DETERMINANTS OF FINANCIAL RISK OF LISTED COMPANIES ON THE NAIROBI SECURITIES EXCHANGE IN KENYA

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Determinants of Financial Risk of Listed Companies on the Nairobi Securities Exchange in Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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This thesis has been submitted for examination with our approval as University Supervisors.

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DEDICATION

To my late parents Mr & Mrs Okello for planting the seed of knowledge, and to my husband Larry and sons Willy, Jimmy and Billy for their love and unending support through yet another degree.

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ACRONYMS

CAPM	Capital Asset Pricing Model
C.E.Os	Chief Executive Officers
C.F.Os	Chief Financial Officers
DFL	Degree of Financial Leverage
DOL	Degree of Operating Leverage
DTL	Degree of Total Leverage
EAC	East African Community
FMI	Financial Management Infrastructure
GARCH	Generalized Autoregressive Conditional Heteroskedasticity
GFR	Global Financial Report
GRN	Global Risk Network
ICT	Information Communication Technology
IMF	International Monetary Fund
IPOs	Initial Public Offers
MDGs	Millennium Development Goals
NSE	Nairobi Securities Exchange
ROSCAs	Rotating savings and credit associations
SMEs	Small and Medium Enterprises
USA	United States of America

DEFINITION OF TERMS

Adverse selection: An unfavourable change in the composition of a group, usually in response to an economic incentive (Osmundsen, Sorenes & Toft, 2010)

Capitalization: The amounts and types of long-term financing used by a firm (Krasniqi, 2010)

Capital structure: A mix of a company's long-term debt, specific short-term debt, common equity and preferred equity (Shim & Siegel, 2008)

Financial leverage: The portion of a firm's assets financed with debt instead of equity (Shim & Siegel, 2008).

Financial Risk: The probability of loss inherent in financing methods which may impair the ability to provide adequate return. (Christoffersen, 2012)

Financial Risk Management: The measurement and the attempt to control trade-offs between risks and rewards in both profit-motivated enterprises and non- profit organizations (Christoffersen, 2000)

ABSTRACT

The purpose of this study was to assess the determinants on financial risk on Companies listed on the Nairobi Securities Exchange (NSE) in Kenya. The study used the existing theoretical underpinnings to identify these determinants and then the purposive sampling method to assess their impact. The study was guided by research objectives which include; assessing how the level of financial leverage, accessibility to financial information, capital structure, cost of capital, and the existing prudential supervision affect the financial risk of companies listed on the NSE in Kenya. The research design used in this study was mixed design employing both the qualitative and quantitative design. Secondary data was extracted from the NSE database, Capital Markets Authority (CMA) database, journals and other publications. Primary data was acquired through administering questionnaires and interviews to a purposive sample of Chief Executive Officers, Chief Financial Officers or Risk Officers of companies publicly listed on the NSE as at 2012. A sample of forty five out of a target population of sixty Companies publicly listed as at January 2012 was extracted from the Nairobi Securities Exchange website. A pre-test on a different sample gave a cronbach's alpha greater than 0.7 for all the variables. Data analysis was by descriptive statistics and inferential statistics using Statistical Packages for Social Sciences (SPSS) version 24. Analysis of variance (ANOVA) was used to establish if there is a statistical significance between the observed and expected values with the Pearson chi square giving the degree significance of the relations, hence establishing the hypothesis. The results indicate that four of the variables, level of leverage, cost of capital, capital structure and prudential supervision have a positive and significant effect on financial risk. Accessibility of financial information has a weak negative correlation with financial risk of listed companies on the NSE, typical with financial markets which are not strong. The study gives recommendations which include the adoption of proper financial risk management systems and improving the efficiency of prudential regulation and supervision procedures in order to improve compliance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Financial risk measures the additional risk that the firm's stockholders bear when the firm is financed with debt as well as equity (Lee, 2010). Globally, financial risk is a major concern and there are numerous studies to support the need to investigate it. Breen and Lerner argued in the context of decision making that variations in financial and operational decisions could change the stock returns and may enhance the uncertainty regarding investment (Skogsvik, 2008). Lane (2003) addresses the financial crisis in Europe and U.S.A and points to heightened financial risks as the major cause of the decline (Altman and Sabato, 2007); (Hunton, Wright &Wright, 2004) and (Tamborini, Trautwein & Mazzocchi, 2014). Ohiorhenuan & Stewart (2009) point out that the main concern of the Global Risk Network (GRN) is systemic financial risk, that it is the most immediate, and from the economic point of view the most severe.

Deregulation, financial innovation, a rise in alternative capital pools, financial services convergence and the changing role of the non-banking institutions and intermediaries show changing implications for the nature of the systemic financial risk (Ohiorhenaun & Stewart, 2009). The implications include; decentralization of risk ownership and increase in importance of risk transmission, making financial risk management more critical.

Clarke (2010) explains that recent turmoil, bank-runs, global equities sell-off and the "credit crunch" have demonstrated sophisticated and interconnected nature of the financial market making the seemingly localized problem to become a global financial risk. McGuigan (2012) and De Nicolo and Lucchetta (2004) explore the global issues associated with making financial decisions, and show how financial decisions made within enterprises affect the entire economy. These studies point to the same view on financial risk at a global level.

McGuigan (2012) also explains that as much as there is no single cause of the financial crisis of 2007 – 2010, proper financial management would have minimized the effect of the financial crisis; it would have minimized the effect of the extraordinarily low mortgages and the stock market bubble which spread to the wider economy from the USA. Shin (2012) finds increased risk to the global financial system with the Euro area crisis being a principle source of concern. More recent studies indicate that Credit risk (the bond bubble) , Duration risk, Impaired Trading liquidity and Emerging Market capital outflow spill over risk as most important presently. Chung (2014) shows the global liquidity variable which takes account of the balance sheets of non-financial corporations, hence deepens our understanding of vulnerability to financial crises.

Studies on the developing countries indicate the need for change in policies and controls in financial risk management. Gemech, Mohan and Reeves, (2011) point to the impact of high uncertainty of commodity prices in financial risk management in developing countries in the effort to prevent or reverse the deterioration in their balance of trade, and mitigate short term volatility.

There is still emphasis on the importance of financial risk management as much as some risks may offset each other since many financial instruments have significant overlaps. Jomo and Rock, (2003) examine the different positions of Asia and Africa in the global economy explaining the different levels of financial risk faced by each continent, and pointing out that risks associated with financial globalization are high, exposing fragile economies to highly volatile external forces. Studies on financial risk in East Africa include McCord and Osinde (2003) who describe how through Rotating Savings and Credit Associations **(**ROSCAs), strong community and social networks in Uganda and Kenya, people create mechanisms to manage the financial risk in their lives.

Helms (2006), demonstrates the increasing role played by the microfinance sector in provision of financial services and reinforces the need to have mechanisms to minimize financial risk. Drehmann & Nikolaou (2012) point

out the regulations adopted by the East African Community in the years 2005 to 2008 which were aimed at minimising financial risk. They reiterate that the East African integration of the financial market requires harmonization of the regulatory frameworks, trading system and taxation in order to minimize the financial risk.

In the Kenyan scenario, financial risk is studied by Hoti and McAleer (2005), and they describe the changing financial risk rating since 1992. They indicate the overall increase in the financial risk rating which fell to 40 by 1992 from 70 by 1997 and has remained inconsistent over time. Reasons for inconsistency are varied including poor weather conditions, inept agricultural policies, political unrest and increasing oil prices on the world market.

Kirkpatrick, Murinde and Tufala, (2008) indicate the improved banking supervision in Kenya, yet at the same time shows the negative effect of "political banks" in the 1980s leading to a high financial risk rating for Kenya. Ledgerwood and White (2006) explore the different prudential requirements by the Central Bank of several countries including Kenya, and show how these requirements play a role in minimizing financial risk. They show the effort made by Micro-finance institutions in meeting these requirements.

Studies have identified and used different determinants, theories and models in explaining financial risk. Fundamentally, degree of financial leverage is used to measure level of leverage. Accessibility of financial information as a determinant of financial risk has previously been identified in the studied by Salami and Iddirisu (2011). Prudential supervision is captured by Short, Kevin & Darren, (2002) who researched the impact of the percentage of shares held by management on leverage. Suto (2003) used ownership concentration as one of the determinants of financial leverage in his study. La Porta *et al.,* (2002) researched on how investor protection impacted on financial leverage of firms. Another study focussing on prudential regulation and supervision was by Desai, Foley and Hines, (2004). These studies point to prudential regulation as a determinant of financial risk.

Cost of capital as a determinant of financial risk was identified in the study from Bancel and Mittoo (2004) who carried out a study and concluded that rate of interest significantly affects the leverage of a firm. Sharfman and Fernando, (2008) in their study of 267 US found out that a lower cost of capital leads to improved environmental risk management. Such lowered costs of capital should, in turn, increase the firm's overall economic performance (Scott, 2005) and thereby help to explain the effect on leverage.

Studies on capital structure show a causal relationship with financial leverage but the reverse is also possible. Hovakimian (2011) and Salawu and Agboola (2008) show that there exists an inverse relationship between excess leverage, relative to targeted leverage and the financial leverage of the firm. The capital structure of a firm is a decision made by the Board of Directors as demonstrated by Noe, Micheal and Jun, (2003) on the relation between top management's experience and debt of a firm. Wen, Rwegasira and Bilderbeek, (2002) dealt with the relationship between board size and the debt of a firm. Berger and Bouwman (2009) and also Wen *et al.,* (2002) show an inverse relationship between tenure of directors and management on debt.

This study uses theories that have been used in previous studies on financial risk. Asymmetric information theory has been used to explain the variation in the relative cost of finance for the different sources of finance (Bénabou & Tirole, 2010) and (Frank & Goyal, 2003). More debt, according to signalling hypothesis implies a higher market value hence low financial leverage (Davidson, Anderso, Wyn & Brown, 2004). Incidentally, this theory is also used to explain capital structure decisions (Cassar & Black, 2003).

The pecking order theory suggests that firms prefer to use internal equity to pay dividends and implement growth opportunities and if external finance is needed, firms prefer to use debt before external equity (Frank & Goyal, 2003). Brierly (2005) argue that there is a negative relationship between leverage and profitability when pecking order theory is used.

La Porta *et al*., (2002) postulates that size and breadth of capital markets vary systematically and positively associated with quality of legal systems across

countries, that if capital markets are smaller or narrower firms may rely more on internal finance or inter-firm credit in order to significantly reduce the financial risk attributed to debt financing.

Leverage "irrelevant" theory's proponent is Modigliani and Miller, and it is used in many studies to introduce the relevance of leverage. Korajczyk and Levi (2003) use the target leverage model to explain capital structure models; Korajczyk and Levi (2003), Francois and Morrellec (2004), Goldstein, Ju & Harfman, (2001). Chen and Zao (2005) showed empirically and theoretically that leverage ratio can revert to the mean mechanically regardless of the theory describing the financial decisions, hence supporting the leverage "irrelevance" theory.

The trade-off theory shows the tax benefit and cost of bankruptcy. Brealy, Myers and Allen, (2006) were the first proponents by arguing that firms balance debt and equity position by making a trade-off between the value of the tax shield on interest and the cost of bankruptcy or financial distress. Gaud *et al.,* (2005) on basis of empirical study of 104 Swiss companies found that the trade-off model works in explicating capital structure. Casser and Holmes (2003), Morellac and Smith (2003), Parrino and Weisbach (2005) use a similar theory in their studies.

The rationale behind this study of the determinants of financial risk on companies listed on the NSE is that there exists a two way relationship between the performance of the listed companies and the performance of the NSE, and both depend on several factors, among them financial risk management .

The performance of the capital market affects the performance of the listed firms as it affects the economy. Di Bella (2011) observes that the most important indicator of inefficiency which strongly translates to poor economic performance is the inadequate number of investors in the capital markets, that the high level of uncertainty at the capital markets discourages potential investors into these markets.

The performance of the capital market in Kenya depends on the performance of the firms listed on the Nairobi Securities Exchange (NSE), which individually and cumulatively affect the market performance. The managements' knowledge of the determinants of financial risk and how they affect performance is therefore important so as to ensure the firms remain competitive both locally and in the global market. Most firms expand their markets (including opening branches locally and internationally or even forming networks) and in an effort to become or remain profitable. This therefore makes the legal aspect in the modern and highly dynamic networks an important issue.

Khan and Senhadji (2003) identifies: speed, know-how and trust between participants as major components of a network. Transactions and contracts between networks should take place efficiently and precisely to minimize financial risk. The Kenyan Government has put up policies to minimize financial risk, starting from the top where the Constitution of Kenya in chapter twelve stipulates the proper use of public finances. Additionally, Sichei *et al*., (2012) reporting on Public Financial Management Act of Parliament of 2004, emphasise the effort to minimize financial risk whereby the Government takes responsibility to avoid, identify and resolve financial problems.

1.2 Statement of the problem

Financial risk represents the risk of being unable to meet prior claims on the company with cash generated by the firm. Debt servicing commitments usually account for a large component of these prior claims. Flesch (2009) points out that the finance theory's premise is that the goal of management should be to maximize the market value of the company's shareholder equity through investments in an environment where outcomes are uncertain. In order to ensure that financial risk strategy add value for shareholders therefore, a sound relationship between risk management and shareholder value has to exist.

Schmukler and Vesperoni (2006) suggested that financial globalisation tends to intensify a country's sensitivities to foreign shocks. This process is inevitable as countries embrace internationalisation of financial and investment services

in the effort to benefit from the international market and to be able to diversify risks. Additionally, Claessens *et al*., (2002) argue that many stock markets are shrinking as trading moves from domestic markets to major global stock exchanges. Irrespective of the benefits that go together with increased networking and globalization, financial risks through contagion effect could affect the financial sector seriously. Sichei *et al*., (2012) indicate that a slow-down in the global economy from 5% in 2010 to 3.8% in 2011 resulting from the rise in oil prices, the Euro debt crisis and a slow-down in leading emerging economies; all these constitute financial risk. The report further pointed out that the Kenyan economy decelerated in growth.

More specifically, the performance of the stock market slow-down, indicated by the drop in the NSE 20 share index by 27.8% from 4433 in December 2010 to 3205 in December 2011 (Ndung'u, 2012). Market capitalization dropped by 26% from K.sh 1167 billion in December 2010 to K.sh 868 billion in December 2011. This was attributed to erratic weather conditions, escalating oil prices, weakening of the Kenyan shilling and high inflation. The economic cost of business failures is relatively large. Evidence shows that the market value of the firms under financial risk decline substantially. The Kenyan corporate history is beset with a number of companies that have gone into insolvency but only a handful of companies have managed to come of out of it in sound financial health (Sitati & Odipo, 2011).

At the moment a number of public and private companies among them Kenya Planters Co-operative Union (KPCU) in 2010; Ngenye Kariuki Stockbrokers in 2010; Standard Assurance in 2009; Invesco Assurance in 2008; Hutchings Beimer in 2010; Discount Securities in 2008; Uchumi Supermarkets in 2006 and Pan Paper Mills in 2009 were put under statutory management (Kuria, 2012). Consequently, the suppliers of capital, investors and creditors, as well as management and employees are severely affected from business failures.

It is important for the management and investors to be conversant with determinants of financial risk and therefore put in place mechanisms to minimize their effects. This is elaborated by Olweny *et al.,* (2013) who

investigated the extent to which financial attributes affect individual investor risk tolerance at the NSE and concluded that the contribution of financial attributes in financial decision making should be considered by fund managers, investment advisors and individual investors. In line with this, the study aims at showing that there is a significant effect of other factors such as level of financial leverage, availability and accessibility of financial information, capital structure, cost of capital and prudential supervision on the financial risk of listed Companies on the NSE. The study also gives recommendations on how to minimize their effect in order to ensure a more vibrant capital market and an accelerated economic growth.

1.3 Objectives of the study

1.3.1 General objective

The general objective of the study was to evaluate the determinants of financial risk of listed companies on the Nairobi Securities Exchange (NSE) in Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were:

1. To evaluate the influence of financial leverage on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya.
2. To establish the influence of accessibility of financial information on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya.
3. To determine the influence of capital structure on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya.
4. To examine the influence of cost of capital on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya.
5. To determine the influence of prudential supervision on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya.

1.4 Research Questions

The research questions of the study were -:

1. What is the influence of the level of financial leverage on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?
2. How does the accessibility of financial information affect the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?
3. What is the influence of the capital structure on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?
4. How does cost of capital affect the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?
5. What is the influence of prudential supervision on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?

1.5 Research hypothesis

This study employed the following null hypotheses:

H_{o1}: Level of financial leverage does not significantly influence the financial risk of companies listed on the NSE.

H_{o2}: Accessibility of financial information does not significantly influence the financial risk of companies listed on the NSE.

H_{o3}: Capital structure does not significantly influence the financial risk of companies listed on the NSE.

H_{o4}: Cost of capital does not significantly influence the financial risk of companies listed on the NSE

H_{o5}: Prudential supervision does not significantly influence the financial risk of companies listed on the NSE.

1.6 Significance of the study

It is clear that whereas a financial failure does not constitute a financial crisis; a financial crisis starts as a financial failure which is brought about by increased financial risk (Crocket, 2003). Lack of proper financial risk management systems in individual sectors lead to the spread of financial risk to the country as a whole and eventually to the other parts of the world.

Flannery and Rangan (2006) postulates that costs of financial distress include the legal and administrative costs of bankruptcy, as well as the subtler agency, moral hazard, monitoring and contracting costs which can erode firm value even if formal default is avoided. This therefore means that proper financial risk management processes should be put in place in individual sectors to avoid such financial crisis as the Mexican crisis of 1994 to 1995, East Asian crisis of 1997 to 1998, Argentina crisis of 2001 and whose effects are still felt, among others.

Ltaifa, Kaendera and Dixit, (2010) explain the type of intervention put up by the Kenya government to mitigate against the effect of the global financial crisis. They explain that Kenya used a sporadic and modest way to restore confidence and smooth movements of the exchange rate. Given the magnitude of effect, long term rather than short term solutions should have been used.

It is imperative that proper financial risk management policies should be enacted and implemented in order to facilitate the achievement of the Millennium Development Goals. This study is important because it will assess the determinants of financial risk hence provide important information to the different participants in the economy.

1.6.1 Listed Companies

This study will be instrumental in providing important information to the management of the companies which are listed and the ones which are not to enable them increase shareholder value (Alaghi, 2013), put in place policies to manage financial risk at the company level which is essential for improved

performance, and increase investor confidence that allows the firm to compete favourably in the local and international market.

1.6.2 Retail and Institutional Investors

The study is also important because it will enlighten the investors on the effects of the determinants of Financial Risk hence empower them to monitor and access the implications of each on their investment decisions in order to ensure optimal returns and avoid being trapped in bankruptcy.

1.6.3 Institutional regulatory bodies

This study is important to the Institutional regulatory bodies such as the Central bank, the Capital Market Authority, Insurance Regulatory Authority and the Retirement Benefits Authority since it will help put in place policies to safeguard investors' interests.

1.6.4 Policy makers

This study is also important to the Government as it will help put up laws and legislation to promote and empower the different regulatory institutions so as to make them more effective in their endeavours. It will also facilitate enactment of laws and regulations to help minimize financial risk, especially risks related to international business, and also put in place long term as opposed to short term solutions to financial risk. This will assist in mitigating against the effects of the financial global crisis and also facilitate the Kenyan government towards accomplishing vision 2030 objectives.

1.6.5 Researchers and Academicians

This study will add to the body of existing knowledge on the determinants of financial risk. Of equal importance is that it also points to the gaps hence offering challenge to researchers on areas for future research. This topic is not adequately covered in the East African region therefore this study will act as an indication for the need of more studies on the same topic and this could be fundamental in the East African Community (EAC) economic market integration.

1.7 Scope of the study

The scope of this study covered firms from different sectors of the economy listed on the Nairobi Securities Exchange as at January 2012. This included firms from sectors covering wide range of economic activities like Agriculture, Commercial and Services, Telecommunication and Technology, Automobiles and Accessories, Insurance, Investment, Manufacturing and Allied, Energy and Petroleum, Finance and Construction and Allied. These sectors were selected not only because of their immense contribution to the economic development of Kenya but also because of the realization of the amount of finances the public investors have put in them.

