DETERMINANTS OF DEBT FINANCING FOR FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

By

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MASTER OF SCIENCE IN COMMERCE (FINANCE AND INVESTMENT)

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE IN COMMERCE (FINANCE AND INVESTMENT) IN THE SCHOOL OF BUSINESS AND PUBLIC MANAGEMENT AT KCA UNIVERSITY

SEPTEMBER, 2016

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where reference is made and author duly acknowledged.

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Date _____

I do hereby confirm that I have examined the master's dissertation of

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And have certified all the revisions that the dissertation panel and examiners recommended have been adequately addressed.

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Mr. Michael Njogo

Dissertation Supervisor

ABSTRACT

Debt is one of the commonest methods of financing in most companies listed at the Nairobi Securities Exchange (NSE). In fact, a large number of firms, more than 50 percent, listed at the NSE use debt financing. A growing body of literature suggests that profitability, firm size, and growth opportunities are some of the major determinants of debt financing. Against this background, the current study explores the main factors that inform the decision to use debt financing for firms listed at the NSE. Using a sample of 30 listed companies and panel data analysis, the researcher examined whether the three independent variables explain the widespread use of debt financing in the Kenyan context. In particular, the Hausman test indicated that there are random variations between the variables; as a result, the researcher adopted the random effect model. In addition, a control variable, corporation risk, helped the researcher reduce the impact of confounding variables. The results indicated that profitability is the only determinant of debt financing. This was in line with the pecking order theory that predicts an insignificant inverse relationship between profitability and debt financing. The researcher suggests that future research should explore other variables, such as non-debt tax shields, institutional shareholding, and interest rate.

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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Debt financing is one of the widespread alternatives listed firms use to raise money for investment. The choice of the three forms of capital, equity, debt, and retained earnings, is always a hard decision to make for many, if not all, finance managers. This is largely because the choice of one over the other has a direct impact on the cost of capital. For instance, the use of equity and retained earnings mean that a firm forgoes the tax-shield benefits that accrue from debt financing (Brealey, Myers, & Allen, 2011). Equally important, high level of debt exposes organizations to varied costs, including financial distress and agency costs. Therefore, it is important for corporate to identify optimal capital mix in order to reduce cost of capital. While this is an intricate decision, understanding the main determinants of debt financing can be a practical way to minimize cost of capital.

There are various debt instruments- such as bonds, mortgages, certificates, and overdrafts- that help companies listed at Nairobi Securities Exchange (NSE) obtain additional capital. These are also classified into two subcategories; namely, long-term and short-term debts. In most cases, short-term debts fall due within one-year, while long-term debts have a maturity date of at least one year. The differential financial costs for short-term and long-term debts explain one of the reasons for which specific firms prefer one form to the other. Nonetheless, there are myriad other factors that inform the choice of debt in a company's capital structure. For instance, the relevance school of thought argues that there is a direct link between debt financing and profitability. Most of all, external sources of capital, including debt and equity financing, have their own share of advantages as well as shortcomings (Eckbo, 2008).

While debt financing is associated with a range of benefits, it also attracts several direct costs. Tax-shield benefit is one of the conspicuous advantages of debt financing. Financial costs-

interest payments- are deductible for tax purposes; of course, this reduces tax on corporate profit, and consequently boosts firm performance. Secondly, debt financing allows companies to retain direct control of day-to-day operations. In contrast to equity financing, debt holders have minimal control over listed companies. Although debt covenants commonly serve as a guarantee that firms are utilizing borrowed funds in the best way possible, they do not confer voting rights to their holders. The implication is that companies retain right to decision-making without any undue influence from third parties. Equally important, debt financing boosts firms' ability to retain profits. A business has only one key obligation to its lenders, that is, to make interest and principal payments within specified timeframes. This means that companies do not necessarily have to share corporate profits as the case with dividend payments (Eckbo, 2008).

On the contrary, debt financing has several noticeable shortcomings. For instance, a large body of literature reports there is a direct link between debt levels and cost of capital. High debt levels, the argument goes, oblige firms to varied financial costs, including interest payments, bankruptcy costs, and financial distress. In this regard, it is essential for companies looking forward to use debt financing to ensure they have steady flow of income in order to meet financial obligations upon maturity. Unlike equity financing that allows for flexibility in dividend payment, debt financing requires regular interest payments. Similarly, public companies are legal entities, which imply that their assets can be sold in case they fail to pay interest within the agreed time. Agency cost is also an apparent shortcoming of debt financing. The use of debt component in the capital structure exposes firms to conflict between lenders and managers. The implication is increased costs in form of debt covenants in order to allow debt holders monitor how firms are investing funds (Zhang, 2013).

Although equity financing extends beyond the scope of the current study, it is critical to explore some of its potential benefits and drawbacks relative to debt financing. It is one of the

three commonly used components of capital alongside debt and retained earnings (Baker & Martin, 2011). In contrast to debt financing where holders do not acquire right of control, equity financing involves direct transfer of ownership to investors. One of its predominant benefits is that it is associated with little agency costs. Public firms usually maintain a thick line between ownership and management. This implies that equity holders lack direct control over management of assets as opposed to debts that restrict firms to specific use of funds (Zhang, 2013).

Unlike debt financing, the issue of shares does not oblige companies to mandatory finance costs. Depending on the preferred payout policy, a business can postpone payment of dividends to a future period or fail to make any payment (Bolton & Freixas, 2000). The implication is that equity financing minimizes a firm's exposure to financial distress. Thirdly, equity financing offers companies an opportunity to obtain additional funds through various options, including rights issue and stock split. These alternatives are relatively cheap because they do not attract floatation costs. Equally, stock repurchase helps firms reacquire shares, and accordingly regain control of business (Eckbo, 2008).

Conversely, there are several disadvantages of equity financing. For example, loss of control is a ubiquitous theme throughout equity financing literature. By definition, a share is a unit of ownership in a given firm. Of course, equity financing involves issue of shares to members of public in exchange of funds. As a result, owners have little choice, but to transfer control of business to third parties through voting rights. In addition, floatation costs, associated with issue of stocks in secondary financial markets, make equity financing less favorable relative to debt financing (Compello, 2006). There are also many financial and legal obligations that a firm must bear before floating shares in the security market.

1.1.1 Debt Financing

Financing, dividend, and investment are the three basic decisions in corporate finance. Financing decision entails an attempt to develop an optimal capital mix in order to minimize cost of capital. Most capital structures of public companies are made up of three components; namely, debt, equity, and retained earnings (Beattie, Goodacre, & Thomson, 2006). In particular, debt financing is involves the use of various debt instruments, such as bonds, mortgages, and bank loans, to obtain additional capital (Hovakimian, Opler, & Titman, 2001). Most forms of debt are further classified into long-term and short-term debts depending on their maturity period. Each source of fund has an impact on cost of capital.

Debt financing usually occurs when an organization obtains funds for capital expenditure of working capital through selling notes, bill, or bonds to institutional or individual investors. In exchange for their money, the institutions or individuals become creditors who are entitled to principal and interest at the agreed period. There are two fundamental factors that determine the rate of interest; namely, creditworthiness and market rates. In addition, there are various factors that determine the inclusion or exclusion of a given form of capital in a company's capital structure.

1.1.2 Determinants of debt financing

There are a number of firm-specific factors that inform use of debt component in an organization's capital structure. To start, *profitability* is a key determinant of a company's capital mix (Abor, 2008; Alkhatib, 2012). The static trade-off theory and pecking order theory argue that there is a direct link between level of debt and profitability. On the one hand, the static trade-off model indicates that profitable companies tend to have low bankruptcy costs alongside more valuable interest tax shield benefits. For these reasons, profitable firms acquire more benefits from financing their activities through debts. On the other hand, the pecking order theory predicts a negative relationship between level of debt and profitability (Zhang, 2013). Other than use of debts, the model advocates for internal sources of funds, such as retained earnings, in the

sense that they are cheap and easily accessible. The implication is that firms should reduce leverage over time with increase in profitability.

