THE EFFECT OF FOREIGN EXCHANGE RISK MANAGEMENT ON THE VALUE OF FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

This Research Project is my own work and has not been submitted in any other university or institution of higher learning for the award of degree, diploma or certificate.

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This Research Project has been submitted for examination with my Approval as the University Supervisor

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DEDICATION

I dedicate this research project to all those who have a desire to pursue knowledge, to learn new things and seek to improve on those areas they do not know.

ABSTRACT

This study investigates the effect of foreign exchange risk management on firm value with specific reference to those listed at the NSE. With the world becoming a global village more firms are being exposed to foreign exchange risk requiring them to seek ways of shielding themselves against the vice.

This being a descriptive study that sought to establish the effect of foreign exchange risk management on the value of a company, the research design used is cross-sectional design. Data was gathered for a period of five years from the year 2008 to the year 2012 based on twenty non-financial companies listed at the NSE. These are companies that are either derivative user's, are exporting firms, have foreign denominated debts or have subsidiaries abroad.

Research findings on the topics have yielded different results leaving a gap as to whether hedging foreign exchange risk really does affect firm value. To test this, Tobin's Q model has been employed in calculating firm value and the study has found that hedging foreign exchange risk does not significantly contribute to firm value. The results add new evidence to the current literature that have reported conflicting empirical findings from prior research.

To better manage risks, firms should therefore understand the risks they are exposed to by developing a risk profile. This will enable firms take on the various options of either letting the risk pass through, protecting themselves by using the hedging instruments or intentionally increasing exposure to some of the risks especially where managing the risk is insignificant.

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LIST OF ABBREVIATIONS

CMA	-	Capital Markets Authority
CD	-	Certificate of Deposit
ERM	-	Enterprise Risk Management
FX	-	Foreign Exchange
FRA	-	Forward Rate Agreement
NSE	–	Nairobi Securities Exchange
NASI	-	Nairobi Securities Exchange All Share Index
NPV	-	Net Present Value
OTC	–	Over the Counter
S&P	-	Standard and Poor
MGT	-	Management
RSK	-	Risk

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Companies in a bid to expand their investment opportunities and acquire resources for operations have had to go beyond their local borders. This has been done through cross listing, importing raw materials from foreign countries, exporting finished goods as well as setting up operations in other countries. Skapof (2011), states that while expansion into foreign markets can be vital to a mid-market company's long-term growth; it is also fraught with significant risks and potential liability. Among the risks faced includes foreign exchange risk which refers to the sensitivity of a firms cash flows, real domestic currency value of assets, liabilities, or operating incomes to unanticipated changes in exchange rates. Exchange rate fluctuations affect operating cash flows and firm value through translation, transaction, and economic effects of exchange rate risk exposure.

Firms dealing in multiple currencies face a risk (an unanticipated gain/loss) on account of sudden/unanticipated changes in exchange rates, quantified in terms of exposures. Exposure is defined as a contracted, projected or contingent cash flow whose magnitude is not certain at the moment and depends on the value of the foreign exchange rates. The process of identifying risks faced by the firm and implementing the process of protection from these risks by financial or operational hedging is defined as exchange risk management, Kothari (2011).

1.1.1 Foreign Exchange Risk Management

Foreign exchange risk can cause erosion of shareholder value. Management of companies which is tasked with the job of maximizing shareholder wealth has thus to come up with ways of mitigating risk to facilitate shareholder wealth maximization.

Risk management techniques vary with the type of exposure (accounting or economic) and term of exposure. Eitman, Stone hill and Moffet (2004) state that accounting exposure, also called translation exposure, results from the need to restate foreign subsidiaries' financial Statements into the parent's reporting currency and is the sensitivity of net income to the variation in the exchange rate between a foreign subsidiary and its parent.

Economic exposure is the extent to which a firm's market value, in any particular currency, is sensitive to unexpected changes in foreign currency. Currency fluctuations affect the value of the firm's operating cash flows, income statement, and competitive position, hence market share and stock price. Currency fluctuations also affect a firm's balance sheet by changing the value of the firm's assets and liabilities, accounts payable, accounts receivables, inventory, loans in foreign currency, investments (CDs) in foreign banks; this type of economic exposure is called balance sheet exposure. Eitman et al. (2004)

Transaction Exposure is a form of short term economic exposure due to fixed price contracting in an atmosphere of exchange-rate volatility. The most common definition of the measure of exchange-rate exposure is the sensitivity of the value of the firm, proxied by the firm's stock return, to an unanticipated change in an exchange rate. This is calculated by using the partial derivative function where the dependent variable is the firm's value and the independent variable is the exchange rate Adler and Dumas (1984). Risk management and specifically hedging is

hence receiving increased attention in companies around the world and in Kenya. Hedging can be an effective tool for dealing with the impact of unexpected events on shareholder

1.1.2 Firm Value

Firm Value refers to the total economic value of a company. It's an economic measure reflecting the market value of a whole business i.e. the value to be allocated to the company's shareholders and debt holders. It consists of not just the Price (i.e., the amount to be paid for the business) but also the associated Terms and the Deal Structure. Different values for a business can exist because of different operating assumptions, deal structures, payment terms, etc., not due to use of different valuation methods. According to Pandey (2009), in the current financial theories, the value of a firm can be calculated by several methods. One of the most-used, most acclaimed methods is the Net Present Value (NPV) method. This method discounts the present and future cash flows of the company to a present value. The discount rate is defined as the rate of return of an average investment in the market with the same risk profile as the investment that is subject of the NPV method.

1.1.3 Effect of Foreign Exchange Risk Management on Firm Value

Finance theory suggests that risk management can increase the value of the firm by addressing the underinvestment problem. The basic idea is that, by hedging financial risks with derivatives, companies reduce the variability of their cash flow, thereby ensuring they will have sufficient funds to undertake all promising projects. This idea is supported by a theoretical paper, Froot, Scharfstein, and Stein (1993), which demonstrated that when the costs of external capital include deadweight costs, companies that require outside financing will under invest when internal operating cash flows are low.