The financial institutions were included irrespective of the high volatility in their finances as compared to the rest of the companies (Engle, 2004). This is because the sector immensely affects the operations of the other sectors and also the capital market. This study was only limited to the companies listed on the Nairobi Securities Exchange.

Studies have shown numerous determinants of financial risk but this study was limited five determinants only. Level of leverage, Capital structure, Cost of capital, Accessibility of financial information and Prudential supervision were used as the determinants of the financial risk of listed companies on the NSE.

1.8 Limitations of the study

The main limitation of the study was that most companies listed on the NSE were reluctant to provide the information required because they considered it confidential. This was overcome by the introductory letter from the University reassuring them that the information was strictly for academic purpose and would be treated with utmost confidentiality. Some respondents may not have had time to participate in the research hence an opportunity cost. The non-response or return of incomplete questionnaires in the survey was detrimental.

Non-sampling errors such as under-coverage where the sampling frame may not include other important elements in the population affect the results of the study. Sampling errors such as lack of specific consideration to equal sample in

gender caused by the existing imbalance in the target population may imply that making generalizations especially those that may have gender as a moderating variable may affect the results. Misunderstanding the question or giving responses contrary to personal opinion also affects the outcome of the study.

Micro- and macro-economic context was assumed to remain constant or not to change so significantly as to invalidate the research objectives. The determinants of financial risk are not limited to the ones investigated. Others such as networking, size of the form and so on may be significant.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter deals with the review of the empirical and theoretical literature relevant to determinants of financial risk and shows its linkage to the research questions. It indicates what has been done by other researchers including the methodologies used and identifies the gaps. The conceptual framework is then laid out to show the interaction between the variables and finally a summary of the literature review is provided.

2.2 Theoretical Framework

Financial risk draws upon numerous theories, enhanced from the Modigliani and Miller theory. The relevant theories explaining these variables are explored, indicating the existing studies and their conclusions. The theories include Leverage "irrelevance'' theory, Asymmetric information theory, Pecking order theory, Static trade-off theory and the Legal and regulatory environment framework.

2.2.1 Leverage "irrelevance" theory

This theory's proponents are Villamil (2008) in their seminal paper "The cost of capital, corporation finance, and the theory of investment" (Kumar, 2008). They postulated that the firm value is independent of its leverage as long as there are no tax subsidies on interest payment, no transaction costs, and the interest rate on borrowing is the same for Corporations and individuals.

Villamil (2008) challenged the traditionally held notion that a firm could increase its value by using debt as part of its capital structure. In their proposition they explain that the investors can create any leverage that they wanted but were not offered, or the investor can get rid of any leverage that the firm took on but was not wanted. As a result, the leverage of the firm has no effect on the market value of the firm.

In addition to the original Modigliani and Miller paper, important contributions include papers by An (2012). Other studies promoting the proposition include Ono (2006) who investigated valuation effects of exchangeable debt calls and concluded that the respective shareholders do not experience any significant wealth changes.

Miller and Modigliani in their second "irrelevance" proposition indicate that given a firm's investment policy, the dividend pay-out it chooses to follow will affect neither the current price of its shares nor the total return to its shareholders (Baral, 2004). In other words, in perfect markets, neither capital structure choices nor dividend policy decisions matter.

Studies have shown the use of certain factors in determining the financial leverage of the firm, hence the financial risk. These studies include Farma and French (2012), Avramov, Chordia and Jostova, (2009). Kumar (2008) points out that numerous documented researches showing a fall in equity prices just before the announcement of new equity issue and in the few years that follow hence validating the M & M leverage "irrelevance" theory.

2.2.2 Asymmetric information theory

The asymmetric information literature indicates that borrowers have an informational advantage over lenders because borrowers have more information about the investment projects they want to undertake. This informational advantage results in moral hazard and adverse selection (Schnabl & Hoffmann, 2008).

Adverse selection and the classic "lemons" problem were first described by Brealey *et al*., (2012). A lemons problem occurs in the debt market because lenders have trouble determining whether a borrower is a good risk or, a bad risk. The failure to distinguish between the borrowers of good quality and bad quality (the lemons), forces the lender to make the loan at an interest rate that reflects the average quality of the good and bad borrowers.

Petersen and Rajan (2012) explains that information asymmetry can result in credit rationing in which some borrowers are arbitrarily denied loans as lenders

decrease the amount of loans that are offered. This in turn raises the interest rates further. De Franco, Kothari and Verdi (2011) indicate that a small rise in the riskless interest rate can lead to a very large decrease in lending, and possibly a collapse in the market.

Schnabl and Hoffmann (2008) explain moral hazard as a situation where an arrangement that relieves a party of some risk causes the party to engage in riskier behaviour. In this case the borrower may invest the borrowed funds in projects with high risk with the expectation of making high returns. This may not be forthcoming, and the lenders in the effort to limit this behaviour, introduce individual provisions in loan contracts that make it harder for borrowers to take excessive risks or shirk repayments of the loan. This includes disbursement in increments, conditional on performance to date.

The necessity of collateral is also stressed so as to decrease the risk. This leads to an increase in transaction costs, affects the amount of credit financing a firm can access hence increasing the financial risk of the firm.

Investors look for two types of signals from managers: the amount of debt and dividends issued. Fama (2012), Pinegar and Lease (2012) in different studies on exchange offers, and Altman (2012), all postulate that there is a positive relationship between stock prices and leverage due to positive signalling effect.

Chen *et al*., (2008) points out that the insiders do not normally sell their shares during leverage – increasing exchange offers because they take advantage of the information they have on the prospects of the firm. Habib and Johnsen (2000) show that debt or outside equity could be used to elicit accurate information about the value of a firm in alternative uses.

Frank and Goyal (2003) argue that since large firms are usually more diversified and have better reputations in debt markets, they are more likely to have more debt than equity financing. Hall *et al.,* (2004) explain that information asymmetry is a bigger problem for small firms than big ones since much of the data which they supply to banks during loan applications is not readily verifiable, hence making access to debt financing elusive.

2.2.3 Pecking order theory

Reid (2003) introduced a framework consistent with the pecking order theory that Flannery and Rangan (2006) revived and named. The pecking order hypothesis suggests that firms finance their needs in a hierarchical fashion starting with internally available funds, then debt, and finally external equity In this theory it is assumed that there are two types of companies, 'good' and 'bad'. Both firms want to raise capital and the first best option is to issue securities at fair value.

The “bad” firm will misrepresent itself as a good firm by issuing securities as first means of financing, hence signalling high quality to the market. On the other hand, the “good” firm will use least information financing, that is, internal financing, before issue of securities, in a pecking order, hence signalling lower quality resulting in the market giving it less value as it sets the price of securities.

Ogawa *et al.,* (2011), Flannery and Rangan (2006) and Audretsch *et al*., (2005) clearly bring out the pecking order hypothesis which suggests that firms prefer to use internal equity to pay dividends and implement growth opportunities; and if external finance is needed, firms prefer to raise debt before external equity.

According to the pecking order theory there is no specific reason to issue equity when profits are high. There are several views as to why firms prefer internal financing as opposed to external financing. Reid (2003) suggests that internal equity is preferred with the intention of avoiding flotation costs which usually accompany external finance. Furthermore, flotation cost of debt is usually less than that of external equity.

A contrary view is given by Myers (2001) and Myers and Majluf (1984) who argue that net benefits associated with debt financing, in terms of tax shield and risk of financial distress, are likely to outweigh flotation costs. Pecking order theory is also supported by Titman and Wessels (1985) whose study shows that more profitable firms tend to use less external financing as compared to internal financing. Studies by Maslis and Korwar (1986), Asquith and Mullins

(1986), Kolodny & Suhler (1985) all show that the issue of equity has negative effects on the share prices because they are interpreted as bad news.

Jamie (1996) carried out a study on determinants of Small and Medium Enterprises (SMEs) capital structure, done on 3500 unquoted SMEs in the UK and found that age of the firms was negatively related to long term and also short term debt. This is consistent with the pecking order theory. Akhtar (2005) postulates that multinational companies are likely to have relatively lower debt than domestic companies since they have varied sources of revenue and better business conditions.

Hall *et al.,* (2004) supports the view that firms which can generate more earnings borrow less externally. Fama and French (2002) demonstrated that the negative relation between leverage and profit is due to pecking order. Frank and Goyal (2003) tested pecking order theory on publicly traded American firms and concluded that in this case, internal financing is not sufficient, hence the use of external financing.

Rajan and Zingales (2012) "neutral mutation" proposition is close to the idea of the historical chance aspect of the pecking order theory that places firms as lucky or unlucky. Flannery and Rangan (2006) stated that historical chance idea identifies firms having sticky dividend policies and unpredictable profitability variability.

Thorsell (2008) however argues that firms with a strong profitability use strategies to safeguard their position; for instance brand building, monopolizing production resources, decreasing risk taking, or investing in research. One of the effects of the historical chance is that capital structures should change slowly over time. Most studies therefore support the pecking order theory since they show that financing decisions, following whichever hierarchy eventually determine the financial risk of a firm.

2.2.4 Static trade-off theory

The trade-off theory's main idea is that benefits and costs of debt financing yield an optimal debt-to-assets ratio for a company. This theory came as a result to 'correct' the Miller and Modigliani's proposition 1. There has to be both positive and negative effects of debt financing for there to be a trade-off result.

Wu & Wang (2005), the proponents of static trade-off model argue that firms balance debt and equity positions by making trade-offs between the value of tax shields on interest, and the cost of bankruptcy or financial distress. Scott (1977) postulates that increase of debt as opposed to equity enhances the financial position of the firm in that, debt is tax deductible whereas equity is not.

The agency cost of cash flows is also lower with debt financing, since a higher level of debt decreases the cash flows through interest payments hence decreasing the likelihood of unwise investments. This therefore implies that as the level of debt financing increases, so should the value of the firm. Furthermore, in case of bankruptcy creditors have a claim to the residual earnings whereas shareholders do not (Pace, 2010). There is however a limit to the tax deductible debt because for a firm with a negative or zero operating income, an interest deduction does not help much. Furthermore, (Lee, 2006) postulates that firms with a lower tax bracket have less tax incentive than those with a higher tax bracket

Hovakimian *et al.,* (2001) found that even if past returns seem to matter for leverage, firms move towards a trade-off predicted capitalization when issuing or retiring more substantial amounts of capital. Fama and French (2002) pointed out that the empirical predictions shared by the trade-off and the pecking order theory are confirmed.

Graham (2003) postulates that high tax rate firms use debt more than low tax rate firms in order to take advantage of tax shields on interest payments. Thornhill *et al.,* (2004) explains that firms in goods producing industries will have higher debt to equity ratio than the ones in the service industry. The

difference is brought by one requiring asset collateral and the service industry is based on intellectual. Gaud *et al.,* (2005) after an empirical study on 104 Swiss companies concluded that the trade- off model works for the capital accordance with the age and size of the company (Namusonge, 2010) large firms are likely to have a higher level of debt because of the fact that they have diversified risk and have easier access to market bonds.

The other supporters of static trade-off are; Mackay (2003), who postulates that company leverage is positively related to flexibility in investments for firms and Pittman (2002), who points out that young firms rely more on investment tax shields than debt tax shields in their younger stages. Other studies supporting this theory include Parrino and Weisbach (2005), Cassar and Holmes (2003) and Strebulaev (2007) among others.

2.2.5 Efficient Market Hypothesis (EMH)

An efficient market is one where the market price is an unbiased estimate of the true value of the investment. Lee (2006) points out that a weak-form EMH asserts that stock prices reflect all information contained in the history of past prices while semi-strong form hypothesis asserts that stock prices reflect all past and current publicly available information. The strong-form hypothesis asserts that stock prices reflect all relevant information, including insider information. No group of investors should be able to consistently find under or overvalued stocks using any investment strategy. The efficient markets hypothesis continues to be the best description of price movements in securities markets since evidence of excess returns in a market implies inefficiency in the market. Accessibility of financial information should allow a market to operate under the strong market hypothesis. Lack of efficiency will lead to variability in returns hence affect the level financial risk of a firm.

The Legal and regulatory environment framework was initiated by La Porta *et al.,* (2002) in Levine, (2005) to explain the relationship between financial risk and prudential supervision. They did a study across 49 countries and pointed out that the nature and effectiveness of financial systems are traced partly to differences in investor protection against expropriation by investors.

The protection is reflected by the legal rules and quality of their enforcement. Subsequently, Botero *et al.,* (2004) compared external financing as a function of origin of their law and concluded that performance of public and private institutions is less effective in countries exhibiting low levels of trust among citizens. Modigliani and Perotti (1996) focused on contract enforcement as a determinant of external financing.

The findings indicate that the relative treatment of shareholders and creditors affect capital structure. Djankov *et al.,* (2007) focussed on legal solutions of agency problems, emphasising on cross sector differences of the solutions. La Porta *et al.,* (2002) employ a model improved from the Becker's model (Lan & Wang, 2004) and Jensen and Meckling's (De Miguel *et al.*, 2004) who used a "crime and punishment" framework to show the level of protection of investors.

Rajan and Zingale (2001) postulate that openness is correlated with financial development. Djankov *et al.,* (2008) indicate that more valuable stock and a higher number of listed firms are indicators of better legal protection of outside shareholders. In separate studies, La Porta *et al.,* (2002) point to higher valuation of a firm relative to their asset and in La Porta *et al.,* (2000) point to greater dividend pay-out, among other factors as indicators of better legal protection of outsider shareholders.

Studies showing the legal framework underlying expropriation of minority shareholders by the controlling shareholders include Djankov *et al.,* (2008) and Grossman & Johnson (2000). Friedman & Johnson (2000), Maury and Pajuste (2005) and Fraser *et al.,* (2006) also show the evidence of expropriation. In Financial Institutions such as Banks, the rules and regulations of operations intended to minimize financial risk are set in the Basel 1 and Basel 11 Accord (Fraser *et al*., 2006).

High concentration of control and ownership, which is detrimental to shareholder protection is covered by Benos and Weisbach, (2004) and Rossi and Volpin, (2004) among others. Beck *et al.,* (2003) and Mahoney, (2001) show that most countries employ two main secular legal traditions; civil law

and common law which finally determine their financial systems. These include among others, the Company law based on the English common law system that regulates business in Kenya.

To increase the capabilities, competitiveness, quality of technology, operational methods and investments on development projects, organizations need financial support. Because of the significance of financial risk in financial management, the goal of this research is to examine the effects of the determinants of financial risk.

Kumar (2008) critically investigated the underlying factors affecting a firm's financial leverage from a perspective of theoretical underpinnings. He considered leverage irrelevance, static trade-off, pecking order and asymmetric information theories. This study therefore adopts the theoretical framework advanced by Kumar (2008) and implements specific amendments by introducing the variables relevant to the theories specific to the Kenyan situation.

2.3 Conceptual Framework

In line with the determinants used in previous studies on financial risk, this study proposes a conceptual framework in Figure 2.1 to link the determinants of financial risk of companies listed on the NSE, (which are the independent variables of the study) to financial risk (which is the dependent variable) in order to show the existing relationship. The independent variables are level of leverage, accessibility of financial information, capital structure, cost of capital and prudential supervision. The measurements for the individual constructs are also captured in the conceptual framework.

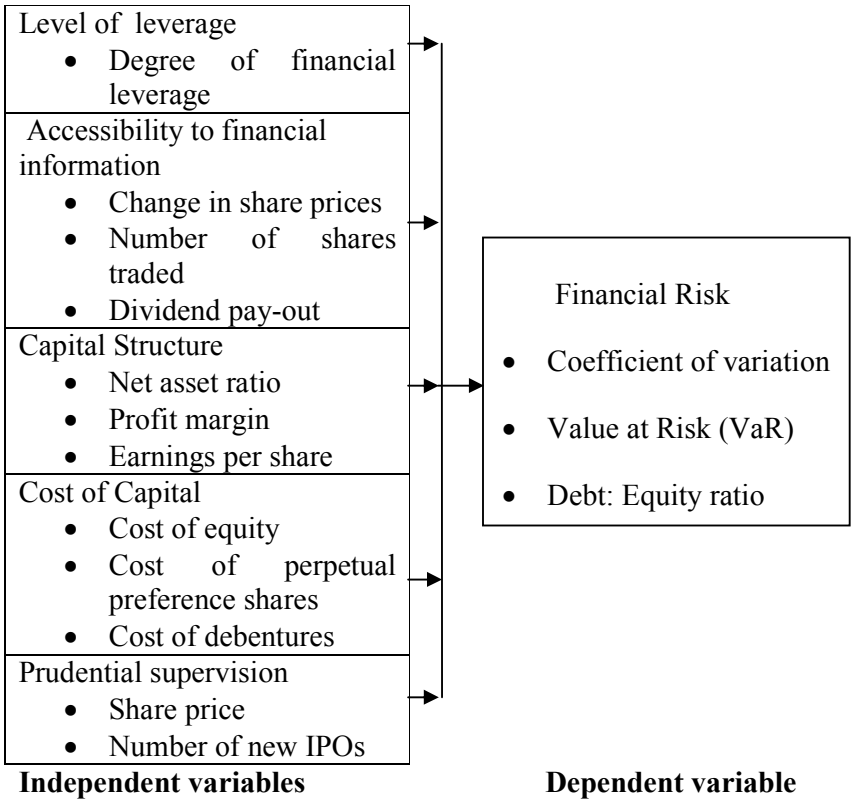

Figure 2.1: Conceptual Framework

2.4 Empirical Review of the determinants and Financial Risk

Chao and Zeng (2005) employed liabilities scale, interest rate, debt structure, profitability, operation ability and solvency as the determinants of financial risk. Wang and Chen (2010) selected solvency, profitability operation management to investigate financial risk. In this research, we summarise in five main determinants that affect financial risk in the case of listed companies on NSE. These determinants of financial risk are: leverage, availability and accessibility of financial information, capital structure, cost of capital and prudential requirements and explained in details in following sections.

2.4.1 Effect of level of leverage

Leverage is that part of the fixed cost which represents a risk to the firm; it could be operating leverage or financial leverage (Shim & Siegel, 2007). The leverage decision depends on the allocation between debt and equity in financing the firm. An "unlevered'' firm uses all equity for financing, while a

highly levered firm employs more debt to equity financing. Kumar (2008) postulates that the guiding principle of leverage it to choose the course of action that maximizes the firm's value.

Dynamic trade-off models can also be used to consider the option values embedded in deferring leverage decisions to the next period. Goldstein *et al.*, (2001) observe that a firm with low leverage today has the subsequent option to increase leverage. Under their assumptions, the option to increase leverage in the future serves to reduce the otherwise optimal level of leverage today.

Strebulaev (2007) analysed a model quite similar to that of Fischer *et al.*, (1989) and Goldstein *et al.,* (2001). Again, if firms optimally finance only periodically because of transaction costs, then the debt ratios of most firms will deviate from the optimum most of the time. In the model, the firm's leverage responds less to short-run equity fluctuations and more to long-run value changes.

Jostova and Philipov (2005) indicate that the leverage of the firm is an important determinant of its equity risk since senior securities have priority over common stock in the distribution of the firm's income as well as in the distribution of its assets in case of bankruptcy. The larger the debt in the firm's capital structure, the higher is the risk of default, and the lower is the valuation of its equity. Omar and Simon (2011) in their study of Corporate Aggregate Disclosures Practices in Jordan used leverage as a determinant of the level of financial risk and disclosures by applying the agency theory.

Jostova and Philipov (2005) further employ the firm's dividend record as a criterion of its effectiveness in successfully pursuing its own target dividend policy, and an indicative of its underlying earnings' stability in the face of business fluctuations. Since financial risk is the risk associated with fixed costs such as debt and preference stock, financial leverage therefore is a measure of financial risk, or in other words, a firm's financial risk reflects its financial leverage.

2.4.2 Effect of accessibility of financial information

Asymmetric information refers to the situation where one party has information not possessed by another party. Both Ross (1977) has used this concept to postulate that manager-insiders have information about their own firms not possessed by outsiders. Hernandez *et al.,* (2010) provides different categories of information which have different implications The information on key executives or insiders (either officers or directors) with their full employment history, would determine the type of financial decisions they make; the transactions category (e.g. stock buys or sales) that insiders make and the general trend for example, having more buys or sales in a year may indicate either a strong company or simply that the market is at a low point (implications); and the relationships (of a given company to other companies, including subsidiaries, potential competitors and institutional holdings in other companies (implications).

