

**A SURVEY OF THE FOREIGN EXCHANGE RATE RISK MANAGEMENT
PRACTICES ADOPTED BY MICROFINANCE INSTITUTIONS IN KENYA**

BY:

GEOFFREY THIGE NJUNGE

REG.NO: D61/P/7120/2005

**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILMENT OF REQUIREMENTS OF DEGREE OF MASTER OF BUSINESS
ADMINISTRATION (MBA), SCHOOL OF BUSINESS - UNIVERSITY OF
NAIROBI**

NOVEMBER 2010

University of NAIROBI Library

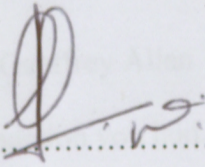


0376684 3

DECLARATION

STUDENT'S DECLARATION

I declare that this is my original work and has not been presented for a degree in any other university.

Sign: 

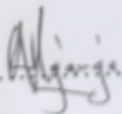
Date: 15th November 2010

Geoffrey Thige Njung'e

D61/P/7120/2005

SUPERVISOR'S DECLARATION

This project has been submitted for examination with my approval as university supervisor

Sign: 

Date: 15th November 2010

Mr. James Ng'ang'a

Lecturer,

DEPARTMENT OF ACCOUNTING AND FINANCE

SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

DEDICATION

I dedicate this work to my wife Susan and children, Angela and Austin for their endless love, patience and encouragement in supporting me all through. May this work be an inspiration to you to strive for higher and greater heights in your endeavors in life.

To my late Dad Geoffrey Allan Njung'e and Mom Esther Gathoni Njung'e thank you for the firm foundation you laid and the discipline you instilled and taking me to school the first day.

Thanks to my late Dad for teaching me the essence of dreaming big and hard work. You drove me past the University of Nairobi whilst still young and inspired me to want to get there. You always believed in me.

May God bless you all.

ACKNOWLEDGEMENT

I first of all thank our good Lord for his care and blessings enabling me successfully undertake my studies. To you God I give all praise.

Special gratitude to my supervisor Mr. James Ng'ang'a whose incisive reading and constructive critiques of the project in progress have been invaluable. His support while guiding me through this research is greatly appreciated.

My profound thanks and appreciation go to my family for their understanding and support during the entire time of the study and the long time spent away from them.

Special appreciation to the finance professionals working the microfinance institutions operating under the auspices of the Association of Microfinance Institutions in Kenya (AMFI) and all those other people who graciously gave their time to fill the research instruments and assisted in the process of data collection

Finally, the great thanks are directed to my siblings, colleagues at my workplace, fellow MBA students, lecturers and friends for affording me an enabling academic environment. Their love and support makes me believe that I can do anything well.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
LIST OF ABBREVIATIONS.....	ix
ABSTRACT.....	x
CHAPTER ONE.....	1
1.0 INTRODUCTION.....	1
1.1 Background of the study.....	1
1.1.1 Concept of Foreign Risk.....	1
1.1.2 Microfinance Institutions in Kenya.....	2
1.2 Statement of the Problem.....	5
1.3 Objectives of the Study.....	6
1.4 Significance of the Study.....	6
CHAPTER TWO.....	7
LITERATURE REVIEW.....	7
2.1 Introduction.....	7
2.2 Foreign Exchange and Foreign Exchange Risk.....	7
2.3 Nature of Foreign Exchange Risk.....	9
2.3.1 Law of One Price.....	9
2.3.2 Relative Version of Purchasing Power Parity Theory.....	9
2.3.3 Uncovered Interest Parity Theory.....	12
2.3.4 Covered Interest Parity.....	12
2.3.4 Arbitrage Pricing Theory.....	13
2.4 Importance of Hedging.....	13
2.5 Measurement and Management of Foreign Exchange Exposure.....	14
2.6 Types of Foreign Exchange Risks.....	16
2.6.1 Fluctuation in Foreign Exchange Rates.....	16
2.6.2 Default by Contractors/Subcontractors.....	17
2.6.3 Delayed or Non-Receipt of Payment.....	18
2.7 Importance and Managing Foreign Exchange Risk.....	18
2.7.1 Netting-Out International Portfolio Investments.....	19
2.7.2 Making of Prepayments.....	20
2.7.3 Leading, Coincident and Lagging Economic Indicators.....	21
2.7.4 Hedging with Derivatives.....	22
2.7.5 Forward and Futures Contracts Techniques.....	24
2.7.6 Use of Options to Hedge.....	25
2.7.7 A back-to-Back or Parallel Loan.....	27
2.7.8 Application of Currency Swaps.....	27
2.8 Empirical Review.....	28

2.9 Conclusion	32
CHAPTER THREE.....	34
RESEARCH METHODOLOGY.....	34
3.1 Introduction.....	34
3.2 Research Design	34
3.3 Population.....	34
3.4 Sample Population.....	35
3.4 Data Collection	35
3.4.1 Reliability and Validity of Research Instrument.....	35
3.5 Data Analysis.....	36
CHAPTER FOUR	37
DATA ANALYSIS, PRESENTATION AND INTERPRETATION.....	37
4.1 Introduction.....	37
4.2 Demographic information.....	37
4.3 International Trade Status.....	38
CHAPTER FIVE	46
SUMMARY, CONCLUSION AND RECCOMENDATIONS.....	46
5.1 Summary.....	46
5.2 Conclusion.....	47
5.3 Recommendation.....	47
5.4 Limitations of the Study	48
5.5 Suggestions for further study.....	48
REFERENCES	49
APPENDICES.....	55
Appendix I: Introduction Letter	55
Appendix II: Research Questionnaire	56
Appendix III: List of registered MFIs in Kenya.....	62

LIST OF TABLES

Table 4.1 Rating of financial risks	38
Table 4.2 Person responsible for the risk management department.....	40
Table 4.3 Management of foreign exchange risk	41
Table 4.4 Financial instruments used by the firms to hedge against foreign exchange risks.	42
Figure 4.5 Ways in which the firms measure foreign exchange risk exposure.....	44
Figure 4.6 How often the firms measure the success of exchange risk management policy	45

LIST OF FIGURES

Figure 4.1 Number of employees in the firm	37
Figure 4.2 Ownership of the company	38
Figure 4.3 Problems encountered in managing foreign exchange risk	40
Figure 4.4 Percentage of foreign currency denominated purchases that are hedged	43
Figure 4.5 Ways in which the firms measure foreign exchange risk exposure.....	44
Figure 4.6 How often the firms measure the success of exchange risk management policy	45

KWFF - Kenya Women Finance Trust

MFI - Microfinance Institution

MSEs - Micro and Small enterprises

NGOs - Non Governmental organization

OTC - Over the counter

PPP - Purchasing Power Parity

RUSCAS - Rotating Savings and Credit Associations

SACCOs - Savings and Credit cooperative Associations

SD - Standard Deviation

US - United States of America

VAR - Value at risk

LIST OF ABBREVIATIONS

AMFI	Association of Microfinance institutions .
BOT	Build operate transfer
FOREX	Foreign exchange
KREP	Kenya Rural enterprise program
KWFT	Kenya Women Finance Trust
MFI	Microfinance Institution
MSEs	Micro and Small enterprises
NGOs	Non Governmental organization
OTC	Over the counter
PPP	Purchasing Power Parity
ROSCAS	Rotating Savings and Credit Associations
SACCOS	Savings and Credit cooperative Associations
SD	Standard deviation
US	United States of America
VAR	Value at risk

ABSTRACT

Today, the economic environment in which the firms operate is highly volatile and uncertain. Increased volatility, greater interdependence and new risk have made the structure of risk exposure of corporate bodies more complex. The objective of this study was to investigate the foreign exchange risk management practices adopted by MFIs in Kenya.