Risk management might enlarge the value of the firm in two ways: Free Cash Flows can become larger or the discount rate becomes lower. The rise of the amount of free cash flows can occur in several ways: more money can be led to those investments that generate the highest return. Stability in cash flows due to risk management makes it possible to keep investments in place, instead of having to abandon these in case money is needed.

According to Smithson and Simkins (2005), management of foreign exchange risk increases shareholders value through enhanced business performance and the reduction of the firms' cost of capital. Further in the event of corporations successfully managing its foreign exchange risks the benefits received from such effective execution will have a long-term positive impact in creating value for the corporations' shareholders.

1.1.4 Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) was constituted as Nairobi Stock Exchange in 1954 as a voluntary association of stockbrokers in the European community registered under the Societies Act**.** It provides services for stock brokers and traders to trade stocks, bonds, and other securities. The Securities Exchange provides companies with the facility to raise capital for expansion through selling shares and securities to the investing public. The NSE plays an important role in the economy of bringing the borrowers and lenders of money together at a low cost. Kobonyo and Ongore (2011) assert that the typical ownership identities at the NSE are by the government, foreigners, institutions, individual and diverse ownership forms. Three indices i.e. NSE 20 Share index, NSE All Share Index (NASI) and FTSE NSE Indices are used to measure performance at the NSE.

Sixty companies are listed at the NSE and they are categorized in ten broad economic sectors namely agriculture, automobile and accessories, banking, commercial and services, construction

and allied, energy and petroleum, insurance, investment, manufacturing and allied, telecommunication and technology. In each of the listed companies, capital structure overrides company specific activities like capital budgeting decisions and dividend policy. Similarly accounting procedures apply to all the listed companies and management prudence is observed by all the quoted companies as it is one of the major requirements by CMA before a company is quoted and as long as a company remains quoted**,** Kipchumba and Wasike (2010).

1.2 Research Problem

Appreciating risks and measuring performance is a crucial step to better managing and improving the performance of firms. Allayannis, Ihrig, and Weston (2001) assert that exchange rate risk management is an integral part of every firm's decisions about foreign currency exposure. It requires understanding of both the ways that the exchange rate risk could affect the operations of economic agents and techniques to deal with the consequent risk implications. Companies that choose not to manage foreign exchange risk may be assuming that exchange rates will remain at their present levels or move in a direction that will be favorable to the company. However according to Zarb (2009), when dealing in foreign currencies, fluctuations in the exchange rates are bound to occur and this affects the firm's expected future cash flows.

Damodaran (2006) state that the value of the firm is the central focus of all of its stakeholders since knowing what creates value and what a firm is worth is essential to making wealth creating decisions. In determining the value of a firm focus is given to the size of future cash flows, the timing of those future cash flows and the uncertainty associated with those cash flows. The risk helps investors determine appropriate expected returns from investment, Firm value is thus affected by the risk a firm is exposed to since it affects the size of future cash flows.

Companies in Kenya are increasingly pursuing a global agenda. As they do, a key consideration in taking their businesses beyond borders is how to effectively manage their currency exposures. The strategies that a business with global operations adopts depend on a number of factors. These include a company's FX footprint and resulting exposure, their objectives in managing FX risks, the way competitors are managing their currency risks and the corporate view on future currency movements. The fact that a significant number of corporations are committing resources to risk management activities is, however, only an indication of the potential of corporate risk management to increase firm value.

An examination of annual reports of companies listed at NSE show that a number of them have had their value eroded because of FX yet some have also posted losses as a result of hedging. In the year 2009 Kenya Airways (KQ) posted an annual loss of 5.6 billion after unrealized losses on jet fuel price hedge hit the bottom line sending its shares plunging 25%. In the year 2012 Kenol Kobil also posted a foreign-exchange loss of 4.6 billion shilling attributable to unfavorable forward contact hedging. This leads to the question on whether hedging increases firm value. Literature has not yet reached a consensus as to whether hedging has an impact on firm value and evidence is somewhat mixed. Some empirical studies support the hypothesis but some do not yet others argue that for hedging to add value, it depends on the types of risk to which a firm is exposed.

It is therefore important to amass evidence on whether risk management increases firm value. Smithson (2005) add that one study provides fairly compelling evidence that the use of commodity price derivatives by commodity users increases share values; but studies of hedging

by commodity producers provide no clear support for the argument that risk management adds value. At a minimum, whether hedging adds value appears to depend on the types of risk to which a firm is exposed (Smithson, 2005). Modigliani and Miller (1958) prove through the arbitrage process that in a frictionless setting, risk is irrelevant and have no impact on the value of the firm. The invariance result proposition stands in sharp contrast to the prominence of risk management in practice, and the rapid growth in financial innovation (Leland, 1998; Miller, 1986; Tufano, 2003).

Many studies suggest that risk management has an impact on firm value. Kisaka and Waweru (2009) and Allayanis and Weston (2001), through their research work shows this. Clark (2006) however found evidence that the use of currency derivatives is not significant for firm value. Abiero (2011) found that the impact on firm value depends on the form of hedging used by a firm. With these differing findings, this research will seek to answer the question. Does risk management affect firm value?

1.3 Objective of the Study

To investigate the effect of foreign exchange risk management on the value companies listed at the NSE.

1.4 Value of Study

This study adds to the empirical literature on the effects of foreign risk management on the value of a company. Most research conducted on the effect of risk management on firm value has yielded different results. This research will seek to find the effect of foreign exchange risk management on values of firms listed at the NSE. This will add to the research database on risk management and future researchers can have baseline information on the effects of hedging on firm value.

This research will also aid firms in policy making. Firms that have never viewed financial risk management as a tool for having a competitive edge will gain light on how risk management can contribute to improving shareholders wealth within the context of the organization's risk tolerance and objectives. The firms can also obtain information on what hedging practices have a significant effect on firm value hence decide on the best approach.