Devis (1996) postulates that preference financing is chosen when significant information asymmetries exist between management and outside investors. Onyango *et al.,* (2012) using complex descriptive approach to evaluate determinants of individual investor risk tolerance at Nairobi Securities Exchange postulate educational level and stock market experience as some of the determinants of risk tolerance.

This directly relates to availability and accessibility of financial information because risk tolerance determines the share price at the NSE which in turn determines the financial risk of the firm. Bhattacharya and Daouka (2002) showed that a well-functioning stock market should allow firms not only to raise financing but also to produce more informative stock prices. Where stock prices are more informative, this induces better governance and more efficient capital investment decisions.

However, in many developing countries, the cost of collecting information on firms is high, resulting in less trading by investors with private information, leading to less informative stock prices. The idea is that a more informative stock displays a higher stock variation because stock variation occurs because

of trading by investors with private information. By assessing the amount of debt financing as compared to equity financing for each individual company, and also the relative stock prices of companies listed on the NSE a valid conclusion will be reached on the level of financial risk of the companies listed on the NSE.

2.4.3 Effect of capital structure

Capital structure is the mix of the long-term sources of funds used by the firm (Shim & Siegel, 2007). They further explain that the capital structure decisions aims at maximizing the market value of the firm through employment of the optimal capital structure which minimizes the firms overall cost of capital and maximises the market price per share of the firm. David Durand provided the net income approach of capital structure (Danielson & Scott, 2006).

This approach states that a firm can increase its value by using the debt capital. Net operating income approach is the inverse to this approach. It contends that the value of a firm and cost of capital are independent of capital structure, thus the firm cannot increase its value by judicial mixture of debt and equity capital alone.

Solomon developed the intermediate approach to the capital structure. This rather traditional theory of capital structure pleads that value of the firm goes on increasing to a certain level of debt capital and finally the value of the firm decreases (Goldstein *et al.,* 2001). This theory holds the concept of optimal capital structure. Jensen and Meckling developed the capital structure theory based on the agency costs (Bauer *et al.,* 2008). They postulate that firms incur two types of agency costs; costs associated with the outside equity holders and the cost associated with the presence of debt in capital structure. Total agency cost first decreases and after a certain level of outside equity capital in capital structure, it decreases.

This therefore means that firms prefer internal financing as opposed to external financing because it reflects less financial risk. If a firm has to use external financing then it will work down the pecking order of securities. By assessing the order in which the companies listed on the NSE acquire financing

therefore, using the motivations of the manager rather than capital valuation principles, the level of financial risk can be identified.

2.4.4 Effect of cost of capital

Cost of capital is the rate of return that is necessary to maintain the market value of the firm or price of the firm's stock (Shim & Siegel, 2007). The cost of capital of a performing firm is indicated by a constant high stock price. This eliminates or minimizes variability or volatilities which increase financial risk. Another opinion (Sharfan & Fernando, 2008) puts the firm's cost of capital is an important determinant of its valuation for two reasons. First, the cost of capital is the expected rate of return demanded by a firm's investors for investing in the firm.

The higher the rate of return demanded by a firm's investors for the capital they provide to the firm, the more costly it is for a firm to finance itself .Second, the cost of capital is the rate that investors use to discount a firm's future cash flows. The higher the cost of capital, the lower the present value of the firm's future cash flows, hence the higher the financial risk.

The cost of capital is computed as a weighted average of the various capital components. This therefore means that by analysing the items on the right-hand side of the balance sheet such as debt, preferred stock, common stock, and retained earnings of companies listed on the NSE the conclusion on whether it is low-cost capital that is used or high-cost capital. High cost capital increases the financial risk of the firm. The cost of debt for instance, the interest rate which has to be paid is a financial obligation and can become a risk in times of low income.

Alaghi, (2013) considered the following determinants for systemic risk in financial management: Liquidity; Leverage; Operating Efficiency; Profitability and Firm Size to show that access to low-cost, low-risk and long-term capital resources is a crucial aspect for the companies, because any funding involves some charges which should be paid by the company through the returns on its investment, and the non-payment of such funds will result in serious problems including an increase in financial risk.

2.4.5 Effect of prudential supervision

These are rules and regulations put by the government to supervise and control deposit taking financial institutions, they are set down requirements that limit their risk taking. La Porta *et al*., (1998, 2000, and 2002) in separate studies show that the presence of these prudential regulations and the level of their enforcement motivate outsider shareholders and protect them from the activities of the insider shareholders, and this is reflected in the performance of the company on the stock market.

By studying the rate of increase in the number of companies listed on the NSE the initial public offers (IPOs), the valuation of the companies relative to their assets, the dividend policy and the dividend pay-out, this will give a picture of the level of legal protection hence the level of financial risk in the country.

Prudential regulation is also widely captured in the Basel Accords (Basel Accord I and Basel Accord II). Basel II code on SME financing is examined by Carey (2001). The implementation of this new code was intended to increase the stability in the banking sector by compelling them to have a risk sensitive amount of equity for each loan outstanding hence reducing financial risk (Schönborn, 2010).

Basel II does not explicitly demand the implementation of a risk management system, when rating a company the bank will check the existing management instruments and also the risk assessment (Henschel, 2008).This helps in assessing the ability of the firm to meet its present and future financial obligations.

There are there are two approaches to prudential supervision of the financial market: Institutional and functional. Under an institutional approach, the legal status of an institution determines its regulatory supervision. On the other hand, the functional approach seeks to regulate financial institutions based on the type of business they undertake, with disregard for how a given institution is defined legally (Raj, 2005).

In Kenya there are four key agencies and regimes for prudential regulation: Central Bank of Kenya (CBK) for banks and payments settlement; Insurance Regulatory Authority (IRA) for insurance; the Capital Markets Authority (CMA) for capital markets and the Retirement Benefits Authority (RBA) for pensions. The chief regulator is however considered to be the Ministry of Finance (Nzomo, 2009).

Huang and Thi, 2003 point out that the board of directors largely affect the final decision and also the implementation of the decisions made that, risk perception plays an important role in the enactment of financial risk management processes. This is determined by personality factors and cognitive biases. Some managers are simply more aggressive than others. Therefore some firms are more inclined to using debt in an effort to boost profits, whereas some managers are very conservative and prefer the capital structure that has always been used, even if it is not optimal (Weston & Brigham, 1990).

However, market-based outcomes reflect how the financial markets value a firm, particularly stock price or variations of it (Namusonge *et al.*, 2012). Claessens and Laeven (2005) use legal tradition and law enforcement to show the direct implications for how financial contracts are shaped. They showed that investments in high-enforcement and common law nations often use convertible preferred stock with covenants, while investments in low-enforcement and civil law nations tend to use common stock and debt and rely on equity and board control.

In other words, the low-enforcement environments force investors to use less-than-optimal contracts to assure their ownership and control rights, which in turn makes the operations of the businesses less efficient and increasing the financial risk. Stefano Rossi and Paolo Volpin studied the determinants of mergers and acquisitions around the world by focusing on differences in laws and regulations across countries. They find that mergers and acquisitions activity is significantly larger in countries with better accounting standards and stronger shareholder protection (Bhattacharya & Daouka, 2002). This finding

shows how better regulations improve the degree of investor protection within target firms and hence low financial risk.

2.4.6 Measurement of financial risk

Traditionally, financial risk is associated with the variance in the value of a portfolio. Financial risks can be of different forms. On one hand there are external financial risks depending on changes on financial markets. On the other hand there are internal financial risks, where the company itself is the source of the risks (Eichhorn, 2004). Engle (2004) indicates the implications when all investors follow the same objectives with the same information, which he called the Capital Asset Pricing Model (CAPM). Within this model, there is natural relation between expected returns and variance.

There has been a considerable amount of literature on the financial risk measurement; however, almost all the existing risk measures, either the popular Value-at-Risk (VaR) or expected shortfall, mainly focus on quantifying the possible large losses at the end of the predetermined time horizon. This focus may be appropriate when dealing with short-term risks (Yen & Lin, 2008). However, this risk measurement methodology would be inadequate for the longer-term risks, since they did not take into account the "intra-horizon risk," or the possibility that the losses incurred before the end of the specified time horizon might trigger other problems such as position rebalancing, early liquidation, or margin call.

The modern method of measuring Financial Risk is the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) class of models which provide risk forecast with mixed results (Bakshi & Panayotov, 2010). This is an extension of the Autoregressive Conditional Heteroskedasticity (ARCH) model which is a theory of dynamic volatilities and highly applicable in Finance, designed for characteristics like unpredictability, fat tails and volatility clustering (Parke & Waters, 2007). GARCH is well placed to explain volatilities on financial market (Engle, 2004).

Studies show different methods of measuring financial risk including the asset-liability ratio, probabilistic analysis, financial leverage coefficient, degree

of financial leverage, gap analysis, scenario analysis, portfolio analysis and others. Melicher *et al.,* (2011) explain a quick way of determining a firm's exposure to risk; that is by computing its degree of financial leverage (DFL). By computing the DFL of the companies listed on the NSE, the level of financial risk will be reflected. A high DFL means high financial risk for the firm.

2.5 Critique of existing literature relevant to the study

Different studies have applied various theories and variables to assess determinants of financial risk such as (Hall, Hutchinson & Michaelas, (2004), Fama & French (2002), and Noe *et al.,* (2003)). This study has used theories similar to the other studies but in addition to the different financial ratios, has used data which is descriptive in nature in order to capture the opinions of the respondents. This will highlight the importance of the role the managements' attitude and behaviour on the financial risk of the firms.

Studies on financial risk use capital structure and often assume that causation is from performance to capital structure; but there is evidence that the causation may also be reverse, hence the possibility of bias (Kumar, 2012). This study therefore uses capital structure as a determinant of financial risk in order to explain the reverse interaction. Studies on financial risk concentrate on treating each of the variables individually as opposed to this study, which looks at the effect of each of them and then assesses the effect of all the variables cumulatively on financial risk.

2.6 Research gaps

Keige studied business failure prediction using discriminate analysis (Taliani, 2012). He concluded that ratios can be used to predict company failure. However, the types of ratios that will best discriminate between failing companies and successful ones tend to differ from place to place. With the same argument current ratio, fixed charge coverage, return on earning to total assets, and return on net worth may be used successfully in predicting risk for a period up to 2 years before it occurs in the case of Kenya (Taliani, 2012).

Although Keige ascertains that stakeholders should pay attention to liquidity, leverage and activity ratios it is not clear which ratios are most suitable.

Kiragu carried out a study on the prediction of corporate failure using price adjusted accounting data (Taliani, 2012). He used a sample consisting of 10 failed firms and 10 non failed firms. Financial ratios were calculated from price level adjusted financial statistics. Discriminant model developed showed that 9 ratios had high corporate failure predictive ability. The results however differed from earlier studies including Kimura in 1980 who had concluded that liquidity ratios were not of any significance in financial risk prediction. Both had indicated that efficiency and profitability ratios were the most important.

Different methods have employed different factors or determinants to predict financial risk. Chao and Zeng (2005) employed liabilities scale, interest rate, debt structure, profitability, operation ability and solvency as the factors. Wang and Chen (2010) selected solvency, profitability and operation management to investigate financial risk. It therefore appears that numerous factors are considered in developing models for predicting financial risk. This study attempts to converge numerous factors into five main determinants that affect financial risk in the case of the listed companies at the NSE. However, the financial risk of a firm is also determined by other external factors such as networking, and this requires further research. Furthermore, this also implies that the other moderating, intervening, confounding and controlling variables are kept constant, a fact that cannot be true in reality, hence it is necessary for a model to be developed to capture most of the variables simultaneously.

2.7 Summary

Effective financial management is a key to success for any business. Business owners must be adept at balancing income, expenses and debt in a way that ensures the financial sustainability and growth of the organization. Being aware of external and internal determinants of financial risk is vital to mastering the art and science of financial management .Furthermore, financial risk is an important aspect of the global economy given the financial crisis observed in recent years.

The contagion effect has seen many countries suffer the consequences of market failures emanating from other countries due to globalization. It is important therefore that each country takes upon itself the initiative of putting in place effective financial risk management processes. A thorough understanding of the factors causing financial risk by management is important to enable them make sound financial decisions; hence in the process protect the country and the globe as a whole.

Different factors that have been employed in the literature to explain variation in the extent of predicting corporate financial risk using different determinants were used to test their validity within the companies listed on the NSE. In this respect, theories such as leverage 'irrelevancy', asymmetric information, pecking order, static trade-off and legal environment framework approach are employed to explain variations in the extent of effects on financial risk on companies listed on NSE.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter introduces the research methodology which includes the research design, sampling frame, target population of study, sample size, sampling procedures, and the data collection and analysis procedures. The study adopted both a qualitative and quantitative approach. Data analysis was undertaken by means of standardized statistical procedures. Questionnaires were used to capture qualitative and quantitative data from management of the listed companies under consideration. In addition guided interviews were used in cases where the respondents preferred them to questionnaires.

Using regression analysis model, determinants of financial risk are measured to aid in predicting financial risk in the specified companies. The study discusses the sample selection criteria and presents the empirical model under consideration. The objective here is to provide a clear rationale behind the research by giving a breakdown of the companies included in the study. The data collection procedures are preceded by pre-test of research instruments. The data analysis and presentation as well as the summary of the variable definition and measurement are presented.

3.2 Research Design

A research design shows how the problem under investigation will be solved. The function of a research design is to ensure that the evidence obtained enables the study to answer the research question as unambiguously as possible. The research design that was used is the mixed research design consisting of both qualitative and quantitative methods. The study intends to collect information from respondents on their attitudes and opinions on determinants of financial risk, therefore cross sectional survey method was used. This was most suitable because it involves collecting information from the people on their habits, opinions, attitudes and any other educational or social issues (Namusonge, 2010). The quantitative design was also used. This

is a formal, objective, systematic process in which numerical data are used to obtain information about the world (Burns & Grove, 2005). This data was extracted from the questionnaires as well as from the NSE database, the profit and loss accounts and balance sheets of the selected listed companies.

3.3 Sampling Frame

A sampling frame of this study included all the listed Companies on the Nairobi Securities Exchange as at January 2012.This was extracted from the NSE website since the information is in real time therefore always updated. This was necessary since there are frequent listings and de-listings on the NSE. The year 2012 was suitable since it was necessary to calculate the financial risk for different years and compare.

3.4 Target population

Besides increasing the academic literature on the subject from Kenyan market, the institutional setup of the Nairobi Securities Exchange provides a rich and unique setting, hence provides a suitable sample for the study. Furthermore, capital markets are a source of external financial risk for the firm and just as the internal sources affect the firms' financial position, so do the external sources, hence the importance of studying the NSE. Kenya's capital market is one of the most promising on the African continent.

The NSE is now the largest in the East African Community (EAC) and alongside the more recently established Uganda securities exchange are the only ones full open to foreign investors (Hearn, 2009). It is also central to the proposed regional integration initiative. The NSE has undergone several changes since inception in the 1920's in the effort to improve efficiency. The phases include the initiation stage, the formalization stage and the revitalization/restructuring stage (Ngugi, 2010). These stages have culminated into dematerialization, demutualization and eventually to self-listing (Okelo, Namusonge & Iravo, (2014). This study was therefore carried out on the Nairobi Securities Exchange in Kenya.

For the purpose of this study, population was represented by the number of companies listed to NSE as from 2011 to 2013. As at January 2012 the companies were clustered in ten different sectors; agricultural, automobile and accessories, construction and allied, commercial and services, energy and petroleum, insurance, investment, banking, manufacturing and allied, and telecommunication and technology .The questionnaires and interviews were administered to a sample of the companies listed as at January 2012.

Table 3.1 Target population

Sector	Population
Agriculture	7
Automobile and Accessories	4
Banking	11
Construction and Allied	5
Commercial and Services	9
Energy and Petroleum	4
Insurance	6
Investment	4
Manufacturing and Allied	9
Telecommunications and Technology	1
TOTAL	**60**

3.5 Sample and Sampling techniques

Random sampling was used to identify the companies whose financial statements were studied and analysed. This eliminated any biasness as the selected group contained elements representative of the characteristics found in the entire group. Questionnaires were administered to a sample of the companies listed on the NSE as at January 2012. Purposive sampling was used to identify the specific respondents in the companies since it was clear which employees in the company had knowledge and access to the information required in the study. Since most of the information required financial

knowledge, in each identified company the Chief Executive Officer, a Chief Financial Officer or the Risk Manager was required to fill in the same questionnaire. Publicly listed companies were selected for this study because they are believed to be information rich due to their diversity hence a source of an in-depth analysis.

Out of the sixty (60) companies listed on the Nairobi Securities Exchange as at January 2012, the sample size was calculated using a proportion of 75% which is in tandem with Mugenda & Mugenda (2003) argument that a 30% sample size is a good representation of the target population.

$S = 75\% \times N$

S = required sample size

N = the population size

$S = 75\% \times 60 = 45$

Table 3.2: Sample size

Sector	Population	Sample size
Agriculture	7	6
Automobile and Accessories	4	3
Banking	11	8
Construction and Allied	5	4
Commercial and Services	9	6
Energy and Petroleum	4	3
Insurance	6	5
Investment	4	3
Manufacturing and Allied	9	6
Telecommunications and Technology	1	1
TOTAL	**60**	**45**

3.6 Data collection Instruments

This study utilized structured questionnaires to collect primary data. Questionnaires are the most commonly used methods when respondents can be reached and are willing to cooperate. This method can get to a large number of subjects who are able to write and read independently. Mugenda & Mugenda (2003), points out that a questionnaire defines the problem and the specific study objectives hence suitable for data collection. Questionnaires are also relatively economical in terms of time and finances. Few respondents preferred interview method since clarifications could be instant hence the questionnaire was administered through interview method. The questions were read as they appeared on the questionnaire.

3.7 Data collection procedures

This study involved both primary and secondary data sources.

3.7.1 Primary data

This is original data which is originated for the purpose of the research at hand (Rudolph *et al*., 2009). The primary data collection procedure started with identifying the respondents and their accessibility. The availability of the questionnaires and competent research assistants were then ascertained. The availability of request permission to collect data was confirmed and advance letters send to the respondents regarding the voluntary nature of the study and how the information would be used.

The data collection procedure involved distribution of the questionnaires to the respondents by the researcher and four research assistants. They were to be collected on agreed upon time. The research assistants were instructed to ensure punctuality in appointments, friendliness and use of clear and simple language where the questionnaires are physically delivered or when they carry out the interviews. Some questionnaires were sent electronically to save on time and where physical accessibility is a challenge.

The research instruments were selected basing on which instrument would bring out the objectives of the study most clearly. The details of the population

sample such as literacy level, profession and culture and the geographical distribution was considered (Orodho, 2002). In this case the area covered is vast but accessible. Questionnaires were used for the top and middle level management because they save on time, confidentiality is upheld, reduces opportunity for respondent bias and the information can be collected from a large sample and diverse region (Orodho, 2002). The questionnaires were combined with interviews for the functional level of management so as to facilitate clarifications and explanations where required. An in-depth analysis of information on the NSE database and the financial statements of the respective firms were also a source of information.

3.7.2 Secondary data

This is data that is originated for purpose other than that of the research at hand (Ozer *et al*., 2006). Secondary data already exists in records such as financial statements, sales data, expenditure records and more .This study utilised data from the NSE database covering a period of three years from January 2011 to December 2013. More information such as on the theories and models was acquired from the internet, the online library and e-journals. The information is ultimately analysed together with the primary data to give a conclusion.

3.8 Pilot study

Pre-testing of the research instrument was done using a small representative sample selected based on convenience. A pilot study aims at showing the validity and reliability of the study. In this study, companies listed on the NSE based in Mombasa County were used to facilitate identification of the potential errors or biasing effect of different questions and procedures. The data was analysed using SPSS version 24.The pilot study made it possible to find out the clarity and objectivity of the selected questions.

Cronbach's alpha reliability coefficient normally ranges between 0 and 1 (Gliem & Gliem, 2003). The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. In this study the Cronbach's alphas were > 0.7 indicating that the perceived scales had enough variance and hence were suitable. They were therefore included in the multiple

regression methods to be used in the study in relation to establishing the determinants of financial risk.

