lead to higher net incomes. Firms may also consider other tax planning incentives to enjoy tax shield such as offering business such as MNCs free trade zones, issuing rural area investment allowances, timing to buy assets at the right

time for claims of capital allowances and issuing exemptions of tax on interest on loans granted to any business by foreign companies in that country (Desai, Dyck & Zingales, 2007).

Desai and Dharmapala (2006) consider an extra inclusive set of agency prices resulting from the battles of interests amongst directors and stockholders. Therefore, self-centered directors may be enthusiastic to involve in tax evasion actions only to take benefit of engorged pleasure and thus to avert fee for their advantage. Shareholders would further admit the anonymity of the directors' tax-related activities in order not to call devotion of tax specialists. This may be a little bit disturbing in organizations with lesser stages of corporate governance. Stakeholders, delicate to these likelihoods, would prompt their worries by overlooking the stock fees of these corporations by the associated danger.

According to Slemrod (2004), tax avoidance can have detrimental effects to the economy, industry, the society at large and performance of a firm. General tax evasion can cause bad service renditions to the public like bad wellbeing facilities, poor structures and declining schooling systems just because the government is not collecting sufficient income to fund private amenities.

#### **1.1.4 Financial Firms Listed at the Nairobi Securities Exchange**

A nation's economy lies on its stability of its financial sector. As the backbone of the economy, financial firms are the social glue that holds the country and drives the businesses and development at both corporate and individual levels. Currently, there are 11 commercial banks and 6 insurance firms. NSE is an important exchanges in Africa and traces its beginning to the early 1920s when a number of traders organized an informal arrangement to trade shares. In its formative years, the stock market

served the East African region and had a number of companies from Kenya, Tanzania and Uganda. This ended with the collapse of the East Africa Community in 1975 when Tanzania and Uganda companies withdrew from the bourse. The NSE was in 1991 incorporated as limited company, based on number of shares, and operations formalized its operations through the introduction of a floor trading system (NSE, 2019).

Financial firms at the NSE are taxed differently because they also perform differently financially. Regardless of that, each firm has its own tax management practices and policies. In addition to that, the ownership structure of the various companies is diverse from state corporations, subsidiaries of foreign companies, local companies while others are privately owned but have sold some shares to the public including the government. The Tax Procedure Act, 2015, which came into operation on 19 January 2016, had the objectives to provision of uniform procedures for consistency and efficiency in organizing and implementing of tax laws, ensuring taxpayers comply with the regulations and effective and efficient collections of tax. The act, gives the KRA rights to reserve any person or company that appears to be structured for the purpose of evading taxation (Ratemo, 2016).

## **1.2 Research Problem**

According to Robinson and Schmidt (2012) there is mixed evidence on the implications of tax avoidance for firm financial performance (Koester, 2011), especially since these effects vary in the cross-section. For example, the increase in the after-tax performance of the firm maybe offset with the increased opportunities of rent extraction associated with tax avoidance. Rent extraction comes into effect when supervisors who are selfish may have willingness to involve in tax evasion only to



yield benefit of engorged pleasure and thus to avert payment for their personal advantage. Shareholders further would take the anonymity of the directors' tax activities so as to call attention of tax establishments (Desai, Dyck & Zingales, 2007).

Financial firms listed at the NSE are taxed differently as they also perform differently financially. Regardless of that, each firm has its own tax management practices and policies. In addition to that, the ownership structure of the various companies is diverse from state corporations, subsidiaries of foreign companies, local companies while others are privately owned but have sold some shares to the public including the government (Ayako, Kungu & Githui, 2015). Many companies use various tax planning methods such as tax avoidance mechanisms as a way to maximize their profits. According to PwC (2013) some Kenyan firms have been able to report high earnings due to efficient tax management practices.

Empirical studies are generally varying on how tax avoidance affects how a firm performs financially. Desai and Dharmapala (2009) argued tax evasion affects firm value and goes up with upgraded tax development schemes. It was found that better corporate governance and tax avoidance strategies result in superior abnormal earnings. These outcomes tally with Wilson (2009) findings who outlined that tax evasion affects performance. Stavroula and Theofanis (2012) did a study on the level to which corporate tax is evaded and its effects on the shareholders' protection and the capital market functioning. The mean rate of tax evasion was estimated at 16 %, insinuating that the tax evasion incentive does not reduce diminish when firms are in the securities listing. On the contrary, Katz et al., (2013) found a negative correlation between tax avoidance and a firm's future profit margins.

Locally, Kamau, Mutiso, and Ngui (2012) described tax evasion and avoidance in Kenya to have a significant influence on the Kenyan creative accounting practices. Owiti (2012) examined the influence strategies of tax planning on tax savings on firms undertaking manufacturing in Nairobi and found that the tax planning strategies were ineffective in contributing to tax savings. Although Mosota (2014) carried out a study on tax avoidance and economic performance of listed firms, his research was conducted in a five-year period and he recommended that future studies should take into account a longer period of study to determine whether indeed tax avoidance has a significant positive influence on performance of listed firms and specifically financial firms. Moreover, the research did not account for effects of tax avoidance on firm value. The current study aimed at filling this research gap by solving the research question; what is the effect of tax avoidance on performance of financial firms listed at the NSE?

### **1.3 Research Objective**

One aim of the research was to determine effect of tax avoidance on value of financial firms listed at the NSE.

### **1.4 Value of Study**

The research would help investors in the selection and establishment of their investment portfolios. The findings will also avail the essential information to the investors about the likelihood of earnings in the securities market. The study will as well aid investment officer while managing investors' portfolios in terms of selecting for inclusion or selling off some securities deemed not preferable for a given investor's preference.

Findings from the study will be used as a reference point by researchers, and scholars undertaking further studies on the same. Researchers and scholars may also utilize the findings so as to identify further research areas on related studies by identifying issues that require extensive research and giving a review of the empirical literature and establish study gaps. It contributed significantly to tax avoidance for listed financial firms.

The study will help organizations regarding achievement of the organization goals which is stakeholder wealth maximization. Using this info, the organization will cause stability in its obligations and incomes objective in honors to the organization's available earnings. It will also be of help to the preparation of the firm in respect to upholding an actual tax rate which is reliable with the organization's purposes and causes to the pleasure of the organization's shareholders.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

The section contains theories that inform research on this study topic. In addition, there is a section on the factors which determine financial performance. Further it contains empirical review, the framework and summary of the same.

### **2.2 Theoretical Framework**

This section reviews relevant theories which expound on associations between tax avoidance and financial performance. It will use tax planning theory, agency cost theory and trade-off theory of capital structure and taxes.

#### **2.2.1 Tax Planning Theory**

Hoffman (1961) recognized the tax planning hypothesis that reinforced organizations transmitting corporate earnings to other organizations uses than going to authorities of the government. Because of this classy nature of tax procedure and structures, gaps in the legal scheme are unavoidable permitting taxpayers to advantage on the tax positions. Hoffman (1961) further described that tax development would contain organizations using lawful customs to lessen the tax obligation by exploiting on the gaps in the legal scheme. He added that firms ought to decrease the tax payable to the least amount keeping in mind not to affect accounting income. In so doing, a firm will enjoy tax planning benefits minus problems with legal authorities.

The theory suggests tax plans should be reasonable in a way that it can incorporate tax law changes, and ought to be personalized according to taxpayer needs, a professional product which is well coordinated to include and support the various types of taxes-corporate, income, capital gains, and gift. He further added that any tax plan ought to

solve possible conflict and tension of the parties involved, time conscious to factor in future tax requirements of the taxpayer and should be completely honest (Hanlon & Heitzman, 2009). The theory is relevant to the current study because it explains how organizations take advantage of opportunities available to pay less tax with an aim to improve firm value.