Investors will get information of the relation between management of risk and firm value and since value is tied to the value of the share, it will give them a chance to evaluate every aspect of a company before putting their stake in it.

The research will seek to provide more data on the proposed theories on risk management to see whether they hold ground or not.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section of the study will seek to review academic research carried out on the subject of risk management and its effect on firm value. It will focus on data relating to theoretical as well as empirical theories on the topic. The chapter will also focus on risk management strategies available and the determinants of firm value.

2.2 Theoretical review

The theoretical literature review help establish what theories already exist, the relationships between them, to what degree the existing theories have been investigated, and to develop new hypotheses to be tested. There are several theories that lend themselves to risk Management. Some of these theories include stakeholder theory and contingency theory.

2.2.1 Stake Holder Theory

This is a theory of organizational management and business ethics that addresses morals and values in managing an organization. It identifies and models the groups which are stakeholders of a corporation, and both describes and recommends methods by which management can give due regard to the interests of those groups. In short, it attempts play to address the "Principle of Who or What Really Counts". In his study of the effect of stakeholder theory on risk management, Aabo (2004) investigates the relationship between the objectives of companies and the risk management strategy that the companies employ. The study shows a distinct difference between the two groups of companies in relation to actual risk management decisions which in

turn have an effect on whether the risk management decisions will have a value addition or value retention effect on the company. Kisaka et.al. (2009) however conclude that this difference in risk management behavior cannot be explained by company characteristics normally identified in the literature as being decisive for the extent of hedging such as firm size, leverage, and export ratio. Rather, the study found a unique relationship between the managerial focus on stakeholders taking a conservative risk management strategy (that focused more on value preservation) and managerial focus on shareholder taking a forward looking risk management strategy (that focused on value addition).

2.2.2 Contingency Theory

This theory contends that there is no one best way of organizing and that an organizational style that is effective in some situations may not be successful in others. That is, optimal organization style is contingent upon various internal and external constraints. Four important ideas of Contingency Theory are: There is no universal or one best way to manage, the design of an organization and its subsystems must 'fit' with the environment, effective organizations not only have a proper 'fit' with the environment but also between its subsystems and the needs of an organization are better satisfied when it is properly designed and the management style is appropriate both to the tasks undertaken and the nature of the work group .Wade and Tomasevic (2006).

Abiero (2011) in her study of the effect of market risk management on company value among firms listed at The NSE found that hedging does add value to the company however not all hedging activities are value adding. In her research it was found that usage of commodity and interest rate instruments do not add value to the share price of firms but it is only the use of exchange rate instruments where value is derived. Basing her research on the sixty listed firms at

the NSE she showed that not all hedging activities add value but the form of hedging used matters. Firm value is thus contingent on the hedging strategy used.

Contingency theory will also apply in this research to determine whether all risk management practices yield the same result or whether the effect on firm value depends on the hedging strategy used.

2.3 Foreign Exchange Risk Management Strategies

There is a spectrum of opinions regarding foreign exchange hedging. Some firms feel hedging techniques are speculative or do not fall in their area of expertise and hence do not venture into hedging practices. Other firms are unaware of being exposed to foreign exchange risks. Giddy and Dufey (1992), there are a set of firms who only hedge some of their risks, while others are aware of the various risks they face, but are unaware of the methods to guard the firm against the risk. There is yet another set of companies who believe shareholder value cannot be increased by hedging the firm's foreign exchange risks as shareholders can themselves individually hedge themselves against the same using instruments like forward contracts available in the market or diversify such risks out by manipulating their portfolio.

In managing foreign exchange risk, the first step is to acknowledge that such risk does exist and that managing it is in the interest of the firm and its shareholders. The firm then identifies the nature and magnitude of foreign exchange exposure before deciding on what strategies to use in hedging the risk. Several strategies are available and are categorized into contractual or non-contractual strategies.

2.3.1 Contractual Hedging

It arises when a firm uses financial contracts to hedge the transaction exposure. It is carried out in several ways that include:

2.3.1.1 Forward Contract

According to Hillier and Titman (2012), a forward Contract is an agreement to buy or sell a security currency or commodity at a prespecified price known as the forward price. At maturity, the person or firm with the long position pays the forward price to the person with the short position, who in turn delivers the asset underlying the forward contact. Forward cover can be settled through delivery, cancellation, extension and early delivery. Banks usually act as intermediaries and charge a commission for the same.

2.3.1.2 Futures

Futures are exchange traded instruments. They are a special type of forward contract that trade on organized exchanges known as future markets. Hillier et al. (2012) Clearing house of the exchange, act as a counter party in each transaction. Margins are taken both from seller and buyer. Since Value at Risk does not factor in event risk, models are built taking into consideration event risk and this model building process is known as risk metrics. When the margin level falls below maintenance margin, then the margin call is made to make it equal to initial margin. Since there are no counter party risks in Futures, it acts as an efficient instrument for price discovery. Even though cost of carry of underlying in the form of interest rate, storage cost and dividend, the price of future cannot be determined by cost of carry alone and this is known as Convenience Yield. Futures are more liquid compared to forward, futures do not have counter party risk as compared to forward, future calls for margins while there is no need for margins in forward, future facilitate price discovery due to absence of counter party risk, same is

not the case with forward, futures are standard in delivery, size etc. while forwards are customized. Minimum price changes which will be recognized in future contract is called as Tick size.

2.3.1.3 Options

This means right without obligation. Since it involves such flexibility premium has to be paid up front. The players involved in option market are option writer and option holder. Option is both OTC as well as exchange traded instruments. Option holder‘s maximum loss is option premium, while option writer‘s maximum loss is without limits. When there is significant uncertainty in the direction of movement, underlying options are used. Options can be classified as *call* and *put* option. Call option is a right without obligation to buy, while put option is right without obligation to sell an underlying at a future date which is known as option period at a particular price called strike price or exercise price. Hillier et al. (2012).