This research was an exploratory study. The target population of this study was the staff working at the MFIs in Kenya. The study conducted a census survey owing to the small number of microfinance institutions in Kenya. Qualitative primary data was used for the study. The questionnaire was administered to the treasury managers, finance managers, risk managers or equivalent managers who are involved in foreign exchange risk management in the selected firms using a drop and pick later technique. The primary data collected from the questionnaire was analyzed using content analysis and descriptive statistics such as measures of variation and measures of central tendency. The descriptive statistical tools helped in describing the data and determining the extent used.. The Likert scale was used to analyze the mean score and standard deviation, this will help in determining the extent to which firms use hedging techniques.

The study concludes that there were various foreign exchange risk management practices adopted by micro finance institutions in Kenya. These included price adjustment, delay of payment when foreign currency was strong and delay accelerate when weak, forward covers, use of swaps, Netting and price negotiation. The least used methods of foreign risk management were prepayment/Advance payment and buying and saving currency in advance. The study further concludes that the microfinance institutions had employed various methods of measuring foreign exchange risk. These included fluctuation in demand, firm market value analysis and exposure through decrease in market share. The study recommends that microfinance institutions in Kenya need to employ risk management policies aimed at reduction of bankruptcy and distress costs, reduction in expected tax payments, reduction in expected payments to stakeholders and reduction in cost of raising funds. If a firm can implement risk management policy that eliminates the risk of bankruptcy, it essentially sets the present value of these real resources cost to zero and increases the firm value accordingly.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the study

Foreign exchange risk becomes more and more important in light of the globalisation and internationalization of world markets and is one of the most difficult and persistent problems with which the financial executives must cope (Fatemi, 2000). Every business activity is confronted with some risk or the other and coping with risk has always been an important managerial function. In recent years, however, risk management has received increasing attention in both corporate practice and literature (Jalilvand, Switzer and Tang, 2000).

1.1.1 Concept of Foreign Risk

Foreign exchange risk is the magnitude and likelihood of unanticipated changes in exchange rate (Brucaite and Yan, 2000). According to Shapiro (2007), exchange rate exposure is the degree to which a company is affected by changes in exchange rates. Foreign exchange risk can be further subdivided into three exposures: translation, transaction and economic exposures (Fatemi and Glaum, 2000). Perception of risk by individuals and at corporate level is both complex and subjective. It involves an understanding of risk, a perception of loss and gain, cognitive biases and personality. Despite advances in finance and risk management, satisfactory method for measuring the total financial risk faced by a business at any time remains elusive (Pickford, 2000).

According to Popov and Stutzmann (2003), foreign exchange risk is the exposure of an institution to the potential impact of movements in foreign exchange rates. Foreign exchange risk arises from two factors: currency mismatches in an institution's assets and liabilities (both on- and off-balance sheet) that are not subject to a fixed exchange rate vis-a-vis the Kenyan shilling, and currency cash flow mismatches. Such risk continues until the foreign exchange position is covered. This risk may arise from a variety of sources such as foreign currency retail accounts and retail cash transactions and services, foreign exchange trading, investments denominated in foreign currencies and investments in foreign companies. The amount at risk is a function of the magnitude of potential

exchange rate changes and the size and duration of the foreign currency exposure (Shapiro, 2002).

1.1.2 Microfinance Institutions in Kenya

The World Bank defines Microfinance Institutions (MFIs) as institutions that engage in relatively small financial transactions using various methodologies to serve low income households, micro enterprises, small scale farmers, and others who lack access to traditional banking services. It is the providing of loans and banking services to the low income; small and micro entrepreneurs (SMEs) to help them engage in productive activities, to better organize their financial lives as well as expand their businesses (Chu, Michael 1998). The key objective of MFIs is to provide micro credit and other financial services like savings to the otherwise poor people and help alleviate poverty. Micro Finance has been recognized as one of the most important tools for poverty alleviation (KWFT PILLAR 2005).

The Kenya Microfinance sector consists of a large number of competing institutions which vary in formality, commercial orientation, professionalism, visibility, size and geographical coverage. These institutions range from informal organizations e.g. rotating savings and credit associations (ROSCAs), financial services associations (FSAs) (Dondo 2003). The goal of MFI organizations in Kenya is to raise the levels of income and welfare of people. They support the poor and unemployed by giving them loans often without collateral to establish small businesses. Kenyans today are faced by increased poverty, unemployment and insecurity of the AIDS pandemic, scarcity of food and rural urban migration among others. MFIs address the above problems by accessing small loans at affordable repayment rates, and other financial services for Micro and Small Enterprises (MSE). These take the form of self-help projects and individual enterprises. Most MFIs lend up to a maximum of Shs. 500,000 and a minimum of Shs. 5,000 per applicant. The 1999 MSE base line survey found that micro-financing, a core source of funding for micro and small enterprises contributes about 18% of the county's GDP and employs 2.3 million people (The Financial Standard, March 19, 2002).

Most MFIs started as NGOs whose funding is from foreign donors and agencies. According to Wainana (2002), NGO's in Kenya have been accused of misappropriation of donor funds and questions have been raised as to whether the funds they receive are used for the designated purposes. The issue of ownership of NGOs has raised fundamental concerns for their governance. For instance, if there are no owners or shareholders, then who hold and exercises the supreme authority of the institution to appoint Directors or change the composition of the Board, appoint auditors and satisfy themselves that an appropriate governance structure is in place (Mwaura, and Gatamah 2000). Secondly if the Board and Management are part owners of the institution, and have to balance the interests of all stakeholders including their own, what would prevent them from maximizing their "joint" interests through empire building, perks, and special benefits at the expense of other stakeholders – given that they are responsible for determining and implementing organization purpose and implied accountable to themselves (Mwaura, and Gatamah 2000).

According to Dominion Consultants (2000), the relationship between management and the Boards of NGOs have also raised concerns as to whether; NGOs are management driven [or whether boards over depend on management]; and the role of governance is recognized as independent and or separate from management. Microfinance is now at the stage of transformation to self – sustaining businesses and must therefore; infuse institution values into the day to day operations (Mwaura and Gatamah 2000). Contrary to general opinion, there have been cases of successful transformation of MFIs from donor based to commercially sustainable institutions despite the governance issues. This is as a result of strong character of their founders e.g. KWFT and KREP in Kenya (AMFI 2005).