### **2.2.2 Trade-off Theory of Capital Structure and Taxes**

A study conducted by Myers (2001) on capital structure noted that moderate debt ratios could be explained by the trade-off theory. The strategy adopted by a firm to fund its investments either through credit or owners' equity is explained by the Trade-off theory. The hypothesis basically seeks to explain the strategy adopted by a firm in the financing of its investments to which could be through equity or debt. According to the tradeoff theory, not well established firms will purely rely on debts from the bank for capital. This therefore implies that bank debts dominate market mix despite the structure of any weak firm. According to Hackbarth, Hennessy and Leland (2007), the findings that all weak firms seek bank contradicts with the un-established firms lack access to sources of financial debt or incur higher costs to do so. The debt "pecking-order" exists within the trade-off theory with debts of banks getting a higher preference since is a lower bankruptcy cost associated with it.

Hack Barth (2007) argues that the bank debt is the only means of attaining the required number of tax shields when the ex-post bargaining power. Miller and Modigliani (1958) assert that debt attractiveness decreases with the tax rate subjected on personal income. Failure by the firm to cope with the obligations of the debt holder leads to a financial distress within the firm. Insolvency accrues due to the continuous debt defaulting by the firm to its holders. Pandey, (2005) asserts that the agency costs

and financial distress costs could explain this phenomenon. Furthermore, the financial distress direct costs include; insolvency costs which are demonstrated through demoralized customers and employees who in the long run cease to purchase the products of the company, failure by the investors of the available capital at high costs and risk avoidance by managers thus failure to venture into profitable investments (Pandey, 2005).

According to Murinde (2002) the firm's capital structure decisions are dictated by the existing tax policy. This is brought about by the fact that firms are privileged to deduct interest on debts by corporate tax during taxable profits' computation. The implication of this is that the tax advantages resulting from debt compels firms to debt financing since the debt' interest payments are subjected to tax deduction whereas equity payments for instance dividends are not subjected to tax deductions. Thus the firm's value may be influenced for good or bad, based on type of business. Trade-off theory was thus found not to give a proper explanation on the associations between low debt ratios and high profitability. The studies by Rajan (1995) also demonstrated a negative relation amid leverage and profitability for the Canada and United states though no links were established for Germany, Britain and Italy. The theory amplifies the present research as it explains how corporate leaders accumulate debt in their company structures in order to pay less tax with an aim to improve firm value.

### **2.2.3 Agency Cost Theory**

This theory was fronted by Meckling and Jensen (1976). In this theory, directors are the agents while proprietors are the principals. The directors pursue to accomplish the requirements of the proprietors and are bestowed with strong motivations so as to encounter both the benefits with of the proprietors and monetary value as well as the

value of the shareholders. Two reasons exist as to why the agency costs contribute to large publicly traded companies. The first reason being fewer than 50% possession by corporation proprietors which make the presence of agency costs non-existent in minor corporations. The contribution of family fellows in the administration of minor businesses approaches another purpose since this does not produce any agency costs. Tax evasion produces pressure between executives and financiers or proprietors of an organization. Dharmapala and Desai (2009) argue that evasion of tax generates agency difficulties as well as executive opportunism where the directors will need to cut down administrative expenses by escaping taxes and distracting assets to be used for self-seeking benefit or other usage in the corporation.

Ang, Cole and Lin (2000) apprehended that directors may be acting in their best benefits as an alternative of the concerns of the organization. Previous studies have shown significant proof that practicing tax avoidance with good corporate governance results to greater abnormal financial returns (Wilson, 2009). Similarly, Dharmapala and Desai (2009) noted that acts of tax avoidance and desirable governance structures among firms generate more value to the firm. Lack of stable corporate governance structures leads to managers misusing corporate tax planning activities to enrich themselves. To avoid or minimize agency costs, Jensen and Meckling (1976) recommended that any key principle ought reimburse and recompense the agent and also form motivations. This theory explains how managers as agents may falsify an organization by performing tax planning approaches so as to restructure corporate wealth for individual benefit.

## **2.3 Determinants of Firm Value**

According to Athanasoglou, Brissimis and Delis (2005) the firm's value may be subjective by fundamentals either one internal or external to the organizations that describe the production stages. The internal aspects are dissimilar depending on the organization and administration of value. The factors are generated by both administrative and board choices. The internal factors consist of tax avoidance, organization size, liquidity, monetary leverage, dividend payout ratio, dividend policy, capital, market power among others. External factors consist of; exchange rate volatility, the country's economic growth, inflation and interest rates.

### **2.3.1 Tax Avoidance**

Tax avoidance strategies create a positive impact on cash flow and a firm's financial performance of an organization, because it can result in higher net incomes. In addition, firms which are financed by loans get shields of tax since the loans reduces the money that is taxable. Desai, Dyck and Zingales (2007) further established that tax planning may correspond to higher financial planning. Firms may also consider other tax planning incentives to enjoy tax shield such as offering business such as MNCs free trade zones, issuing rural area investment allowances, timing to buy assets at the right time for claims of capital allowances and issuing exemptions of tax on interest on loans granted to any business by foreign companies in that country.

The tax obligation of a firm is and firm's profitability are positively linked. The achievement of wealth maximization goal of the firm using many approaches of increasing profit may worsen a firm's ability to remit a lot of taxes causing reduced tax liability. Ogundajo and Onakoya (2016) also noted that tax avoidance has negative impact on Kenya's economy as the state may not earn substantial income from taxes.



### **2.3.2 Liquidity of a Firm**

Liquidity is defined as the degree in which an entity is able to honor debt obligations falling due in the next twelve months through cash or cash equivalents for example assets that are short term can be quickly converted into cash. Liquidity results from the managers' ability to fulfill their commitments that fall due to policy holders as well as other creditors without having to increase profits from activities such as underwriting and investment and as well as their ability to liquidate financial assets (Adam & Buckle, 2003).

According to Liargovas and Skandalis (2008), liquid assets can be used by firms for purposes of financing their activities and investments in instances where the external finance is not forthcoming. Firms with higher liquidity are able to deal with unexpected or unforeseen contingencies as well as cope with its obligations that fall due in periods of decreased gains. Almajali et al., (2012) noted that liquidity may create great influence on financial performance of insurance companies; therefore he proposed that insurance companies ought to aim at increasing their current assets while decreasing their current liabilities. However, Jovanic (1982) noted that an abundance of liquidity may at times result to more harm. He therefore concludes that the influence of liquidity on financial performance of firms is ambiguous.

### **2.3.3 Capital Structure**

This is also another important determinant of financial performance of a firm. It is the debt, equity financing ratio. For a firm to thrive, substantial amount of resources are required in form of labour, land, capital employment of all required finances which could either be internally or externally generated. The firm's capital structure together with the costs of acquiring resources is the main determinants of the source of finance

to be selected. These costs can be non-monetary or monetary. According to Su and Vo (2010), debt financing exposes the firm to bankruptcy although its attributed with certain tax and monetary benefits. Debt financing also reduces agency conflict by reducing the firm's free cash flow.

A significantly positive association was found established amid profitability and total debt presented in percentage of the entire buyout-financing package (Roden and Lewellen 1995). On the contrary, Fama and French (1998) found negative correlation between debt financing and financial performance. They stated that using debt significantly would translate to agency problems among creditors and shareholders' which could in negative associations between profitability and leverage.

#### **2.3.4 Firm Size**

According to Burca and Batrinca (2014) the association that is amid size of the firm and its performance. It is positive in the logic that extra capitals are obtainable in superior organizations, efficient hazard diversification approaches, and compound information schemes and are capable of management of expenditures well associated to small organizations. This might influence performance of corporations in dissimilar conducts for example big companies may be lucky associated to lesser companies they may be gifted to adventure economies of scale; as such they have greater efficiency in their responsibilities and as a outcome earn greater level of incomes.

Almajali et al. (2012) further argued that the organization's scope might affect performance. The connection amongst performance and scope is positive owing to the point that there are competences in operational fee that end up to bigger productivity and economies of scale. Insurers of big corporations are capable of diversifying their hazards hence are capable to fast answer to any fluctuations that might arise in the

marketplace. Yuqi (2007) also highlighted that in organizations that are extremely huge, there might be a negative performance in relative to its scope owed to administrative and extra prices insinuations.