2.3.1.4 Swaps

This is an agreement between two investors to periodically exchange the cash flows of one security for the cash flows of another. Hillier et al. (2012). It involves exchange of stream of currencies or interest rate either between fixed and floating rate of interest. Floating rate of interest involves different basis like treasury and Libor which involves a basis swap. Swap is based on Ricardo‘s theory of comparative advantage. Sometimes spread of borrowing between fixed and floating occurs due to Quality Spread Differential. Quality Spread Differential occurs due to credit rating difference due to which fixed interest loan whose interest cannot be re priced during the tenor of the loan carries a higher spread depending on credit rating of borrower, compared to a floating rate interest loan. Swap is an OTC market. Currency Swap can be treated as a series of forward contracts used for hedging long term exposures. Banks had warehoused

swaps and sold them off the shelf and took position and hedged their exchange risk thereby standardizing the instruments and avoiding costly search for counter party for each transaction. Today, Swap documents are standardized throughout the world by International Swap Dealers Association (ISDA). Parties can cover their interest rate risk by taking or writing a Forward Rate Agreement (FRA). Foreign exchange risk management

2.3.2 Natural Hedging

According to Madura (2008), natural hedging describes how a firm might arrange operational techniques to shield it from risk. Several strategies can be used and include currency invoicing, leading and lagging of receipts and payments, and exposure netting. Leading and lagging refers to an adjustment in the timing of payment request or disbursement to reflect expectations about future currency movements. Expediting a payment is referred to as leading; while deferring a payment is termed lagging. Currency invoicing arises when a firm bills its clients in its home currency hence it does have to convert the currencies to the home currency upon payment. Exposure netting refers to offsetting operating cash flows i.e. have foreign currency cash flows coming in and going out at roughly the same times and same amounts.

2.4 Determinants of Firm Value

2.4.1 Leverage

Higher financial leverage, generally associated with high asset base, means lower average cost of capital and hence higher value. As such businesses can command a respectable price if a cash flow lender can be found, or if the Seller is willing to finance the transaction. Business with low financial leverage (generally associated with a low asset base, or an asset base with low borrowing capacity, or a tight lending market) will command a lower price due to lack of lower cost borrowing. If there are tax shield with relation to the payment of interest, or the debt soothes

the dispute between shareholders manager and creditor, the impact is positive. If an increase in the leverage presents an increase in the likelihood of incurring payment of bankruptcy costs, the impact is negative. According to free cash flow hypothesis (Jensen, 1986), debt decreases the amount of cash available to managers, hence reducing their possibilities for wasting corporate resources. In such a way leverage serves as a commitment and incentive mechanism – it induces managers to pay out cash to firm's investors and basically minimizes agency costs of external equity (consumption of perquisites, shirking from duties and undertaking negative NPV projects). Eventually, issuing debt instead of equity lowers agency costs and therefore increases firm value.

2.4.2 Profitability

According to pecking order theory, more profitable companies are likely to have low debt levels because they generate cash internally. Consequently, the relationship between debt and profitability will be negative as concluded by Rajan and Zingales (1995). Profitability is the primary goal of all business ventures Hofstrand (2009). Without profitability the business will not survive in the long run. Profitability results from the excess of income over expenses. A firm that is highly profitable has the ability to reward its owners with a large return on their investment. The firms therefore trade at a premium and are likely to generate a higher valuation

2.4.3 Risk Management

Risk management entails assessing and managing the corporation's exposure to various sources of risk through the use of financial derivatives, insurance and other activities. Hillier et al. (2012) Business risks can impact a company's cash flows as well as its general health. In the event of corporations successfully managing its foreign exchange risks the benefits received from such effective execution will have a long-term positive impact in creating value for the corporations'

shareholders**.** Management of foreign exchange risk increases shareholders value through enhanced business performance and the reduction of the firms' cost of capital. Since market value is conditioned by the company results, the level of risk exposure can cause changes in its market value.

2.4.4 Growth Options

Smith and Watts (1992) argued that future investment affect firm value. A firm with higher growth options will have a higher value as it's favorable to investors who have higher prospects of recovering their investment. If a firm has lower growth options its likely to be erased by competitors leading to eventual collapse hence a lower value.

2.4.5 Firm Size

Although no clear definition of firm size can be found, it can be measured by the size of corporate book value or the amount of sales. It is believed there is a high correlation between firm size and cash flow which is the foundation for calculating market capitalization. The size of a company can have a positive effect on financial performance because larger firms can use that advantage to get some finanancial benefits in business relations. Large organizations can obtain cheap funding hence a lower rate of capital. This generates a higher market capitalization rate. Hoyt et al. (2008) observed that ERM usage is positively related to firm size. The larger the organization, the more complex its operations will probably be and the more its exposure to threatening events

2.4.6 Financial Constraints

Firms facing financial constraints are unlikely to meet their investment obligations. The firm may be paying out more than it is receiving and more likely to go bankrupt. This implies that in

the long run the chances of survival of the company are low and this would yield a lower valuation. On the contrary firms with adequate cash flow are likely to meet their financial obligations on time and hence have a higher value.

2.5 Empirical Review

Allayanis and Weston (2001) confirmed the existence of a positive and significant relation between the use of currency derivatives and firm value for a sample of American firms. The authors found a nearly 4.87% hedging premium. Similar result was found by Carter et al. (2006). In the study, the authors showed that hedging with relation to oil prices in the airlines industry is positively related to firm value and the hedging premium reaches over 5%. The authors showed evidence that the greatest benefit of hedging in this sector would be the reduction in underinvestment costs because the fuel price is highly correlated to the investment opportunities in the sector.