Governance has assumed increasing importance for microfinance institutions (MFIs). As microfinance institutions grow in their outreach, increase their assets, and an increasing numbers become regulated entities that can capture savings deposits, they require clear articulation of how their boards will ensure effective governance (Rock, Otero, and Saltzman 1998). Moreover, according to the Association of Microfinance Institutions

(AMFI) 2004, a growing number of microfinance institutions, source of capital has shifted or is shifting from being donor-dependent to accessing financial markets in increasingly sophisticated ways. The recent entrance of investors who are providing capital for the most advanced microfinance institutions also raises important issues regarding the characteristics and quality of the governing bodies that lead these institutions (Otero 2004). According to the Micro Enterprises Best Practices Publication on "Principles and Practices of Microfinance Governance" (1998), governance is the process by which board of directors, through management, guides an institution in fulfilling its corporate mission and protects the institution's assets over time. Boards are established to provide oversight and give direction to the managers of an institution. In the case of for-profit organizations, the board of directors carries out this function on behalf of a third party, referred to as shareholders. In non-profit organizations ownership is not easily identified. Herein lays the dilemma that MFIs are faced with as they transform from non-profit donor funded organizations to commercialized self-sustainable institutions (Wainaina 2002).

The growth of Kenya's MFI industry has witnessed at least 100 non governmental organizations (NGOs) offering services to clients. However, only 15 organizations can be classified as significant players. It has however been recognized widely in Kenya that promotion of the micro and small enterprise sector is a viable and dynamic strategy for achieving national goals, including employment creation, poverty alleviation and balanced development between sectors and sub sectors. All these together are essential for the achievement of the government vision of industrialization by the year 2020 (Mullei and Bokea, 1999). The importance of having strong performing MFIs can therefore not be overemphasized.

There has been no specific legislation to govern the MFIs in Kenya until Parliament passed MFI Bill 2006. The MFI Bill 2006 seeks to regulate all deposit taking organizations. In order to promote investor confidence and to assist companies meet stakeholders expectations MFI Bill 2006 has developed a set of guidelines and principles

of corporate governance as key to maintaining the trust of the investors (Central bank newsletter 2006).

1.2 Statement of the Problem

Today, the economic environment in which the firms operate is highly volatile and uncertain. Increased volatility, greater interdependence and new risk have made the structure of risk exposure of corporate bodies more complex (Li, 2003). Increased market globalization and internationalization has been reflected in increased exchange rate fluctuations. Fatemi and Glaum,(2000) note that the financial environment is riskier today than it was in the past. The volatility of foreign exchange rates and interest rates has been increasing significantly.

The motivation for the study is due to the nature and operations of microfinance industry in Kenya. Their operations and transactions expose these firms to foreign exchange risks. Similarly, some of the firms are owned by foreign companies and therefore they report in parent company reporting currency, other firms borrow funds in foreign currency hence the expected cash inflows / outflow need to be certain.

The existence of the foreign exchange risks requires a firm to develop and implement policies that would mitigate negative effects of fluctuating exchange rates. The negative effect of fluctuation exchange rate will have direct impact on the margins hence profitability of the firms will also fluctuate. To check on this, it is fundamental to have some financial management controls employed to sustain the microfinance industry firms in Kenya in long run business. Consequently this study will focus on the exchange risk management strategies these firms use to militate against foreign exchange exposures.

Empirical studies have revealed that of all financial risk exposures, foreign exchange risk has received more attention than interest and inflation rate risks. Exchange rate risk has also been considered to be the most critical of all the financial risk exposures (Brucate and Yan, 2000). While Doherty and Smith (2001) argued that, in general, the companies' aim when managing foreign exchange exposure should be to avoid reductions in their operating value that is reductions in the present value of expected operating cash flows,

Martin and Mauer (2003) argued that foreign exchange risk exposure, also known as economic exposure typically has a longer-term time dimension as well, as it encompasses the competitive and indirect effects of exchange rate risk. Local studies (Ubindi, 2006), Omagwa, 2005) have also been done in Kenya on risk management practices but none, known to the researcher, has been done on foreign exchange risk management in the Microfinance institutions in Kenya. This study intended to fill the research gap that exist by carrying out a survey of foreign exchange risk management practices by microfinance institutions in Kenya.

1.3 Objectives of the Study

The objective of this study was to investigate the foreign exchange risk management practices adopted by MFIs in Kenya.

1.4 Significance of the Study

This research will make a contribution to the academic literature on the field of foreign exchange management practices in Kenya where very little is known about corporate practices in the microfinance due to few studies in the subject.

The findings of the study will provide some insights to the regulatory body (Central Bank of Kenya) and the government at large on the salient aspects of the foreign exchange that adversely affects the microfinance industry firms in Kenya hence being in a position to make timely and appropriate interventions to mitigate the risks.

The findings of this study will help microfinance industry firms in Kenya come up with appropriate hedging strategies by analyzing how other firms hedge against the risk

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of related literature on the subject under study presented by various researchers, scholars, analyst and authors. The research has drawn materials from several sources which are closely related to the theme and the objectives of the study. Models by the writers are used to illustrate the various sub topics mentioned in the objectives of the study. The specific areas covered in this chapter are foreign exchange risk management in Kenya, nature of foreign exchange risk, importance of financial risk management, measurement and management of foreign exchange exposure and foreign exchange management practices.

2.2 Foreign Exchange and Foreign Exchange Risk

According to (Einzig (1972) foreign exchange refers to methods and instruments used to adjust the payment of debts between two nations that employ different currency systems. A nation's balance of payments has an important effect on the exchange rate of its currency. Bills of exchange, drafts, checks, and telegraphic orders are the principal means of payment in international transactions. The rate of exchange is the price in local currency of one unit of foreign currency and is determined by the relative supply and demand of the currencies in the foreign exchange market. Buying or selling foreign currency in order to profit from sudden changes in the rate of exchange is known as arbitrage. The chief demand for foreign exchange within a country comes from importers of foreign goods, purchasers of foreign securities, government agencies purchasing goods and services abroad, and travelers.

Abuaf and Schoess (1988) defined foreign exchange as currency-literally foreign money-used in settlement of international trade between countries. Trading in foreign exchange is the means by which values are established for commodities and manufactured goods imported or exported between countries. Creditors and borrowers settle the resulting international trade obligations, such as bank drafts, bills of exchange, bankers' acceptances, and letters of credit, by exchanging different currencies at agreed upon rates.

The result of all this international trade is that financial institutions accumulate surpluses of different currencies from loan repayments by foreign borrowers, and also from import-export trade financing on behalf of bank customers, Wexler (1972) The interbank foreign exchange market is an over-the-counter market, a network of commercial banks, central banks, brokers, and customers who communicate with each other by telex and telephone throughout the world's major financial centers. Foreign exchange traders also make markets or speculate in different currencies, usually anticipating future appreciation of stronger currencies against weaker ones, through the foreign exchange forward market and the currency futures market. The usage of a method in a foreign trade transaction depends upon the duration of relationship and trust between the buyer and seller. Similarly, there are various hedging instruments that can be used. Foreign exchange risk is the risk that an entity will be required to pay more (or less) than expected as a result of fluctuations in the exchange rate between its currency and the foreign currency in which payment must be made.

Foreign exchange risk is commonly defined as the additional variability experienced by a multinational corporation in its worldwide consolidated earnings that results from unexpected currency fluctuations. It is generally understood that this considerable earnings variability can be eliminated partially or fully at a cost, the cost of foreign exchange risk management (Jacques, 1981). Firms are exposed to foreign exchange risk if the results of their projects depend on future exchange rates and if exchange rate changes cannot be fully anticipated. Generally, companies are exposed to three types of foreign exchange risk: transaction (commitment) exposure, economic (operational, competitive or cash flow) exposure and translation (accounting) exposure. Transaction risk occurs where the value of existing obligations are worsened by movements in foreign exchange rates. Economic risk relates to adverse impact on equity/income for both domestic and foreign operations because of sharp, unexpected change in exchange rate. Translation risk is also related to assets or income derived from offshore enterprise (Glaum, 1990; Grant and Soenen, 1991; Madura, 2003).