### **2.3.5 Dividend Payout Ratio**

Miller and Modigliani (1961) showed that a corporation's dividend decree doesn't impact its value hence inappropriate. On the other hand, Gordon (1962), Lintner (1963), Ross (1977) and other scholars contend policies on dividends affect the firm's value. Deeptee and Rosan (2009) found out that the choice of company's dividend policy is very substantial and therefore the managers' way of making dividend policy choices and whether they monitor the given set of policies or plans that are precise for making such adoptions will impact how a firm performs.

Khan (2012) explains that in businesses' viewpoint, choosing an appropriate dividend policy is a significant choice for the firm due to suppleness for investing in forthcoming projects relies on the dividend amount which they pay to their stockholders. As such, companies in designing their dividend policies consider certain significant features such as decision-making as well as behavioral environment, companies' productivity proportions, and the willingness of the company.

### **2.3.6 Macro-Economic Variables**

Several studies have ascertained the effect of macroeconomic factors and how companies perform. The factors include but not limited to monetary aggregates, rate of interest, investment level in the economy, consumer price index, producer price index, GDP growth, inflation, financial depth and the degree of market efficiency. Kwon and Song (2011) carried out a research on mergers in the Korean market. He found out that the global financial challenges negatively influence the cumulative

abnormal return of the acquiring company when upon the making of a merger announcement. He also stated that it may be possible that investors are more averse to large cash outflows during a period of crisis. Flannery and Protopapadakis (2002) pointed out that inflation and money supply are well documented as the two macro-economic factors that have a significant effect on shareholders returns.

## **2.4 Empirical Review**

Both internationally and locally numerous empirical studies exist that support the link between tax avoidance and the value of the firm, though mixed results have emanated from the studies.

### **2.4.1 Global Studies**

Wang (2012) applied an opacity index that is self-constructed and multiple tax avoidance measures to assess how tax avoidance is related to corporate transparency. Transparent firms of potentially less severe agency problems as found out by the study, shun more tax relative to their counterparts which are opaque. The insinuation of this result is that transactions of tax avoidance by managers is mainly for shareholder's wealth enhancing. Additionally, according to the study, a tax avoidance value premium is placed by investors, but corporate opacity brings about a decrease in the premium. This agrees with the assumption that managerial actions' monitoring is facilitated by corporate transparency and therefor alleviates concern of outside investors for the tax avoidance agency costs that are hidden.

Stavroula and Theofanis (2012) did a study on the level to which corporate tax is evaded and its effects on the shareholders' protection and the capital market functioning. The mean rate of tax evasion was estimated at 16 %, insinuating that the tax evasion incentive does not reduce diminish when firms are in the stock exchange

listing. This implies that the task behavior of companies only changes a year prior or preceding the IPO. The level of the omitted tax evasion was also influenced by the type of audit firm. This proved that tax evasion is a national disaster that requires serious attention. Since Greece was in a financial crisis at that particular time, the topic on tax evasion was more crucial than ever. The role of the importance of the effectiveness the firm in the detection of fraud was also found to be significant since it is granted with the rights of issuing tax certificates by the 2010 Greek tax bill.

Katz et al. (2013) examined how saving acquired from tax avoidance is invested by the managers to increase the firm's profitability or divert them towards rent extraction, non-value adding projects and perquisite consumption. The findings were in line with the negative tax avoidance effects such as rent extraction thus the main components yielding profitability were identified as: utilization of assets, operating liability leverage and margins lead to lower future tax profitability for firms whose tax aggressiveness is higher compared to less tax aggressive firms. Lower margins also had a more robust impact than that of operating liability leverage and inefficient asset utilization. This outcome is applicable in many contexts that exacerbate or mitigate rent extraction, such as the better governance structure, existence of foreign operations, industry leadership position, across corporate life cycle stages and more transparency.

Goh et al. (2014) examined how firm's cost of equity relates to corporate tax avoidance by use of three measures that indicate the corporate tax avoidance forms that are less extreme: permanent book-tax differences, book-tax differences as well as cash effective tax rates that are long-run. The forms of corporate tax avoidance that are less aggressive according to the study reduce the equity costs in a company

significantly. This effect is stronger as depicted by further analyses for firms with better external monitoring, firms with likelihood of realizing higher tax savings' marginal benefits, and better information quality firms.

Antonio (2015) did a study on internationals and the Portuguese corporate tax reforms and international trends. The study's aim was to explore the impact of the 2014 Portuguese corporate tax reform on the shift towards international trends. It was also used in determining the more pronounced fields of disparities and similarities in the assessment of Portuguese reforms contrary to the Corporate Tax Base that is common and consolidated. They found that increasingly Portugal was out of line with corporate taxation's global trends. The 2011 Portuguese Government asked bailout laid a public finances burden that was very heavy, coupled with lack of room to follow corporate tax reform's global trends. Nevertheless, a conclusion can be drawn that, having convinced the troika that growth and investment were key in overcoming the severe economic and social crisis facing the country, the corporate tax was perceived as an crucial policy tool for the promotion of such goals.

#### **2.4.2 Local Studies**

Levin and Widell (2007) examined the tax evasion level in Tanzania and Kenya. It was concluded from the study that the tax coefficient in Tanzania was higher than that of Kenya whose implication was that Tanzania's tax evasion on imported goods was higher than that of Kenya .This findings went contrary to the Transparency International Corruption Perceptions Index which indicates that Tanzania is a lesser corrupt country than Kenya. They United Kingdom was also included in the equation and evasion of tax was found to have trade flows that more severe between Tanzania and Kenya than those between the UK and Tanzania/ Kenya. It was further noted

from the study that there was a lower tax evasion coefficient in the case of United Kingdom- Kenya compared to that of United Kingdom- Tanzanian.

Ongore (2013) attempted to explore the factors influencing commercial banks' fiscal performance in the country. The parameters were estimated using the generalized Least Square and Linear multiple regression model. From the findings it was concluded that the Kenyan commercial banks' performance is influenced by specific factors except liquidity. There was cumulative significance level of 5% of the influence of the micro-economic variables. The commercial banks' financial performance was however insignificantly influenced by the role of ownership. Thus, the conclusion was that performance when it comes to Kenyan commercial banks is mainly driven by management and board decisions, whereas an insignificant contribution of the macroeconomic factors was noted.

Mosota (2014) sought to establish how tax avoidance affects firms listed at the (NSE) fiscal performance. NSE's 61 listed firms comprised the interest population. The data comprised of the intangible assets of the firms, size, government shareholding, institutional shareholding and age. Tax avoidance was depicted to positively impact the companies' fiscal performance. Moreover, company size contribute to the profitability of a company positively, companies' financial performance impacted negatively by leverage ratio, the performance of the firm is positively influenced by age while a positive correlation exists between companies' fiscal performance, and intangible assets.

Kariuki (2017) undertook a study to ascertain corporate tax planning effect on financial performance of Kenya's listed companies. All NSE's 61 listed firms comprised the study population. A 5 years period on an annual basis (January 2012 to