Secondly, *firm size* may also dictate the use of debt financing by a listed company in Kenya. In particular, the trade-off theory predicts a positive and statistically significant link between gearing level and firm size (Frank & Goyal, 2007). This means that the benefits of debt financing outweigh the potential costs, at least in a large organization. The explanation is quite clear; large firms have huge financial muscles and a combination of deep-seated knowledge and skills that enable them identify and invest in feasible investment projects. Equally important, the pecking order theory hypothesizes an inverse link between leverage and firm size. The main argument is that low adverse selection in large firms enable them issue equity more easily relative to the small firms. As a result, high adverse selection in small firms means they are forced to use debt financing.

In addition, *growth opportunities* are firm-specific determinants of debt financing. To illustrate, a number of agency theories report a negative correlation between growth opportunities and use of debt in capital structure (Francis, Hasan, & Sharma, 2012). Firms with many growth opportunities require little, if any, external sources of fund due to the fact that they generate adequate income. The implication is that they often rely on internal rather than external funding, which helps minimize and control agency costs. Also, asset substitution, exchange of low-risk assets for high-risk projects, has a positive relationship with growth opportunities, meaning that debt is more likely to be expensive. This forces firms with growth opportunities to prefer internal sources of funds to debt financing. In contrast, the pecking order theory claims that debt financing provides a cheap source of money for firms with myriad growth opportunities. The logic behind this argument is that such companies are more profitable, and accordingly able to meet their financial obligations.

Moreover, *tangibility of assets* is one of the factors that determines the use, or lack of, debt in capital structure of companies. Obviously, businesses with more tangible assets can readily access debt instruments relative to those with many intangible assets. This is due to the fact that tangible assets are more liquid, and thus easy to convert into cash, to intangible assets. In addition, they are easy to collateralize and sell in case a company experiences financial distress. This also reduces agency costs in the sense that tangible assets provide the all-important assurance to debt holders that their funds are secure. Therefore, lenders prefer tangible assets to intangible assets (Lee et al., 2010).

Equally important, *corporation risk* may be one of the factors that determine the use of debt financing. Precisely, Nyamita, Garbharran, & Dorasmy (2014) claim that volatility or corporation risk indicates the possibility of financial distress. They also argue that there is a negative link between corporation risk and debt financing. Their argument is that firms with volatile cash flows are exposed to financial distress, meaning they should use less debt. Furthermore, volatility of earnings is directly associated with adverse selection. For these reasons, firms with more volatile earnings are likely to experience difficulties obtaining debts.

1.2 Problem Statement

There is a broad range of literature that explores the main determinants of debt financing both in the African and international context (Chadha & Sharma, 2015; Kwenda & Holden, 2014; Ebaid, 2009; Beattie, Goodacre, & Thomson, 2006). These studies hypothesize that varied factors, including profitability, growth opportunities, and firm size, are potential reasons for which firms use debt financing. However, the specific link between these variables and debt financing is not very clear. While some researchers report a negative correlation between debt financing and the independent variables, others argue that the correlation is positive. For example, Kwenda & Holden (2014) find a positive relationship between firm size and debt financing while (Ebaid,

2009) reports that the correlation between the two variables is negative. Equally important, the irrelevance preposition argues that these variables are immaterial as far as explaining debt financing is concerned, while the trade-off and pecking order theory claim that they are statistically significant.

All in all, firms have their own objectives and strategies, which explain the reason why some use debt and others rely on equity financing or/and retained earnings. On the one hand, firms that employ debt financing are motivated by various explicit benefits. In addition to the much-repeated tax-shield advantage, debt financing also allows owners to retain control of their businesses as well as profits (Ebaid, 2009). On the other hand, companies that depend entirely on equity financing or/and retained earnings consider the high agency costs and cost of capital associated with debt financing. To these firms, the use of debt financing has an adverse effect on profitability, which implies that it is irrational to include debt in the capital mix. Therefore, there is a knowledge gap about the main determinants of debt financing. Against this backdrop, the researcher intends to explore the main determinants of debt financing for firms listed at the NSE.

1.3 Research Objectives

1.3.1. General objective

i. Establish the determinants of debt financing for companies listed at the NSE

1.3.2 Specific objectives

The specific objectives are to:

i. Examine the effect of profitability on debt financing for companies listed at the NSE
ii. Explore the impact of firm size on debt financing for companies listed at the NSE
iii. Study the correlation between growth opportunities and debt financing for companies listed at the NSE

1.4 Research Questions

i. What is the effect of profitability on debt financing for companies listed at the NSE?

ii. What is the relationship between firm size and debt financing for companies listed at the NSE?
iii. How do growth opportunities affect debt financing for companies listed at the NSE?

1.5 Significance of the Study

Financing is one of the three basic decisions in corporate finance. It largely entails use of three different components; namely, debt, equity, and retained earnings. Each of these sources has unique benefits and disadvantages. In addition, there are several firm-specific factors that inform the choice of a particular source of fund. For this reason, firms employ either one component or a combination of two or/and three sources. Nonetheless, there is no clear guideline in literature about the optimal capital mix that a firm should adopt as well as the impact of choosing one over the other on probability. The current research focuses on the interplay between debt financing, profitability, firm size, and growth opportunities. It will also shed further light on the factors that determine the use of debt financing. Above all, it will help finance managers minimize the cost and increase the benefits of debt financing.

1.6 Scope of the Study

In particular, the focus of this study is to explore the main determinants of debt financing for companies listed at the NSE. The researcher explores the background of debt financing as well as the documented benefits and shortcomings of the method. Although there are different firm-specific determinants of debt financing in public firms, the scope of the study is limited to profitability, firm size, and growth opportunities.

1.7 Limitations of the Study

The current study is exposed to a number of limitations. Firstly, the sample size may not be large enough to study the relationship of debt financing and the three explanatory variables. The research design is based on studies conducted in developed economies, which mostly utilize

samples of at least one thousand public companies. However, the population of the current study is only made up of 67 firms; obviously, this is a threat to the external validity of the study. In addition, the data is secondary, which means it may not be reliable.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The finance literature provides several competing explanations of determinants of debt financing. Agency conflicts, transaction costs, profitability, growth opportunities, adverse selection, and firm size are some of the most common factors. These ideas are often synthesized into irrelevant proposition, trade-off, and pecking order theory. The researcher reviews these theories and relates them to the Kenyan context. In addition, several empirical studies are reviewed in an attempt to understand the major determinants of debt financing.

2.2 Theoretical Review

2.2.1 Modigliani and Miller (1958) Theory

There are varied theoretical models that focus on the main determinants of debt financing. Firstly, the Modigliani and Miller (1958) theory argues that expected cash flows do not impact debt financing decisions. This is due to the fact that cash flows are distributed among external investors every time a firm chooses to use debt financing. The model assumes that information symmetry in the financial markets allows investors and firms create homemade leverage. Also, this implies that expected free cash flows enable investors get rid of any unwanted leverage, and that future cash flows are irrelevant predictors of debt financing. However, this theory is based on several assumptions, which are difficult to examine empirically.

The theory has triggered serious research in an endeavor to disapprove irrelevance as an empirical or theoretical matter. Most subsequent studies indicate that the Modigliani and Miller model does not hold under varied circumstances. Some of the most commonly noted aspects include investor clientele effect, inseparability between operations and financing, time variant financial market opportunities, adverse selection, agency conflict, bankruptcy costs, transaction costs as well as taxes (Chang & Dasgupta, 2009; Baker & Martin, 2011). Although this theory

does not shed much light on the determinants of debt financing, it offers a good starting point for understanding the use of debt financing in firms. Subsequent theories use different variables from the aforementioned list. The trade-off and pecking order theories also provide valuable explanations about the major determinants of debt financing.

2.2.2 Trade-off Theory

The trade-off model was popularized by Kraus and Litzenberger in 1984. Precisely, it is based on the assumption that debt financing attracts varied costs and benefits. It postulates that benefits and costs are essential determinants of debt financing. As a result, decision makers need to maintain an optimal balance between marginal costs and benefits. The original model was a result of fiery debates over the shortcomings of the irrelevance preposition. When the assumption of no taxes was relaxed, it created a tax-shield benefit that primarily shielded earnings from taxes (Bevan, & Danbolt, 2002). This implied using 100% debt capital in the sense that firms aim to maximize value and there were no costs to offset the benefits. To avoid this limitation, theorists needed to come up with a practical cost of debt. This led to adoption of bankruptcy as a proxy for cost of debt. For this reason, the theory considers debt financing to be a reflection of a trade-off between costs of bankruptcy and tax-shield benefits. Another important implication is that firms have a target level of debt financing, which is given by balancing costs of bankruptcy against debt tax shields (Fama & French, 2002).