2.3 Nature of Foreign Exchange Risk

In trying to explain the fluctuations in exchange rates, several theories have been advanced that link between domestic and foreign inflation, interest rate and exchange rates. These are: the law of one price, the relative version of purchasing power parity, uncovered interest parity theory and covered interest parity theory.

2.3.1 Law of One Price

According to Reid and Joshua (2004), the law states that in the absence of shipping cost, tariffs and other frictions to international trade – identical goods should trade for the same real price in different countries. That is when converted at spot exchange rate into common currency, the price of a homogeneous commodity good will be identical across borders. As the exact price of the homogenous commodity is rarely known in two different countries, price indexes are used in empirical work. One difficulty in measuring purchasing power parity constructed from price indexes is that different countries use different goods to determine their price level, i.e. preference for the goods may vary widely across countries. Hence, even if the law of one price holds in each good, it may not hold overall for dissimilar consumption basket.

2.3.2 Relative Version of Purchasing Power Parity Theory

The purchasing power parity hypothesis traces its origin to the writings of the Swedish economist Gustav Cassel (1918). The original theory states that equal goods in different countries cost the same in the very same countries when measured in terms of the same currency. Cassel declares that deviations from PPP imply that a country's currency is incorrectly valued.

Even if the contemporarily examined forms of PPP are weaker than the original version of PPP, it is still based on the simple hypothesis of arbitrage. If two homogeneous goods are traded at different prices in different countries, this arbitrage opportunity will be utilized, which leads to convergence of the deviations from PPP towards zero (in the absence of arbitrage costs). "Half-life" is the generally applied PPP convergence measure. Rogoff (1996) describes a consensus view in PPP research of three to five year half-lives, which is definitely too slow to be compatible with arbitrage opportunities.

Therefore, an intense hunt for empirical half-life evidence, that supports this idea of arbitrage, has accelerated over the last few years.

Different versions of PPP have been examined over the years. The absolute form of PPP has very weak support in empirical studies. In the attempts to find evidence in favour of PPP, weaker and weaker forms of PPP have been specified, sometimes with questionable policy relevance (Horne, 2004). Currently, in the research community, the main focus is on long-run (relative) PPP, (henceforth termed long-run PPP, or just PPP). Given the large variation in the nominal spot rate relative to the variation in inflation rates, international inflation differentials are unlikely to explain changes in the short run exchange rates. This explains the development of the concept of long-run PPP. However, due to the specification of various test methods, there has been an implicit development of different empirical versions of long-run PPP (despite that all these studies claim that they test the very same theory of long-run PPP). It is difficult to quantify how strong different versions of long-run PPP are, but some tests are definitely weaker than others. For instance, if a time-varying equilibrium is allowed, this generally leads to some limitations in the policy implications and its relevance.

Over the years, conclusions regarding the validity of PPP have been under constant debate. In some periods the research community has concluded that PPP holds, and in other periods that PPP is not valid. PPP was put forward as a long-run equilibrium condition in the post-war period, but after the breakdown of the Bretton Woods system in the early 1970s it was even advocated as a short-run equilibrium (Taylor and Taylor, 2004). During the late 1970s and early 1980s most research concluded that the theory was not valid (Krugman, 1978).

Essentially, at this time, only tests for hyperinflation economies indicated support for PPP (Frenkel, 1978). However, a fundamental flaw in the econometrics of the so-called stage-one tests was the failure to take explicitly into account the possible non-stationarity of the relative prices and exchange rates. PPP increasingly came under attack on both theoretical and empirical grounds from the late 1970s to the mid 1990s (Taylor and

Taylor, 2004). PPP was tested using real exchange rates with a random walk as the null hypothesis. The alternative hypothesis was that PPP holds in the long run, see, e.g. Huizinga (1987), and Meese and Rogoff (1988). In small samples, it is difficult to distinguish between slow mean reversion and a random walk real exchange rate, and this causes a power problem when only post-Bretton Woods data is used.

An obvious solution to increase power is to rely on long time spans such as in Abuaf and Jorion (1990), Lothian and Taylor (1996) and Taylor (2002), whose findings are in favour of the PPP theory. However, a problem with long-horizon tests is the risk of sample selection bias since countries with long-horizon data tend to be the wealthiest nations in the world. There is usually no available data for third world countries, countries that grew very fast from a low level, or countries that once were rich but are no longer so. Furthermore, it is a well-known fact that increasing the estimation period can cause problems associated with structural breaks and regime changes (e.g. fixed versus floating exchange rate data). It is well documented that unit root tests are misleading in the presence of structural breaks.

In more recent times, PPP researchers such as Frankel and Rose (1996) and others have argued that a solution to these long time-span problems is to apply panel data analysis with shorter time series. Examples of panel studies that support the PPP hypothesis are Cheung et al. (2001), Fleissig and Strauss (2000), Murray and Papell (2002, 2005a), and Wu (1996). However, as Maddala (1998) explains, panel data analysis creates problems that can be even worse than structural breaks. The worst problem is most likely cross-sectional heterogeneity and it is not clear whether this is a lesser problem than the lack of time homogeneity (structural breaks).

According to Reid and Joshua (2004), this theory implies that the rate of change of the exchange rate equals the difference between the inflation rates in the two countries. If the percentage change is positive, then the foreign currency is appreciating and home currency is depreciating. If the percentage change is negative, the foreign currency is depreciating and home currency is appreciating.

2.3.3 Uncovered Interest Parity Theory

While the purchasing power parity condition applies to the cross border pricing of goods and services, uncovered interest rate parity theory looks into the cross border pricing of financial investments. According to Reid and Joshua (2004), this theory states that, lacking frictions in financial markets, the price of otherwise risk less financial investments or the rate of return received on them, should be identical across borders. The frictions present in the international financial markets are slightly different from those in goods markets. While there are likely to be few frictions in the form of costs to transferring capital across borders, markets for investment capital still include the frictions, causing the imperfect capital mobility such as multiple currencies. Uncovered interest parity requires that overseas returns be expected to equal domestic returns when converted at spot exchange rates. The theory established that in international financial markets, when looking at the domestic currency return on an investment that pays interest in a foreign currency, exchange rate changes must be added to the own currency return.

2.3.4 Covered Interest Parity

Covered Interest Parity theory states that if we can remove currency risk, the same currency return of two otherwise risks less assets (short term cash deposits) should be identical. This currency risk can be removed through forward contract. The exchange rate that is quoted for transactions taking place in the future is called the forward exchange rate.

Concept that any disparity in the interest rates of two countries is equalized by the movement in their currency exchange rates (Huang 1984). This theory states that the interest rate differential between two countries is equal to the differential between the forward exchange rate and the spot exchange rate. Interest rate parity plays an essential role in foreign exchange markets, connecting interest rates, spot exchange rates and foreign exchange rates (Roll and Yan, 2000).