The Cronbach's alphas were computed using SPSS Version 24 to assess internal consistency of the resulting scales. Endorsing as ''True or agree'' an item affecting financial risk was scored as a 1.'' False or Disagree'' was scored as 0, whereas "neither agree nor disagree" or I don't know was scored as 0.5. These values were consequently used to test the regression model.

3.9 Data analysis and presentation

Qualitative and quantitative approaches were applied in this research as advocated for by Neuman (2000); and Babbie and Mouton (2001). These two main research approaches were examined with respect to their suitability to the current research.

3.9.1 The qualitative analysis

Qualitative research employs a range of philosophies, research designs and specific techniques, including in-depth qualitative interviews; participant and non-participant observation; focus groups; document analyses; and a number of other methods of data collection (Pope *et al*., 2007; Olsen, 2003; Denzin, 1994). The research adopted both qualitative and quantitative methods in determining factors affecting financial risk in Companies listed on the Nairobi Securities Exchange in Kenya. Questionnaires and interviews were used to collect qualitative data.

3.9.2 The quantitative Analysis

Quantitative research is based on testing the theories composed of variables, measured with numbers, and analysed using statistical techniques and aims at determining whether the predictive generalisation of the theories hold true (Creswell & Maitta, 2002: Bryman, 2004). This study's data analysis was based on the principle components of the Financial Risk model and how they affect the financial risk of listed firms on the NSE.

A stepwise logic regression procedure to predict the effect, or lack of effect of the determinants on the financial risk was applied. Six classes of variables were entered separately in the order: demographic variables; relationship between availability and accessibility of financial information and financial risk; the link between capital structure and financial risk; the effect of cost of capital on financial risk; the impact of prudential regulation and supervision on financial risk. The demographic variables were entered first to allow for control of their impact on financial risk before accessing the ultimate impact of the determinants on Financial Risk, for instance how the period of listing affects the level of financial risk.

Regression model was used to assess variables that are considered in determining financial risk to the organization listed at Nairobi Securities Exchange (NSE). Regression Analysis is a statistical modelling technique used to identify meaningful, stable relationships among sets of data. The application of analytical procedures is based on the premise that, in the absence of known conditions to the contrary, relationships among information may reasonably be expected to exist. Regression measures the causal relationship between one dependant and one independent variable. Multiple regression analysis measures the effects of multiple independent variables on one dependent variable.

The dependent variables of the proposed model was financial risk, and the independent variables consisted of level of leverage, availability and accessibility of financial information, capital structure, cost of capital and prudential regulation and supervision as explained in section 2.4. By taking into the much specification of companies listed on the NSE into account, in this research a model similar to Alexander Bathory's (Fu *et al.,* 2012) was used to measure the financial risk. The study adopted the following multiple regression model to test the theoretical relations between financial risk and the determinants if the financial risk of the firm:

$$\boldsymbol{FR} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}(\boldsymbol{LEV}) + \boldsymbol{\beta_2}(\boldsymbol{ACCESS}) + \boldsymbol{\beta_3}(\boldsymbol{CAPS}) + \boldsymbol{\beta_4}(\boldsymbol{COSC}) + \boldsymbol{\beta_5}(\boldsymbol{PRUD}) + \ldots + \boldsymbol{\alpha} \quad \ldots\ldots\ldots(1)$$

Where;

FR = Financial Risk

LEV = Level of leverage

ACCESS = Accessibility of financial information

CAPS = Capital structure

COSC = Cost of capital

PRUD = Prudential supervision

β_o = constant term of the model

β's = coefficients of the model

α = random error of the model

The model was tested to know if it is valid in assessing the effect of the factors on the financial risk of firms listed on the NSE in Kenya. Inferential statistics such as non-parametric test which include analysis of variance (ANOVA) were used to test the significance of the overall model at 5% level of significance. The null hypothesis for the test asserts that independent variables have no influence on FR (H_o: the model is not significant).The alternative hypothesis asserts that the independent variables have an influence on FR (H_a: the model is significant).

The Pearson's Chi-square Test of Association ($\chi 2$) is used to test for the significance of relationships between variables cross-classified in a bivariate table. The results of the equation where the p-value is less than the *critical value* < 0.05 the null hypothesis is rejected, and the alternative hypothesis accepted and vice versa. Correlation analysis was used to determine the relation existing between the independent variables, to determine if they move in the same direction.

The data from the NSE included the balance sheets and profit and loss accounts of the listed companies under consideration. Crino (2010), points out that panel data sets for economic research possess major advantages over conventional

cross-sectional or time-series data sets hence Panel data analysis was used for the analysis of this data in addition to the SPSS version 24. An electronic spread sheet was used for data storage, both raw and coded, and the findings were presented using tables, pie charts, bar graphs and equations.

3.9.3 Variable definition and measurement

The dependent variable in this study is financial risk and the independent variables are level of leverage, accessibility of financial information, capital structure, cost of capital and prudential supervision. Specific to this study, the variables have been defined in section 2.4. The measurement of the variables is represented in Table 3.3.Measurement of financial risk of the companies constituted the use of coefficient of variation, value at risk and the ratio of debt to equity. Level of leverage was measured using the Degree of financial leverage (DOF). Accessibility of financial information was measured using changes in share prices, the number of shares traded and the dividend pay-out ratio. Capital structure was measured using the net asset ratio, fixed asset ratio, and the profit margin. Cost of capital was measured using level of investment, interest rates, cost of equity, cost of perpetual preference share and the cost of debentures. Prudential supervision was measured using the share price and the number of initial public offers (IPOs)

Descriptive data was collected using the questionnaire and interview. Gliem and Gliem, 2003 reiterate the use of Likert-type scales in gathering information in marketing business and finance and this was used in this study. Questions used were drawn from various sub-scales. “Level of leverage” was assessed using a 5-point scale (6 questions). “The availability and accessibility of financial information” was tested using a 5-point scale (7 questions). “Capital structure” was tested using a 5-point scale (6 questions). ”Cost of capital” was tested using a 5-point scale (6 questions). “Prudential regulation and supervision” was accessed using a 5-point scale (6 questions). “Financial risk” was accessed using a 5-point scale (6 questions). Coding preceded the entry of each of the variables separately.

Table 3.3 Variable measurement

VARIABLE NAME	RELATED MEASUREMENT
Financial risk	Value at Risk (VAR) Coefficient of variation, $FR = \frac{Debt}{Equity}$
Level of leverage	$DFL = \% \frac{\Delta EPS}{\Delta EBIT}$
Accessibility of financial information	- Change in share prices - Number of shares traded - Dividend pay-out
Capital structure	- Net asset ratio - Fixed asset ratio - Profit margin - Earnings per share
Cost of capital	- Level of investment - Cost of equity (common stock) - Cost of perpetual preference shares - Cost of debentures
Prudential Supervision	- Share price - Number of new Initial Public Offers (IPOs)

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter deals with organization, analysis and presentation of data collected from a sample using questionnaires which were designed to measure the hypothesis of the study. It gives the empirical findings and results following the application of the variables using the techniques indicated in the third chapter. The implications are then discussed. Most of the questions were Likert-type, scale ranging from 1 to 5 indicating the extent to which the respondents agreed or disagreed with each statement used to capture the different variables.

4.2 Response rate

The response rate for the study is important because it reflects the suitability of the study procedure. This is based on the assertion of Bailey, (2000) that a response rate of 50% is considered good, and response greater than 70% is considered very good. The study achieved a response rate of 84% and non-response rate of 16% from a sample of 45 questionnaires administered, out of which 38 were completed and returned. The high response can be attributed to the elaborate data collection procedures. The potential respondents were pre-notified by mail of the intended research and requested to acknowledge receipt of the mail via e-mail. The questionnaires were delivered shortly after by research assistants. Any clarifications were made at that instance and the date for collection of the questionnaires jointly set.

4.3 Reliability analysis

Reliability refers to the ability of the instrument to produce consistent and stable measurements hence its accuracy or lack of accuracy (Bagozzi,1994). The cronbach's alpha was used in this study to measure the internal consistency of the variables. The study consists of five independent variables and one dependent variable. The independent variables consist of level of leverage, availability and accessibility of financial information, capital

structure, cost of capital and finally prudential regulation and supervision. SPSS version 24 was used to find the reliability of the variables and the results are in table 4.1.

Table 4.1 Reliability Test of Constructs

Financial Risk	Reliability Cronbach's alpha	Comment
Level of leverage	.906	Accepted
Availability and accessibility of financial information	.838	Accepted
Capital structure	.916	Accepted
Cost of capital	.863	Accepted
Prudential regulation and supervision	.946	Accepted

Cronbach Alpha was used to test the reliability of the proposed constructs. The findings indicated that Level of leverage had a coefficient of 0.906, Availability and accessibility of financial information had a coefficient of 0.838, capital structure had a coefficient of 0.916, cost of capital had a coefficient of 0.863 and prudential regulation and supervision had a coefficient of 0.946. All constructs depicted that the value of Cronbach's Alpha are above the suggested value of 0.5 thus the study was reliable (Nunnally & Bernstein, 1994). Qualitative results of the study include results on demographic factors and study variables.

4.4 Demographic factors

The study sought to establish demographic data of the respondents. The data included position held by respondent, age of respondent, the level of education of the respondents, the sector of the company, years of existence of the company, duration of listing of company on NSE, and the financial literacy of respondent. The study targeted 45 companies in regard to the effect of financial risk of companies listed on NSE out of which 38 questionnaires were generated

4.4.1 Position in company

The position of the respondents is important because whereas managing risk well is the essence of good business practice and is everyone's responsibility in the company, the decisions on financial risk are ultimately made by top management. The results are depicted in table 4.2

Table 4.2 Position in the company

Position	Frequency	Percent	Cumulative
CEO	5	13.2	13.2
CFO	27	71.1	84.2
Risk Manager	6	15.8	100.0
Total	**38**	**100.0**	

The study indicated that out of the 38 respondents 5 (13.2%) were Chief Executive Officers while 27 (71.1%) were Chief Financial Officers. The remaining, 6 (15.8%) of the respondents were Risk managers. Most of the respondents (71.1%) were CFOs since some of the companies are yet to create the position of a Risk officer.

4.4.2 Age of respondent

The age bracket of the respondents is important because risk-taking tendencies in the financial domain reduce steeply in older age (Rolison *et al.,* 2014).The results of the study are depicted by table 4.3

Table 4.3 Age of respondent

Age	Frequency	Percent	Cumulative
Below 30	4	10.5	10.5
Between 30 and 40	25	65.8	76.3
Between 40 and 50	7	18.4	94.7
Over 50 years	2	5.3	100.0
Total	**38**	**100.0**	

The study indicated that 4 (10.5%) of the respondents were below 30 years of age, 25 (65.8%) were between 30 and 40 years, 7 (18.4%) were between 40 and 50 years old and only 2 (5.3%) were above 50 years of age. Most of the

respondents (76.3%) were within the age bracket where risk taking tendencies are high.

4.4.3 Level of education

The level of general education of the respondents is important because education facilitates the acquisition of more current technical skills which allow them to have more innovative ideas or be able to better adapt to new environments (Ouimet & Zarutskie, 2014). The results are in table 4.4

Table 4.4 Education level of respondent

Education level	Frequency	Percent	Cumulative
Bachelors	27	71.1	71.1
Masters	7	18.4	89.5
PhD	4	10.5	100.0
Total	**38**	**100.0**	

The research indicated that 27 (71.1%) of the respondents had a Bachelor's degree, 7 (18.4%) had a Master's degree and 4 (10.5 %) had a PhD. Most of the respondents (71.1%) had the first degree, which is the minimum educational requirement for financial positions.

4.4.4 Sector of the company

The sector to which the respondents belong is important because different sectors, due to the difference in operations and cash turnover experience different levels of financial risk. The result is depicted by table 4.5

Table 4.5 Sector of the Company

Sector	Frequency	Percent	Cumulative Percent
Agriculture	5	13.2	13.2
Automobile & Accessories	3	7.9	21.1
Banking	6	15.8	36.8
Commercial & Services	3	7.9	44.7
Construction and Allied	5	13.2	57.9
Energy and Petroleum	3	7.9	65.8
Insurance	4	10.5	76.3
Investment	3	7.9	84.2
Manufacturing and Allied	5	13.2	94.4
Telecommunication and Technology	1	2.6	100.0
Total	**38**	**100.0**	

The study indicated that 5 (13.2%) of the respondents were from Agricultural sector, 3 (7.9%) from Automobile and Accessories, 6 (15.8%) from Banking sector and 3 (7.9%) from Commercial and Services sector. Five (13.2%) were from Construction and Allied, 3 (7.9%) from Energy and Petroleum, 4 (10.5%) from Insurance sector. Three (7.9%) were from Investment and 5 (13.2%) from Manufacturing and Allied sector. Telecommunication and Technology accounted for 1 (2.6%) of the sample. The respondents were from varied sectors, both service providers and commodity providers, hence a good reflection of the overall financial risk across all sectors.

4.4.5 Years of existence

Years of existence of the firm are important because the firms' decisions are different in any step of the life cycle of the firm and this influences directly their investment opportunities costs and their market value (Chen & Strange, 2005). Furthermore, Ouimet and Zarutskie, (2014) show that younger firms are more likely to employ young workers who are associated with greater risk tolerance, hence likely to support risky ventures. Table 4.6 captures the years of existence of the Companies.

Table 4.6 Years of existence

Duration of existence	Frequency	Percent	Cumulative Percent
5-10 Years	14	36.8	36.8
More than 10 Years	24	63.2	100.0
Total	**38**	**100.0**	

The study indicated that out of the 38 Companies, 14 (36.8%) have been in operation for 5-10 years while 24 (63.2%) have been in operation for more than 10 years. Most of the companies (63.2%) have been in operation for a long period hence the age may not be a significant factor in determining financial risk.

4.4.6 Duration of listing

Duration for listing is important because to become publicly held a firm must grow to a certain size and meet certain regulatory criteria for its equity to be publicly traded. High equity would translate to a lower financial risk. Table 4.7 depicts the results of the study.

Table 4.7 Duration of listing on NSE

Duration of Listing	Frequency	Percent	Cumulative Percent
Less than 4 years	1	2.6	2.6
5-10 Years	33	86.8	89.5
More than 10 years	4	10.5	100.0
Total	**38**	**100.0**	

The study depicted 1 (2.6%) company had been listed for less than 4 years, 33 (86.8%) had been listed for 5-10 years and 4 (10.5%) had been listed for more than 10 years.

4.4.7 Financial literacy of the respondent

The financial literacy of the respondents is important given the strong positive association between financial risk and higher levels of financial literacy, and therefore calculated risk-taking (Lusardi & Mitchell, 2007). The results are depicted by table 4.8

Table 4.8 Financial literacy

Response	Frequency	Percent	Cumulative Percent
Strongly agree	10	26.3	26.3
Agree	19	50.0	76.3
Neither agree nor disagree	9	23.7	100.0
Disagree	0	0	100.0
Strongly Disagree	0	0	100.0
Total	**38**	**100.0**	

The response from the study indicated that 9 (23.7%) of the respondents were not sure if their financial literacy could facilitate proper decision making while 29 (76.3%) of the respondents were sure that their financial literacy could facilitate proper decision making on financial risk therefore resourceful for the research.

4.5 Study variables

The study's independent variables included level of leverage, availability and accessibility of financial information, capital structure, cost of capital and prudential regulation and supervision. The influence of each variable on the financial risk of companies listed on the NSE was investigated.

4.5.1 Level of leverage

The study sought to investigate the influence of level of leverage on the financial risk of firms listed on the NSE. Specifically, the study focussed on first option for additional funding, creditors' assessment of high leverage, implication of use of debt on cash flow, the market value of company, use of retained earnings to meet interest payments and finally the use of production process with low fixed cost.

i. First option for additional funding

The study sought to find out whether choice of additional funding influences the financial risk of companies listed on the NSE. The choice of additional funding is important because use of debt increases the leverage of the firm hence increasing the financial risk. The findings are depicted by table 4.9.

Table 4.9 First option for additional funding

Response	Frequency	Percent	Cumulative Percent
Strongly agree	21	56.4	56.4
Agree	12	31.6	88.0
Neither agree nor disagree	-	-	88.0
Disagree	3	8.0	96.0
Strongly Disagree	2	4.0	100.0
Total	**38**	**100.0**	

The table depicts that 56.4% of the respondents strongly agree that debt financing is often the first option for additional financing and 31.6% agree. 8% of respondents disagree and 2% strongly disagree. Most respondents agree that debt financing is often the first option for additional financing.

ii. Creditors' assessment of high leverage

The study sought to find out whether Creditor's assessment of high leverage was increased financial risk for companies listed on the NSE. The creditors' assessment is important because it indicates the credit policy applied to the firms. This will determine the firm's cash budget hence reflect the level of financial risk predominant. Results are depicted in table 4.10.

Table 4.10 Creditor's assessment of high leverage

Response	Frequency	Percent	Cumulative Percent
Strongly agree	14	36.8	36.8
Agree	18	47.4	84.2
Neither agree nor disagree	1	2.6	86.8
Disagree	3	7.9	94.7
Strongly Disagree	2	5.3	100
Total	**38**	**100.0**	

The results indicated that 36.8% of the respondents strongly agree that creditor's assessment of high leverage is increased risk, 47.4%% agree, 2.6% neither agree nor disagree, 7.9% disagree and 5.3% strongly disagree. Majority (84.2%) agree that creditor's assessment of high leverage is increased risk.

iii. The implication of use of debt on cash flow

The implication of the use of debt financing on cash flow and subsequently on financial risk was assessed. The view is important because it will determine the financial decision made on additional funding, in terms of debt or equity. Results are depicted in table 4.11.

Table 4.11 The implication of use of debt on cash flow

Response	Frequency	Percent	Cumulative Percent
Strongly agree	16	42.1	42.1
Agree	14	36.8	78.9
Neither agree nor disagree	3	7.9	86.8
Disagree	3	7.9	94.7
Strongly Disagree	2	5.3	100
Total	**38**	**100.0**	

The study indicated that 42.1% strongly agree that the use of additional debt funding does not always leads to increase in cash flow while 36.8% agree.7.9% neither agree nor disagree, 7.9% disagree and 5.3% strongly disagree. Most of the respondents (78.9%) do not relate the use of debt to increased cash flow.

iv. The market value of the company

The study sought to find the effect of the market value of the company on financial risk. This is important because the company's policies geared towards achieving and maintaining a high market value would directly affect the financial risk of the firm. The results are depicted in table 4.12.

Table 4.12 The market value of the company

Response	Frequency	Percent	Cumulative Percent
Strongly agree	22	57.9	57.9
Agree	11	28.9	86.8
Neither agree nor disagree	0	0	86.8
Disagree	4	10.5	97.3
Strongly Disagree	1	2.7	100
Total	**38**	**100.0**	

The study indicated that 57.9% of the respondents strongly agree that market value of the company affects its financial risk, 28.9% agree, 10.5% disagree and 2.7% strongly disagree. Most of the respondents (86.8%) link the market value of the firm to the level of financial risk.

v. The use of retained earnings to meet interest payments

The use of retained earnings to meet interest payments and debt in order to control financial risk was assessed and the results are depicted in table 4.13.This is important because interest payments are generally tax deductible and allows the firm to withdraw an equivalent amount from retained earnings without any net tax consequence lowering the financial risk.

Table 4.13 Use of retained earnings to meet interest payment

Response	Frequency	Percent	Cumulative Percent
Strongly agree	18	47.3	47.4
Agree	10	26.3	73.7
Neither agree nor disagree	2	5.3	79.0
Disagree	5	13.1	92.1
Strongly Disagree	3	7.9	100
Total	**38**	**100.0**	

The study indicates that 47.3% of the respondents strongly agree that their firms at times use retained earnings in interest payment to reduce level of leverage while 26.3% agree, 5.3% neither agree nor disagree, 13.1% disagree, and 7.9% strongly disagree. The majority of the respondents (73.7%) support the use of retained earnings in interest payment to reduce level of leverage.

vi. The use of production process with low fixed cost.