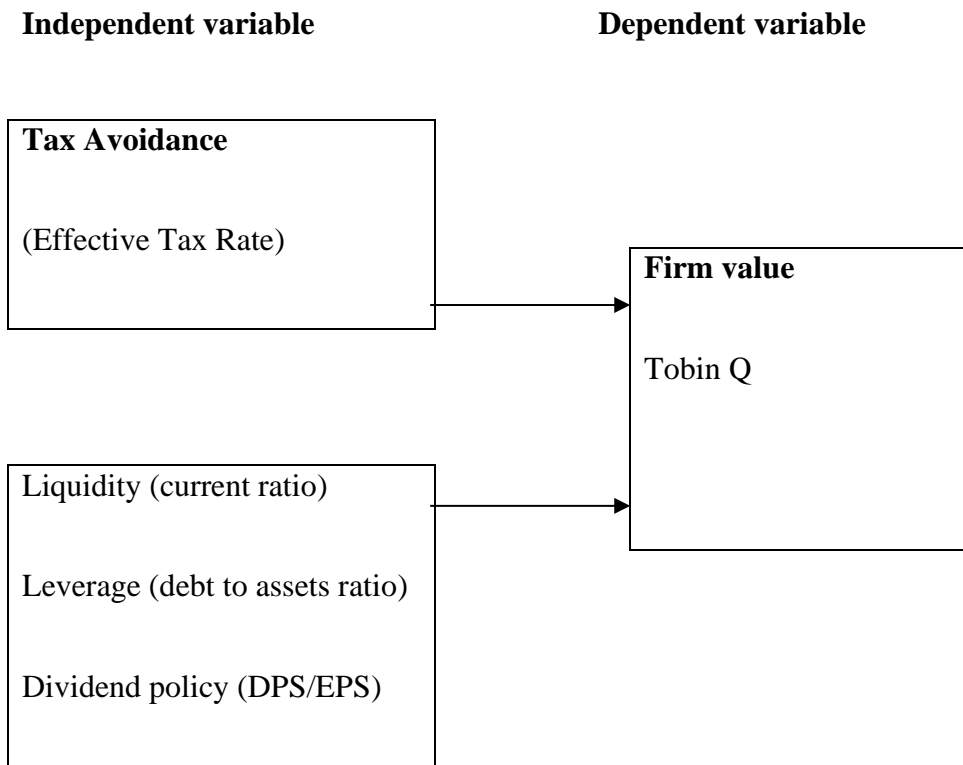
December 2016) was used to collect Secondary data. A descriptive cross-sectional research design was used by the study while analysis for the association between the variables was done using multiple linear regression model. The results showed that corporate tax planning and liquidity gave values that were statistically significant and positive in the research. Values were statistically significant but negative while the size of the firm was an insignificant statistically determinant of financial performance of listed companies in Kenya.

## **2.5 Conceptual Framework**

The diagrammatic representation below depicts a hypothesis of how the dependent and independent variables interrelate. The independent variable is tax avoidance , evaluated by present income tax ratio and gross income. The control variables will be liquidity as per the present ratio, dividend policy as per the dividend payout ratio and leverage as per the debt to asset ratio. Firm value is dependent variable which will be determined by Tobin Q.



**Figure 2.1: The Conceptual Model**



**Control variables**

**Source: Researcher (2019)**

## **2.5 Summary of the Literature Review and Research Gaps**

A number of theoretical frameworks have attempted to describe the tax avoidance concept. This theoretical review discusses three theories. The hypothesis include tax planning hypothesis, taxes and agency cost, and trade-off theories of capital structure. Empirical studies have been carried out both locally and internationally on tax avoidance, liquidity, leverage and dividend policy on financial performance. Findings of this study are also discussed.

Empirical studies analyzed indicate different researchers considered different contexts and industries in light of tax avoidance and varying effect have been established depending on the industry, country, period of study or methodology applied. The

studies that were analyzed had different variables investigated to understand how they affected or were interrelated to firm performance. The country and period of the studies also differed and this meant that further and current studies need to be undertaken to institute what is the influence of tax avoidance on financial performance.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

Chapter three entails research frameworks selected, and preferred for study. It further looks into the research design preferred and population used. The appropriate data collection tool was established and procedure to analyze data.

### **3.2 Research Design**

This describes processes to be followed by a scholar in forming links between dependent and independent variables (Khan, 2008). Descriptive cross sectional design was used in this research. This design was used since it entails an explanation of all components of the study population. In addition, cross-sectional study approaches are prepared once and they signify a swift in a certain period. (Cooper & Schindler, 2008).

### **3.3 Target Population**

The population consisted of financial firms listed at the NSE. As at December 2018, NSE had listed 17 financial firms. The decision was informed on the basis that financial sector has been one of the most demanding on managers in terms of performance improvement. The sector has been seen to be concentrating on improving its performance due to stiff competition within this industry. In addition, the economy of the country depends on the success of financial institutions (Waithanji, 2016). As the t population for study is limited, the research was a census targeting all listed financial firms.

### **3.4 Collection of Data**

Secondary data was sourced from audited reports, statements and other available corporate publications for the past 10 years between January 2009 and December 2018. The reports were obtained from CMA and data was compiled on an annual basis. Data from websites was also utilized since recently firms have automated their methods of communication and most prefer digital systems. The specific data collected included tax expense, income before tax, market value, book value, current assets, current liabilities, total debt, earnings and dividends.

### **3.5 Diagnostic Tests**

Linearity display variables X and Y connected using math formula  $Y=bX$  , in which c is the constant. Test was gotten using scatterplot or F-statistic of ANOVA. Stationarity test procedure where statistical things such as mean, variance and autocorrelation structure do not change with time. Stationarity was gotten from the run sequence plot. Normality is an assessment assuming residual return sub variables are standardly distributed, round mean. Shapiro-walk or Kolmogorov-Smirnov tested for normality. This dimension of association between definite and lagged series of the over consecutive interims (Cooper & Schindler, 2008). Durbin-Watson statistic assessed for correlation.

Homoskedasticity of variance is necessary in multiple linear regression. It is when variance of error term remains standard over population as variance of y is standard and does not depend on x's. Otherwise, lacking a constant variance posits heteroskedasticity. It was graphically assessed on residual plots where the regression residuals were plotted against the values of the independent variables. If an even pattern about the horizontal axis appears then heteroskedasticity is unlikely. It was

also shown by white test and ANOVA test (Khan, 2008). Multicollinearity occurs once there is approximately particular or linear association amongst predictor variables. Variance Inflation Factors (VIF) and tolerance stages were used to display the degree of Multicollinearity (Burns & Burns, 2008).

### 3.6 Data Analysis

Regression model showed how tax avoidance affected a firm's value. The model was a linear regression analysis where tax avoidance was the independent variable while firm value was the dependent variable. Quantitative data collected from the secondary sources was entered in an SPSS data editor, and showcased means, percentages, frequencies, and standard deviations as well as through written explanations. SPSS was preferred because it is user friendly to any form of analysis depending on the nature of analysis one would like to carry out. The relationship was explained through the regression model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon.$$

Where,

Y = Value of listed financial firms at the NSE as measured by Tobin Q (market value of equity/ book value of equity) on an annual basis

$\alpha$  = Constant Term (the value of firm value when all variables are held to constant zero)

$\beta_n$  = Beta Coefficients

$X_1$  = Tax avoidance as measured by effective tax rate which is current income tax expense divided by profit before tax on an annual basis. This has been used before in literature such as (Desai & Dharmapala, 2009; Nanik & Ratna, 2015;

Ogundajo & Onakoya, 2016; Zhang et al, 2016; Nwaobia et al, 2016) as a proxy of the tax avoidance/tax planning.

X<sub>2</sub> = Liquidity as measured by current assets divided by current liabilities

X<sub>3</sub> = Dividend policy as measured by dividend payout ratio on an annual basis

X<sub>4</sub> = Leverage as measured by debt to assets ratio on an annual basis

ε = Error term

### **3.6.1 Tests of Significance**

In testing statistical significance, F- test and t – test were at 95% confidence level. F statistic was utilized to establish a statistical significance of regression equation while t statistic tested for statistical significance of study coefficients.

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS

### 4.1 Introduction

The chapter presents analysis of collected data from CBK to establish how tax avoidance influences financial firms' value. Using descriptive statistics, correlation and regression analyses, research findings were illustrated on tables as illustrated in the subsequent sections.

### 4.2 Descriptive Analysis

This statistic gives the average, maximum and minimum values of the variables including standard deviations for the research. Table 4.1 shows statistics for t selected study variables. SPSS was used to analyze the variables for the five year period (2014 to 2018) for all the 17 financial firms whose data was availed for the study. The values of the variables chosen for the study are as illustrated below.

**Table 4.1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Firm value	85	.0628	52.4659	7.682636	12.3078013
Tax avoidance	85	-.6451	.3625	.270173	.1996372
Liquidity	85	.0743	5.6188	0.998241	1.3937281
Dividend policy	85	-.6000	1.4286	.316014	.3131396
Leverage	85	.3604	0.8819	.731206	.2132446
Valid N (listwise)	85				

**Source: Research Findings (2019)**

### 4.3 Diagnostic Tests

Diagnostic tests were done by the researcher on the data obtained. Multicollinearity test was undertaken. The study used the VIF for values greater than 0.2 for Tolerance, and values lower 10 for VIF signifies lack of Multicollinearity. In order to apply the multiple regressions a significant relation should be established among the variables.