There is no evidence on the direct impact of the use of currency derivatives on firm value for emerging markets. Rossi (2002) observed a reduction in the Brazilian firm's foreign exchange exposure in the shift from the fixed exchange regime to the flexible exchange regime. The author verified that this change occurred due to the fact that many firms started using currency derivatives to manage their exchange rate risk and to reduce the currency mismatch in their balance sheets.

Judge (2003) summed up the results of 15 studies on the topic of effect of risk management on the value of the firm. He found low support for the importance of taxes, or the managers' risk-aversion, or the presence of bankruptcy costs to determine the use of derivatives. The study also pointed that the results related to the importance of imperfections in the finance market is mixed.

Half of the studies confirmed the existence of a relationship between growth opportunities and the use of derivatives. The authors found strong evidence that scale economies and the volatility of cash flow in foreign currency are important determinants of derivative use. Larger companies, exporting companies or companies with subsidiaries abroad use derivatives more intensively**.**

Hagelin et al. (2004), in a study of Swedish companies, found evidence that hedging activities increase firm value. They found that companies that use currency derivative are negotiated with premium when compared to those that do not use them. In addition, they showed that if management has an option plan for company's stock, many times, they use hedging tools to protect their remuneration and not the shareholder's. In this case, hedging shows a negative relation with firm value. Also using a sample of Swedish companies, Pramborg (2004) found a positive impact of hedging on firm value in case the firms use it to hedge its transaction exposure and an insignificant impact in case they use it to hedge its translation exposure.

Jim and Jorion (2004) analyzing the behavior of American companies in the oil and gas sector from 1998 to 2001 found that the impact of using derivatives on firm value is statistically insignificant if not with the signal contrary to the expected. Look man (2004) in his analysis of the sample of oil and gas producers observed that hedging would aggregate value only to companies where the commodity risk is secondary and hedging would have a negative impact on the firms where the commodity price is a primary risk. He argued that these results derive from the fact that hedging is a proxy for management quality or agency costs, and once controlling for these facts the hedging effect would be insignificant.

Clark et al. (2006) investigated the use of currency derivatives for non-financial firms in France from 2003 to 2005. The authors found evidence that the use of currency derivatives is not significant for firm value.

Kisaka et al. (2009) investigated the effect of enterprise risk management on the value of companies listed at the NSE. Their findings showed that companies can add to their shareholders value by implementing ERM thus have a competitive advantage over companies that have not implemented ERM or are at earlier stages of implementation. They further showed that regardless of the differences between developed and emerging markets, the implementation of ERM has a positive effect on the value of companies.

Abiero (2011) in her study of the effect of market risk management on company value among firms listed at The NSE found that hedging does add value to the company however not all hedging activities are value adding. In her research it was found that usage of commodity and interest rate instruments do not add value to the share price of firms but it is only the use of exchange rate instruments where value is derived. Basing her research on the sixty listed firms at the NSE she showed that not all hedging activities add value but the form of hedging used matters.

In a study investigating the relationship between foreign exchange risk management and profitability of airlines in Kenya, Wekesa (2012) found out that foreign exchange rate risk management has a positive impact on the profits of airlines in Kenya. He established that foreign exchange risk accounts for 35% of the variability of the profits of airlines in Kenya hence most airlines had put up ways of mitigating the risk to curb nose diving of their profits.

2.6 Summary of Literature Review

Financial theory suggests that risk management can smooth variability in firm value. Bartram, Brown and Fehle (2009). The notion that risks are redistributed to those better equipped to handle them is a norm in capital markets. Risk is reduced by hedging which involves buying and selling derivatives and these can decrease the variance of the expected value of the firm. Modigliani and Miller however showed that with a fixed investment policy in an economy without any friction (transaction costs, agency costs and taxes), in a scenario where all rational investors have the same access to market prices and to information without any cost, the firm's financial policy will be irrelevant. If the markets are perfect and complete, firm value will be independent of hedging. In this outline, an investor will be able to eliminate the exchange rate risk from its portfolio through diversification, eliminating the gains of an active hedging policy by the firm.

As discussed above risk management yields different results on the value of a company. Some studies show that it affects firm value while others show that it does not have a significant impact on firm value. Others studies found that managing risk using financial derivatives does affect firm value and even in this case it depends on the form of derivative used. In light of this, this research will seek to find whether managing foreign exchange risk has any effect on the value of the firm by focusing on the firms listed at the NSE.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methods used in conducting the research. It stipulates the research design used, the population of the study, the sample as well as the procedures applied in data collection.

3.2 Research Design

This being a descriptive study that aimed at establishing the effect of foreign exchange risk management on the value of a company, the research design used was cross-sectional design, which is a study in which data is gathered systematically over a period of time in order to answer a research question. It is used when the purpose of the study is descriptive, often in the form of a survey. Usually there is no hypothesis as such, but the aim is to describe a population or a subgroup within the population with respect to an outcome and a set of risk factors. It is also used when the purpose of the study is to find the prevalence of the outcome of interest, for the population or subgroups within the population at a given time point.

3.3 Population

The target population comprised twenty non financial firms listed on the Nairobi Securities exchange as at June 2013. These are companies that are either derivative user's, are exporting firms, have foreign denominated debts or have subsidiaries abroad. This listing is attached at the appendix.

3.5 Data Collection

Data was obtained from secondary sources i.e. the financial statements of the companies under analysis. The hedging information was obtained from two parts of the annual report: (a) Risk Management of Management's discussion and analysis and (b) Financial instruments in notes of consolidated financial statement. The information in management's Discussion and Analysis highlights the hedging activities in the fiscal year. The information in financial instruments in notes of consolidated financial statement details hedging contracts throughout the year. A firm was considered to engage in hedging if it explicitly stated the derivative or hedging policy used in its financial statements.

3.6 Data Analysis

A multiple regression model was employed. A computer package SPSS (Statistical Package for the Social Sciences) was used to solve the multiple regression equation used in this study. The dependent variable is firm value. The independent variables as determinants of firm value are firm size, profitability, leverage, growth options, and financial constraints. Firm value was regressed on hedging practice controlling for the financial factors considered to correlate firm value.