The study sought to find if the company uses production process with low fixed cost in order to control financial risk. Results are depicted in table 4.14. This is important because the use of low fixed cost implies less use of debt financing and hence low leverage. This ensures financial risk is minimized.

Table 4.14 The use of production process with low fixed cost.

Response	Frequency	Percent	Cumulative Percent
Strongly agree	16	42.1	42.1
Agree	13	34.2	76.3
Neither agree nor disagree	2	5.3	81.6
Disagree	4	10.5	92.1
Strongly Disagree	3	7.9	100
Total	**38**	**100.0**	

The study indicated that 42.1% of the respondents strongly disagree that the firm uses production process with low fixed cost to lower financial risk and 34.2% agree while 5.3% neither agree nor disagree, 10.5% disagree and 7.9% strongly disagree. Majority of the respondents (76.3%) support the use of low fixed cost production processes in order to lower financial risk.

4.5.2 Accessibility of financial information

In addition, the study sought to assess the effect of accessibility of financial information on financial risk of firms listed on the NSE. The study focussed on amount of information required in debt financing, the degree of detail required in debt financing, requirement of collateral in debt financing, loan disbursement in increments, level of diversification of the firm, and level of establishment of the firm.

i. Amount of information required in debt financing

The adequacy of the financial information required in debt financing is important because creditors require specific information on the company before providing credit to minimise chances of default. The results are depicted in table 4.15.

Table 4.15 Amount of information required in debt financing

Response	Frequency	Percent	Cumulative Percent
Strongly agree	18	47.3	47.3
Agree	9	23.7	71.0
Neither agree nor disagree	2	5.3	76.3
Disagree	3	7.9	84.2
Strongly Disagree	6	15.8	100
Total	**38**	**100.0**	

The study indicated that 47.3% of the respondents strongly agree that the information required for debt financing is not adequate, 23.7% agree, 5.3% neither agree nor disagree and 7.9% disagree while 15.8% strongly disagree. Most respondents (71.0%) indicated that the information required in debt financing was adequate but mostly not corroborated.

ii. Degree of detail of information required in debt financing

The degree of detail of information is important in order to distinguish whether it encouraged the use of debt financing or discouraged its use. The results on the degree of detail required in debt financing are depicted in table 4.16.

Table 4.16 Detail of information required for debt financing

Response	Frequency	Percent	Cumulative Percent
Strongly agree	21	55.3	55.3
Agree	7	18.4	73.7
Neither agree nor disagree	1	2.6	76.3
Disagree	5	13.2	89.5
Strongly Disagree	4	10.5	100
Total	**38**	**100.0**	

The study indicates that55.3% strongly agree that the degree of detail required for debt financing does not discouraged the use of debt financing and 18.4% agree. 2.6% of the respondents neither agree nor disagree, 13.2% disagree while 10.5% strongly disagree. Most of the respondents (73.7%) agree that although the degree of detail is high, that does not discourage the use of debt.

iii. Requirement of collateral

The requirement for collateral is important because inability to provide it minimizes the possibility of debt financing (Njeru *et al.*,2012). The requirement for collateral being one of the loan contract terms, increases the cost of debt (Okelo, Namusonge & Iravo, 2014).The results on requirement for collateral are depicted in table 4.17.

Table 4.17 Requirement for collateral

Response	Frequency	Percent	Cumulative Percent
Strongly agree	20	52.6	52.6
Agree	12	31.5	84.1
Neither agree nor disagree	0	0	84.1
Disagree	2	5.3	89.4
Strongly Disagree	4	10.6	100
Total	**38**	**100.0**	

The study indicated that 52.6% of the respondents strongly agree that the requirements of collateral for debt financing is not justified while 31.5% agree, 5.3% disagree while 10.6% strongly disagree. Most respondents (84.1%) do not agree with the use of collateral by creditors in minimizing the risk of default.

iv. Loan disbursement in increments

Loan disbursement in increments subject to performance is important because it moderates the firms' use of debt as a source of additional funding. The results are indicated by table 4.18.

Table 4.18 Loan disbursement in increments

Response	Frequency	Percent	Cumulative Percent
Strongly agree	14	36.8	36.8
Agree	11	28.9	65.7
Neither agree nor disagree	2	5.3	71.0
Disagree	5	13.2	84.2
Strongly Disagree	6	15.8	100
Total	**38**	**100.0**	

The study indicated that 36.8% of the respondents strongly agree that loan disbursement in increments subject to performance is not justified, 28.9% agree, 5.3% neither agree nor disagree, 13.2% disagree while 15.8% strongly disagree. The majority of the respondents (65.7%) alluded that this practice is not justified.

v. Level of diversification of the firm

The effect of the level of diversification on the use of debt is important because diversification of risk facilitates access to debt financing. The results are depicted by table 4.19.

Table 4.19 Level of diversification of the firms

Response	Frequency	Percent	Cumulative Percent
Strongly agree	12	31.6	31.6
Agree	17	44.7	76.3
Neither agree nor disagree	0	0	76.3
Disagree	5	13.2	89.5
Strongly Disagree	4	10.5	100
Total	**38**	**100.0**	

The study indicated that 31.6% strongly agree that more diversified firms should have more debt financing if they are diversified, 44.7% agree, 13.6% disagree while 10.5% strongly disagree. The majority (76.3%) agree that more diversified firms should have more debt financing.

vi. Level of establishment of the firm

The level of establishment of the firm is important because it gives insight to whether the firm relies more on investment tax shield or debt tax shields. Results are depicted in table 4.20.

Table 4.20 Level of establishment of the firm

Response	Frequency	Percent	Cumulative Percent
Strongly agree	9	23.7	23.7
Agree	14	36.8	60.5
Neither agree nor disagree	0	0	60.5
Disagree	8	21.1	81.6
Strongly Disagree	7	18.4	100
Total	**38**	**100.0**	

The study indicated that 23.7% strongly agree that well established firms have easy access to debt financing, 36.8% agree, 21.1% disagree while 18.4% strongly disagree. The majority of the respondents (60.5%) agree that well established firms have easy access to debt financing

4.5.3 Capital structure

The study further sought to establish the effect of capital structure on the financial risk of firms listed on the NSE. The study focussed on chances for decision making by management and owners, position of company's capital structure in line with the industry, capital structure's capability to ensure stability, company's operation on low-cost short term financing, use of more debt to offset corporate taxes, and finally managers 'interests in capital structure decision making.

i. Chances for decision making by management and owners

The question on whose responsibility it is, to make decisions between owners and management is important because it determines the interests behind the decisions which are made, and they eventually affect the financial risk of the firm. The results are depicted by table 4.21.

Table 4.21 Right of decision making by management and owners

Response	Frequency	Percent	Cumulative Percent
Strongly agree	16	42.1	42.1
Agree	16	42.1	84.2
Neither agree nor disagree	4	10.6	94.8
Disagree	1	2.6	97.4
Strongly Disagree	1	2.6	100
Total	**38**	**100.0**	

The study indicated that 42.1% of respondents strongly agree that owners and management do not have equal chances in decision making, 42.1% agree, 10.6% neither agree nor disagree, 2.6% agree and 2.6% strongly agree. Most respondents (84.2%) indicate that management and ownership do not have the same chances in decision making concerning the firm.

ii. Position of company's capital structure in line with the industry

The position of the company's capital structure in line with the industry is important because a capital structure dissimilar to the rest of the industry would expose the firm to a higher financial risk. Table 4.22 depicts the company's capital structure position.

Table 4.22 Position of company's capital structure.

Response	Frequency	Percent	Cumulative Percent
Strongly agree	11	28.9	28.9
Agree	10	26.3	55.2
Neither agree nor disagree	0	0	55.2
Disagree	8	21.1	76.3
Strongly Disagree	9	23.7	100
Total	**38**	**100.0**	

The study indicated that 28.9% of the respondents strongly agree and 26.3% agree that the company's capital structure is in line with the industry competitive structure. 21.1% disagree while 23.7% strongly disagree. Most firms (55.2%) have their capital structure in line with the industry to control financial risk.

iii. Capital structure's capability to ensure stability

The capital structure's capability to ensure stability is important because the optimal capital structure of a firm should be able to shield it against uncertainty about future investment needs and volatility in returns. Table 4.23 depicts the company's capital structure's capability to ensure stability.

Table 4.23 Capital structure's capability to ensure stability

Response	Frequency	Percent	Cumulative Percent
Strongly agree	7	18.4	18.4
Agree	7	18.4	36.8
Neither agree nor disagree	10	26.3	63.1
Disagree	8	21.1	84.2
Strongly Disagree	6	15.8	100
Total	**38**	**100.0**	

The study indicated that 18.4% strongly agree that capital structure of the company is capable of ensuring stability of future sales, 18.4% agree, 26.3% neither agree nor disagree, 21.1% disagree while 15.8% strongly disagree. The percentage of the respondents who are certain of future stability resulting from the capital structure they employ is the same (36.8%) as those who are not.

iv. Company's operation on low-cost short term financing

Low cost short term financing of the firm maximises the market price per share hence reducing financial risk of the firm. Table 4.24 depicts the results.

Table 4.24 Company's operation on low-cost short-term financing

Response	Frequency	Percent	Cumulative Percent
Strongly agree	17	44.7	44.7
Agree	6	15.8	60.5
Neither Agree nor Disagree	10	26.3	86.8
Disagree	2	5.3	92.1
Strongly Disagree	3	7.9	100
Total	**38**	**100.0**	

The study indicated that 7.9% of the respondents strongly disagree that the company operates on low-cost short-term financing to lower financial risk, while 5.3% disagree. Ten (26.3%) are neutral while 44.7% strongly agree and 15.8% agree. The majority (60.5%) concur that their Companies operate on low-cost short-term financing to lower financial risk. Shim and Siegel, (2007) corroborate these findings.

v. Use of more debt to offset corporate taxes

Use of more debt to offset corporate tax is important because interest is tax deductible and this raises the possibility of default of payment as the firm takes on more debt financing, hence increasing the financial risk of the firm. The findings are depicted in table 4.25.

Table 4.25 Use of more debt because of interest tax deductibility

Response	Frequency	Percent	Cumulative Percent
Strongly agree	11	28.9	28.9
Agree	16	42.1	71.0
Neither Agree nor Disagree	1	2.6	73.6
Disagree	2	5.3	78.9
Strongly Disagree	8	21.1	100
Total	**38**	**100.0**	

The study indicated that 28.9% of the respondents strongly agree that since debt is interest tax-deductible more debt financing should be used, 42.1%

agree, 2.6% neither agree nor disagree, 5.3% disagree and 21.1% strongly disagree. The majority (71.0%) concur that more debt financing should be used since interest is tax deductible.

vi. Managers 'objectives in capital structure decision making.

Manager's objectives in capital structure decision making is important because when the management's individual interests are put aside, the wealth maximization goal would necessitate decisions which minimize financial risk of the firm. Findings are indicated in table 4.26.

Table 4.26 Manager's objectives in capital structure decision making

Response	Frequency	Percent	Cumulative Percent
Strongly agree	9	23.7	23.7
Agree	21	55.3	79.0
Neither Agree nor Disagree	0	0.0	79.0
Disagree	4	10.5	89.5
Strongly Disagree	4	10.5	100
Total	**38**	**100.0**	

The study indicated that 23.7% of the respondents strongly agree that managers always pursue their own objectives in making capital structure decisions, 55.3% agree, 10.5% disagree while 10.5% strongly disagree. The majority (79.0%) concur that managers always pursue their own objectives in making capital structure decisions. These results are corroborated by the findings of Weston and Brigham (1990).

4.5.4 Cost of capital

To determine the effect of cost of capital on the financial risk of companies listed on the NSE the study focussed on the value of the common stock in relation to the book value, company's policy on the choice of discount rate in foreign investment, possibility of company's stability being affected by a pending litigation, possibility of company's portfolio being affected by existing credit rate, effect of high cost of debt financing on choice of financing, and finally effect of free cash flow and low investment opportunity set on choice of debt financing. Cost of capital is key in determining financial risk since as

Namusonge (1999) indicates, availability of finance influences the entrepreneurs' choice of source of funding.

i. **The value of the common stock in relation to the book value**

The value of common stock in relation to book value is important because it indicates the financial risk inherent in the firm. A higher market value than the book value leads to a lower financial risk. Table 4.27 depicts the findings.

Table 4.27 Value of the common stock in relation to the book value

Response	Frequency	Percent	Cumulative Percent
Strongly agree	12	31.6	31.6
Agree	15	39.4	71.0
Neither Agree nor Disagree	2	5.3	76.3
Disagree	5	13.4	89.5
Strongly Disagree	4	10.3	100
Total	**38**	**100.0**	

The study indicated that 31.6% of the respondents strongly agree that common stock usually sells at a lower value than the book value, 39.4% agree, 5.3% neither agree nor disagree, 13.4% disagree while 10.3% strongly disagree. Majority of the respondents (71.0%) indicate that the common stock sells at a lower value than the book value.

ii. **Company's policy on the choice of discount rate in foreign investment**

Proper choice of discount rate in foreign investments is important because the use of multiple currencies in trade increases financial risk. The findings are depicted in table 4.28.

Table 4.28 Proper Choice of Discount Rate in Foreign Investments

Response	Frequency	Percent	Cumulative Percent
Strongly agree	11	28.9	28.9
Agree	15	39.6	68.5
Neither Agree nor Disagree	0	0	68.5
Disagree	11	28.9	97.4
Strongly Disagree	1	2.6	100
Total	**38**	**100.0**	

The study indicated that 28.9% of the respondents strongly agree that there is emphasis on proper choice of discount rate in foreign investments in order to minimise financial risk, 39.6% agree, 28.9% disagree while 2.6% strongly disagree. Majority of the respondents (68.5%) support that it is necessary to put emphasis on proper choice of discount rate in foreign investment in order to minimize financial risk.

iii. **Possibility of company's stability being affected by a pending litigation**

The possibility of Company's stability being affected by a pending litigation is important because this may involve massive cash outflows which may render the company incapable of fulfilling its future financial obligations. The results are depicted by table 4.29.

Table 4.29 Effect of litigation on the Company's stability

Response	Frequency	Percent	Cumulative Percent
Strongly agree	7	18.4	18.4
Agree	7	18.4	36.8
Neither Agree nor Disagree	0	0	36.8
Disagree	16	42.1	78.9
Strongly Disagree	8	21.1	100
Total	**38**	**100.0**	

The study indicated that 18.4% of the respondents strongly agree that the financial stability of the firm could not be affected by a pending litigation, 18.4% agree, 42.1% disagree while 21.1% strongly disagree. The majority of

the respondents (63.2%) indicate that the financial stability of the firm could be affected by a pending litigation.

iv. **Possibility of company's portfolio being affected by existing credit rate**

The table 4.30 shows the Possibility of company's portfolio being affected by existing credit rate. This is important because the changes in credit rating may cause a firm some substantial financial shortcomings in form of extra interest paid or deficit in interest earned.

Table 4.30 Effect of existing credit rate on company's portfolio

Response	Frequency	Percent	Cumulative Percent
Strongly agree	11	28.8	28.9
Agree	21	55.3	84.1
Neither Agree nor Disagree	2	5.3	89.4
Disagree	2	5.3	94.7
Strongly Disagree	2	5.3	100
Total	**38**	**100.0**	

The research indicated that 28.8% of the respondents strongly agree that the company's portfolio could be affected by the existing credit rate, 55.3% agree, 5.3% neither agree nor disagree, 5.3% disagree while5.3% strongly disagree. Majority (84.1%) agree that the Company's portfolio could be affected by the existing credit rate.

v. **Effect of high cost of debt financing on the choice of financing**

The effect of high cost of debt financing on the choice of financing is depicted by table 4.31. This is important because the cost of financing eventually determines the choice of financing selected by an individual firm.

Table 4.31 Effect of high cost of debt financing on the choice of financing

Response	Frequency	Percent	Cumulative Percent
Strongly agree	15	39.5	39.5
Agree	15	39.5	79.0
Neither Agree nor Disagree	3	7.9	86.9
Disagree	2	5.3	92.2
Strongly Disagree	3	7.8	100
Total	**38**	**100.0**	

The study indicated that 39.5 % of the respondents strongly agree that the high cost of debt financing always deters firms from using it while 39.5% agree, 7.9% neither agree nor disagree, 5.3% disagree while 7.8% strongly disagree. Majority of the respondents (79.0%) agree that the high cost of debt always deters firms from using it.

vi. **The effect of free cash flow and low investment opportunity set on choice of debt financing.**

Table 4.32 shows the effect of free cash flow and low investment opportunity set on the firm. This is important because firms seek for external funding if there is no sufficient internal funding. External funding increases the financial risk of the firm.

Table 4.32 The effect of free cash flow and low investment opportunity set

Response	Frequency	Percent	Cumulative Percent
Strongly agree	7	18.4	18.4
Agree	19	50.0	68.4
Neither Agree nor Disagree	0	0	68.4
Disagree	6	15.8	84.2
Strongly Disagree	6	15.8	100
Total	**38**	**100.0**	

The study indicated that 18.4% of the respondents strongly agree that the firms debt level is always lower when it has high free cash flow and low Investment opportunity set, 50.0% agree, 15.8% disagree while 15.8% strongly disagree. The majority of the respondents (68.7%) agree that the firms' debt level is

always lower when it has high free cash flow and low Investment opportunity set. The results agree with the findings by Hall *et al*., (2004) that firms which can generate more income borrow less.

4.5.5 Prudential regulation

The study sought to determine the effect of prudential regulation and supervision on the financial risk of firms listed on the NSE. Focus was on effect of the existing prudential regulation and supervision on potential investors, the degree of protection offered to outsider shareholders by the prudential regulation, presence of gaps and overlaps in financial regulation system, availability of adequate supporting infrastructure for prudential regulation enforcement, effect of better protection on minority shareholders on valuation of firms, and finally the consequences of absence of clear measures in prudential supervision.

i. Effect of the existing prudential supervision on potential investors

The effect of existing prudential regulation and supervision on potential investors is important since the performance of public and private institutions; hence the level of financial risk is determined by the level of trust among the citizenship. The findings are depicted by table 4.33.

Table 4.33 Effect of prudential supervision on potential investors

Response	Frequency	Percent	Cumulative Percent
Strongly agree	12	31.5	31.5
Agree	14	36.8	68.3
Neither Agree nor Disagree	2	5.3	73.6
Disagree	5	13.2	86.8
Strongly Disagree	5	13.2	100
Total	**38**	**100.0**	

The study indicates that 31.5% of the respondents strongly agree that elaborate prudential regulations and supervision do not demotivate potential investors, 36.8% agree, 5.3% neither agree nor disagree, 13.2% disagree while 13.2%

strongly disagree. The majority of respondents (68.3%) support elaborate prudential regulation and supervision, and do not consider it as a demotivation for potential investors.

ii. **The degree of protection offered to outsider shareholders by the prudential regulation**

The degree of protection offered to outsider shareholders is important because it determines the number of firms listed and the value of the stock. The results are depicted by table 4.34.

Table 4.34 The degree of protection to outsider shareholders.

Response	Frequency	Percent	Cumulative Percent
Strongly agree	17	44.7	44.7
Agree	15	39.6	84.3
Neither Agree nor Disagree	1	2.6	86.9
Disagree	1	2.6	89.5
Strongly Disagree	4	10.5	100
Total	**38**	**100.0**	

The study indicates that 44.7% strongly agree that the prudential regulation offered in Kenya do not sufficiently protect the interests of outsider shareholders, 39.6% agree, 2.6% neither agree nor disagree, 2.6% disagree while 10.5% strongly disagree. The majority (84.3%) do not consider the existing prudential regulations sufficient in protecting outsider shareholders.

iii. **Presence of gaps and overlaps in financial regulation system**

The presence of gaps and overlaps in the financial regulation system leads to lack of clear policies and enforcement mechanisms in shareholder protection leading to increased financial risks. Table 4.35 depicts the results on the presence of gaps and overlaps in financial regulation system.