The finding showed tolerance values  $>0.2$  and VIF values  $<10$  for all the variables as illustrated in table 4.2 indicating no multicollinearity exists within predictor variable.

**Table 4.2: Multicollinearity Test for Tolerance and VIF**

Variable	Collinearity Statistics	
	Tolerance	VIF
Tax avoidance	0.398	2.513
Liquidity	0.388	2.577
Leverage	0.376	2.659
Dividend policy	0.386	2.591

**Source: Research Findings (2019)**

Shapiro-walk and Kolmogorov-Smirnov ascertained normality. Null hypothesis tested assumptions thatl. A greater p-value of greater than 0.05, would lead to rejection by the researcher. Findings illustrated on table 4.3.

**Table 4.3: Normality Test**

Firm value	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Tax avoidance	.178	85	.300	.881	85	.723
Liquidity	.176	85	.300	.892	85	.784
Leverage	.173	85	.300	.918	85	.822
Dividend policy	.175	85	.300	.874	85	.812

a. Lilliefors Significance Correction

**Source: Research Findings (2019)**

The Kolmogorov-Smirnova and Shapiro-Wilk tests gave o-values higher than 0.05 an implication that research data had a normal distribution hence leading to a rejection of the null hypothesis. This implied the suitability of the data to be used for parametric tests like the Pearson's correlation, regression analysis and ANOVA.

Tests for autocorrelation tests were run to determine correlation of error terms over periods of time. This test was conducted through the Durbin Watson test. Statistic of



1.834 indicated that there was a lack of serial correlation since the value lied within 1.5 and 2.5 which was the acceptable range.

**Table 4.4: Autocorrelation Test**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.493 <sup>a</sup>	.243	.205	10.9742140	1.834

a. Predictors: (Constant), Leverage, Liquidity, Tax avoidance, Dividend policy  
b. Dependent Variable: Firm value

**Source: Research Findings (2019)**

In nature many variables are mainly non-stationary prior to doing regression analysis. The Unit root tests were therefore carried out by use of the Augmented Dickey-Fuller (ADF) test determine if variables used stationary or not. It prevented false regression findings from being accessed by non-stationary series.

**Table 4.5: Stationary Test**

Variable name	ADF test	1% Level	5% Level	10% Level	Prob
Value	-3.753547	-4.23497	-3.540328	-3.202445	0.0312
Tax avoidance	-4.262276	-4.23497	-3.540328	-3.202445	0.0093
Liquidity	-4.522157	-4.23497	-3.540328	-3.202445	0.0520
Dividend policy	-3.98997	-3.55267	-2.91452	-2.59503	0.0043
Leverage	-2.78574	-2.25267	-1.53674	-1.04693	0.0381

**Source: Research Findings (2019)**

Table 4.5 indicates that variables as stationary (i.e. absence/presence of unit roots) at 1%, 5% and 10% levels in significance. Therefore, there was no need to differentiate some of the variables.

#### 4.4 Correlation Analysis

Measurement of how two variables are related is done through a correlation analysis. The established relationship may be between a (-) significant negative correlation and (+) strong positive correlation. This measurement was done through the Pearson correlation to establish how financial firms' firm value and the independent variables for this study (tax avoidance, liquidity, leverage and dividend policy) are related.

The study found out that tax avoidance, dividend and leverage were positively but not significantly correlated with the financial firms' firm value given by ( $r = .051$ ,  $p = .642$ ;  $r = .016$ ,  $p = .885$ ;  $r = .103$ ,  $p = .349$ ) in that order. Liquidity exhibited a positive and significant correlation with firm value shown by ( $r = .449$ ,  $p = .000$ ). Although showing a relation to each other, independent variables' relation was not significant enough to establish Multicollinearity since the  $r$  values registered values lower than 0.70. This is evidence that Multicollinearity did not exist between the predictor variables and hence confirmed their suitability for the determination of firm value in the regressed model.

**Table 4.6: Correlation Analysis**

		Firm value	Tax avoidance	Liquidity	Dividend policy	Leverage
Firm value	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	85				
Tax avoidance	Pearson Correlation	.051	1			
	Sig. (2-tailed)	.642				
	N	85	85			
Liquidity	Pearson Correlation	.449**	.088	1		
	Sig. (2-tailed)	.000	.424			
	N	85	85	85		
Dividend policy	Pearson Correlation	.016	.177	.235*	1	

	Sig. (2-tailed)	.885	.105	.031		
	N	85	85	85	85	
Leverage	Pearson					
	Correlation	.103	.059	.008	.101	1
	Sig. (2-tailed)	.349	.590	.945	.359	
	N	85	85	85	85	85

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

**Source: Research Findings (2018)**

#### 4.5 Regression Analysis

The four predictor variables against which firm value was regressed included; tax avoidance, liquidity, leverage and dividend policy. The analysis was made at a 5% level of significance. Critical value given by F – table was assessed with the resulting figure from the regression model. The summarized model statistics are given in table 4.7 below.

**Table 4.7: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.493 <sup>a</sup>	.243	.205	10.9742140	1.834

a. Predictors: (Constant), Leverage, Liquidity, Tax avoidance, Dividend policy  
b. Dependent Variable: Firm value

**Source: Research Findings (2019)**

R<sup>2</sup> otherwise called the coefficient of determination shows the variations in the response variable caused by variations from predictor variable. From results in table 4.6 above, R square was found to be 0.243, a revelation that 24.3% of the change in value of financial firms stems from variations in tax avoidance, liquidity, leverage and dividend policy. Alternative variables not included in the model justify for 75.7% of these changes in performance. Also, the results revealed that the independent variables exhibited moderate relations amongst each of them and the firm value

evidenced by a 0.493 correlation coefficient (R). A durbin-watson statistic of 1.834 was the evidence that the variable residuals had no serial correlation since it was higher than 1.5.

**Table 4.8: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3089.816	4	772.454	6.414	.000 <sup>b</sup>
	Residual	9634.670	80	120.433		
	Total	12724.486	84			

a. Dependent Variable: Firm value  
b. Predictors: (Constant), Leverage, Liquidity, Tax avoidance, Dividend policy

**Source: Research Findings (2019)**

The significance figure is 0.000 that is lower than  $p=0.05$ . It indicates appropriateness of the model in estimating how tax avoidance, liquidity, leverage and dividend policy affect how Kenyan financial firms value.

Coefficients of determination were employed to indicate direction of the association between the predictor variables and the financial firms' value. The p-value under sig. column was employed to indicate how significant the relation between the dependent and the independent variables are. The 95% confidence level, showed a p-value of less than 0.05. Consequently, a p-value higher than 0.05 shows a statistically unsubstantial relation between the predictor and response variables. Results are illustrated on table 4.9

**Table 4.9: Model Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.899	4.885		2.436	.017
	Tax avoidance	7.247	6.156	.118	1.177	.243
	Liquidity	.044	.009	.497	4.919	.000

Dividend policy	6.456	4.035	.164	1.600	.114
Leverage	6.269	5.649	.109	1.110	.270
a. Dependent Variable: Firm value					

**Source: Research Findings (2019)**

From the above results, it is evident that apart from liquidity, the other three independent variables produced positive but statistically significant values for this study (low t-values,  $p > 0.05$ ). Liquidity produced positive and a statistically significant value for this study as shown by a p value of less than 0.05.

The following equation was determined:

$$Y = 11.899 + 0.044X_1$$

Where,

Y = Firm value

X<sub>1</sub> = Liquidity

On the model given above, the constant = 11.899 indicates that if selected independent variables (tax avoidance, liquidity, leverage and dividend policy) were held constant or rated zero, firm value would be 0.044. A unit increase in liquidity would lead to an increase in firm value by 0.044 while the other variables were found to be non-statistically significant.