3.6.1 Analytical Model

The below model was used.

$$Y= \beta_0+\beta_1X_1 +\beta_2X_2 +\beta_3X_3 +\beta_4X_4 +\beta_5X_5 +\beta_6X +\varepsilon$$

Where:

Y= Firm Value

X_1 = Foreign Exchange risk Management

X_2 = Firm size

X_3 = Profitability

X_4= Leverage

X_5= Growth Options

X_6= Financial constraints

ε = Error Term

The independent and dependent variables were calculated as follows

Table 3.1 Calculation of Dependent and Independent Variables

Variable	**Definition**	**Formula**
Y	Firm Value	(Market Value of Common Shares +Total Assets – Book Value of Common Shares)/ Total Assets
X_1	Foreign Exchange Risk Management	Hedged Amount/Total Assets
X_2	Firm size	Log (Total Assets)
X_3	Profitability	Net Income/ Total Assets

X_4	Leverage	Total Liabilities/Total Equity
X_5	Growth Options	Net Capital Spending/Sales
X_6	Financial constraints	(Cash + Receivables)/Current Liabilities

3.6.2 Analysis of Variance

In conducting this research study Analysis of variation was done. This is a statistical method for making simultaneous comparisons between two or more means to yield values that can be tested to determine whether a significant relation exists between variables. It is a test of the hypothesis that the variation in an experiment is no greater tan due to normal variation of individual characteristics and error in their measurement. It involves the determination of the Regression residual and total sum of squares. Regression sum of squares is a measure of how well a regression model represents the data being modeled. Residual sum of squares measures the discrepancy between the data and an estimation model. The total sum of squares is a summation of the residual sum of squares and the regression sum of squares and measures how much variation there is in the observed data.

Each sum of squares is associated with a certain degree of freedom computed from number of subjects and groups. A mean square is also computed by dividing the sum of squares by the appropriate degrees of freedom

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter provides the results of the study and a discussion of the findings. The findings are analyzed and interpreted in line with the objective of the study which was to determine the effect of foreign exchange risk management on the value of firms listed at the Nairobi securities exchange. Data for the study was obtained from twenty Non-financial firms listed at the Nairobi Securities Exchange.

4.2 Hedging Policy

Based on the study, the firms adopted different hedging policies. For some firms risk was inherent in their operations thus they hedged fully. Other firms hedged partially only the portion they deemed was significant, while two of the firms however did not hedge foreign exchange risk as they felt that the degree of exposure to the risk was insignificant

Table 4.1: Hedging policy in the organization

Hedging Policy	Frequency
Hedging Fully	10
Hedging Partially	8
Not Hedging at all	2

Source: Research Findings.

Table 4.1 displays the extent to which foreign exchange risk management is practiced by firms. Of the twenty firms under study ten firms hedged their risks fully, eight only hedged those exposures they deemed significant while two did not hedge foreign exchange risk at all as they felt that their exposure to foreign exchange risk wasn't significant.

4.3 Hedging Techniques

Different hedging techniques were utilized by the firms under study. Most firms used natural hedging techniques which they thought were easier to use and shied way from the use of hedging with derivatives which are more complicated.

Table 4.2 Hedging Technique

Instrument	N	Mean	St Deviation
Netting out	18	1.6892	1.338
FX Forward contracts	18	1.1599	1.186
Invoicing in foreign currency	18	1.4363	1.154
Lead	18	1.4659	1.274
Lag	18	1.3563	1.161

Source: Research Findings.

Table 4.2 displays the hedging techniques employed by the firms in hedging against foreign exchange risk management. The netting out strategy was utilized by a majority of the firms and had the highest mean of 1.6892. Leading and invoicing in foreign currencies followed closely with a mean of 1.4659 and 1.4363 respectively. Use of forward contracts had the lowest mean of 1.1599 which may be attributable to the fact that most of the firms avoided the complexities that come with hedging with derivatives and financial instruments hence preferred to use natural hedging strategies.

4.4 Descriptive statistics

This section focuses on the degree of correlation on the sample. R, R squared, adjusted R squared and the standard error of the estimate have been calculated. This assist in determining the strength of association between the Y and X variables as well as explaining what variance of firm value is explained by the predictor variables.

Table 4.3 Degree of Correlation

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.865	.748	.610	.56891665

Source: Research Findings.

Table 4.3 shows the degree of correlation between firm value and the predictor variables. R is the correlation coefficient between the observed values of Y and the predicted values of Y. It measures the strength and direction of a linear relationship between two variables. As shown in table 4.3 R value is 0.865 which is close to one hence shows a strong correlation between the X and Y value. R Squared known as the coefficient of determination shows the proportion of the variance of one variable that is predictable from the other variable. It denotes the strength of the linear association between X and Y. Based on the study 75% of the variation in Firm Value can be explained by the linear relationship between X and Y. The other 25% of the variation in Y remains unexplained. The adjusted R squared is adjusted for predictor variables it decreases when a predictor improves the model. As shown in table 4.3, adjusted R Squared values show that approximately 61% of the variance of a firm's value can be explained by the independent variables.

4.5 Analysis of Variance

Analysis of Variance involved determination of the Sum of squares the degrees of freedom of the sum of squares, the mean square as well as the F statistic. This helped in determining the degree of variation in the modeled values. This is illustrated in the table below.

Table 4.4: Analysis of Variance

ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	10.562	6	1.760	5.439	0.008
Residual	3.560	11	.324		
Total	14.122	17			

Source: Research Findings.

As shown in table 4.4 the Regression sum of squares is 10.562, implying that there is a variation of 10.562 in the modeled values. This measure describes how well a model often a regression model represents the data being modeled. The greater the Regression sum of squares the better the estimated model performs. The Residual sum of squares measures the discrepancy between the data and an estimation model. In this study the Residual sum of squares is 3.56 showing a tight fit of the model to the data. The total sum of squares measures how much variation there is in the observed data which in this study is 14.122.