Akin to the Modigliani and Miller theorem, several aspects of the trade-off theory have also raised wide-ranging discussions. Firstly, the target is a theoretical phenomenon that is hard to observe directly. While there is growing consensus that firms prefer a certain proportion of debt, this depends on the existing capital structure. Secondly, tax code is a more complex concept than that postulated by the trade-off theory. Therefore, the debt target may vary between firms depending on the nature of the tax code in question. Thirdly, the model focuses on deadweight bankruptcy costs as opposed to mere transfers from one investor to another. Furthermore, the

behavior, fixed or variable, of these costs is important determinant of the level of debt financing. Fourthly, the theory only holds if transaction costs are of a specific form. This means that marginal costs must change with the level of adjustment (Yang et al., 2015). However, this assumption does not mirror the real adjustment path mainly because large fixed costs usually correspond to roughly invariable marginal costs.

In an attempt to overcome these shortcomings, the trade-off theory is classified into two distinct parts; namely, the static and dynamic trade-off models. In particular, the static trade-off theory holds if debt financing is a result of a single-period trade-off between costs and benefits. In addition to the risk-neutral nature of investors, the model also assumes that investors face a *progressive* corporate tax on wealth from bonds. Capital gains and dividends are subject to a fixed tax rate. The implication of risk neutrality is that it motivates investors to buy securities that maximize potential benefits. In contrast, firms' earnings are taxed at a constant marginal tax rate. One of the main predictions of this theory is that an increase in financial distress costs and non-debt tax shields reduces the end-of-year level of debt for a firm. It also hypothesizes that there is a positive relationship between personal tax rate on equity and optimal debt level.

Conversely, a firm is said to follow the dynamic trade-off model if it has a target level of debt and if changes from that level are removed gradually over time. This means that the financing margin that a company expects in the next period is a key determinant of debt financing. While some firms expect to raise funds in the next period, others must pay funds. They raise funds either through equity or debt, although some use a combination of these sources. Most dynamic models are based on fairly general ideas (Eckbo, 2008). For instant, it argues that the choice of debt today is determined by what is anticipated to be optimal in the next period. It may be optimal to pay funds or raise them in the next period. If raising additional funds, it may be most advantageous to use either equity or debt.

In general, the trade-off theory predicts that profitability is one of the key determinants of debt financing. It posits that profitable companies should use debt financing largely due to the fact that their expected interest tax shields outweigh the bankruptcy costs (Zhu, 2014). This is very realistic; profitable firms have strong financial muscles that allow them obtain debt at relatively low costs. Another benefit is that they are able to offset the financial costs against operating income, consequently reducing the taxable income. Perhaps, bankruptcy costs are the only apparent costs associated with debt financing in profitable organizations. However, these firms have myriad assets that cover-up these costs, and accordingly maximize the benefits of debt financing.

Also, the model considers firm size to be a chief predictor of debt financing. Precisely, the static-trade off theory posits that large firms should accumulate more debt in the sense that they are more diversified. In addition, large firms tend to have low default risks, consequently reducing the costs associated with debt financing (Kwenda & Holden, 2014). Large companies are also more mature, meaning that they have a good reputation in financial markets. This helps them reduce agency costs and other related costs of debt. For these reasons, the benefits of debt financing exceed the costs in large firms, which imply there is a positive link between firm size and leverage.

Growth opportunities also form another important determinant of debt financing. The static trade-off theory argues that there is an inverse link between growth opportunities and debt financing (Chang & Dasgupta, 2009). Firms with many growth opportunities incur relatively high costs in case of bankruptcy. To illustrate, most growth firms have little motivation to invest, meaning that they prefer less debt financing. The underinvestment issue arises due to the fact that debt obliges firms to financial costs, which reduce the benefits of equity holders. Moreover, asset substitution problem is more severe in companies with many growth opportunities. Stockholders

can increase project risks in high growth companies without the knowledge of debt holders. This increases the cost of issuing external debts and consequently reduces the benefits of debt financing.

2.2.3 Pecking Order Theory

The pecking order theory was originally proposed by Myers and Majiluf in 1984. It is also one of the theoretical models that explain the determinants of debt financing. Its most basic premise is that a firm prefers internal to external financing and debt to equity if there is little or no internal funds. This model is subject to a number of limitations. For example, it does not clarify whether the term "prefer" means firms use all internal funds before external funds or "other things equal", companies exhaust internal funds before turning to debt financing (Brealey, Myers, & Allen, 2011). This means that the model is only testable if the word "prefer" is taken more strictly, and that it rests on the condition of "other things equal" if the verb is interpreted in the "other things equal" way. The "other things constant" argument appears to more rational in that companies use some internal funds, short-term investments and cash, even when using debt financing. Such funds are used for reasons beyond the scope of this model, including day-to-day transaction costs.

The assumption that firms prefer debt over equity is also problematic. Of course, this definition rests on strict interpretation that equity is only issued if debt financing is infeasible. This suggests there is a "debt capacity" that limits the capacity of firms to increase level of debt and allows equity financing within the pecking order (Bevan, Danbolt, 2002). This raises the issue of defining debt capacity. To overcome this shortcoming, researchers base the model on agency considerations, adverse selection considerations, or others. There are several common features that define pecking order theories. Firstly, linearity of a company's objective function is an underlying aspect of this model. This definition is important because it implies that costs and earnings increase with increase in debt financing.

Basically, the pecking order theory predicts that the correlation between profitability and debt financing is negative. This means that the costs of debt financing outweigh the potential costs. This is most common in firms that use fixed dividends and investment policy. The argument is logical due to the fact that such firms are able to retain more profit than less profitable firms (Fama & French, 2002; Aqilah & Ramli, 2014). Therefore, profitable firms have a large pool of internal funds that they can use to fund investments and dividend payments. Of course, profitable firms turn to debt financing after exhausting internal funds.

Equally important, the pecking order theory hypothesizes a negative correlation between debt financing and size of a firm (Zelia & Marcia, 2009; Bassey et al., 2014). Large firms, the argument goes, often have a good reputation in financial markets because they are better known by investors. As a result, they have low information asymmetry, which enable them issue equity more easily relative to small firms that experience severe adverse selection problems (Bharath, Pasquariello, Wu, 2009).

Growth is also a possible determinant of debt financing, at least according to the pecking order theory. The model predicts a positive and strong link between growth opportunities and debt financing. The underlying argument is that firms with more growth opportunities, holding profitability constant, ought to increase level of debt gradually. This is purposely meant to ensure that growth firms have adequate resources to invest in projects with growth opportunities.

Beatie, Goodacre, and Thomson (2006) conduct a survey to test the pecking order theory in the U.K context. The authors report that the diversity and complexity of capital structure decision is rather difficult to be fully captured by any theory. They conclude the choice of capital mix is more than mere links between firm-specific characteristics and capital structure outcomes. However, their study indicates that most firms prefer the pecking order theory.

2.3 Empirical Evidence

2.3.1 Firm Size and Debt Financing

There are several quantitative studies that have explored the main determinants of debt financing. For example, Jozwiak et al. (2015) study the determinants of indebtedness among 111 firms listed at the Warsaw Stock Exchange. The balanced panel data is for ten-year period from 2002 through 2012. The authors use four independent variables; namely, firm size, profitability, asset tangibility, and growth. Their hypotheses are that firm size, profitability, and growth have an inverse relationship with debt financing, while asset tangibility is negatively correlated with level of debt. Equally important, the authors use panel data analysis to examine the underlying link between debt financing and the four variables. They use Hausman test to check whether the data fit in a fixed or random effects model. Also, the researchers check the correlation between the variables using a correlation matrix.

The results of their study indicate that the relationship between the dependent and independent variables is statistically different from zero. Precisely, the authors report a statistically significant, P= 0.0017, negative relationship between firm size and debt financing. There is also an inverse link between profitability and indebtedness, with the p-value being less than 0.05, (P=0.018) (Jozwiak et al., 2015). The correlation between asset tangibility and level of debt is the only result that matches the original hypothesis. The authors show that there is a strong relationship, P=0.00075, between the two variables. Finally, results of the study show that there is a negative link between growth and level of debt, which is in line with the static trade-off model. There is a strong relationship between these variables as indicated by the P-value of 0.00025. The conclusion is that the results contradict the major debt financing theories- pecking order and trade-off model.