**4.7 Discussion of Research Findings**

The research sought to assess how tax avoidance influence value of financial firms listed at NSE. Tax avoidance was the dependent variable given by the effective tax rate. The control variables were liquidity given by current ratio, dividend policy given by dividend per share divided by earnings per share and leverage given by debt to assets ratio. Firm value was response variable that the research intended to explain

and it was given by Tobin Q.

The Pearson correlation coefficients for the variables showed that liquidity has a positive and statistically significant correlation with value of financial firms. The study also showed a positive but not statistically significant correlation between leverage and dividend policy with firm value of financial firms listed at the NSE. Tax avoidance exhibited a positive but statistically insignificant association with value of financial firms listed at the NSE.

The model summary revealed that the independent variables: tax avoidance, liquidity, leverage and dividend policy explains 24.3% of changes in the dependent variable as shown by  $R^2$  which is an implication that other factors not considered in the model explain the 75.7% of variations in firm value. The model was found fit at 95% confidence level because the F-value is 6.414. This signifies that the model adopted is appropriate for predicting and explaining how the independent variables affect listed financial firms' value.

Results from this study concur with Goh et al. (2014) who examined how firm's cost of equity relates to corporate tax avoidance by use of three measures that indicate the corporate tax avoidance forms that are less extreme: permanent book-tax differences, book-tax differences as well as cash effective tax rates that are long-run. The forms of corporate tax avoidance that are less aggressive according to the study reduce the cost of equity in a firm significantly. This effect is stronger as depicted by further analyses for firms with better external monitoring, firms with likelihood of realizing higher tax savings' marginal benefits, and better information quality firms.

The findings are also in line with Mosota (2014) who sought to establish how tax avoidance affects firms listed at the Nairobi Securities Exchange (NSE) fiscal

performance. NSE's 61 listed firms comprised the interest population. The data comprised of the intangible assets of the firms, size, government shareholding, institutional shareholding and age. Tax avoidance was depicted to positively impact the companies' fiscal performance. Moreover, company size contribute to the profitability of a company positively, companies' financial performance impacted negatively by leverage ratio, the performance of the firm is positively influenced by age while a positive correlation exists between the companies' fiscal performance and intangible assets.

# **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

## **5.1 Introduction**

Chapter 5 presents a summary of results from previous chapter, conclusion, and limitations encountered during the study. It also recommends policies which policy makers may use to improve the expectations of listed financial firms in regards to the achievement of superior firm value. Additionally, the chapter gives recommendations for researchers.

## **5.2 Summary of Findings**

Intention of the research was to assess how tax avoidance influence firm value of financial firms listed at the NSE. The selected variables for investigation included tax avoidance, liquidity, leverage and dividend policy. A descriptive cross-sectional research design was selected to complete the research. Secondary data was obtained from the CMA and an analysis made using SPSS. Yearly data for 17 financial firms for five years from 2014 to 2018 was obtained from the financial firms' reports.

From correlation analysis, liquidity has a positive and statistically significant correlation with value of financial firms. The research also showed a positive but not statistically significant correlation between leverage and dividend policy with firm value of financial firms listed. Tax avoidance exhibited a positive but statistically insignificant association with value of financial firms listed at the NSE.

$R^2$  otherwise called coefficient of determination shows variations in response variable caused by variations from the predictor variable. From the results, R square was found to be 0.243, a revelation that 24.3% of the changes in value of financial firms listed at



the NSE stems from variations in tax avoidance, liquidity, leverage and dividend policy. Alternative factors beyond those in the model justify for 75.7% of these changes in firm value. The findings showed a moderate correlation between the chosen variables and the financial firms' value ( $R=0.493$ ). Results from the ANOVA test showed that the F statistic was at 5% significance level and a  $p=0.000$  rendering the model was found appropriate for providing an explanation of the relation in the variables studied.

Regression results indicate that when independent variables chosen for study (tax avoidance, liquidity, leverage and dividend policy) were held constant or rated zero, firm value would be 0.044. A unit increase in liquidity would lead to an increase in firm value by 0.044 while the other variables were found to be non-statistically significant.

### **5.3 Conclusion**

Findings of this study show that the listed financial firms' value is notably affected by liquidity. This research shows that a unit increase in this variable significantly increases the firm value of financial firms. Tax avoidance was found to be positively but not significantly related to value and therefore this study shows that increasing tax avoidance increases firm value but not significantly. The study also showed that leverage and dividend policy were statistically insignificant in determining firm value and hence the study concluded that these variables do not have a profound effect on firm value of listed financial firms.

The conclusion is that the independent variables selected for this study tax avoidance, liquidity, leverage and dividend policy to a larger extent has a notable influence on the value of financial firms listed at the NSE. These variables have a notable impact

on the value of financial firms given the p value in anova summary is hence correct. The fact that 24.3% of variations in the response variable are from the four factors adopted for this study, implies that the 75.7% variations result from other factors outside the model.

This study agrees with the findings of Mosota (2014) who sought to establish how tax avoidance affects firms listed at the Nairobi Securities Exchange (NSE) fiscal performance. NSE's 61 listed firms comprised the interest population. The data comprised of the intangible assets of the firms, size, government shareholding, institutional shareholding and age. Tax avoidance was depicted to positively impact the companies' fiscal performance. Moreover, company size contribute to the profitability of a company positively, companies' financial performance impacted negatively by leverage ratio, the performance of the firm is positively influenced by age while a positive relationship exists between the companies' fiscal performance and intangible assets.

This study differs with Kariuki (2017) who undertook a study to ascertain corporate tax planning effect on financial performance of Kenya's listed companies. NSE's 61 listed firms comprised the study population. A 5 years period on an annual basis (January 2012 to December 2016) was used to collect Secondary data. A descriptive cross-sectional research design was employed by the study while analysis for the relationship between the variables was done using multiple linear regression model. The results showed that corporate tax planning and liquidity produced values that were statistically significant and positive for the study. Leverage produced values that were statistically significant but negative while firm size was found to be insignificant statistically determinant of financial performance of listed companies in Kenya.

#### **5.4 Recommendations**

The study showed the relationship between tax avoidance and firm value as positive but not statistically significant. Some of the recommendations of this study that will enable policy change include: Financial firms listed at the NSE should focus on other factors that influence their values as tax avoidance though positively related to firm value; the influence is not statistically significant. It is the responsibility of the Government through the CMA, CBK and IRA to formulate policies that will discourage firms from doing tax avoidance.

The study showed that a positive relationship exists between firm value and liquidity position. This study recommends that a comprehensive assessment of listed financial firm's immediate liquidity position should be undertaken to ensure the company is operating at sufficient levels of liquidity that will lead to improved value of firms. This is because a firm's liquidity position is of high importance since it influences the firm's current operations.

Leverage was found to have an insignificant positive impact on value of financial firms listed at the NSE. The research recommends that when firms are setting their leverage they should strike a balance between savings benefit of debt and bankruptcy costs linked with borrowing. High levels of debt has been found to increase the value of financial firms from the findings of the research and so financial firms management should maintain debt in levels that do not impact negatively on value to ensure the goal of maximizing shareholders' wealth is attained.

#### **5.5 Limitations of the Study**

Selected study period was 5 years that is from 2014-2018. No evidence has been found that similar results will hold for a longer time period. Additionally, it cannot be

determined if the same results will hold beyond 2018. An extensive time period would prove more reliable since it will consider significant economic changes.

The most significant limitation for this study was the reliability of the data. It cannot be concluded with accuracy from this study that the findings are a true representation of the situation at hand. An assumption has been made that the data used in the study is accurate. Additionally, a lot of inconsistency in the measurement of the data was experienced due to the prevailing conditions. The study utilized secondary data but primary data would be better since it is first-hand information. It also considered a few of the factors influencing firm value of financial firms and not all factors because of the limit imposed by data availability.

To complete the data analysis, the multiple linear regression model was used by the researcher. Because of limitations faced in the use of the model such as misleading results resulting from a change in variable value, it would be impossible for the researcher to generalize the findings with accuracy. In case of an addition of data to the model, the model may not perform as per the previous assumption hence how two variables in a study relate may be different.