Most importantly to our purpose, Bilson (1981), Bilson and Hsieh (1983), Huang (1984), and others, have shown that the economic theory relating interest-rate differences among countries to subsequent exchange rate changes (uncovered interest-rate parity) seems to have broken down during the recent float. As a consequence, exchange-rate changes are

no longer governed by international interest differentials. Hacche and Townsend (1981) and Meese and Rogoff (1983a, b) have demonstrated that other plausible economic theories, such as purchasing power parity and the monetary model, also add little to random walk forecasts of exchange rates, at least at horizons of less than a year. These studies all reported strong rejections of uncovered interest-rate parity. Subsequent studies have confirmed these results. There is also an active theoretical literature, which attempts to determine if the failure of uncovered interest parity is due to risk aversion or market segmentation rather than market inefficiency. In contrast, Roll and Yan (2000) suggest that forward exchange rates are unbiased predictors of subsequent spot rates and there is really no forward premium puzzle.

2.3.4 Arbitrage Pricing Theory

The underlying principle of the pricing theory involves the recognition that the anticipated return on any asset may be charted as a linear calculation of relevant macro-economic factors in conjunction with market indices (Stephen Ross, 1976). It is expected that there will be some rate of change in most if not all of the relevant factors. Running scenarios using this model helps to arrive at a price that is equitable to the anticipated performance of the asset (Roll and Yan, 2000). The desired result is that the asset price will equal to the anticipated price for the end of the period cited, with the end price discounted at the rate implied by the Capital Asset Pricing Model. It is understood that if the asset price gets off course, that arbitrage will help to bring the price back into reasonable perimeters (Stephen Ross, 1976).

2.4 Importance of Hedging

Stulz (1996) identified four types of gains emanating from financial risk management: reduction of bankruptcy and distress costs, reduction in expected tax payments, reduction in expected payments to stakeholders and reduction in cost of raising funds. If a firm can implement risk management policy that eliminates the risk of bankruptcy, it essentially sets the present value of these real resources cost to zero and increases the firm value accordingly.

Crabb (2003) noted that in the early 1990s, Procter and Gamble Corporation lost over 100 million dollars through speculative use of derivatives. In 1995, Daimler Benz reported first half interim losses due to the weakening dollar. The company explained that it did not hedge against financial risk because the forecast it received were too dispersed, ranging as they did from 1.2 to DM 1.7 per dollar, therefore, misdirected risk management can lead to huge losses.

Other studies have been carried out in counter argument of the need for risk management. (M-M) (1958) in their study of perfect market world of financing irrelevancy, suggest that there is no need for firms to control risks since the investors can accomplish this task themselves in a perfect market by holding a well diversified portfolio.

2.5 Measurement and Management of Foreign Exchange Exposure

According to Madura (1995) firms are exposed to three types of exposure namely: In the traditional, more practically oriented literature, it was generally assumed that firms should adopt a strictly risk averse attitude to financial risks. Theoretician's belonging to the neoclassical school of thought took up a different attitude. They argued that management of financial risks is unnecessary and potentially even harmful. This spurred a lot of debate with some scholars making a case for corporate risk management. In the recent past, a more detailed discussion of the arguments for and against corporate hedging activities has been developed (Blommestein, 2000).

Accounting or translation exposure, transaction exposure and economic exposure. Levi (1983) asserts that the concept of accounting exposures arises from the need to translate accounts that are denominated in foreign currencies into home currency of the reporting entity. Most commonly, the problem arises when an enterprise has foreign affiliates keeping books in the respective local currency. For purposes of the consolidation these accounts must be translated into the reporting currency of the parent company and a decision must be made as to exchange rate that is to be used for translation of various account balances (Logue, 1977). The following are various method off measuring foreign exchange exposure:

Current /Non-current is a method that divides assets and liabilities into current and noncurrent assets. The current assets and liabilities include trade payable, receivables, inventory etc. Noncurrent assets are fixed assets- both tangible and intangible and long term debt. Under this method only current assets and liabilities are presumed to change in value when the local appreciates or depreciates vis-à-vis the home currency.

Monetary/Non-Monetary method, all items are explicitly defined in terms of monetary units and translated at the current exchange rate, regardless of their maturity. Non monetary items in the balance sheet, such as tangible assets are translated at the historical exchange rate.

Temporal method is the exchange rate used to translate balance sheet items depend on the valuation method used for a particular item in the balance sheet. Thus, if an item is carried on the balance sheet of the affiliate at its current value, it is to be translated using the current exchange rate. Alternatively, items carried at historical cost are to be translated at historical exchange rate.

Levi (1983) defines Transaction exposure as a risk that occurs when on currency must be exchanged for another, and a foreign exchange rate differences occurs between the time a transaction is contracted and time it is settled. He outlines two –step process involved in measuring this exposure; determining the projected net amount of inflows or outflows in each foreign currency and then determining the overall risk exposure to these currencies.

Levi (1983) defines economic exposure as the degree to which a firm's present value of future cash flows can be influenced by exchange rate fluctuations. Economic exposure and can be assessed by applying regression analysis to historical cash flow and exchange rate date. A second method involves carrying out sensitivity of earnings to exchange rates by classifying the cash flow in to different income statement items and subjectively predicting each income statement item based on forecasted exchange rate.

Value at Risk (VAR) is another measure exchange rate risk. The technique describes risk succinctly; it is a percentile of a profit and loss distribution over a specialized horizon. It tries to determine how much the company's underlying cash flows are affected i.e. if

foreign exchange rate moves to a certain level, VAR indicates how much profit/ loss the company makes (Dowd,1998)

For some firms revenues are more susceptible and they are not concerned that their home currencies will appreciate against foreign currencies, since the unfavorable effects on revenues will be more to offset the favorable effect on expenses. Conversely, firms whose expenses are more exchange rate sensitive than their revenues could reduce the exposure by increasing the sensitivity of expenses to exchange rate movements used to manage foreign-exchange risk in such transactions.

2.6 Types of Foreign Exchange Risks

2.6.1 Fluctuation in Foreign Exchange Rates

An unfavorable change in exchange rates can result in a loss when the revenue received is in one currency but loan repayments are in another currency (Xenidis and Angelides, 2005). In build-operate-transfer (BOT) projects, foreign exchange fluctuation risk is moderately critical during the pre-investment stage and slightly critical during other BOT stages (Lam and Chow, 1999). Chua et al. (2003) found that fluctuation of foreign exchange rates is one of the most critical factors causing budget overrun in East Asia. Other studies have found risk arising from fluctuation in foreign exchange rates to be of varying importance to joint ventures (Bing et al., 1999; Shen et al., 2001; Wang et al., 2004).

Interest rate is a key factor in determining the intensity of a debt and internal rate of return, which consequently affects the feasibility, construction and operation of a project (Lam and Chow, 1999). Loss due to fluctuation of interest rate is moderately critical (Shen et al., 2001), especially during pre-investment stage and slightly critical in all other stages (Lam and Chow, 1999).

Inflation fluctuation in a country affects various financial indices such as the interest rate, rate of return and currency exchange rate (Lam and Chow, 1999). Several studies have

found rise in inflation to have some bearing on construction projects (Lam and Chow, 1999; Bing et al., 1999; Fang et al., 2004; Shen et al., 2001; Wang et al., 2004).