Table 4.35 Presence of gaps and overlaps in financial regulation system

Response	Frequency	Percent	Cumulative Percent
Strongly agree	14	36.8	36.8
Agree	9	23.8	60.6
Neither Agree nor Disagree	1	2.6	63.2
Disagree	10	26.8	90.0
Strongly Disagree	4	10.0	100
Total	**38**	**100.0**	

The study indicates that the majority of the respondents (60.6%) agree that there are numerous gaps and overlaps in the financial regulatory system in Kenya. Out of these, 36.8% of the respondents strongly agree, 23.8% agree, 2.6% neither agree nor disagree, 26.8% disagree while 10.0% strongly disagree.

iv. Availability of adequate supporting infrastructure for enforcement

Availability of supporting infrastructure for prudential regulation enforcement is important because it makes implementation of the policies more efficient hence lowering the financial risk. Table 4.36 depicts the research findings.

Table 4.36 Availability of supporting infrastructure for prudential regulation enforcement

Response	Frequency	Percent	Cumulative Percent
Strongly agree	19	50.0	50.0
Agree	7	18.4	68.4
Neither Agree nor Disagree	0	0	68.4
Disagree	8	22.6	89.5
Strongly Disagree	4	9.0	100
Total	**38**	**100.0**	

The study indicates that the majority of the respondents (68.4%) concur that the prudential regulation enforcement system in Kenya does not have adequate supporting infrastructure to control financial risk. Out of these, 50.0% of the respondents strongly agree 18.4% agree, 26.6% disagree while 10.0% strongly disagree.

v. Effect of better protection on minority shareholders on valuation of firms

Better protection on minority shareholders translates to an increase in valuation of firms. The findings of the study are depicted by table 4.37.

Table 4.37 Effect of better protection on minority shareholders on valuation of firms

Response	Frequency	Percent	Cumulative Percent
Strongly agree	9	23.7	23.7
Agree	23	60.5	84.2
Neither Agree nor Disagree	0	0	84.2
Disagree	4	10.3	94.7
Strongly Disagree	2	5.5	100
Total	**38**	**100.0**	

The study indicates that 23.7% of the respondents strongly agree that better protection on minority shareholders leads to higher valuation of firms, 60.5% agree, 10.3% disagree while 5.5% strongly disagree. The majority of the respondents (84.2%) agree that better minority shareholder protection minimizes financial risk.

vi. The consequences of absence of clear measures in prudential supervision.

Absence of clear measures in prudential supervision encourages operations which are not efficient by the firms, and forces investors to use less than optimal contracts to assure ownership and control rights, thus increasing the financial risk of the firm. The findings are demonstrated in table 4.38.

Table 4.38 The consequences of absence of clear measures in prudential supervision.

Response	Frequency	Percent	Cumulative Percent
Strongly agree	16	42.1	42.1
Agree	9	23.7	65.8
Neither Agree nor Disagree	2	5.3	71.1
Disagree	4	10.5	81.6
Strongly Disagree	7	18.4	100
Total	**38**	**100.0**	

The study indicates that 42.1% of the respondents strongly agree that the absence of clear penalties for non-compliance leads to increase in financial risk, 23.7% agree, 5.3% neither agree nor disagree, 10.5% disagree while 18.4% strongly disagree. The majority of the respondents (65.8%) concur that absence of clear penalties for non-compliance leads to an increase in financial risk.

4.5.6 Financial risk

The study sought to determine the opinion of respondents about specific aspects on financial risk This was captured in the questionnaire and the interviews Focus was put on the importance of financial risk in performance of the firm, if high cash turnover affects financial risk, if adequate financial risk management mechanisms are in place, if the degree of leverage of a firm affects its financial risk, if high operating leverage affects the financial risk of a firm.

i. Importance of financial risk in performance of the firm

Table 4.39 depicts the importance of financial risk in performance of the firm. This is important because decisions on financial risk will be based on the importance it is given in determining the performance of the firm.

Table 4.39 Importance of financial risk in performance of the firm

Response	Frequency	Percent	Cumulative Percent
Strongly agree	17	44.7	44.7
Agree	13	34.4	79.0
Neither Agree nor Disagree	1	2.6	81.6
Disagree	4	10.4	92.1
Strongly Disagree	3	7.9	100
Total	**38**	**100.0**	

The study indicated that 47.4% of the respondents strongly agree that performance and sustainability of a firm is affected by its financial risk, while 34.4% agree. 2.6% neither agree nor disagree, 10.45 disagree while 7.9%

strongly disagree. The majority (79.0%) agree that performance and sustainability of affirm is affected by its financial risk.

ii. Effect of cash turnover on financial risk

Effect of cash turnover on financial risk is depicted by table 4.40. This is important because high cash turnover predisposes the firm to high frequency risk exposure such as theft and fraud which increases financial risk.

Table 4.40 Effect of cash turnover on financial risk

Response	Frequency	Percent	Cumulative Percent
Strongly agree	11	28.9	28.9
Agree	10	26.3	55.2
Neither Agree nor Disagree	0	0	55.2
Disagree	11	28.9	84.1
Strongly Disagree	6	15.9	100
Total	**38**	**100.0**	

The study indicates that 28.9% of the respondents strongly agree that high cash turnover always leads to increased financial risk, 26.3% agree, while 28.9% disagree while 15.9% strongly disagree. The study indicate that most respondents (55.2%) concur that high cash turnover always leads to increased financial risk

iii. Adequacy of financial risk management mechanisms.

Adequacy of financial risk management mechanisms is depicted by table 4.41.This is important because implementation of adequate financial management mechanisms is necessary in moving financial systems in the right direction.

Table 4.41 Adequacy of financial risk management mechanisms.

Response	Frequency	Percent	Cumulative Percent
Strongly agree	13	34.3	34.3
Agree	12	31.6	65.9
Neither Agree nor Disagree	0	0	65.9
Disagree	6	15.8	81.7
Strongly Disagree	7	18.3	100
Total	**38**	**100.0**	

The study indicated that 34.2% of the respondents strongly disagree that adequate risk management mechanisms have not been put in place to control financial risk, 31.6% agree and 34.2% strongly agree. The majority (65.9%) agree that the financial risk management mechanisms put in place are not adequate for controlling financial risk.

iv. Effect of internationalisation of trade on financial risk

Effect of internationalisation of trade on financial risk is important because this exposes individual economies to highly volatile external forces hence increasing financial risk. The results are indicated in table 4.42.

Table 4.42 Effect of internationalisation of trade on financial risk

Response	Frequency	Percent	Cumulative Percent
Strongly agree	23	60.9	60.9
Agree	11	28.9	89.8
Neither Agree nor Disagree	0	0	89.8
Disagree	3	7.6	97.4
Strongly Disagree	1	2.6	100
Total	**38**	**100.0**	

The study indicated that 60.9% of the respondents strongly agree that internationalization of trade always leads to increased financial risk, 28.9% agree, 7.6 disagree and 2.6% strongly disagree. The majority (89.8%) agree internationalization leads to increased financial risk.

v. Effect of degree of leverage of a firm on its financial risk

Effect of degree of leverage of a firm on financial risk is important it .The results are illustrated by table 4.43

Table 4.43 Effect of degree of leverage on financial risk

Response	Frequency	Percent	Cumulative Percent
Strongly agree	15	39.5	39.5
Agree	14	36.8	76.3
Neither Agree nor Disagree	0	0	76.3
Disagree	3	7.9	84.2
Strongly Disagree	6	15.8	100
Total	**38**	**100.0**	

The study indicated that 39.5% of the respondents strongly agree that the degree of leverage determines financial risk of a firm, 36.8% agree, 7.9% disagree while 15.8% of the respondents strongly disagree. The majority of the respondents (76.3%) concur that the degree of leverage determines the financial risk of the firm. These results are consistent with the findings of Kumar (2008).

vi. Effect of operating leverage on the financial risk of a firm

Effect of operating leverage on the financial risk of a firm is important because the fixed assets which are associated with operating leverage are financed with either debt or equity hence affects the financial risk of the firm. .The results are depicted by table 4.44

Table 4.44 Effect of operating leverage on the financial risk of a firm

Response	Frequency	Percent	Cumulative Percent
Strongly agree	13	34.3	34.3
Agree	11	28.8	63.1
Neither Agree nor Disagree	1	2.6	65.7
Disagree	9	23.8	89.5
Strongly Disagree	4	10.5	100
Total	**38**	**100.0**	

The study indicated that 34.3% of the respondents agree that high operating leverage always leads to an increase in financial risk, 28.8% agree, 2.6% neither agree nor disagree, 23.8% disagree while 10.5% strongly disagree. These results concur with the findings of Wang & Chen (2010).

The quantitative results of the study include correlation results and linear regression results of the variables.

4.6 Correlation analysis

Correlation shows the relationship existing between variables. The study's dependent variable is financial risk and the independent variables consist of level of leverage, availability and accessibility of financial information, capital structure, cost of capital and prudential supervision. The results in table 4.45 Indicate that there is a strong positive correlation of .734 between level of

leverage and financial risk of companies listed on the NSE. The p value is actual 0.000 implying that the relationship is significant. This means that level of leverage is a strong determinant of the financial risk of listed companies on the NSE.

The results in table 4.45 also indicate that there is a weak negative correlation of -.233 between accessibility of financial information which means that the relationship is inverse and that accessibility of financial information is a weak indicator of the financial risk of companies listed on the NSE. The ***p*** value is actual 0.010 implying that the relationship is significant. The table also shows that there is a strong positive correlation of .565 between capital structure and financial risk of companies listed on the NSE. The ***p*** value is actual 0.000 implying that the relationship is significant. It is also evident that there is a weak positive correlation of .276 between cost of capital and financial risk of companies listed on the NSE. The ***p*** value is actual 0.029 implying that the relationship is significant. The results further indicate that there is a strong positive correlation of .585 between prudential and supervision and financial risk of companies listed on the NSE. The ***p*** value is actual 0.000 implying that the relationship is significant.

Table 4.45 Correlations Matrix

		financial risk	Leverage	financial information	capital structure	cost of capital	prudential
financial risk	Correlation	1	.734**	-.233	.565**	.276	.585**
	sig. (2tail)		.000	.010	.000	.029	.000
company leverage	Correlation	.734**	1	.545**	.614**	.745**	.478**
	sig. (2tail)	.000		.000	.000	.000	.002
financial information	Correlation	-.233	.545**	1	.191	.799**	.082
	sig. (2tail)	.010	.000		.251	.000	.624
capital structure	Correlation	.565**	.614**	.191	1	.565**	-.038
	sig. (2tail)	.000	.000	.251		.000	.820
cost of capital	Correlation	.276	.745**	.799**	.565**	1	.066
	sig. (2tail)	.029	.000	.000	.000		.696
prudential	Correlation	.585**	.478**	.082	-.038	.066	1
	sig. (2tail)	.000	.002	.624	.820	.696	

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

4.7 Regression analysis

4.7.1 Linear regression model of financial risk/ Level of leverage

The linear regression analysis models the relationship between the dependent variable which is financial risk and independent variable which is level of leverage. The coefficient of determination (R^2) and correlation coefficient (R) shows the degree of association between level of leverage and financial risk of companies listed on the NSE in Kenya. The results of the linear regression in table 4.46 indicate that R^2 =.539 and R = .734. R value gives an indication that there is a strong linear relationship between level of leverage and financial risk of the listed Companies on the NSE in Kenya. The R^2 indicates that explanatory power of the independent variables is 0.539. This means that about 53.9% of the variation in financial risk is explained by the model $\boldsymbol{FR} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}(\boldsymbol{LEV})$ and 46.1% is unexplained by the model. Adjusted R^2 is a modified version of R^2 that has been adjusted for the number of predictors in the model by less than chance. The adjusted R^2 of 0.531 which is slightly lower than the R^2 value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted R^2 indicates that 53.1% of the changes in the financial risk is explained by the model and 46.1% is not explained by the model $\boldsymbol{FR} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}(\boldsymbol{LEV})$. This means that level of leverage has a strong influence on the financial risk of listed companies on the NSE. These results are consistent with the study by Jostova & Philipov (2005) which indicate that the higher the debt (high leverage) the higher the risk of default hence the higher the financial risk of a firm.

Table 4.46 Model of Financial risk/ Level of leverage

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.734	.539	.531	.18264

a. Predictors: (Constant), Level of leverage

Table 4.47 shows the results of ANOVA test which reveal that level of leverage has significant effect on financial risk of companies listed on the NSE

since the P value is actual 0.000 which is less than 5% level of significance. This is depicted by linear regression model $\boldsymbol{FR = \beta_0 + \beta_1(LEV)}$ where FR is financial risk and LEV is level of leverage. The *P* value was 0.000 implying that the model was significant. The study therefore rejected the first null hypothesis;

$\mathbf{H_0}$; Level of financial leverage does not significantly affect the financial risk of companies listed on the NSE.

Table 4.47 ANOVA of financial risk/ Level of leverage

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.405	1	1.201	8.119	.010[a]
	Residual	1.201	36	.033		
	Total	**2.606**	**37**			

a. Predictors: (Constant), Level of leverage
b. Dependent Variable: Financial risk

The table 4.48 indicates there was positive gradient which reveals that an increase in Level of leverage leads to increased financial risk. Level of leverage constitutes debt and equity hence a highly levered firm employs more debt than equity. The guiding principle of leverage is to choose the course of action that maximises the firm's value (Kumar, 2008).

Table 4.48 Model of coefficients

Model		Coefficients		Sig.
		B	Std. Error	
1	(Constant)	2.334	.358	.000
	Company leverage	.504	.078	.010

4.7.2 Linear regression model of financial risk/ Accessibility of financial information.

The linear regression analysis models the relationship between the dependent variable which is financial risk and independent variable which is accessibility of financial information. The coefficient of determination (R^2) and correlation coefficient (R) shows the degree of association between availability and accessibility of financial information and financial risk of companies listed on

the NSE in Kenya. The results in table 4.49 of the linear regression indicate R^2 = .054 and R =.233.R value indicates a very weak linear relationship between availability and accessibility of financial information and financial risk of companies listed on the NSE. The R^2 indicates that explanatory power of the independent variables is 0.054. This means that about 5.4% of the variation in financial risk is explained by the model $\boldsymbol{FR = \beta_0 + \beta_2(ACCESS)}$ and 94.6% is unexplained by the model. Adjusted R^2 is a modified version of R^2 that has been adjusted for the number of predictors in the model by less than chance. The adjusted R^2 of 0.051 which is slightly lower than the R^2 value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted R^2 of indicates that 5.1% of the changes in the financial risk is explained by the model and 94.9% is not explained by the model $\boldsymbol{FR = \beta_0 + \beta_2(ACCESS)}$. This means that the influence of accessibility of financial information on the financial risk of listed companies on the NSE is minimal. This indicates limitations in the functioning of the existing stock market which is supposed to facilitate raising of funds and also produce more informative stock prices which would lead to a decrease in financial risk of the firm. This is corroborated by Bhattacharya and Daouka (2002).

Table 4.49 Model of Financial risk/ Financial information

Model	R	R Square	Adjusted R Square
1	.233	.054	.051

a. Predictors: (Constant), Financial information

Table 4.50 shows the results of ANOVA test which reveal that availability and accessibility of financial information has significant effect on financial risk of listed companies on the NSE since the P value is actual 0.001 which is less than 5% level of significance. This is depicted by linear regression model $\boldsymbol{FR = \beta_0 + \beta_2(ACCESS)}$ where FR is financial risk and ACCESS is accessibility of financial information. The P value was 0.001 implying that the model was significant. The study rejected the second null hypothesis;

$\mathbf{H_o}$: Accessibility of financial information does not significantly affect the financial risk of companies listed on the NSE.

Table 4.50 ANOVA of Financial risk/ Financial information

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.103	1	.103	0.000	.001
	Residual	2.503	36	.072		
	Total	**2.606**	**37**			

a. Predictors: (Constant), Financial information
b. Dependent Variable: Financial risk

The table 4.51 indicates there was negative gradient which reveals that an increase in availability and accessibility of financial information leads to decreased financial risk. Accessibility of financial information constitutes of different categories (Hernandez *et al*., 2010); first information on key executives or insiders which gives information on the transactions category for instance stock sales or buys. There is also information on the relationship of the company to other companies for instance competitors, and institutional holdings.

Table 4.51 Model of coefficients

Model		Coefficients		Sig.
		B	Std. Error	
1	(Constant)	4.652	.175	.000
	Financial information	-.003	.043	.001

4.7.3 Linear regression model of financial risk/ Capital structure

The linear regression models the relationship between the dependent variable financial risk and the independent variable capital structure. The results in table 4.52 indicate R^2= .319 and R= .565. R value points to a strong linear relationship between capital structure and the financial risk of companies listed on the NSE. The R^2 indicates that explanatory power of the independent variables is 0.319. This means that about 31.9% of the variation in financial risk is explained by the model $\boldsymbol{FR = \beta_0 + \beta_3(CAPS)}$ and 68.1% is unexplained by the model. Adjusted R^2 is a modified version of R^2 that has been adjusted for the number of predictors in the model by less than chance. The adjusted R^2 of

0.300 which is slightly lower than the R^2 value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted R^2 indicates that 30% of the changes in the financial risk is explained by the model and 60% is not explained by the model $\boldsymbol{FR = \beta_0 + \beta_3(CAPS)}$. This means that the influence of capital structure on the financial risk of listed companies on the NSE is not strong. The optimal capital structure employed by the study was of more debt than equity because it maximizes the market price per share. The firm cannot increase its value by judicial mixture of debt and equity alone hence the less than proportionate influence of capital structure on financial risk. This is in line with the findings by Bauer *et al*., (2008).

Table 4.52 Model of Financial risk/ Capital structure

Model	R	R Square	Adjusted R Square
1	.565[a]	.319	.300

a. Predictors: (Constant), Capital structure

The ANOVA test in table 4.53 on the model indicates that capital structure has significant effect on financial risk of companies listed on the NSE since the ***p*** value is actual 0.000 which is less than 5% level of significance. The linear regression model $\boldsymbol{FR = \beta_0 + \beta_3(CAPS)}$ where FR is financial risk and CAPS is the capital structure, had P value of 0.000 implying that the model was significant. The study therefore rejected third the null hypothesis;

$\mathbf{H_o}$: Capital structure does not significantly affect the financial risk of companies listed on the NSE.

Table 4.53 ANOVA of Financial Risk/ Capital Structure

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	.832	1	.832	16.880	.000[a]
	Residual	1.774	36	.049		
	Total	**2.606**	**37**			

a. Predictors: (Constant), Capital structure

b. Dependent Variable: Financial risk

The table 4.54 indicates there was positive gradient which reveals that an increase in capital structure leads to increased financial risk. Cost of capital constitutes of cost of debt, cost of common stock and cost of preferred stock. The study adopted an optimal capital structure constituting of more debt than equity (Danielson & Scott, 2006) to increase market value. The model results therefore imply that the use of more debt increases the financial risk of the firm.

Table 4.54 Model of coefficients

Model		Coefficients	Sig.
		B	
1	(Constant)	4.049	.000
	Capital structure	.149	.000

a. Dependent Variable: Financial risk

4.7.4 Linear regression model of financial risk/ Cost of capital

The linear regression models the relationship between the dependent variable which is financial risk and the independent variable which is cost of capital. The results in table 4.55 show R^2= .076 and R= .276. R value indicates a weak linear relationship between cost of capital and financial risk of companies listed on the NSE. The R^2 indicates that explanatory power of the independent variables is 0.076. This means that about 7.6% of the variation in financial risk is explained by the model $\boldsymbol{FR = \beta_0 + \beta_4(COSC)}$ and 92.4% is unexplained by the model. Adjusted R^2 is a modified version of R^2 that has been adjusted for the number of predictors in the model by less than chance. The adjusted R^2 of 0.070 which is slightly lower than the R^2 value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted R^2 of indicates that 7% of the changes in the financial risk is explained by the model and 93% is not explained by the model $\boldsymbol{FR = \beta_0 + \beta_4(COSC)}$. This means that the influence of cost of capital on the financial risk of listed companies on the NSE is minimal. Since cost of capital is the expected rate of return demanded by the investors, the higher the rate the more costly it is for the firm to finance itself hence the higher the financial risk. The use of more equity in financing on the

existing stock market and the lack of reflection of the cost of capital on the existing stock prices means that cost of capital has minimal influence on the financial risk of listed companies on the NSE. This concurs with findings of Shim & Siegel, (2007).