### **5.6 Suggestions for Further Research**

The focus of the research was how tax avoidance influence value of financial firms listed at the NSE and reliance was placed on secondary data. Similar studies that is based on primary data collected with tools such as in depth questionnaires and interviews conducted on all 17 financial firms listed at the NSE would be more appropriate for complimenting this research.

This study did not exhaust all the factors showing value of financial firms listed and therefore gives a recommendation that future studies be based on other variables such

as growth opportunities, industry practices, age of the firm, political stability and other macro-economic variables. By determining how each of the variables affects firm value the policy makers will be able to implement an appropriate tool to control firm value.

The study utilized data from the recent 5 years because it was readily available. Subsequent research can use a range of data for many years for instance 2000 to date which is useful in complementing or disapproving the results from this study. The other limitation of this study is that it focused only on financial institutions. It recommends that future studies be done equally on other non-financial firms in operation in the country. Lastly, due to the limitations of the regression models, further studies should adopt a different model for instance the Vector Error Correction Model (VECM) to provide an explanation for the different relationships between the variables.

## REFERENCES

- Abdul-Wahab, N. & Holland, K. (2012). Tax planning, corporate governance and equity value. *The British Accounting Review*, 44(2), 1-14.
- Andow, H. & Bature, M. (2016). Ownership structure and the financial performance of listed conglomerate firms in Nigeria. *The Business and Management Review*, 7(3), 1-10.
- Ang, S., Cole, A. & Lin, J. (2000). Agency costs and ownership structure, *The Journal of Finance*, 55:(1), 81-106
- António, M. (2015). The Portuguese corporate tax reform and international trends: an assessment. *International Journal of Law and Management*, 57 (4): 281 – 299.
- Ayako. A., Kungu, G. & Githui, T. (2015). Determinants of the performance of firms listed at the Nairobi Securities Exchange. *Research Journal of Finance and Accounting*, 6(12), 157-164
- Bouba, I. (2011). *Financial performance measurement of manufacturing small and medium enterprises in Pretoria: A multiple exploratory case study*. Unpublished Project. University Of South Africa
- Boulton TJ, Braga-alves M. & Shastri K. (2012). Payout policy in Brazil : Dividends versus interest on equity. *Journal of Corporate Finance*, 18(4), 968–979.
- Burns, R. B. & Burns, R. A. (2008). *Business research methods and statistics using SPSS*. London. Sage Publications Limited.
- Cooper, C. R., & Schindler, P. S. (2008). *Business research methods*(10<sup>th</sup> ed.). Boston: correction', *American Economic Review*, 53(3), 433–443.

- Desai, M. A., A. Dyck, & L. Zingales (2004). Theft and taxation. *NBER Working Paper No. 10978*. 12-21.
- Desai, M.A., & Dharmapala, D. (2009a). Corporate tax avoidance and firm value. *The Review of Economics and Statistics*, 91, 537-546.
- Desai, M.A., & Dharmapala, D. (2006). Corporate tax avoidance and high powered incentives. *Journal of Financial Economics*, 79, 145-179.
- Fama, E.F. & French, K.R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, 47, 427–465.
- Graham, J. R. (2003). Taxes and corporate finance: A review. *Review of Financial Studies*, 16, 1074-1128.
- Graham, J. R., Lang, M. H., & Shackelford, D. A. (2004). Employee stock options, corporate taxes and debt policy. *Journal of Finance*. 17 (6), 78-83.
- Hanlon, M. & Heitzman, S. (2009). A review of tax research. *Working Paper*. Massachusetts Institute of Technology.
- Harris, M. N. & Feeny, S. (2000). Habit persistence in effective tax rates: Evidence using Australian tax entities, *Working Paper, University of Melbourne*.
- Hasan, I., Hoi, C.K., Wu, Q. & Zhang, H. (2014). Beauty is in the eye of the beholder: The effect of corporate tax avoidance on the cost of bank loans. *Bank of Finland Research Discussion Papers 3*, Bank of Finland.
- Hoffman, W. H. (1961). The theory of tax planning. *The Accounting Review*, 36(2), 274–281.

- Jensen, M.C. & Meckling, W.H. (1976). *Can the corporation survive?* Center for Research in Government Policy and Business Working Paper no. PPS 76-4 (University of Rochester, Rochester, NY).
- Kajirwa, H. I. (2015). Effects of debt on firm performance: A survey of financial firms listed on Nairobi Securities Exchange. *Global Journal of Advanced Research*, 2(6), 1025-1029
- Kamau, C.G., Mutiso, A.N., & Ngui, D.M. (2012). Tax avoidance and evasion as a factor influencing 'creative accounting practice' among companies in Kenya. *Journal of Business Studies Quarterly*, 4(2), 77 – 84.
- Katz, S., Khan, U. & Schmidt, A.P. (2013). Tax avoidance and future profitability. Available at: <http://ssrn.com/abstract=2227149>.
- Khan, J. A. (2008). *Research methodology*. New Delhi. APH Publishing Corporation
- Kuria, S.M. & Memba, F. (2016). Relationship between tax policies and financial performance of medium size enterprises in Kenya: A Case of Kiambu County. *International Journal of Social Sciences and Information Technology*, 2(4), 1-17.
- Levin, J. & Widell, L.M. (2007). Tax evasion in Kenya and Tanzania: Evidence from Missing Imports. *Working Paper No. 8*, Oserro University.
- Loretz, S. & Moore, P.J. (2009). *Corporate tax competition between firms*. [www.etpf.org](http://www.etpf.org).
- Manzon, G. & Plesko, G., 2002. Relation between financial and tax reporting measures of income. *The Tax Law Review* 55, 175-214.



- Modigliani, F. & Miller, M. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*, 48, 261- 297.
- Murphy, K. (2007). Aggressive tax planning: Differentiating those playing the game from those who don't. *Journal of Economic Psychology*, 25, 307–329.
- Needham, C. (2013). Corporate tax avoidance by multinational firms, *Journal of Finance*, 12(2), 49-58
- Njoroge, A. (2014). *Relationship between capital structure and financial performance*. An unpublished masters project from the University of Nairobi
- Nyamita, M. O. (2014). *Factors influencing debt financing and its effects on financial performance of state corporations in Kenya*. Doctorate Thesis. Durban University of Technology
- Ogundajo, G.O. & Onakoya, A.B. (2016). Tax planning and financial performance of Nigerian manufacturing companies. *International Journal of Advanced Academic Research, Social & Management Sciences*. 2(7), 1-17.
- Omondi, O. M. & Muturi, W. (2013). Factors affecting the financial performance of listed companies at the Nairobi Securities Exchange in Kenya. *Research Journal of Finance and Accounting*, 4 (15), 99 – 104.
- Omotoso, M. (2001). *Principle of Taxation*, (1<sup>st</sup> Ed.). Ibadan: First Shepherd Investment.
- Ongore, V.O. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1), 237 – 252.

- Owiti, E.O. (2012). *Effects of tax planning strategies on tax savings by manufacturing firms based in industrial Area Nairobi*. Unpublished MBA Project, University of Nairobi.
- Ratemo, M.J. (2016). *The effect of tax avoidance on the financial performance of listed companies at the Nairobi Securities Exchange*. Unpublished MBA Project.
- Shiu, Y. M (2004). Determinants of United Kingdom general insurance company performance. *British Actuarial Journal*, 10, 1079 – 1110.
- Sonja, O. R. (2002). Tax avoidance activities of U.S. multinational corporations. *Working Paper Series*, Tippie College of Business, University of Iowa, 2-10.
- Stavroula, K., & Theofanis, K. (2012). Extent of corporate tax evasion when taxable earnings and accounting earnings coincide. *Managerial Auditing Journal*, 27 (3), 228 – 250
- Vasanthi, R.M. (2015). A study on tax planning pattern of salaried assessee. *Research Journal of Finance and Accounting*. 6 (1), 1-5.
- Wachira, D.M. (2011). *A Survey of tax avoidance and incentives schemes adopted by Kenya Airways*. Unpublished MBA Project, University of Nairobi.
- Wang, X. (2012). Tax avoidance, corporate transparency, and firm value. *Working Paper*, University of Texas Austin
- Wilson, J. (2009). An examination of corporate tax shelter participants. *Accounting Review*, 84 (3), Available at SSRN: <http://ssrn.com/abstract=2411015>