In contrast, Coleman, Cotei, & Farhat (2014) study the major determinants of debt financing for start-up firms in the U.S. The target population is 4,928 businesses, out of which the authors select a sample of 3,348 businesses. Equally important, the period of study is eight

years, that is, from 2004 through 2008. In order to control for correlation among variables as well as sample selection bias, the authors make use of a Bivariate Probit-Tobit model. While debt is the explained variable, the explanatory variables are firm size, tangibility of assets, and growth prospects. The results of the study indicate there is an inverse link between firm size and debt financing. In other words, large start-up firms rely more on equity as well as personal finances, while small start-up firms use more debt financing. Of course, these findings are consistent with the pecking order theory that argues firms prefer some forms of capital to other.

2.3.2 Profitability and Debt Financing

Yazdanfar & Ohmar (2014) have also examined the underlying link between debt financing and firm performance. In particular, the researchers employ panel data analysis to explore the correlation between the variables in the Swedish context. They examine 15,897 firms in five different industries for the period between 2009 and 2012. They mainly focus on the effect of maturity period of debt on profitability as measured by return on assets ratio (ROA). Unlike the current study, the authors assume that trade credit, short-term and long-term debts can predict profitability. In addition, their model incorporates three control variables, that is, firm size, industry affiliation, and firm age. Their main hypothesis is that debt financing is negatively related to firm profitability in Sweden. They also hypothesize that there is a positive link between profitability and the three control variables.

Consistent with one of the hypotheses, the results show that there is a statistically significant negative relationship, P=0.0001, between long-term debt and profitability at 5% alpha level. There is also a negative link between short-term debt and profitability as indicated by the P-value of 0.00012 at 5% significance level (Yazdanfar and Ohmar, 2014). Finally, there is a significant inverse link, P=0.00023, accounts payable and profitability. The results confirm the static trade-off theory that predicts an inverse correlation between profitability and debt financing.

On the contrary, Nyamita, Garbharran, & Dorasmy (2014) examine the effect of profitability on debt financing among state-owned firms in Kenya. Using panel data analysis and general method of moments, the authors focus on 50 income-generating corporations. They use non-probability sampling technique to select a sample of 40 corporations. The period of the study is ten years, that is, from 2002 through 2012. Total debt leverage, measured by total debt to total asset, is the explained variable, while profitability- operating profit divided by sales- is the main explanatory variable. Other independent variables include corporation size, asset tangibility, liquidity, corporation risk, corporation growth, and corporation tax rate. Equally important, the authors explore three macroeconomic variables; namely, gross domestic product, inflation rate, and interest rate.

The results confirm the hypothesis of the study that there is a negative correlation between profitability and debt financing. One of the major conclusions is that income-generating state-operated corporations use less debt financing. The explanation is that state corporation managers lack independence as far as making financing decisions is concerned. In addition, the authors conclude that dearth of efficient capital market and institutions make it difficult for state-owned firms to attract external debts.

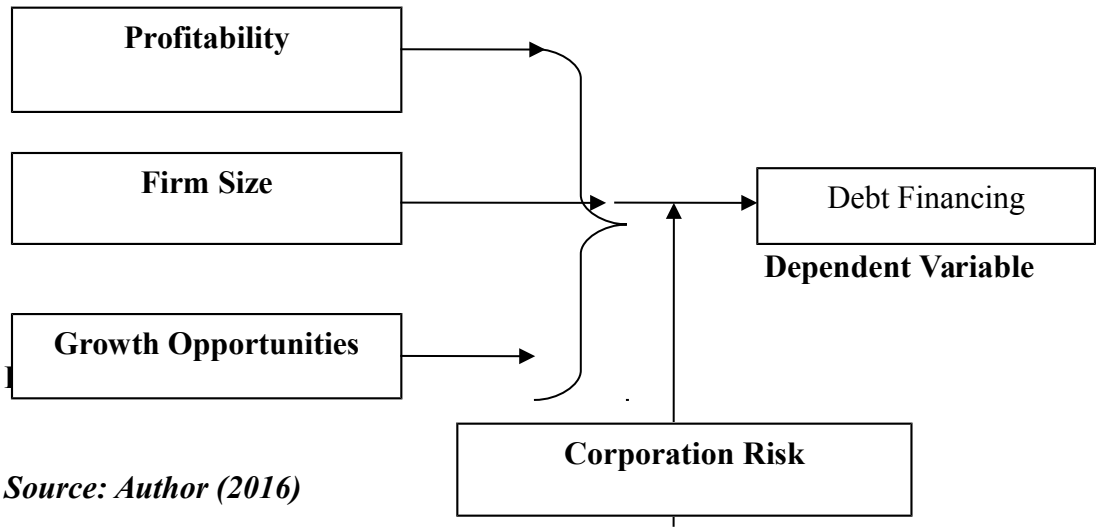
2.3.3 Growth Opportunities and Debt Financing

Chadha & Sharma (2015) provide an insightful analysis of the relationship between growth opportunities and debt financing. Using a sample of 422 companies listed at the Bombay Stock Exchange, India, and panel data analysis, the authors study the relationship between the two variables for a ten year period from 2003 through 2012. The ratio of total debt to total assets is the dependent variable while growth is the main independent variable. The other explanatory variables include profitability, tangibility, inflation, interest coverage ratio, and dividend payout ratio.

The findings of the research indicate that growth opportunities have an inverse relationship with debt financing. In fact, there is a statistically significant between these variables because P< 0.05. Equally important, the link between profitability and debt financing is different from zero. Their conclusion is that Indian manufacturing firms use the pecking and trade-off theory interchangeably.

Moreover, Billett, King, & Mauer (2007) explore the impact of growth opportunities on debt financing in the U.S. Their study focuses on a target population of 28,785 debt issues, and a sample size of 15,504 debt issues from 1960 through 2003. The dependent variable of the study is debt financing, while the explanatory variables are operating profit, firm size, investment tax credit, and growth opportunities. The authors employ panel data analysis to test their hypothesis. Although the results indicate that the direct impact of growth opportunities on debt financing is negative, the authors report that a positive relation between the two variables interacted with debt covenant. They conclude that debt covenants attenuate the inverse link between debt financing and growth opportunities. Similarly, they find that short-term debt may attenuate the negative impact of growth opportunities on debt financing, especially for riskier borrowers.

FIGURE 1
Conceptual Framework



Source: Author (2016)

2.5 Description and Measurement of Variables

Debt Financing (DEBT): This is the dependent variable. It is the ratio of debt reported in a company's financial statement to total assets. The current research combined both short-term and long-term debts. Most debt components included bank borrowings, corporate bonds, bank overdrafts, and finance leases. The variable was measured as follows:

$$\text{DEBT} = \frac{LDit + SDit}{ASSETit}$$

Where,
DEBT = Debt financing
LD_{it} = Long-term debt for firm "i" at time "t"
SD_{it} = Short-term debt for firm "i" at time "t"
$ASSET_{it}$ = Total assets for firm "i" at time "t"

Profitability (PROF): This is one of the independent variables. While there are various proxies of profitability, the researcher utilized the ratio of earnings before interest and tax (EBIT) to total assets. This was calculated as below:

$$\text{PROF} = \frac{EBITit}{ASSETit}$$

Where,
PROF = Profitability
$EBIT_{it}$ = Earnings before interest and tax for firm "i" at time "t"
$ASSET_{it}$ = Total assets for firm "i" at time "t"

Firm Size (SIZE): This is also an independent variable. In particular, the researcher hypothesized that market capitalization was reasonable proxy for firm size. As a result, the natural log for market capitalization was used to represent firm size. This was measured as follows:
SIZE = ln (Market capitalization)

Growth Opportunities (GROWTH): This is the third independent variable. It indicates the change, increase or decrease, in assets from one year to the other. The variable was measured as follows:

$$\text{GROWTH} = \frac{\Delta ASSETit}{ASSETit}$$

Where,
$\Delta ASSETit$ = The difference in assets between two years
$ASSET_{it}$ = Total assets in firm "i" at time "t"