Table 4.55 Model of Financial risk/ Cost of capital

Model	R	R Square	Adjusted R Square
1	.276	.076	0.070

a. Predictors: (Constant), Cost of capital

The ANOVA test in table 4.56 indicates that cost of capital has significant effect on the financial risk of companies listed on the NSE since the p value is actual 0.029 which is less than 5% level of significance. The linear regression model $\boldsymbol{FR = \beta_0 + \beta_4(COSC)}$ where FR is Financial Risk and COSC is the cost of capital. The $\boldsymbol{p}$ value was 0.001 implying that the model was significant. The study therefore rejects the fourth null hypothesis;

$\mathbf{H_o}$: Cost of capital does not significantly affect the financial risk of companies listed on the NSE.

Table 4.56 ANOVA of Financial risk/ Cost of capital

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.198	1	.198	2.964	.029[a]
	Residual	2.408	36	.067		
	Total	**2.606**	**37**			

a. Predictors: (Constant), Cost of capital

The table 4.57 indicates there was positive gradient which reveals that an increase in cost of capital leads to increased financial risk. Cost of capital constitutes of cost of debt, cost of common stock and cost of preferred stock. Sharfan & Fernando (2008), indicate that the higher the rate of return the investors demand for the capital they provide, the more costly it is for the firm to finance itself.

Table 4.57 Model

Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	4.355	.176	.000
	Cost of capital	.082	.048	.029

a. Dependent Variable: Financial risk

4.7.5 Linear regression model of financial risk/ Prudential supervision

The linear regression models the relationship between the dependent variable financial risk and the independent variable prudential supervision. The results in table 4.58 indicate R^2= .342 and R= .585. R value points to a strong linear relationship between prudential supervision and the financial risk of companies listed on the NSE. The R^2 indicates that explanatory power of the independent variables is 0.342. This means that about 34.2% of the variation in financial risk is explained by the model $\boldsymbol{FR = \beta_0 + \beta_5(PRUD)}$ and 65.8% is unexplained by the model. Adjusted R^2 is a modified version of R^2 that has been adjusted for the number of predictors in the model by less than chance. The adjusted R^2 of 0.339 which is slightly lower than the R^2 value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted R^2 of indicates that about 33.9% of the changes in the financial risk is explained by the model and 66.1% is not explained by the model $\boldsymbol{FR = \beta_0 + \beta_5(PRUD)}$. This means that the influence of prudential supervision on the financial risk of listed companies on the NSE is not high. Presence of prudential supervision increases investor confidence but inadequate legal tradition and infrastructure leads to increase in financial risk. This is corroborated by the findings by Claessens & Laeven, (2005).

Table 4.58 Model of Financial risk/ Prudential supervision

Model	R	R Square	Adjusted R Square
1	.585	.342	.339

a. Predictors: (Constant), prudential

The ANOVA test in table 4.59 indicates that prudential supervision has significant effect on financial risk of companies listed on the NSE since the p value is actual 0.000 which is less than 5% level of significance. The linear regression model $\boldsymbol{FR = \beta_0 + \beta_5(PRUD)}$ where FR is Financial Risk and PRUD is prudential regulation and supervision. The actual P value was 0.000 implying that the model was significant. The study therefore rejects the fifth null hypothesis;

H_o: Prudential supervision does not significantly influence the financial risk of companies listed on the NSE.

Table 4.59 ANOVA of Financial risk/ Prudential supervision

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.891	1	.891	18.696	.000[a]
	Residual	1.715	36	.048		
	Total	**2.606**	**37**			

a. Predictors: (Constant), prudential
b. Dependent Variable: Financial risk

The table 4.60 indicates there was positive gradient which reveals that an increase in prudential regulation and supervision leads to increased financial risk of companies listed on the NSE. Studies show that increase in prudential regulation and supervision leads to decrease on financial risk (La Porta, 1998, 2002).However it is the enforcement that produces the positive results. The results of the study pointed to numerous gaps and overlaps leading to lack of efficiency in enforcement of the regulations hence an increase in financial risk.

Table 4.60 Model of coefficients

Model		Coefficients		Sig.
		B	Std. Error	
1	(Constant)	4.064	.140	.000
	prudential	.143	.033	.000

a. Dependent Variable: Financial risk

4.8 Overall regression analysis

The linear regression models the relationship between the dependent variable financial risk and the independent variables level of leverage, accessibility and availability of financial information, capital structure, cost of capital and prudential regulation and supervision. The results in table 4.61 indicate R^2 = .825 and R = .908. R value points to a strong linear relationship between level of leverage, accessibility and availability of financial information, capital structure, cost of capital and prudential regulation and supervision on one side,

and the financial risk of companies listed on the NSE. The R^2 indicates that explanatory power of the independent variables is 0.825. This means that about 82.5% of the variation in financial risk is explained by the study model

$$\boldsymbol{FR = \beta_0 + \beta_1(LEV) + \beta_2(ACCESS) + \beta_3(CAPS) + \beta_4(COSC) + \beta_5(PRUD)}$$

However, 17.5% of the variation in financial risk is unexplained by the model. Adjusted R^2 is a modified version of R^2 that has been adjusted for the number of predictors in the model by less than chance. The adjusted R^2 of 0.051 which is slightly lower than the R^2 value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted R^2 of indicates that 82.1% of the changes in the financial risk is explained by the model and 17.9% is not explained by the model

$$\boldsymbol{FR = \beta_0 + \beta_1(LEV) + \beta_2(ACCESS) + \beta_3(CAPS) + \beta_4(COSC) + \beta_5(PRUD)}.$$

This means that the influence of all the independent variables that is level of leverage, accessibility of financial information, capital structure, cost of capital and prudential supervision on the financial risk of listed companies on the NSE is strong.

Table 4.61 Overall model of dependent/ Independent variables

Model	R	R Square	Adjusted R Square
1	.908[a]	.825	.821

a. Predictors: (Constant), prudential, capital structure, financial information, company leverage, cost of capital

The ANOVA test in table 4.62 on the overall model indicates that the independent variables level of leverage, availability and accessibility of financial information, cost of capital, capital structure and prudential regulation and supervision have a significant effect on financial risk of companies listed on the NSE since the p value is actual 0.000 which is less than 5% level of significance. The linear regression model

$$\boldsymbol{FR = \beta_0 + \beta_1(LEV) + \beta_2(ACCESS) + \beta_3(CAPS) + \beta_4(COSC) + \beta_5(PRUD)}$$

Where FR = Financial Risk, LEV = Level of leverage, AVAIL = Accessibility of financial information, CAPS = Capital structure, COSC = Cost of capital, PRUD = Prudential regulation and supervision. The P value was 0.001 implying that the model was significant. This therefore implies that the factors significantly affect the financial risk of listed companies on the NSE in Kenya.

Table 4.62 ANOVA of dependent/ Independent variables

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.149	5	.430	30.134	.000
	Residual	.457	32	.014		
	Total	**2.606**	**37**			

a. predictors: (constant), prudential , capital structure, financial information, company leverage, cost of capital
b.dependent variable: financial risk

Table 4.63 Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(constant)	2.218	.329		6.747	.000		
Company leverage	.525	.119	.765	6.414	.000	.182	5.486
Financial information	-.082	.037	-.321	-2.202	.035	.258	3.874
Capital structure	.077	.033	.292	3.366	.024	.360	2.781
Cost of capital	.067	.056	.221	2.170	.021	.154	6.509
Prudential supervision	.066	.027	.271	2.493	.018	.464	2.155

a. Dependent Variable: Financial risk

The researcher used the results on table 4.63 to decide on whether to accept or reject the study hypothesis.

$\mathbf{H_{o1}}$: Level of financial leverage does not significantly influence the financial risk of companies listed on the NSE.

For the first hypothesis the null hypothesis was rejected and the alternative hypothesis taken that the level of leverage significantly influences the financial risk of listed companies on the NSE. This is because the p-value 0.000 <0.05 making the coefficient of level of leverage significant in the model.

H_{o2}: Accessibility of financial information does not significantly influence the financial risk of companies listed on the NSE.

For the second hypothesis the null hypothesis was rejected and the alternative hypothesis taken that accessibility of financial information significantly influences the financial risk of listed companies on the NSE. This is because the p-value 0.035 <0.05 making the coefficient of accessibility of financial information significant in the model.

H_{o3}: Capital structure does not significantly influence the financial risk of companies listed on the NSE.

For the third hypothesis the null hypothesis was rejected and the alternative hypothesis taken that capital structure significantly influences the financial risk of listed companies on the NSE. This is because the p-value 0.024 <0.05 making the coefficient of capital structure significant in the model.

H_{o4}: Cost of capital does not significantly influence the financial risk of companies listed on the NSE.

For the fourth hypothesis the null hypothesis was rejected and the alternative hypothesis taken that cost of capital significantly influences the financial risk of listed companies on the NSE. This is because the p-value 0.021 <0.05 making the coefficient of cost of capital significant in the model.

H_{o5}: Prudential supervision does not significantly influence the financial risk of companies listed on the NSE.

For the fifth hypothesis the null hypothesis was rejected and the alternative hypothesis taken that prudential supervision significantly influences the financial risk of listed companies on the NSE. This is because the p-value 0.018 <0.05 making the coefficient of prudential supervision significant in the

model. With the results, the original conceptual framework was retained as it captured the determinants of financial risk of listed companies on the NSE as shown in Figure 4.1 which forms the optimal model of the study.

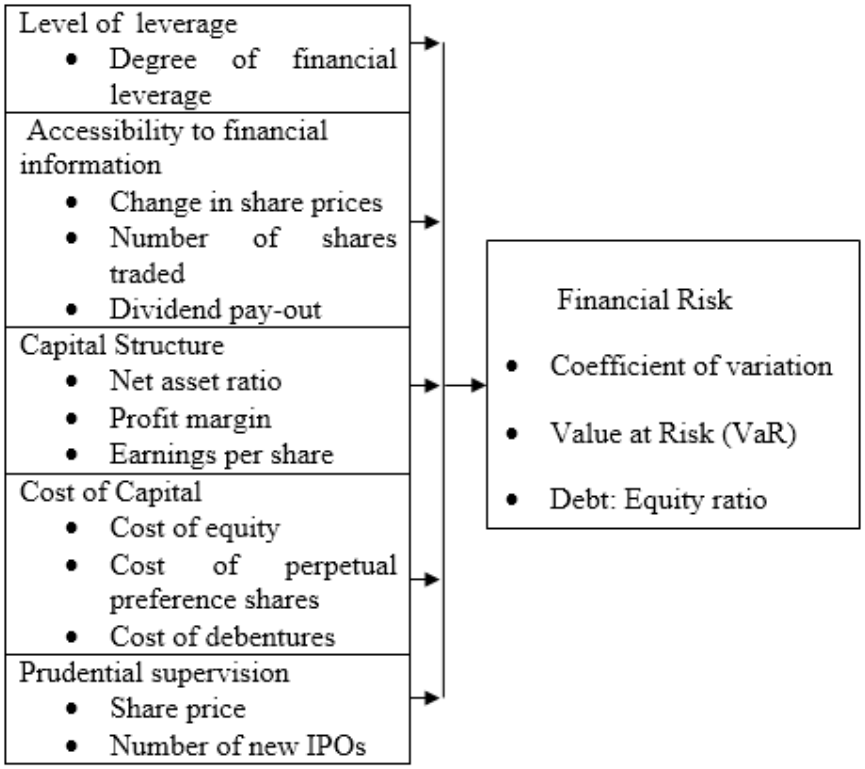

Figure 4.1: Optimal Model Framework

Since the linear multiple regression model of the study was

$$\boldsymbol{FR = \beta_0 + \beta_1(LEV) + \beta_2(ACCESS) + \beta_3(CAPS) + \beta_4(COSC) + \beta_5(PRUD)}$$

The estimated value of the model was found by inserting the unstandardized beta coefficients values in the study model. The Constant was 2.218, showing that even in the absence of the determinants of financial risk of listed companies on NSE, there is an inherent risk factor which is constant to all the firms. The $\boldsymbol{\beta_1}$ gave a value of 0.525, $\boldsymbol{\beta_2}$ gave a value of -0.082, $\boldsymbol{\beta_3}$ a value of 0.077, $\boldsymbol{\beta_4}$ a value of 0.067 and $\boldsymbol{\beta_5}$ was 0.066. To find the estimated value of the model hence;

$$\boldsymbol{FR = 2.218 + 0.525(LEV) - 0.82(ACCESS) + 0.077(CAPS) + 0.067(COSC) + 0.066(PRUD)}$$

The data extracted from the financial statements of the listed companies was used to estimate the financial risk of three different companies and the scenarios in table 4.63 were observed. In scenario A, the financial risk is high due to high level of leverage and accessibility of financial information. In scenario B, the financial risk is comparatively lower compared to Scenario A due to low level of leverage and accessibility of financial information. Finally Scenario C, the financial risk is low due to low level of leverage and high accessibility to financial information. This therefore indicates that, level of leverage has quite a significant influence on the financial risk of a listed firm on the NSE in Kenya. Accessibility of financial information has negative effect hence an increasing in the value means a lower financial risk for a firm.

Table 4.64 Running model of Financial risk/ Independent variables

	Scenario A	**Scenario B**	**Scenario C**
Level of leverage	0.77	0.49	0.25
Accessibility of financial information	0.67	0.35	0.81
Capital structure	2.5	4.6	8.9
Cost of capital	0.03	0.25	0.65
Prudential supervision	0.15	0.50	0.70
Financial risk	**2.998**	**2.592**	**2.456**

4.9 Discussion of key findings

The results of the study point out to some key findings which answer the research questions;

Research question one: What is the influence of the level of leverage on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?

The results indicate that level of leverage positively influences the financial risk of companies listed on the NSE more than financial information, cost of capital, capital structure and prudential regulation and supervision as shown by the unstandardized beta coefficients. The table 4.63 of regression analysis shows that the level of leverage has a positive and significant influence on

financial risk as shown by a t value of 6.414 (greater than 2) and a p value of 0.000 ($p < 0.05$) at 95% level of confidence.

The individual constructs of level of leverage were also tested and it was evident that there is increased possibility of the use of debt as initial source of additional funding and this implies an increase in financial risk. These results are corroborated by the findings of Jostova and Philipov (2005). However, most of the respondents do not relate the use of debt to increased cash flow making the use of debt a less favourable choice of funding hence decreasing financial risk. The results agree with the findings by Pace (2010).

Most respondents agree that creditor's assessment of high leverage is increased risk and this is consistent with the findings by Kumar (2008). Additionally, most of the respondents link the market value of the firm to the level of financial risk and this may facilitate financial decisions which regulate financial risk. The results are in line with the findings by Kumar, (2008). The majority of the respondents indicate the use of retained earnings in interest payment to reduce level of leverage. These results are corroborated by the findings by Chen and Strange (2005).

Most of the respondents agree to the use of low fixed cost production processes in effort to ensure a low financial risk. These results are similar to the findings by Alaghi, (2013). However, results corroborated by Frank and Goyal, (2003) indicate that since large firms are more diversified they are more likely to have more debt than equity financing. Overall therefore, the findings indicate that level of leverage significantly affects the financial risk of listed companies on the NSE and there is evidence indicating that Companies put in effort to control financial risk.

Research question two: What is the influence of accessibility of financial information on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?

The results indicate that accessibility of financial information negatively influences the financial risk of companies listed on the NSE unlike level of

leverage, cost of capital, capital structure and prudential regulation and supervision which positively influence financial risk as shown by the unstandardized beta coefficients. The table 4.63 of regression analysis shows that accessibility of financial information has a negative and significant influence on financial risk as shown by a t value of -2.202 (less than 2) and a p value of 0.035 ($p < 0.05$) at 95% level of confidence.

Individual constructs of availability and accessibility of financial information were tested. In line with the findings of Petersen and Rajan (2012), the results show that most of the respondents agree that although the degree of detail is high, that does not discourage the use of debt. The overall interest rate set is the main deterrent to the use of debt. Most respondents do not agree with the use of collateral by creditors in minimizing the risk of default. Depending on the sector the company belongs, collateral requirement could discourage the use of debt hence minimise financial risk. This is corroborated by Thornhill *et al*., (2004).

In addition, most respondents indicate that loan disbursement in increments subject to performance is not justified as it hinders wholesome implementation of projects hence increasing the financial risk of the firm. Majority of the respondents agree that more diversified firms should use more debt financing. The results are corroborated by the study by Jaggi *et al*., (2009) which shows that diversification of risk facilitates access to debt financing. These results indicate that as much as firms are aware of financial risk, they do not fully support the policies put in place on availability and accessibility of financial information meant to reduce financial risk. Furthermore, a low correlation between availability and accessibility of financial information and the financial risk of the listed Companies is an indicator of a financial market efficiency which is not strong.

Research question three: What is the influence of capital structure on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?

The results indicate that capital structure positively influences the financial risk of companies listed on the NSE more than availability and accessibility of financial information, cost of capital and prudential regulation and supervision. Its influence is however less than that of level of leverage and as shown by the unstandardized beta coefficients. The table 4.63 of regression analysis shows that the capital structure has a positive and significant influence on financial risk as shown by a t value of 3.366 (greater than 2) and a p value of 0.024 ($p < 0.05$) at 95% level of confidence.

On individual constructs of capital structure, results show that most respondents agree that management and ownership do not have the same chances in decision making concerning the firm, that the financial risk of the firm is determined by the management. This is in line with the findings by Noe *et al*., (2003).

Results indicate that most Companies have their financial risk in line with the industry but there was no certainty of future stability resulting from the existing capital structure. This indicates the need for financial flexibility, adjusting the optimal capital structure to suit prevailing financial conditions. The findings are corroborated by Golstein *et al*., (2011).

Study results indicated that the majority of the respondent found debt financing appealing because interest is tax deductible. The findings are corroborated by the findings by Pace (2010). The results therefore conclusively indicate that capital structure has a significant effect on the financial risk of listed Companies on the NSE.

Research question four: What is the influence of cost of capital on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?

The results indicate that cost of capital positively influences the financial risk of companies listed on the NSE to the least extend as shown by the unstandardized beta coefficients. The table 4.63 of regression analysis shows that the cost of capital has a positive and significant influence on financial risk

as shown by a t value of 2.170 (greater than 2) and a p value of 0.021 ($p < 0.05$) at 95% level of confidence.

Individual constructs tested indicate that for majority of the firms, the common stock sells at a lower value than the book value. The results concur with the findings by Namusonge *et al*., (2012) and they indicate high financial risk. Majority of the respondents agree to the use of proper choice of discount rate in foreign investment in order to lower financial risk. These findings are corroborated by Schmukler and Vesperoni (2006) who indicated that financial globalisation tends to intensify sensitivities to foreign shocks.

The majority of the respondents indicated that financial stability of the firm could be affected by a pending litigation, the findings are in line with Sitati and Odipo (2011).In addition, the majority agree that the Company's portfolio could be affected by existing credit rate, results which agree with the findings by Bancel and Mittoo (2004).

The results of the study also indicated that the majority of the respondents agree that high cost of debt always deters firms from using it. The results are consistent with the findings by Petersen and Rajan (2012). These results therefore conclusively indicate that although the stock prices do not reflect the opportunity cost inherent with investment in the listed Companies, the cost of capital affects the financial risk of listed Companies on the NSE.

Research question five: What is the influence of prudential supervision on the financial risk of Companies listed on the Nairobi Securities Exchange (NSE) in Kenya?

The results indicate that prudential regulation and supervision positively influences the financial risk of companies listed on the NSE more than cost of capital. Its influence is however less than that of level of leverage and capital structure as shown by the unstandardized beta coefficients. The table 4.63 of regression analysis shows that prudential supervision has a positive and significant influence on financial risk as shown by a t value of 2.493 (greater than 2) and a p value of 0.018 ($p < 0.05$) at 95% level of confidence.

Tests on individual constructs indicated that the majority of respondents support elaborate prudential regulation and supervision, this is corroborated by the findings of a study by Botero *et al*., (2004). The majority of the respondents do not consider the prudential regulations available sufficient in protecting outsider shareholders. This is reflected in the low dividend pay-out by the firms. This is corroborated by the findings by La Porta *et al*., (2000). Findings also show inadequate legal tradition and law enforcement which determine the shaping of financial contracts. This increases financial risk of the listed companies, and the findings are corroborated by the findings by Claessens and Laeven, (2005).