The mean Square refers to an estimate of the population variance based on the variability among a given set of measures and it is obtained by dividing the sum of squares with the degrees of freedom. The significance value is 0.008 which is less than alpha in this case assumed to be 0.05. This shows that the independent variables significantly predicted the Y Variable.

4.6 Regression Coefficients

To determine the relationship between Firm Value and the predictor variables, the regression coefficients were calculated to help explain how firm value is affected by the changes in the independent variable. The level of significance of the e independent variables was also calculated to help in determining whether their change would result in a significant effect in the Firm value. This is shown in the below table.

Table 4.5 Regression Coefficients

	Beta	T	Significance	Std. Error
Constant		-.786	.448	2.283
FX Risk Mgt	-0.029	-.165	.872	.941
Firm Size	0.275	1.299	.220	.137
Profitability	0.727	4.381	.001	1.998
Leverage	0.213	1.174	.265	.136
Growth Options	-0.150	-.710	.492	1.733
Financial Constraints	-0.048	-.248	.808	.658

Source: Research Findings.

Table 4.4 shows the results of value regression with a set of firm specific variables that have been shown to be important determinants of firm value. The five independent variables in the model are firm size, profitability, leverage, growth options and financial constraints.

Based on the multivariate regression results, a model to predict the changes in firm value can be written as

Firm Value = - 0.029 Fx Risk Mgt + 0.275 Firm Size + 0.727 Profitability + 0.213 Leverage - 0.15 Growth Options – 0.048 Financial Constraints

The regression coefficient on Firm Size, profitability, growth options and leverage is positive thus for every unit increase in the variables an increase of 0.275, 0.727 and 0.213 in firm value is predicted.

Financial constraints and growth options have negative coefficients thus a decrease in the variables would increase firm value by 0.048 and 0.015 respectively.

The coefficient on risk management is at negative 0.029 showing that foreign exchange risk management is not significantly associated with firm value since a decrease in the variable would increase firm value by 0.029. This finding is possibly as a result of samples without strong exchange rate exposures. The results add further evidence to the current literature that not all hedging activities will significantly increase firm value. To achieve the goal, other factors have to be considered such as the extent of the exchange rate exposure of the firms.

4.7 Interpretation of Findings

This study aimed at determining the effect of foreign exchange risk management in firms listed at the NSE. Most of the firms under study utilized some form of hedging although not all utilized financial instruments. The beta coefficient obtained from the regression is at negative 0.029 indicating that foreign exchange risk hedging does not improve. These results add further evidence to the current literature that not all hedging activities will economically and significantly enhance firm value. This is consistent with findings of Adam et.al (2007) who in their study found hedging of risk to have no significance on firm value.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter presents a summary of the research, conclusion drawn from the findings highlighted and recommendation made there-to. The conclusions and recommendations drawn were addressing the objective of the study. The objective of the study was to determine the effect of foreign exchange risk management on the value of the firm among companies listed at the NSE.

5.2 Summary

This study sought to determine the effect of foreign exchange risk management on the value of firms listed at the Nairobi securities exchange. Among the five control variables profitability enhances the value of the firm significantly since an increase in profitability has the highest impact on firm value. The study found that on average foreign exchange risk management does not contribute significantly to firm value. This may be due to our sample without strong exchange rate risk exposure. The results however add further evidence to the current literature that not all hedging activities will enhance firm value.

To achieve this goal other factors have to be considered such as the extent of the risk or exchange rate exposure of the firms

5.3 Conclusion

As previously discussed this research was conducted to determine the effect of foreign exchange risk management on the value of firms listed at the Nairobi securities exchange. The findings of the new data from the hedging practices of the firms listed at the Nairobi securities are consistent

with some prior studies that valuation effect associated with foreign exchange risk management is insignificant and foreign exchange risk management appears to be a small component of non-financial firms overall risk profiles (Guay and Kothari, 2003).

Out of the twenty firms studied only two did not hedge foreign exchange risk. The rest do utilize some type of hedge strategies but may not necessarily utilize financial hedging. Most of the firms reported usage of basic instruments with forward contracts and netting out being in high usage. This can be attributed to lack of developed financial instruments market in Kenya and unavailability of credit lines that constrain access to the instruments.

One of the pillars in modern finance (theory of efficient markets) comes into play to support the findings of the study. Market efficiency means markets do no leave their money on the table. Information that is freely accessible is incorporated in prices with sufficient speed and accuracy that one cannot profit by trading on it.

The lesson of market efficiency for the CEOs is that an attempt to earn higher returns in most financial markets means bearing large unfamiliar risks and thereby making losses thus reducing firm value. According to Stulz 1995, highly liquid markets such as those of interest rate and FX futures are not favorable to industrial firms as they are unlikely to have a comparative advantage in bearing these risks.

5.4 Recommendations for Policy

Based on this research foreign exchange risk is inherent in the operations of firms however managing it does not add any significant value to the firm .Those tasked with managing the risks should thus first understand the risks they are exposed to by developing a risk profile. This

requires an examination of both the immediate risks from competition and product market changes as well as the more indirect effects of macro - economic forces. This will enable firms take on the various options of either letting the risk pass through, protecting themselves by using the hedging instruments or intentionally increasing exposure to some of the risks because the feeling of having significant advantages over the competition.

Beyond methodologies, data, and technology capabilities, effectiveness in foreign risk management may require enhancing or, in some cases, creating a pervasive risk-awareness culture throughout the organization and creating an environment with incentives that sustain this culture over time.

Executive management should provide leadership, with oversight and input from the board of directors, towards enhancing and making more transparent the institution's risk strategy, risk appetite, and risk management framework.

The management could also infuse risk management responsibilities throughout the organization and these integrated into performance goals and compensation decisions to achieve value.