Corporation risk (RISK): This is the control variable. In particular, it measures the volatility of operating profits over total assets. It was calculated as below:

$$RISK=\ln\left(\sqrt{\frac{(EBIT - \overline{EBIT})^2}{5}}\right)$$

Where,

$EBIT_{it}$ = the proportion of earnings before interest and tax to total asset in firm i for year t

$$\overline{EBIT} = \sum_{2010}^{2014} EBITit / 5$$

i = 1, 2…..30

t = 1, 2… 5

TABLE 1
Operationalization of Variables

Variable	**Formula**
Debt	$\frac{LDit + SDit}{ASSETit}$
Profitability	$\frac{EBITit}{ASSETit}$
Firm Size	ln (Market capitalization)
Growth Opportunities	$\frac{\Delta ASSETit}{ASSETit}$
Risk	$\ln \left(\sqrt{\frac{(EBIT - \overline{EBIT})^2}{5}} \right)$

Source: Author (2016)

CHAPTER THREE
METHODOLOGY

3.1. Introduction

This chapter covers the research design, target population, sample size and sampling procedure, data collection, diagnostic tests, and the data analysis technique. It is one of the important parts of this paper. The data were mainly analyzed through the regression analysis method.

This is an invaluable approach as far as examining relationships between variables is concerned. Precisely, it helps investigators determine the underlying impact of a given variable upon another (Brooks, 2008).

In particular, panel data have several other names, including longitudinal data, micro-panel data, and pooled data. One of their striking characteristics is that they vary in both *time* and *space*. Regression analysis based on the data is known as panel data regression analysis. The fixed effect model is one of the two estimation techniques; it depends on a number of assumptions about slope coefficients, intercept, and error term (Gujarati, 2003). The random effect model considers the intercept to be a combination of a constant and an independent and identically distributed random error. The Hausman test is a highly rated technique that allows researchers choose between the two forms of regressions.

3.2. Research Design

The current study adopts a causal research design. This is a popular research structure in quantitative studies. It helps the researcher measure the factors that determine debt financing for firms listed at the NSE. The trade-off and pecking order theory show that debt financing, profitability, firm size, and growth opportunities have the conditions required to determine relationship between variables. To illustrate, a large body of literature indicates that there is an empirical association between debt financing and the three independent variables. The main

benefit of this design is high internal validity, especially due to the fact that the companies operate in the same market (Wooldridge, & South-Western Publishing, 2013).

3.3. Target Population

The target population for this study is the 67 companies listed at the Nairobi Securities Exchange. For this reason, the unit of study is the companies listed at the Nairobi Securities Exchange. The 67 companies maintain and disseminate secondary data; as a result, it is easy to obtain information about the level of debt, growth opportunities, profitability, firm size, and corporation risk.

3.4. Sample Size and Sampling Procedure

The sample of the current study is 30 listed firms. This is a relatively large size because the data vary in time and space. The researcher makes use of purposive sampling in order to select a representative sample (Verbeek, 2008). Of course, one of the inclusion criteria is the companies that use short-term and long-term debt to finance transactions. Moreover, the 30 firms must have been listed and actively trading at the NSE during the period of study. There were only 30 firms that had met these criteria, and therefore the researcher used their data to conduct the analysis. These criteria helped the researcher obtain unbiased and consistent estimators.

3.5. Data Collection

Panel data are rich form of information that combine two basic features; namely, cross-section and time series variation. The annual data are available in the published books of account of the 30 companies. As result, the secondary data are sourced from published financial statements of individual firms. These records are available on the websites of the 30 companies. The researcher hypothesizes that a five year period, 2010 through 2014, is sufficient to ascertain the determinants of debt financing for firms listed at the NSE. This period is fit for the study because

it gives the researcher a large sample size. The proportion of debt includes both short-term and long-term debt reported in the financial statements.

3.6. Diagnostic Tests

The ordinary least square (OLS) method is based on a number of assumptions. For instance, it assumes that there is no multicollinearity between variables and that the error variances are time invariant- homoscedastic. In this regard, the researcher conducted diagnostic tests in order to assess whether the data violate these assumptions.

One of the important specification tests is *within firms'* effect. Growth plot (within firms) helped the researcher determine whether to use pooled ordinary linear square (POLS) regression, fixed effect, or random effect model. Similarly, overlain plots (between firms) were used to identify outlier(s) and check if intercepts varied between firms. On the contrary, it was important to check whether the variables were correlated in order to eliminate multicollinearity. Here, the researcher used a correlation matrix.

3.5. Data Analysis Technique

Regression analysis is the heart of the current research. In particular, panel data modeling helped the researcher determine whether profitability, growth opportunities, and firm size affect the decision to use debt financing. The Hausman test was conducted in order to choose between the two panel data models. The results showed that the random effect model was appropriate to run the regression analysis. As a result, the model was used to prove if there is a causal relationship between the variables. The model appears as follows:

$DEBT = a_1 + a_2PROF_{it} + a_3GROWTH_{it} + a4SIZE_{it} + a5RISK_{it} + e_{it}$

Where,
DEBT = Debt financing
PROF = Profitability
GROWTH = Growth opportunities
SIZE = Firm size
RISK = Corporation risk

e_{it} = Stochastic error term

CHAPTER FOUR
FINDINGS AND DISCUSSIONS

4.1. Introduction

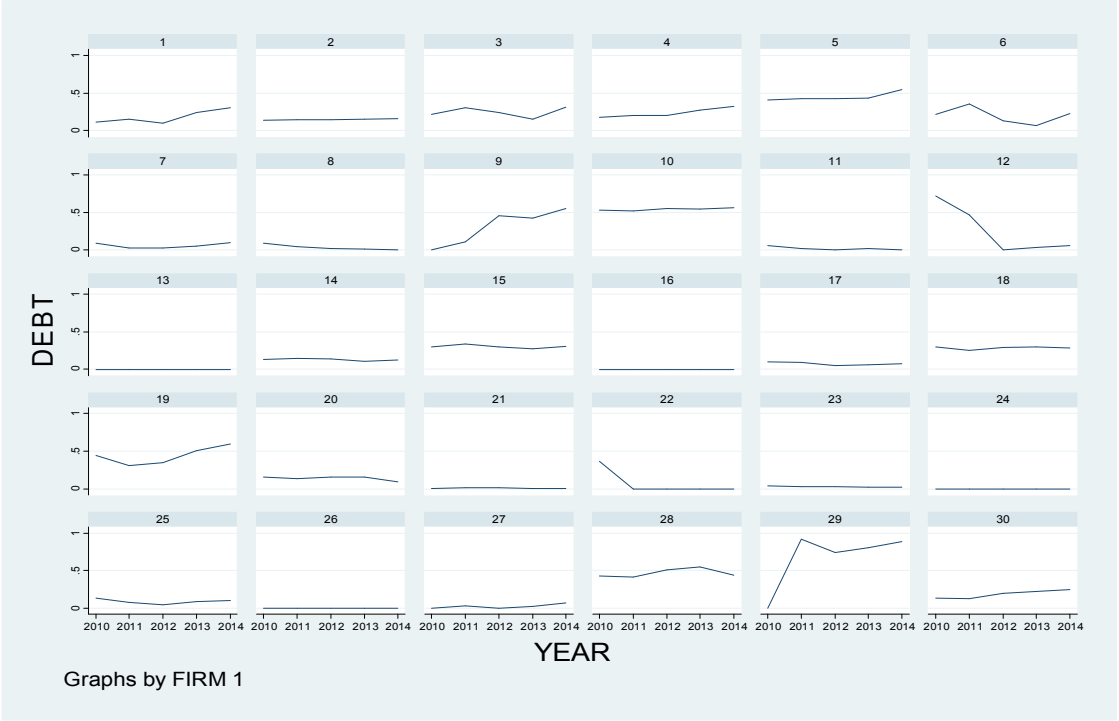
In particular, this chapter presents data analysis, presentation, and interpretation. The researcher conducted varied specification tests, including exploratory data analysis, correlation analysis, and descriptive statistics, in order to check within firms and between firms behavior as well as to describe the data using mean and standard deviation. Equally important, diagnostic tests were carried out to choose an appropriate model and to determine whether the data met the OLS assumptions.