The economic conditions in the host country may lead to an increase of production costs (Xenidis and Angelides, 2005). The increase in demand for construction work will result in shortages of resources, which leads to higher prices (Chen, 1997). Smith et al. (2004) found labour and material costs to be volatile when a country is undergoing economic reforms.

Foreign AEC firms may face the risk of financial failures of their own firms or their business partners. Companies that face financial failures have a serious impact on the project's progress. Nevertheless, potential bankruptcy is not necessarily connected to the project but could be related to other business activities (Xenidis and Angelides, 2005).

2.6.2 Default by Contractors/Subcontractors

Forward contracts are customized in terms of the amounts and maturities of currencies exchanged, and are negotiated with commercial banks or other financial institutions. Conversely, futures contracts have standard lot sizes (which vary by currency), mature on a standard (quarterly) basis, and are executed by securities brokerage houses on an organized exchange. Moreover, futures contracts are traded for only seven major currencies versus the dollar (the Japanese yen, the German mark, the Canadian dollar, the Mexican peso, the British pound, the Swiss franc, and the Australian dollar) while forward contracts can be established for any currency (Ricci and Morrison, 1996). The difference in the usage level between forward and futures contracts may be explained by the flexibility of forward contracts, which can be tailored to meet customer needs, as opposed to futures contracts, which cannot. In addition, the costs associated with futures contracts tend to be significantly higher than those associated with forward contracts, both in terms of transaction costs and prepayments required (Pasmantier, 1993), resulting in negative benefit-cost analyses.

Bing et al. (1999) found that incompetence of subcontractors and suppliers is a major risk factor for contractors. Poor management, technology and quality of materials are significant risks faced in China (Fang et al., 2004). Other associated risks are: unexpected

delay in delivery of materials; subcontractors' breach of contract; and disputes between main and sub contractors. It is therefore important to select contractors/subcontractors carefully, and pay close attention to quality of materials supplied materials and their construction and management ability (Fang et al., 2004).

A deficit trade balance of the host country may be the reason for the imposition of several restrictions concerning imports and exports. It is common for a host government to implement policies such as increasing tariffs for imported products or requiring special permission to import certain products (Xenidis and Angelides, 2005). This leads to an increase in the prices of goods and services.

2.6.3 Delayed or Non-Receipt of Payment

In some developing countries such as China, established banks only provide project financing to large national projects and this lack of construction credit is a major constraint in the construction industry (Chen, 1998). It may lead to owners of smaller projects not making regular payments to contractors. Disputes have been found to arise from the shortage of necessary capital, due to the lack of construction financial credit facilities (Smith et al., 2004).

Restriction on the repatriation of funds occurs when a host country forces foreign companies to spend their earnings in the host market (Chua et al., 2003). This results in loss of profit either by preventing exploitation of foreign bank account privileges or by additional convertibility costs to lift restrictions. Furthermore, the enforcement of such restrictions may not be predictable (Xenidis and Angelides, 2005).

2.7 Importance and Managing Foreign Exchange Risk

Doherty and Smith (2001) argued that, in general, the companies' aim when managing foreign exchange exposure (FOREX) should be to avoid reductions in their operating value that is reductions in the present value of expected operating cash flows. In this sense, Shapiro (2003) proposed that a sensible objective for an exchange risk management strategy should be to protect the dollar home currency earning power of the company as a whole. To accomplish these objectives, the role of financial management

should be to structure the firm's liabilities in such a way that the reduction in asset earnings is matched by a corresponding decrease in the cost of servicing these liabilities. However, this approach concentrates exclusively on risk reduction rather than on cost reduction (Shapiro, 2003).

On the other hand, Martin and Mauer (2003) argued that FOREX, also known as economic exposure typically has a longer-term time dimension as well, as it encompasses the competitive and indirect effects of exchange rate risk. The origins of the economic exposure are changes in the sales price, sales volume, and the cost of input of the firm and its competitors due to exchange rate changes. Since these effects are often indirect, and longer-term in nature, it is unclear if financial hedging is effective (Chow 1997), Pringle, (1991) Pringle and Connolly, 1993).

However, relocating operations to form such hedges can be expensive and difficult to reverse (Chow (1997); Martin and Mauer, (2003); Pringle and Connolly, (1993). In other words, the costs of geographically diversified production along with its perceived net benefits sometimes are not enough to offset the economic exposure. Nevertheless, the CFOs could choose to diversify financing sources since this is relatively cheap compared with diversifying operations.

Another challenge when hedging economic exposure is the need for coordination among the functional areas of the company. In fact, Hodder, (1982) the complexity of the information required to assess economic exposure may involve different areas. In addition, its long-term nature makes it difficult to identify and measure economic exposure so "it is possible that the perceived costs of hedging outweigh the perceived benefits or that the exposure is not recognized, and the economic exposure remains unhedged" (Martin and Mauer, 2003).

2.7.1 Netting-Out International Portfolio Investments

Baum and Schofield (1991) argues that, buyers of international real estate are part of large portfolios which already contain other international investments. An alternative strategy for large portfolio managers could be to consider all of the different international

investments in the portfolio (stocks, bonds and real estate) and to net-out exposures in any given country. Following the lines of modern portfolio theory, it may also be appropriate to net-out investments in countries whose exchange rate fluctuations also are highly correlated. After netting-out the currency exposures, the hedging for the entire portfolio could then be based on the currency specialists' knowledge and expertise on how the foreign currency markets are fluctuating in relation to the domestic currency of the portfolio at a given point in time. This system is used in international transactions by multinational companies and involves reducing fund transfers between affiliates to only a netted amount. It requires the firm to have a centralized organization of its cash management (Bogusz, 1993; Shapiro, 2002).

There are basically two forms of payments netting. These include bilateral and multilateral netting. Bilateral netting involves the transfer of a netted amount between two affiliates. Bilateral payment is valuable only to the extent that subsidiaries sell back and forth to each other (Shapiro, 1978). Multilateral netting involves the transfer of a netted amount among three or more affiliates. The use payments netting reduces the physical flow of funds from one subsidiary to another. As a result, measurable costs such as the cost of purchasing foreign exchange, the opportunity cost of the float (time in transit) and other transaction costs are minimized or eliminated. Netting systems are set up to reduce the costs associated with inter-affiliate cash transfers that result from business transactions. The payoff from multilateral netting systems can be large relative to their expense (Bogusz, 1993; Shapiro, 2002).

2.7.2 Making of Prepayments

If the future rate finally depreciates, the firm is worse off than if it had done nothing. This method poses a big risk to the importer as he/she depends totally on the integrity of the exporter but offers the greatest protection for exporters because no credit extension is required. The primary disadvantage of prepayment is that it can limit the exporter's sales potential (Dennis, 1993). This method of payment requires the importer to pay the exporter in full before shipment is made (Hill, 2001). Payment is usually made in the form of international wire transfer to the exporter's bank account or foreign bank draft.

This method affords the supplier the greatest degree of protection and it is normally requested of first-time buyers whose credit worthiness is unknown or whose countries are in financial difficulty. If currency is thought to appreciate, then prepaying enables the company to pay at a lower rate.