5.5 Limitations of the Study

The scope of the study focused on Non-Financial firms listed the NSE and hence the findings may not be shared by other organizations outside this scope.

Although most organizations manage their exposure to foreign exchange risk management they do not disclose what percentage of exposure is hedged hence it was difficult to determine the level of foreign risk exposure hedged by such firms.

It was difficult to obtain data from financial firms listed at the NSE as they do not break down their assets and liabilities into the fixed and current components. This information was vital in calculating the variable financial constraints.

5.6 Suggestions for Further Research

This study focuses on the effect of foreign exchange risk management on firm value. Future studies should focus on whether other types of hedging affect firm value. This would help management in deciding to what extent they are exposed to risk, what areas of risk to focus on as well as what measures should be put in place to hedge those risks. Management is thus aware of what form of hedging s beneficial and will lead to increased firm value

Future research can also seek to establish whether the form of hedging practice used by firms impacts the firm values. .This research study generalized all the forms of hedging under one title foreign exchange risk management. Future research should explore whether the type of hedging strategy used affects firm value. For instance, whether firms that hedge using commodity derivatives have higher values than those that use currency derivatives.

Researchers can also seek to establish whether cash flow volatility has an effect on the firm value. Although most firms hedge, the degree of their cash flow volatility is different where some have high cash flows and hedge a small portion of it. Other however have low levels of cash flows but are very prone to risk thus have to hedge a substantial amount. Researchers should thus seek to determine the effect of cash flow volatility on firm value.

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APPENDICES

Appendix 1: Companies Listed at the NSE as at July 2013

Agricultural	
Listing	**Activity Undertaken**
Rea Vipingo Sisal Estate	Sisal
Sasini Tea and Coffee	Tea, coffee
Kakuzi	Coffee, tea, passion fruit, avocados, citrus, pineapple.
Automobiles and Accessories	
Listing	**Activity Undertaken**
Sameer Africa Limited	Tires
Commercial and Services	
Listing	**Activity Undertaken**
Kenya Airways	Kenya's flagship airline;
Standard Group Limited	Publishing
TPS Serena	Hotels & resorts
Nation Media Group	Newspapers, magazines, radio stations, television stations
Scan group	Advertising and marketing
Construction and Allied	
Listing	**Activity Undertaken**
Athi River Mining Limited	Cement, fertilizers, minerals; mining and manufacturing
Bamburi Cement Limited	Cement
East African Portland Cement Company	Cement manufacture and marketing
Crown-Berger (Kenya)	Paint manufacturing
Energy and Petroleum	
Listing	**Activity Undertaken**
Kenol Kobil	Petroleum importation, refining, storage & distribution
Total Kenya Limited	Petroleum importation and distribution
Kengen	Electricity generation

Manufacturing and Allied	
Listing	**Activity Undertaken**
East African Breweries	Beer, spirits;
Mumias Sugar Company Limited	Sugar cane growing, sugar manufacture & marketing
Telecommunication and Technology	
Listing	**Activity Undertaken**
Safaricom	Mobile telephony

Source: Nairobi Securities Exchange

Appendix 2: Companies at the NSE adopted for Analysis

Sector at the NSE	Number adopted for analysis
Manufacturing and Allied	2
Agricultural	3
Commercial and Services	5
Telecommunication and Technology	1
Automobile and Accessories	1
Energy and Petroleum	3
Construction and Allied	4
Investment	1

Source: Research Findings

Appendix 3: Descriptive statistics of the firms under Consideration

Variable	N	Mean	Std. Deviation
Firm Value	18	1.675738	0.900071
FX Risk Mgt	18	0.127164	0.158104
Firm Size	18	16.57338	1.406532
Profitability	18	0.064866	0.073689
Leverage	18	1.207229	1.248957
Growth Options	18	0.094569	0.130918
Financial Constraints	18	0.888552	0.492889

Source: Research Findings

Appendix: 4 Values of Variables used in estimating Firm Value

Company	Firm Value	FX Risk Mgt	Firm Size	Profitability	Leverage	Growth Options	Financial Constraints
Rea Vipingo	1.31557	0.03561	14.68119	0.16007	0.38003	0.03984	0.53146
Sasini	1.3067	0.02502	16.00414	-0.01391	0.3884	-0.08477	1.1575
Kenya Airways	1.06554	0.02407	18.1649	0.02144	2.36324	0.0441	0.57655
Nation	3.74434	0.01863	16.18363	0.2351	0.4579	-0.02082	0.9377
Standard Group	1.11671	0.07157	15.06872	0.05235	1.02873	0.00793	0.86214
Serena	1.52209	0.01731	16.41701	0.03661	0.64813	0.18723	0.83138
Safaricom	2.29738	0.01206	18.61871	0.10359	0.69113	0.23955	0.50281
Sameer	0.94105	0.44014	15.03918	0.00558	0.46113	0.00765	0.65451
Olympia	0.87766	0.05247	14.29852	0.02644	0.51884	0.04587	0.79882
Transcentury	1.79022	0.02411	16.89951	0.0339	0.81011	0.14846	0.08521
EABL	3.9698	0.04097	17.81525	0.19828	5.26263	0.11386	0.40864
Mumias	1.11167	0.1097	17.12606	0.07346	0.7426	0.28403	0.82545
Athi River Mining	1.68079	0.59669	17.10961	0.04622	2.78527	0.23291	0.34603
Bamburi	2.28625	0.23235	17.57759	0.11343	0.39458	0.2056	0.49493
Crown Berger	0.94747	0.067	14.63011	0.05491	0.91996	0.02364	0.85301
East African Portland Cement	1.50217	0.21397	16.46583	-0.05802	1.87974	0.14244	0.31914
Total	1.0045	0.18555	17.31143	-0.00613	1.32378	0.00651	0.41043
Kengen	1.08624	0.37657	18.91014	0.0173	1.32468	0.2657	0.43416

Source: Research Findings