4.2. Specification Tests

4.2.1. Exploratory Data Analysis

Firstly, the visual plots for individual firms were obtained to test within firms' behavior over time. In other words, growth plots helped the researcher determine whether to use basic regression or panel data model. The trend plot showed that there were time-related fixed effects within firms. This was largely because the individual growth plots did not appear to change with time, that is, they were time-invariant. The implication was that panel data models, fixed effect and random effect, were more appropriate to conduct regression analysis. The trend plots for individual firms are shown below.

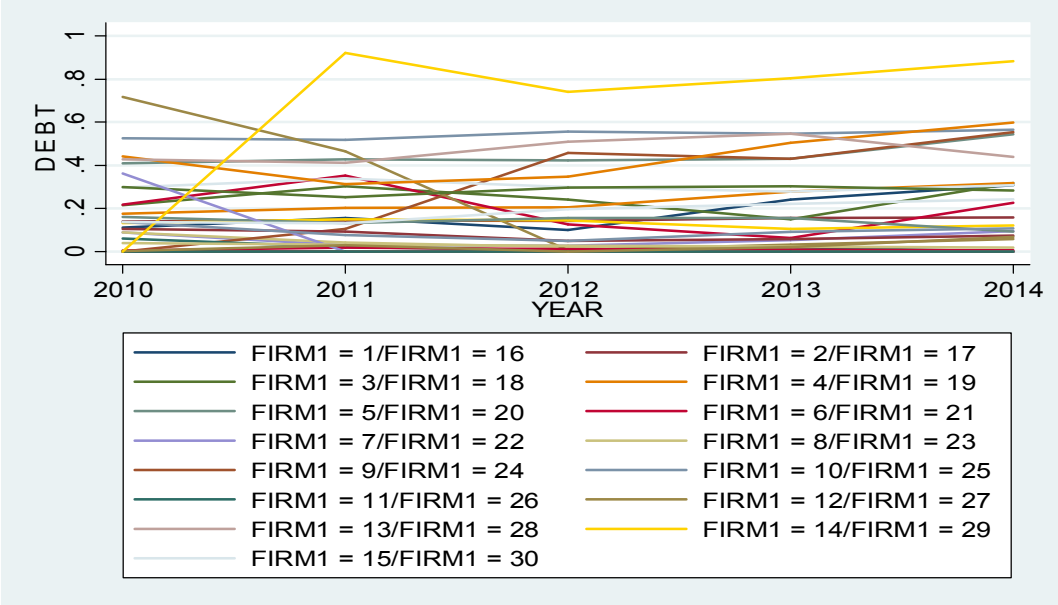
FIGURE 2
Growth Plots



Source: Author (2016)

On the contrary, the researcher used overlain plots to check if the intercept varied over firms or it was invariant over individuals. The results showed that individual units had different intercepts, that is, the intercept differed across firms. This implied that there were significant differences between companies. A further implication was that it was appropriate to use panel data models because they are based on the assumption that the intercept varies across individuals. Conversely, individual overlain plots were time-invariant, which meant individual firms had time-related fixed effects. The output for the overlain plots was as follows.

FIGURE 3
Overlain Plots



Source: Author (2016)

4.2.2. Correlation Matrix

Furthermore, a correlation matrix was obtained in order to check whether there was an association between the variables. The results indicated there was a weak collinearity between Debt and Profitability as well as between Profitability and Firm size. The partial correlation between these variables was -0.3035 and 0.5436 respectively. As a result, multicollinearity was not a major issue because the correlation between these variables was less than 0.7.

TABLE 2
Correlation Matrix

```
. pwcorr   DEBT  PROF  GROWTH  SIZE  RISK, sig star(0.05)
```

	DEBT	PROF	GROWTH	SIZE	RISK
DEBT	1.0000				
PROF	-0.3035*	1.0000			
	0.0002				
GROWTH	-0.2026*	0.2368*	1.0000		
	0.0129	0.0035			
SIZE	-0.0342	0.5436*	0.1885*	1.0000	
	0.6778	0.0000	0.0209		
RISK	0.0459	0.2036*	0.0921	0.6921*	1.0000
	0.5774	0.0124	0.2623	0.0000	

Source: Author (2016)

4.2.3. Collinearity Diagnostics

Also, collinearity diagnostics were obtained to preclude the issue of multicollinearity. The results affirmed that multicollinearity was not present because the mean VIF was less than 5. Moreover, all the variables had low VIF, which implied the correlation between variables was low.

TABLE 3
Collinearity Diagnostics

```
. collin PROF GROWTH SIZE RISK DEBT
(obs=150)

  Collinearity Diagnostics

                       SQRT                   R-
  Variable      VIF     VIF    Tolerance    Squared
----------------------------------------------------
      PROF      1.75    1.32    0.5726      0.4274
    GROWTH      1.09    1.04    0.9160      0.0840
      SIZE      2.90    1.70    0.3451      0.6549
      RISK      2.09    1.45    0.4787      0.5213
      DEBT      1.16    1.08    0.8622      0.1378
----------------------------------------------------
  Mean VIF      1.80
```

Source: Author (2016)

4.2.4. Descriptive Statistics

In addition, descriptive statistics helped the researcher obtain summary of the mean and standard deviations. They were for a balanced panel, which means each variable had *overall*, *between*, and *within* statistics. The output for the descriptive statistics is shown below.

TABLE 4
Descriptive Statistics

```
. xtsum PROF GROWTH SIZE RISK DEBT
```

Variable		Mean	Std. Dev.	Min	Max	Observations
PROF	overall	.0854267	.1046014	-.2225663	.3490668	N = 150
	between		.0948944	-.1636463	.3270727	n = 30
	within		.0466718	-.1706094	.1790057	T = 5
GROWTH	overall	.0896236	.1967979	-.8989146	1	N = 150
	between		.0972174	-.2146348	.2077189	n = 30
	within		.1718485	-.5949312	1.156767	T = 5
SIZE	overall	3.801236	.8432052	2.149381	5.704517	N = 150
	between		.8429832	2.26541	5.367786	n = 30
	within		.1394681	3.461506	4.235504	T = 5
RISK	overall	2.020269	.8001784	-.0073388	3.662271	N = 150
	between		.6902258	.7863801	3.276241	n = 30
	within		.4203134	.2146325	2.854981	T = 5
DEBT	overall	.1865905	.2059404	0	.9207658	N = 150
	between		.1811188	0	.6694526	n = 30
	within		.1024113	-.4828621	.6488947	T = 5

Source: Author (2016)

Precisely, the results showed that the mean operating profit of a firm listed at the NSE is approximately 0.0854 or 8.54% of its total assets. Similarly, the average growth opportunities' for NSE listed companies is around 0.0896. This implies that the total assets of firms listed at the NSE increase by 8.96 percent every year. Conversely, the average size of firms listed at the NSE is 3.8012, which is the mean market capitalization of each company. In contrast, the mean risk for firms listed at the NSE is 2.020. The implication is that the volatility of operating profits is approximately 2% for every firm. Finally, the average debt for a company listed at the NSE is 0.1866. This implies that approximately 18.66 percent of total assets for each firm are financed through debt.

In contrast, the *overall* standard deviation of profitability is 0.1046; of course, this is a relatively large variation mainly because the statistic includes the profitability of all firms. Arguably, this is because some large firms are more profitable than small firms. The standard deviation for profitability *between* firms is 0.0949, which implies that the profitability of a firm varies from another firm by around 9.49%. Finally, the standard deviation of *within* firms is

approximately 0.0467. The implication is that the annual variation in profitability is 4.67 percent for each firm.