2.7.3 Leading, Coincident and Lagging Economic Indicators

There are 3 categories of economic indicators that can be used to analyze the foreign exchange market's direction, each with their own significance. Economic indicators involves a broad spectrum and they can be classified; Leading economic indicator, Coincident economic indicator and Lagging economic indicator. It is difficult to rank which types of indicators have the most weight in foretelling the course of the economy, and subsequently, its impact on currency market. Leading economic indicators have been showing reliable foresights in the past to help investors make crucial investment decisions.

Leading economic indicators are major key markers that shift in advance ahead of the economy. A good example of a leading economic indicator is the stock market. A stock market provides an up-to-date data and is a direct reflection of a country's economy. Undoubtedly, the trend in stock market is parallel with the economy although there are nine other components of leading economic indicators to give a thorough idea of where the economy is heading. Coincident economic indicators cover a wide range of data and are handy to determine business cycle. A coincident economic indicator, as its name suggests, move at the same time as the economy. These can serve as a confirmation to business cycle turning points as far as forex investors are concerned. Finally, lagging economic indicators are not so much as an 'indicator' as they usually prevail three to twelve month after the economy. Lagging economic indicators are the evidence to define the peaks and troughs that occurred, to be used in estimating the course of the next business cycle. Perhaps the most powerful lagging economic indicator is unemployment rate.

A lead strategy involves attempting to collect foreign currency receivables early when a foreign currency is expected to depreciate and paying foreign currency payables before

they are due when a currency is expected to appreciate. A lag strategy involves delaying collection of foreign currency receivables if that currency is expected to appreciate and delaying payables if the currency is expected to depreciate (Hill, 2001). Leading and lagging involves accelerating payments from weak-currency countries to strong-currency countries and delaying inflows from strong-currency to weak-currency countries. However, lead and lag strategies can be difficult to implement. The firm must be in the position to exercise some control over payment terms. Leading and lagging is a zero-sum game; that is, while one party benefits, the counterpart loses. Thus, the benefit gained from taking advantage of exchange rates may be outweighed by the cost of losing business due to the zero-sum nature of this method. The practice of leading and lagging has developed as one of many methods of hedging against adverse impacts of exchange rate movements.

2.7.4 Hedging with Derivatives

Financial derivatives – foreign exchange, interest rate, and commodity derivatives – are important means of managing the risks facing corporations. Finance theory indicates that hedging increases firm value if there are capital market imperfections such as expected costs of financial distress, expected taxes and other agency costs. Theoretical models of corporate risk management indicate that derivatives use increases with leverage, size, the existence of tax losses, the proportion of shares held by directors, and the payout ratio. The corporate use of derivatives decreases with interest coverage and liquidity (Smith and Stulz, 1985; Froot et al., 1993; Nance, 1993). However, previous studies find only weak evidence consistent with theory. Mian (1996) finds that there is empirical evidence on the determinants of corporate hedging decisions. He ensures that although the evidence is inconsistent with financial distress cost models, it is mixed with respect to contracting cost, capital market imperfections, and tax-based models. Géczy et al. (1997) show that firms with greater growth opportunities and tighter financial constraints are more likely to use currency derivatives. Also, they find that firms with extensive foreign exchange rate exposure and economies of scale in hedging activities are more likely to use currency derivatives. Howton and Perfect (1998) find that swaps are the most often used interest-rate contract, and forwards and futures the most often-used currency

contract. Gay and Nam (1998) find that firms with enhanced investment opportunity sets use derivatives more when they also have relatively lower levels of cash. Their results show that firms can and do use derivatives as one strategy to maximise shareholder value.

2.7.3 Forward and Futures Contracts Techniques

Guay (1999) concludes that firms using derivatives to hedge, and not to increase entity risk. Firm risk declines following derivatives use. Haushalter (2000) shows that companies with greater financial leverage manage price risks more extensively. His results also show that larger companies and companies, whose production is located primarily in regions where prices have a high correlation with the prices on which exchange-traded derivatives are based, are more likely to manage risks. Berkman et al. (2002) show that size and leverage are the main explanatory variables for derivatives use in both industrial and mining companies in Australia.

Although many firms and individuals use derivatives as part of an overall strategy to manage the various financial risks they face (e.g. interest rate risk, foreign currency risk, commodity price risk and equity price risk), misuse of these derivative instruments results in huge losses of several companies. Karpinsky (1998) and Singh (1999) discuss the various financial disasters relating to the use of derivative instruments. Karpinsky (1998) gives examples of some derivatives losers. For instance, Sumitomo Corporation lost \$3,500 million in 1996 because of Copper Futures; Metallgesellschaft lost \$1,800 million from oil Futures in 1993; Kashima Oil lost \$1,500 million from FX Derivatives in 1994; Orange County lost \$1,700 million from Interest Rate Derivatives in 1994; Barings Bank lost \$1,400 million from Stock index and Bond futures and Options in 1995; and Daiwa Bank lost \$1,100 million from Bonds in 1996. Hedging includes all acts aimed at reducing uncertainty about future (unknown) price movements in a commodity, financial security or foreign currency. Undertaking forward or futures sales or purchases of the commodity, security or currency can be done in over the counter (OTC) forward or in the organized futures market. As an alternative to speculation, many financial managers are turning to hedging strategies and using derivatives to reduce foreign currency risk. Previous studies have shown a widespread use of derivative products among Canadian,

US and European firms in managing their risks including long-run exchange rate exposures (Jalilvand et al., 2000; Bradley and Moles, 2002).

2.7.5 Forward and Futures Contracts Techniques

Typically, the various hedging techniques available to mitigate exchange rate fluctuations for an international exposure are meant to be used for a specified period of time to hedge known cash inflows or outflows against adverse movements in the exchange rate. For example, an importer wants to specify the cost of goods that are being imported in order to set the price to sell them in the US. The importer wants to lock in an exchange rate for when the goods are delivered and payment will be due. An international real estate investor might want to establish the value of rental income to be repatriated on a given date or an investor may want to lock in the purchase price of an international investment from the time the offer is made until the transaction is closed. The most commonly used hedging instruments in the international financial markets are the forward or futures contracts. Forward contracts are negotiated contracts available over-the-counter and usually drawn up by a major financial institution. Typically, these instruments are reserved for very large, credit-worthy clients and contracts are usually written in excess of \$1 million.

The term of the contract is usually written for less than a year, although recently longer-term contracts for five or ten years have become available in major currencies such as sterling, yen, or Deutschmark. However, these contracts are available only to large multinational companies (Madura, 1992). Futures contracts, on the other hand, are sold on an organized exchange. Contract sizes are set for each currency (much smaller than those of forward contracts) so an investor may be unable to exactly match the cash flow to be hedged and may have to buy additional currency. Furthermore, contracts have specified closing dates and the expiration date will not necessarily coincide with the time when the investor is to receive or pay out the foreign currency, so that future contracts rarely provide a complete hedge.

Forward and future contracts work in a similar way – the investor locks in an exchange rate and, therefore, the return; so the risk level of the international investment is similar to the risk associated with the local market return, unadjusted for currency fluctuations. However, to apply this strategy to multi-period investments, such as real estate, a US investor would continually need to convert the international property value to a dollar-denominated value by rolling over the forward contract at maturity. When a forward hedge is rolled over, the investor who wants to continue to hedge the investment must complete a “close-out” (Kettle, 1985).