Yahaya, O. A. & Lamidi, Y. (2015). Empirical examination of the financial performance of islamic banking in Nigeria: A case study approach. *International Journal of Accounting Research*, 2(7), 1 – 13

## APPENDICES

### **Appendix I: Financial Firms Listed at the Nairobi Securities Exchange**

#### **Banking Firms**

1. Barclays Bank Ltd
2. Stanbic Holdings Plc.
3. I&M Holdings Ltd
4. Diamond Trust Bank Kenya Ltd
5. HF Group Ltd
6. KCB Group Ltd
7. National Bank of Kenya Ltd
8. NIC Group PLC
9. Standard Chartered Bank Ltd
10. Equity Group Holdings
11. The Co-operative Bank of Kenya Ltd

#### **Insurance Firms**

1. Britam Holdings Ltd
2. CIC Insurance Group Ltd
3. Jubilee Holdings Ltd
4. Kenya Re-Insurance Corporation Ltd
5. Liberty Kenya Holdings Ltd
6. Sanlam Kenya PLC

## Appendix II: Research Data

COMPANY	Year	Firm value	Tax avoidance	Liquidity	Dividend policy	Leverage
Barclays	2018	1.0000	0.3034	11.3453	0.8029	0.6376
	2017	1.0000	0.3315	8.7936	0.7813	0.6848
	2016	1.0000	0.3182	7.5081	0.7353	0.6861
	2015	1.0000	0.3042	11.0126	0.6452	0.6853
	2014	1.0000	0.3177	14.9346	0.6494	0.7284
Diamond Trust Bank	2018	9.0530	0.3562	2.8029	0.1087	0.7489
	2017	9.0530	0.3142	2.8665	0.1096	0.7328
	2016	7.8477	0.2972	2.4794	0.0965	0.7258
	2015	8.5325	0.3100	2.2289	0.1024	0.7145
	2014	8.5325	0.3301	2.6155	0.1095	0.7609
Standard Chartered Bank Kenya Ltd	2018	4.8999	0.3164	9.0437	0.8229	0.7858
	2017	4.8999	0.3135	6.2534	0.8656	0.7467
	2016	4.9010	0.3190	8.3139	0.7737	0.7450
	2015	5.2680	0.3076	8.2777	0.9460	0.7353
	2014	5.2680	0.2725	9.9848	0.5688	0.6924
NIC Bank	2018	1.6745	0.2738	8.2736	0.2063	0.6934
	2017	1.8438	0.2601	6.8502	0.1543	0.6738
	2016	1.8438	0.2978	6.4954	0.1846	0.6599
	2015	1.8438	-0.2989	7.9563	0.1786	0.6778
	2014	1.8536	-0.3393	10.4939	0.1414	0.6889
National Bank	2018	1.0000	1.0825	6.1879	0.0000	0.8608
	2017	1.0000	0.4768	7.9556	0.0000	0.8580
	2016	1.0000	0.1120	9.1183	0.0000	0.8375
	2015	1.0000	0.2958	14.8597	0.0000	0.8819
	2014	1.0000	0.3318	16.4180	0.0000	0.8509
KCB Bank	2018	8.0603	0.2913	2.0584	0.4470	0.7524
	2017	8.0603	0.3232	2.2596	0.4666	0.7725
	2016	8.0603	0.3220	2.5380	0.4644	0.7529
	2015	7.6565	0.2606	22.8442	0.3082	0.7604
	2014	1.0000	0.2917	25.7634	0.3552	0.7694
I&M Bank	2018	46.4889	0.2604	6.9753	0.2028	0.7387
	2017	46.4889	0.2658	7.0178	0.2138	0.7050
	2016	45.1722	0.2681	7.5650	0.1886	0.6959
	2015	45.1722	0.2973	7.4809	0.2044	0.6936

COMPANY	Year	Firm value	Tax avoidance	Liquidity	Dividend policy	Leverage
	2014	45.172 2	0.3033	9.8725	0.2139	0.6472
HFCK	2018	3.2586	0.0137	8.0077	0.0000	0.5734
	2017	3.4850	0.0681	11.1020	0.9722	0.5440
	2016	6.4334	0.3367	12.9947	0.1931	0.5381
	2015	6.0602	0.3174	0.0743	0.3790	0.5814
	2014	1.0000	0.3037	11.1567	0.3563	0.5923
Equity Bank	2018	9.5125	0.3035	5.7614	0.3810	0.7373
	2017	9.5125	0.2963	7.1487	0.4000	0.7115
	2016	9.5125	0.3339	6.9370	0.4566	0.7118
	2015	9.5125	0.2768	11.5347	0.4301	0.7059
	2014	7.5700	0.2339	5.9272	0.3888	0.7121
Co-operative Bank	2018	1.3259	0.2988	10.6099	0.4587	0.7400
	2017	1.3259	0.3045	8.4955	0.4020	0.7382
	2016	1.5910	0.2848	9.8981	0.3030	0.7375
	2015	1.5910	0.2391	11.0987	0.3463	0.7749
	2014	1.5910	0.2658	11.1785	0.2959	0.7628
CFC Stanbic	2018	9.5487	0.2985	11.5155	0.3652	0.6593
	2017	9.5487	0.4944	5.2016	0.4817	0.6218
	2016	9.5487	0.2695	7.2248	0.4696	0.5558
	2015	9.5487	0.3334	10.6828	0.4956	0.5097
	2014	9.5487	0.2615	12.1898	0.0661	0.8139
Jubilee	2018	1.0000	0.2279	156.4959	0.1714	0.7541
	2017	1.0000	0.1803	182.0733	0.1659	0.7596
	2016	1.0000	0.1943	334.3321	0.1869	0.7635
	2015	1.0000	0.2470	211.4665	0.1991	0.7526
	2014	1.0000	0.2141	204.0282	0.1945	0.7788
Pan Africa	2018	1.0000	0.0703	220.7237	0.0000	0.9455
	2017	1.0000	0.7852	290.2066	0.0000	0.8641
	2016	1.0000	0.7773	286.4568	0.0000	0.8617
	2015	1.0000	0.4965	184.8027	0.0000	0.8598
	2014	1.0000	0.2442	200.3115	0.0000	0.8464
Kenya Re	2018	1.0000	0.2655	245.0464	0.1385	0.3604
	2017	1.0000	0.2152	376.2684	0.1663	0.3634
	2016	1.0000	0.2160	268.5073	0.1660	0.3731
	2015	1.0000	0.2180	186.1161	0.1531	0.3900
	2014	1.0000	0.1996	153.1993	0.1563	0.3787
Liberty	2018	2.7823	0.4059	149.2095	0.5435	0.7917
	2017	2.7823	0.3891	282.5173	0.4098	0.8041
	2016	2.7823	0.3334	182.8142	0.0000	0.8085

<b>COMPANY</b>	<b>Year</b>	<b>Firm value</b>	<b>Tax avoidance</b>	<b>Liquidity</b>	<b>Dividend policy</b>	<b>Leverage</b>
	2015	2.7823	0.2282	122.4129	0.0000	0.8195
	2014	2.7823	0.1467	132.8034	0.2000	2.3580
Britam	2018	52.466 0	0.0373	358.3571	0.0000	0.7689
	2017	35.646 0	0.3908	285.6286	1.3462	0.7711
	2016	22.004 8	0.4149	355.6396	0.2381	0.7863
	2015	22.004 8	0.1552	426.3296	-0.6000	0.7723
	2014	22.004 8	0.2224	215.4864	0.2290	0.7041
CIC	2018	0.0628	0.2657	384.6438	0.5417	0.7610
	2017	0.0628	0.0784	517.3777	0.6667	0.7496
	2016	0.0628	-0.6451	282.3714	1.4286	0.7212
	2015	0.0628	0.1512	250.4336	0.2326	0.6858
	2014	0.0628	0.2171	561.8849	0.2381	0.6958