4.3. Fixed and Random Effects Models

4.3.1. Fixed Effects Model

TABLE 5
Fixed Effect Model

```
. xtreg DEBT PROF GROWTH SIZE RISK, fe vce(robust)

Fixed-effects (within) regression               Number of obs      =       150
Group variable: FIRM1                           Number of groups   =        30

R-sq:  within  = 0.1368                         Obs per group: min =         5
       between = 0.0431                                        avg =       5.0
       overall = 0.0593                                        max =         5

                                                F(4,29)            =      2.57
corr(u_i, Xb)  = -0.1918                        Prob > F           =    0.0585

                                (Std. Err. adjusted for 30 clusters in FIRM1)
```

DEBT	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
PROF	-.538534	.2071462	-2.60	0.015	-.9621955	-.1148724
GROWTH	-.1114137	.1555602	-0.72	0.480	-.42957	.2067426
SIZE	-.0125672	.064978	-0.19	0.848	-.145462	.1203277
RISK	-.0362294	.019061	-1.90	0.067	-.0752135	.0027548
_cons	.3635448	.2508017	1.45	0.158	-.1494023	.8764918
sigma_u	.18139278					
sigma_e	.10783479					
rho	.73887488	(fraction of variance due to u_i)				

Source: Author (2016)

The output for the fixed effect model is shown in the above table. One of the striking observations is that the model is not "adequate". This is largely because the *P*-value of the F-test (=0.0585) is greater than 0.05. Furthermore, there is a low correlation between the errors and independent variables: corr (u_i, xb) = -0.1918. Equally important, profitability is statistically significant different from zero at 5% alpha level.

4.3.2. Random Effect Model

Firstly, the researcher conducted the regression without the control variable. This was to check if the control variable improved the regression results. The results indicated that the model was plausible because the *P*-value of the chi-test was less than 0.05. Also, only profitability had a positive link with the dependent variable; its *P*-value (=0.003) was less than 0.05. The output was as follows.

TABLE 6

Random Effect Model without the Control Variable

```
. xtreg DEBT PROF GROWTH SIZE, re vce(robust)

Random-effects GLS regression                   Number of obs      =       150
Group variable: FIRM1                           Number of groups   =        30

R-sq:  within  = 0.1117                         Obs per group: min =         5
       between = 0.1418                                        avg =       5.0
       overall = 0.1299                                        max =         5

                                                Wald chi2(3)       =      9.63
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0220

                                  (Std. Err. adjusted for 30 clusters in FIRM1)
------------------------------------------------------------------------------
             |               Robust
        DEBT |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        PROF |  -.5373211   .1778365    -3.02   0.003    -.8858742   -.1887681
      GROWTH |  -.1231895   .1581862    -0.78   0.436    -.4332286    .1868497
        SIZE |   .0185072   .0411134     0.45   0.653    -.0620735    .0990879
       _cons |   .1731827   .1703657     1.02   0.309    -.1607279    .5070932
-------------+----------------------------------------------------------------
     sigma_u |  .16789016
     sigma_e |  .10868461
         rho |  .70468733   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. findit constant variance
```

Source: Author (2016)

The output for the random effect model appeared as follows (Table 7) after adding the control variable. It shows that the model improved because the *P*-value for the chi-test decreased from 0.220 to 0.0114.

Table 7
Random Effect Model with the Control Variable

```
. xtreg DEBT PROF GROWTH SIZE RISK, re vce(robust)

Random-effects GLS regression                   Number of obs      =       150
Group variable: FIRM1                           Number of groups   =        30

R-sq:  within  = 0.1309                         Obs per group: min =         5
       between = 0.1159                                        avg =       5.0
       overall = 0.1173                                        max =         5

                                                Wald chi2(4)       =     12.97
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0114

                                (Std. Err. adjusted for 30 clusters in FIRM1)
```

DEBT	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
PROF	-.5734584	.1765196	-3.25	0.001	-.9194305	-.2274862
GROWTH	-.1176166	.1585247	-0.74	0.458	-.4283193	.1930861
SIZE	.0372423	.0429259	0.87	0.386	-.046891	.1213756
RISK	-.0295619	.0181174	-1.63	0.103	-.0650714	.0059477
_cons	.1642766	.1686486	0.97	0.330	-.1662685	.4948217
sigma_u	.17131213					
sigma_e	.10783479					
rho	.71621711	(fraction of variance due to u_i)				

Source: Author (2016)

Clearly, the random effect model is "adequate". This is due to the fact that the *P*-value of the chi-test is less than 0.05 (=0.0003). In addition, only profitability is significant at 0.05 alpha level. This implies that the variable is negatively related with debt financing. Therefore, a 1% increase in profitability reduces debt by 0.5735%. Arguably, this is because as firms improve their profitability, they are able to set aside some surplus funds for debt repayment.

4.4. Diagnostic Analysis

4.4.1. Hausman Test

The researcher further conducted the Hausman test in order to choose between random effect and fixed effect model. The results, shown below, indicated that the *P*-value for the chi-test was greater than 0.05. Therefore, the researcher adopted the random effect model.

TABLE 8
Hausman Test

```
. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed        random       Difference          S.E.
-------------+------------------------------------------------------------
        PROF |   -.6419594    -.5105725       -.1313869        .0899307
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        2.13
                Prob>chi2 =      0.1440
```

Source: Author (2016)

4.4.2. Testing for Random Effects

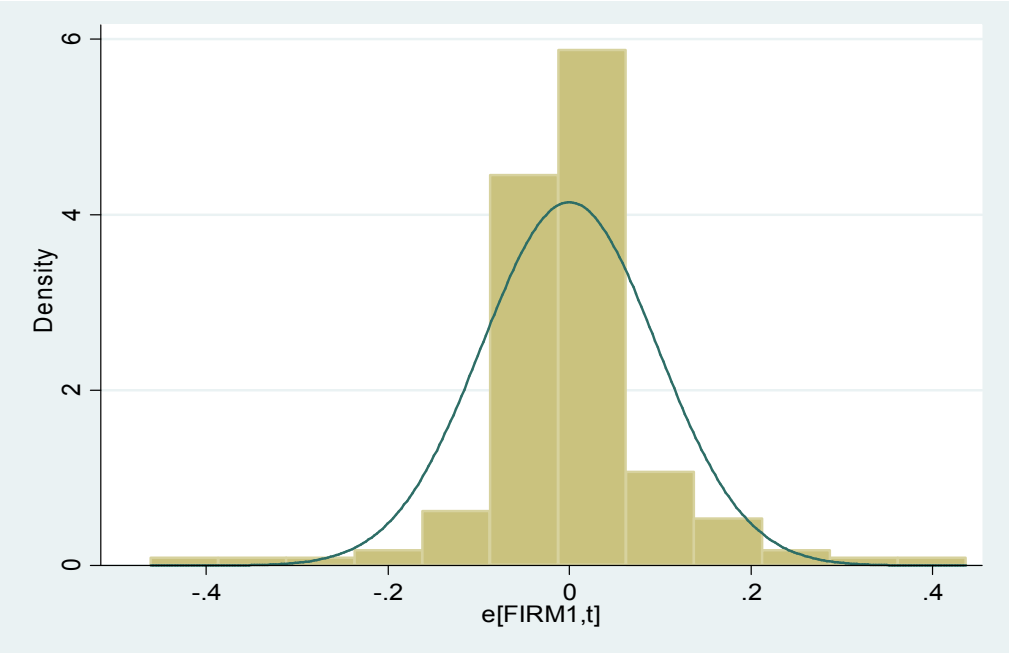
The Breusch-Pagan LM test was used to test for random effects. The null hypothesis that the variance across groups is zero was rejected because the *P*-value of chi-test was less than 0.05 (=.0000). As a result, the researcher concluded that the random effect model was appropriate. The output for the test is shown below.