Results of the study show that there is inadequacy in financial risk management mechanisms hence a possibility of a high financial risk. The results concur with the findings by Gemech *et al*., (2011) on the importance of financial risk management in order to take advantage of possibilities that some risks may overlap each other hence reducing financial risk. The study also indicates presence of gaps and overlaps in the prudential regulation system which leads to higher financial risks. These findings are corroborated by the findings by Bhattacharya and Daouka, (2002). Finally, the majority of the respondents concur that absence of clear measures in prudential regulation leads to increase in financial risk. The findings are corroborated by the findings by Claessens and Laeven, (2005).

The results conclusively indicate that prudential regulation and supervision significantly affect the financial risk of listed Companies on the NSE in Kenya. More specifically, the existing prudential regulation and supervision leads to increase in financial risk of listed companies on the NSE. This is corroborated by Prates (2013) who points out that the proposition to limit instability and risk poses the danger of disfiguring the system instead of only regulating it. This is due to the dynamic and complexity nature of financial systems. Furthermore, overregulation has significant costs not only to the private businesses regulated, which will have to devote more time and money to compliance, but also to the regulators and supervisors themselves hence increasing the financial risk.

4.10 Checks for Multicollinearity and Heteroscedasticity

Multicollinearity, or excessive correlation among explanatory variables, can complicate or prevent the identification of an optimal set of explanatory variables for a statistical mode. Cohen *et al., (*2013)'s definition of variance inflation factor (VIF) is that it "…provides an index of the amount that the variance of each regression coefficient is increased relative to a situation in which all of the predictor variables are uncorrelated" and suggest VIFs of 10 or more to be the rule of thumb for concluding VIF to be too large hence not suitable. Table 4.63 indicates level of leverage had VIF of 5.486 (less than 10), availability and accessibility of financial information had a VIF of 3.874 (less than 10), capital structure had a VIF of 2.781 (less than 10) cost of capital had a VIF of 6.509 (less than 10) and prudential regulation and supervision had a VIF of 2.155 (less than 10) hence all variables are suitable.

Heteroscedasticity means that previous error terms influence other error terms and hence violating the statistical assumption that the error terms have a constant variance. Normal P plots and scatter diagrams were used to check this and there was no evidence of heteroscedasticity. A plot of the residuals against the fitted values and against all predictors did not show any discernible pattern hence no evidence of heteroscedasticity.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter deals with the summary of the entire study including the data presented in chapter four with specific attention given to the objectives and research questions of the study which were used as units of analysis. Theoretical and empirical literature was used to compare the results of the study with previous studies. The conclusions were drawn from the results and implications of the results drawn and used to give the recommendations.

5.2 Summary of the findings

The study sought to evaluate the influence of the determinants of financial risk on companies listed on the NSE in Kenya. The study targeted the listed companies on the NSE. Population of 60 listed companies as at January 2012 was used to derive the sample size. The summary and discussion followed the study hypothesis formulated in chapter one. The influence of level of leverage, accessibility of financial information, capital structure, cost of capital and prudential supervision on financial risk was investigated. The factors were derived from empirical literature on financial risk. A pilot study was conducted on a convenience sample of ten to test the reliability and validity of the research instrument. In line with the findings presented and discussed in the previous chapter, the study derived the following findings.

5.2.1 Influence of level of leverage on financial risk

The findings indicated that the level of leverage positively influence the financial risk of Companies listed on the NSE in Kenya. This is indicated by the results of inferential statistics such as ANOVA. The findings indicate that the ratio of debt to equity has the most significance in determining the financial risk of Companies listed on the NSE in Kenya.

5.2.2 Influence of accessibility of financial information on financial risk

The findings from inferential statistics indicate that there is a negative relationship between availability and accessibility of financial information and financial risk. The weak correlation indicates that although increase accessibility of financial information leads to a decrease in financial risk of the companies listed on the NSE, its influence on the financial risk is minimal

5.2.3 Influence of cost of capital on financial risk

Findings indicate that cost of capital positively influences the financial risk of the Companies listed on the NSE in Kenya. The study exploited both the internal implication of cost of capital to the firm and the implication on the stock price on the NSE. Internal to the firm, when the cost of capital is high, the companies experience variability in earnings and this increases the possibility of default in case of a decrease in earnings, hence increasing financial risk. On the other hand, cost of capital being the opportunity cost for investment in a firm, should be reflected in the stock prices of the firm, hence 'good' firms should have higher share prices. This is however not fully reflected in the study of the financial risk of the listed companies on the NSE. The study shows that the effect of cost of capital on financial risk of listed companies on the NSE is minimal.

5.2.4 Effect of capital structure on financial risk

The study adopted an optimal capital structure consisting of more debt than equity. The findings indicated a strong positive relationship between capital structure and financial risk of listed Companies. This is because most of the companies utilize debt as opposed to equity for additional funding

5.2.5 Effect of prudential supervision on financial risk

The relationship between prudential supervision on one hand and financial risk is positive as indicated by the findings. This implies that increase it prudential regulation and supervision leads to an increase in the financial risk of

companies listed on the NSE in Kenya. The findings indicate that stringent rules and measures intended to protect the investors are inhibiting to the Companies, though they are motivating to the investors.

5.2.6 The overall effect of the variables

The study findings showed a great influence of all the five variables to the financial risk of companies listed on the NSE in Kenya. The study found out that there was 90.8% of corresponding change in the financial risk for every change in all the five predictor variables jointly. Test of overall significance of all the five variables jointly, level of leverage, accessibility of financial information, capital structure, cost of capital and prudential supervision using ANOVA, at 0.05 level of significance found the model to be significant. The individual constructs indicate an agreement with the findings by De Nicolo and Lucchetta (2004) that financial risk is a key determinant of performance in the economy although not adequate financial risk management mechanisms have been put in place. Most respondents agree that internationalization of trade increases financial risk. The results concur with results by Jomo & Rock, (2003). Additionally, results corroborated by Yen and Lin (2008) indicate that short-term risks might trigger other problems such as early liquidation. These results clearly indicate the importance of financial risk in the performance and sustainability of the listed Companies on the NSE, hence the need for proper financial risk management mechanisms.

5.3 Conclusions

The aim of this study was to evaluate the influence of the determinants of financial risk on companies listed on the NSE in Kenya The output given from the findings indicate that there is a positive relationship between level of leverage and the financial risk of listed companies on the NSE. The regression analysis showed that there is a positive relationship R=0.734 between the dependent variable financial risk and level of leverage. Level of leverage therefore is the strongest determinant of the financial risk of the listed companies since more debt financing implies higher possibilities of default, hence higher financial risk.

The regression analysis showed a negative and weak relationship (R = -0.233) between accessibility of financial information and financial risk of listed companies on the NSE. The study identified that increase in accessibility of financial information leads to a decrease in financial risk as more informed financial decisions are likely to be made. However the minimal influence is because the accessibility of financial information is not reflected on the existing prices of stocks. Informational advantages can allow individuals to 'outplay' the stock market. Accessibility of financial information is therefore not a strong indicator of the financial risk of the listed companies on the NSE.

The regression analysis on capital structure and the dependent variable financial risk indicates a positive ad a strong relationship (R = 0.565). This I because the choice between debt and equity financing determines the possibility of bankruptcy as interest payment is compulsory. Since other factors influence the choice of financing such as the board of directors and risk tolerance of the manager, the influence of capital structure on the listed companies on the NSE is reduced considerably (adjusted R^2 value of 0.300).

The positive and wear relationship between cost of capital and the financial risk of listed companies on the NSE indicate that the rate of return expected by the owners of capital existing on the stock market is not reflective of the financial risk inherent in the particular companies. For instance, dividends per share should be high for performing companies yet this is not the case as most companies use retained earnings to finance projects.

Inferential statistics showed that prudential supervision is a significant determinant of financial risk (p value of 0.000). There was a positive strong relationship (R = 0.585) between prudential supervision and the financial risk of listed companies on the NSE. This is because increased confidence in the stock market due to improved supervision leads to increase in investments hence the financial risk of the company reduces. The influence on the listed companies on the NSE is however less than proportionate due to the inhibitions caused by inefficient regulatory processes.

It further indicates a negative relationship between accessibility of financial information and financial risk. On the overall however, findings indicate the relationship between the independent variables and the dependent variable is significant, hence the conclusion that level of leverage, availability and accessibility of financial information, capital structure, cost of capital and prudential regulation and supervision significantly affect the financial risk of Companies listed on the NSE in Kenya. The weak linear relationship between cost of capital and financial risk indicates that the opportunity cost of investment is not reflected on the market value of companies on the NSE. This may be due to the weak linear relationship between availability and accessibility to financial information and financial risk, which is an indicator of a market efficiency which is not strong. Efficiency in availability and accessibility of financial information is paramount in a sensitive and reactive financial market hence an indicator of the performance of the listed companies. This is reflected in the share prices which show the opportunity cost of investment, hence cost of capital. The positive relation between prudential regulation and supervision, and financial risk may be explained by the inhibiting effect of the supervision and regulation rules and processes which cause slow-downs in the financial system if not efficiently implemented and monitored.

5.4 Recommendations

Following the findings of the study and the implications on the determinants of financial risk of listed companies on the Nairobi Securities Exchange, the study gives the following recommendations.

5.4.1 Managerial recommendations

1) The management and owners of the Companies require investing in competitive financial risk management tools and processes. The internal risk management process must be sophisticated, proactive and adaptable handled by risk management staff and external partners, who can effectively and routinely assess, quantify, prioritize and address

risk. This therefore requires massive investments in capital and human resources.

2) Management should practice good corporate governance and support the rules intended to protect investors since improved investor confidence will have positive effects on the market value of the Companies.

5.4.2 Policy recommendations

1) Policies should be put in place to ensure that prudential regulation and supervision have very minimal gaps and overlaps in order to make the process efficient and not prohibitive and inhibitive to the Companies being regulated.

2) Proper enforcement rules and measures should be put in place to ensure compliance to the rules which are intended to protect investors. The rules should be enforced and punitive measures put against those who break the rules. The supervisory authorities should have not only the legal power to search for a solution within the financial system but also the legal power to impose them. This will improve investor confidence.

3) Policies should be put in place by the government to ensure Companies can access debt financing at a reasonable rate by putting in place credit rate control mechanisms.

4) Mechanisms should be put in place to ensure the Kenyan financial market evolves to the level of the global financial markets. This will facilitate an upgrading of the actual regulation and settlement systems in order to respond to the existing systemic risks.

5) Government should put in place clear rules and regulations to improve financial market efficiency and minimise the possibilities of 'insiders; outwitting the market. This can be done by enhancing financial information delivery to the market.

5.5 Areas for further research

This study is significant and a pointer for future research in this area, particularly in Kenya. The study findings emphasize the effect of effect of level of leverage, availability and accessibility of financial information, capital structure, cost of capital and prudential regulation and supervision on the financial risk of Companies listed on the NSE in Kenya. This therefore reiterates the importance of financial risk management in these companies and others as persistently high financial risk leads to financial crisis. Existing literature indicates that as a future avenue of research, there is need to carry out similar research on companies which are not listed on the NSE, specifically the Small and Medium Enterprises as they are equally important to the Kenyan economy.

This study's target population was the management of the listed companies. This therefore means that the conclusions and recommendations were based on their opinions. Future research should include the individual and institutional investors in order to capture their opinions which are also important in determining the effect of financial risk.

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APPENDICES

APPENDIX A: FINANCIAL RISK QUESTIONNAIRE

Introduction

This questionnaire on the subject: DETERMINANTS OF FINANCIAL RISK OF COMPANIES LISTED ON THE NAIROBI SECURITIES EXCHANGE IN KENYA.

Your responses to these questions will be treated with utmost confidentiality. Your honest and objective answers to the following questions will be highly appreciated and acknowledged.

Participant Instructions (Part 1):

Section A: Demographics

For questions 1 – 8 please tick the number that pertains to you or answer with the information requested.

1) What is your position in the company
   a) Chief Executive Officer (C.E.O)
   b) Chief Financial Officer (C.F.O)
   c) Financial manager (Middle level)
   d) Financial manager.(Functional level)
2) What is your age?
   a) Below 30 years
   b) Between 30 and 40 years
   c) Between 40 and 50 years

d) Above 50 years

3) What is your level of education?

a) Bachelors Degree

b) Masters Degree

c) Doctor of Philosophy (PhD)

4) In which sector does the company belong to?

a) Agriculture

b) Automobile and Accessories

c) Banking

d) Construction and Allied

e) Commercial and Services

f) Energy and Petroleum

g) Insurance

h) Investment

i) Manufacturing and Allied

j) Telecommunications and Technology

5) Your financial literacy can adequately facilitate reliable decision making on financial risk.

a) Strongly agree

b) Agree

c) Neither agree nor disagree

d) Disagree

e) Strongly disagree

6) For how long has the company been in operation?

a) Less than 4 years

b) Between 5 and 10 years

c) More than 10 years

7) For how long has the company been listed on the Nairobi Securities Exchange (NSE)?

a) Less than 4 years

b) Between 5 and 10 years

c) More than 10 years

Participant Instructions (Part 2):

To what extend do you agree with each of the following statements. Please indicate your answer using the following 5-point scale where:

SD = Strongly Disagree

D = Disagree

N = Neutral

A = Agree

SA = Strongly Agree

This section explores your perceptions regarding aspects of your firm's

		SA	A	N	D	SD
B	**Level of leverage**					
8	The company's first option for additional financing is always debt.					
9	The company's creditors assessment of high leverage is always increased financial risk.					
10	Use of debt as source of additional financing does not always leads to increased cash flow					
11	The market value of a company is determined by its leverage					
12	The company rarely uses retained earnings to meet interest payments and debt at maturity.					
13	The firm does not use production processes with low fixed costs in order to lower risk					

C	**Availability and accessibility of financial information**	SA	A	N	D	SD
14	The amount of the information required by lenders in debt financing is adequate					
15	The degree of detail of the information required by lenders in debt financing is adequate					
16	The requirement for collateral by creditor is justified because it lowers their financial risk.					
17	Loan disbursement in increments, conditional to performance is a justified condition put by lenders.					
18	This firm should have more debt financing because it is diversified and has better reputation in the debt market.					
19	Since well-established firms have easily verifiable data it is always easy to access debt financing					
20	Young firms are more vulnerable to the problem of asymmetric information hence likely to use debt financing					

D	**Capital structure**	SA	A	N	D	SD
21	The owners and the management of the company have equal chance in making financial decisions affecting the company.					
22	The company's capital structure is in line with the competitive structures existing in the industry at present.					
23	The company's capital structure is capable of ensuring stability of future sales.					
24	The company presently operates on low-cost short term financing.					
25	Since interest is tax-deductible more debt should be used to offset corporate taxes					
26	Managers rarely pursue their own objectives in making capital structure decisions					

E	**Cost of capital**	SA	A	N	D	SD
27	The common stock for this company usually sells at a lower value than the book value.					
28	The company emphasises the proper choice of discount rate in its foreign investments					
29	The company's financial stability can be affected by a					

	pending litigation					
30	The company's investment portfolio can be affected by the existing credit rate					
31	The high cost of debt financing always deters firms from using it					
32	A firm's debt level is always higher when is has free cash flow and low investment opportunity set					

F	**Prudential regulation and supervision**	**SA**	**A**	**N**	**D**	**SD**
33	The prudential regulations surrounding the registration, operations and listing of a company on the Nairobi Stock Exchange are too elaborate and therefore demotivating to potential investors.					
34	Prudential regulations in Kenya does not sufficiently protect the interests of the outsider shareholders.					
35	There are numerous gaps and overlaps in the financial regulation system in Kenya.					
36	Prudential regulation enforcement system in Kenya does not have adequate supporting infrastructure put in place.					
37	Countries with better protection of minority shareholders often have higher valuation of firms					
38	Underdeveloped capital markets or weak creditor rights often lead to higher borrowing costs					

H	**Financial risk**	**SA**	**A**	**N**	**D**	**SD**
39	The Company considers Financial Risk as an important factor in determining performance and sustainability.					
40	High cash turnover frequently leads to increase in financial risk					
41	This company has in place adequate Financial Risk Management mechanisms.					
42	Internationalisation of trade always leads to increase in the financial risk faced by a firm					
43	The degree of leverage that a firm has a great deal on its riskiness					
44	Higher operating leverage does not affect the degree of financial leverage of a firm					

Section G: Kindly tick ( ) in the box that best reflects/corresponds to your opinion on the matter.

45) To what extend do the following determinants influence financial risk

a) Level of leverage

Very high extend ☐

High extend ☐

Moderately ☐

Low extend ☐

☐

Very low extend

b) Availability and accessibility to financial information

Very high extend ☐

High extend ☐

Moderately ☐

Low extend ☐

Very low extend ☐

c) Capital structure

Very high extend ☐

High extend ☐

Moderately

Low extend ☐

Very low extend ☐

☐

d) Cost of capital

Very high extend ☐

High extend ☐

Moderately ☐

Low extend ☐

☐

Very low extend

e) Prudential regulation

Very high extend ☐

High extend ☐

Moderately ☐

Low extend ☐

Very low extend ☐

Please suggest your recommendations on possible Financial Risk Management mechanisms that your company could put in place.

……

……

……

……

……

Thank you for your co-operation in completing this questionnaire. Kindly return the questionnaire as specified in the cover letter.

THANK YOU

APPENDIX B

Introduction letter

P O Box 82001 – 80100

Mombasa

Dear sir/madam

My name is Caroline Ayuma, a PhD student at Jomo Kenyatta University of Science and Technology JKUAT). I am undertaking a research project on Determinants of Financial Risk of Companies Listed on the Nairobi Security Exchange in Kenya. To this end I kindly request that you complete the following short questionnaire regarding the status of your company. Your response is of the utmost importance to me.

Please do not enter your name or contact details on the questionnaire. It remains anonymous.

The completed questionnaire shall be physically collected from your office. Should you have any queries or comments regarding this survey, you are welcome to contact me telephonically at 0703304668 or e-mail us at cayuma@gmail.com

Thank you

Yours sincerely

Caroline Ayuma

PhD Research Student

APPENDIX C

List of Companies listed on the Nairobi Securities Exchange as at January 2012.

Agricultural

Eaagads Ltd

Kapchorua Tea Co. Ltd

Kakuzi

Limuru Tea Co. Ltd

Rea Vipingo Plantations Ltd

Sasini Ltd

Williamson Tea Kenya Ltd

Commercial and Services

Express Ltd

Kenya Airways Ltd

Nation Media Group

Standard Group Ltd

TPS Eastern Africa (Serena) Ltd

Scangroup Ltd

Uchumi Supermarket Ltd

Hutchings Biemer Ltd

Longhorn Kenya Ltd

Telecommunication and Technology

Safaricom Ltd

Automobiles and Accessories

Car and General (K) Ltd

CMC Holdings Ltd

Sameer Africa Ltd

Marshalls (E.A.) Ltd

Banking

Barclays Bank Ltd

CFC Stanbic Holdings Ltd

I&M Holdings Ltd

Diamond Trust Bank Kenya Ltd

Housing Finance Co Ltd

Kenya Commercial Bank Ltd

National Bank of Kenya Ltd

NIC Bank Ltd

Standard Chartered Bank Ltd

Equity Bank Ltd

The Co-operative Bank of Kenya Ltd

Insurance

Jubilee Holdings Ltd

Pan Africa Insurance Holdings Ltd

Kenya Re-Insurance Corporation Ltd

Liberty Kenya Holdings Ltd

British-American Investments Company (Kenya) Ltd

CIC Insurance Group Ltd

Investment

Olympia Capital Holdings ltd

Centum Investment Co Ltd

Trans-Century

Manufacturing and Allied

B.O.C Kenya Ltd

British American Tobacco Kenya Ltd

Carbacid Investments Ltd

East African Breweries Ltd

Mumias Sugar Co. Ltd

Unga Group Ltd

Eveready East Africa Ltd

Kenya Orchards Ltd

A.Baumann CO Ltd

Construction and Allied

Athi River Mining

Bamburi Cement Ltd

Crown Berger Ltd

E.A.Cables Ltd

E.A.Portland Cement Ltd

Energy and Petroleum

KenolKobil Ltd

Total Kenya Ltd

KenGen Ltd

Kenya Power & Lighting Ltd

Umeme Ltd