TABLE 9
Breusch-Pagan LM Test

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        DEBT[FIRM1,t] = Xb + u[FIRM1] + e[FIRM1,t]

        Estimated results:
                     |       Var     sd = sqrt(Var)
             ---------+------------------------------
                DEBT |    .0424114       .2059404
                   e |    .0116283       .1078348
                   u |    .0293478       .1713121

        Test:   Var(u) = 0
                             chibar2(01) =   135.85
                          Prob > chibar2 =   0.0000
```

4.4.3. Testing for Normality

FIGURE 4
Histogram



Source: Author (2016)

The output for the histogram is shown in the above table. Clearly, the random disturbances follow a normal and independent distribution. The implication is that the OLS estimators are also normally distributed. Of course, this further meant that it was appropriate to use the F-test and Chi-test.

4.5. Discussion

The findings indicated that it was appropriate to use the random effect model. As a result, the researcher adopted the model in order to interpret the results. The model is shown below.

$DEBT = 0.16427 - 0.5735PROF_{it} - 0.1176GROWTH_{it} + 0.3724SIZE_{it} - 0.2956RISK_{it}$

In particular, the constant/intercept shows that the average proportion of debt financing, regardless of the level of profitability, growth opportunities, size, and risk, is 0.16427 at the NSE.

Similar to the pecking order theory, the results indicated that there is a significant negative relationship between profitability and debt financing (Brealey, Myers, & Allen, 2011). This is because the slope coefficient is negative (=-.5735) and the *P*-value is less than 0.05 (=0.001). This implies that firms listed at the NSE should reduce the level of debt with increase in profitability. Precisely, a 1% increase in profitability should correspond to 0.5735% decrease

in the level of debt. This is logical because increase in profitability means additional internal funds, which are less costly than debt.

In contrast, the results for growth opportunities are in line with the prediction of the trade off theory (Brealey, Myers, & Allen, 2011). They show that there is an insignificant inverse relationship between growth opportunities and debt financing for firms listed at the NSE. Of course, the coefficient is negative (=-.1176) and the *P*-value is greater than the alpha level (=0.458). The implication is a 1% increase in growth opportunities leads to a 0.1176% reduction in debt financing. The argument is that firms with myriad growth opportunities tend to invest in highly risky projects, consequently increasing the costs of debt financing.

Furthermore, the results indicate there is a positive and insignificant relationship between firm size and debt financing. The variable has a *P*-value of 0.316, which is greater than 0.05. Therefore, the size of a firm listed at the NSE does not affect the decision to use debt financing. Equally, there is an insignificant relationship between risk and debt financing. The *P*-value is more than 0.05 (=.152). This implies that volatility of operating profit is not a determinant of debt financing for listed at the NSE.

CHAPTER FIVE
CONCLUSION AND RECOMMENDATION

5.1. Introduction

The current study was on the determinants of debt financing for firms listed at the NSE. The general objective was to establish the factors that inform the decision to use debt. In addition, the specific objectives were to examine the effect of profitability, firm size, and growth opportunities on debt financing for firms listed at the NSE. In all, the chapter presents the summary of findings with respect to each objective, conclusions, areas of further study, and limitations of the study.

5.2. Summary of the Findings

5.2.1. Profitability and Debt Financing

There is a significant negative relationship between profitability and debt financing. This implies that an increase in profitability leads to a decrease in the level of debt financing for firms listed at the NSE. Therefore, profitable firms have relatively low levels of debt.

5.2.1. Firm Size and Debt Financing

There is an insignificant positive relationship between firm size and debt financing. The implication is that some large firms at the NSE appear to prefer more debt financing than small firms. Arguably, this is because large firms have huge financial muscles and low adverse selection, which allow them to access capital markets easily.

5.2.3. Growth Opportunities and Debt Financing

There is an insignificant inverse relationship between growth opportunities and debt financing. Firms with many growth opportunities seem to prefer other sources of capital than debt. This means that increase in growth opportunities causes firms listed at the NSE to reduce their level of debt financing.

5.3. Conclusion

In addition to the fact that most firms use debt financing, there are firm-specific factors that inform the decision to obtain external debt. For instance, profitability is a key determinant of debt financing for firms listed at the NSE. Akin to the prediction of the pecking order theory, the

link between profitability and debt financing is negative. As a result, profitable firms should reduce their level of debt and finance most of their operations through the relatively cheap internal sources of fund. While this has a direct implication on dividend policy, it can help listed firms minimize different costs, including bankruptcy and agency costs.

Profitability for companies listed at the NSE is significantly and negatively related with debt. As a matter of fact, this indicates that most firms also follow the trade off theory. For this reason, profitable companies should reduce their leverage in order to minimize the high costs associated with debt financing. This is also a practical way to increase overall profitability, and consequently the value of companies listed at the NSE. In contrast, the results showed that firm size, growth opportunities, and risk are not determinants of debt financing. This means that small and large companies have equal access to financial markets. In addition, volatility of operating profit does not matter as far as the use of debt is concerned.

5.4. Recommendations

The results of this study are important to varied groups, including management, investors, and academicians. For instance, management should rely on the findings to reduce the costs and increase the benefits of debt financing. Of course, the significant inverse link between profitability and debt financing means that management should turn to internal sources of fund with increase in profitability.

In addition, investors should consider the proportion of a company's debt before investing in the NSE. This is because the level of debt financing has different direct implications to investors. To illustrate, high level of debt exposes firms to bankruptcy costs, which can make investors lose their funds. Therefore, it is important to invest in companies with low level of debt. Furthermore, academicians should conduct more research about other variables that possibly inform the use of debt.

5.5. Areas of Further Study

Going forward, there is need for researchers to explore other factors that may affect the decision to finance operations through debt. A growing body of literature suggests that other variables, including non-debt tax shields, institutional shareholding, and interest rate, could be determinants of debt financing. While these factors extend beyond the scope of the current study, their impact is captured by the error term. Equally important, future research should focus on a larger sample size in order to further increase external validity.

5.6. Limitations of the Study

The current study has a number of limitations. For instance, while it employs panel data, the 5-year period may not be adequate to ascertain determinants of debt financing. This may be a threat to external validity. Equally important, the relatively small sample size, 30 firms, may have caused some variables to regress to the mean, accordingly affecting internal validity.

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APPENDICES

Appendix I: listed firms in the NSE

COMMERCIAL AND SERVICES

Express Kenya	Scangroup Ltd
Kenya Airways	Uchumi Supermarket
TPS Eastern Africa (Serena)	Longhorn Publishers Ltd
Standard Group	Hutchings Biemer
Nation Media Group	Atlas Development and Support Services
Deacons (East Africa) Plc	Nairobi Business Ventures Ltd

AGRICULTURAL

Eaagads Ltd	Real Vipingo Plantations Ltd
Kapchorua Tea Co. Ltd	Williamson Tea Kenya Ltd
Kakuzi	Sasini
Limuru Tea Co. Ltd	

BANKING

Barclays Bank Ltd	CFC Stanbic Holdings Ltd
I&M Holding Ltd	Kenya Commercial Bank
National Bank of Kenya	Equity Bank Ltd
HF Group Ltd	NIC Bank Ltd
Diamond Trust Bank Kenya	The Co-operative Bank of Kenya
Standard Chartered Bank	

MANUFACTURING AND ALLIED

BOC Kenya Ltd	Eveready East Africa
Unga Group Ltd	East African Breweries
Mumias Sugar Co.	A. Baumann Co.
Carbacid Investment Kenya	Kenya Orchards Ltd
British American Tobacco Kenya	Flame Tree Group Holdings Ltd

REAL ESTATE INVESTMENT TRUST

Stanlib Fahari I-REIT

INSURANCE

Jubilee Holdings	Liberty Kenya Holdings
Kenya Re-Insurance Corporation	Sanlam Kenya Plc
CIC Insurance Group	British-American Investment Company

TELECOMMUNICATION AND TECHNOLOGY

Safaricom Ltd

CONSTRUCTION AND ALLIED

ARM Cement	Bamburi Cement Ltd
Crown Berger Ltd	E.A. Cables Ltd

E.A. Portland Cement Ltd	

ENERGY AND PETROLEUM

Umeme	Kenya Power
KenGen	Total Kenya Ltd
KenolKobil	

AUTOMOBILES AND ACCESSORIES

Marshalls (E.A.)	Sameer Africa
Car and General (K)	

INVESTMENT

Trans-Century	Centum Investment Co Ltd
Olympia Capital Holdings	Home Afrika Ltd
Kurwitu Ventures	

INVESTMENT SERVICES

Nairobi Securities Exchange Ltd.

Appendix II: Sample of the study

Kenya Airways Ltd	Express Kenya
Nation Media Group	Kakuzi
Scangroup Ltd	Marshalls (E.A.)
Safaricom Ltd	Sasini Ltd
British American Tobacco Kenya	TPS Eastern Africa (Serena)
BOC Kenya Ltd	East African Breweries
Eveready East Africa	Bamburi Cement
Unga Group Ltd	E.A. Cables
Jubilee Holding	Total Kenya
HF Group Ltd	KenGen
KenolKobil	Kenya Power Co
Mumias Sugar Co.	ARM Cement
Pan African Insurance Holdings	Sameer Africa
Kenya-Re Insurance Corporation	Crown Berger
Olympia Capital Holdings	Car & General