To hedge the entire investment and maintain the investment portfolio in real estate beyond the delivery date of the contract, an investor closes out the position held by the forward contract by using the spot exchange rate market right before the forward contract is to expire. That is, the old contract is settled with the present spot rate and a new forward position is created for the next period (Madura and Reiff, 1985). A forward contract involves a commitment to trade a specified item at a specified price at a future date. It is a contract made today for delivery of an asset at a pre-specified time in the future at a price agreed upon today. No money changes hands until the expiry time. Futures contract is a special type of contract with standardized delivery dates and sizes that would allow trading on an exchange.

A system of margin requirements is designed to protect both parties against default. Instead of the parties realizing the profit or loss at the expiry date, futures are evaluated every day and margin payments are made across the lifetime of the contract. Forward and futures contracts are relatively similar foreign exchange instruments. Both forwards and futures are agreements that bind two parties to exchange currencies at a fixed exchange rate at a future date. Essentially, both contracts offer the benefit of securing cash flows on imminent transactions (Ricci and Morrison, 1996). There are, however, a number of significant differences that distinguish forwards from futures.

2.7.6 Use of Options to Hedge

International real estate investment has long been a feature of property markets and, in recent years, has generated both academic and professional interest. Extensive reviews

and references can be found in Baum (1995), Lizieri and Finlay (1995), Newell and Worzala (1995) and Worzala (1992). Most of these studies, however, either ignore the currency fluctuations (Giliberto, 1990; Sweeney, 1988) or the researchers attempt to acknowledge the risk by adjusting for fluctuations on a quarterly or annual basis but do not explicitly address the possibility of hedging the currency risk (Hudson-Wilson and Stimpson, 1996; Worzala and Vandell, 1995; Ziobrowski and Curcio, 1991). A series of studies that have attempted to examine currency hedging in real estate report findings that may be somewhat suspect owing to the unrealistic assumptions which have gone into their analyses (Ziobrowski and Boyd, 1991; Ziobrowski and Curcio, 1991; and Ziobrowski and Ziobrowski, 1993, 1995). An Option is a contract that conveys the right, but not the obligation, to purchase in a future transaction some underlying security or a futures contract. Unlike in a forward or futures contract the option holder does not have to exercise his/her right to purchase the underlying asset. To hedge foreign exchange risk with options there are two possibilities which are options on Cash and options on Futures. A currency option gives the right, but not the obligation to buy or sell a specific currency at a specific price within a specific period of time. While American options can be exercised in whole or in part at any time up to expiration, European options can be exercised only at expiration. Options provide a number of advantages. It is used to hedge against foreign exchange rate risk arising from import or export of goods. Secondly, it can be used to hedge against exchange rate fluctuations arising from foreign investments or funding in any currency. Finally, options offer a very high degree of gearing or leverage, which makes them attractive for speculative purposes too (Cowdell, 1993). Since very long-term options are not available, option strategies are also difficult and costly hedging techniques to implement. To cover currency exposure over long periods with shorter-term options requires stacking the option contracts up-front, as with forward/future contracts. Options have the advantage of limited downside loss but the transaction costs and complexity associated with implementing up-front option hedges limit their usefulness for a real estate investment. The large number of options that must be rolled over for a five-year holding period makes this strategy very costly.

2.7.7 A back-to-Back or Parallel Loan

A back-to-back or parallel loan involves two firms in different countries arranging to borrow each other's currency for a specified period of time. At an agreed terminal date, the two firms return the borrowed currencies. In the case of a real estate investment, a US company wishing to buy an office building in London locates a British firm wanting to invest funds in the USA. Avoiding the exchange markets entirely, the American company borrows dollars for the British company and the British company borrows sterling for the Americans. The two loans are of equal value at the current spot rate and are both held for the same period of time. Interest and principal are paid in the local currency of the loan (more than likely from income generated from the investment) and at maturity the loans are repaid in the local currency (more than likely from the proceeds of the sale of each building). Neither loan carries with it the foreign exchange risk and neither loan needs the approval of any governmental body regulating the availability of foreign exchange. However, one portion of the investment in this scenario, the appreciation over the holding period, is not locked in and is subject to currency fluctuations.

2.7.8 Application of Currency Swaps

Currency swaps operate in a similar fashion to a parallel loan and offer significant long term advantages. With this hedging strategy, the investor either finds another investor in the host country that is willing and able to swap the cash flows or they use a dealer to swap out the cash flows. It is more likely that a dealer or financial intermediary would be used, since it is unlikely that there would be two real estate investors with properties of similar price and yield in the two countries. There are three sets of cash flows which the investor must consider, the initial investment, the periodic cash flows, and the sale at the end of the period. If the periodic cash flows are known with certainty or are relatively stable, then the initial investment and the periodic flows can be swapped so that the cash flows are completely protected from any adverse currency fluctuations. The most difficult cashflow to protect is the sale price at the end of the period. The initial investment is protected but any appreciation associated with the investment will still be subject to the risk associated with currency fluctuations. A typical currency swap is an agreement between two parties to exchange two currencies at the spot or current exchange rate, with the agreement that they will reverse the exchange rate that prevailed at the time of the

initial exchange (Tygerson, 1993). Currency swaps require the party receiving the currency with a higher interest rate in that country's currency to pay the interest to the counter party at a rate that represents the interest rate differential between the two countries. Currency swaps provide an opportunity for customers to balance currency resources in situations where there are excess funds in one currency and shortage of funds in another (Evans and Malhotra, 1994).

Madura and McCarty (1989) indicate that currency swaps may be too sophisticated or intimidating to most companies and often require extensive documentation. Currency swaps operate in a similar fashion to a parallel loan and offer significant long term advantages. With this hedging strategy, the investor either finds another investor in the host country that is willing and able to swap the cash flows or they use a dealer to swap out the cash flows. It is more likely that a dealer or financial intermediary would be used, since it is unlikely that there would be two real estate investors with properties of similar price and yield in the two countries. There are three sets of cash flows which the investor must consider, the initial investment, the periodic cash flows, and the sale at the end of the period. If the periodic cash flows are known with certainty or are relatively stable, then the initial investment and the periodic flows can be swapped so that the cash flows are completely protected from any adverse currency fluctuations. The most difficult cash flow to protect is the sale price at the end of the period. The initial investment is protected but any appreciation associated with the investment will still be subject to the risk associated with currency fluctuations.

2.8 Empirical Review

Previous works in this field area have studied the use of hedging instruments in the protection of firms' value (Bodnar (1998); Marshall, (2000) as well as the relation between variations in the exchange rate and companies' value (Bodnar and Gentry, (1993) Chow et al., 1997a; Jorion, 1990). Although most of the studies refer to US companies, this relationship has also attracted studies in other countries (Choi and Kim,(2003); De Jong (2002); Doukas Nguyen and Faff, 2003). Other studies tried to assess the operational hedge's effect on firms' value (Martin et al., 1999; Pantzalis et al., 2001), and

to find the determinants of foreign exchange rate exposure of multinational corporations (Faff and Marshall, 2005). The current work follows this line of research and attempts to contribute to the following areas, by: Taking a broader, cross-functional perspective; it adds marketing, operations management, and strategic planning to the traditional financial perspective for the analysis of FOREX. This is relevant, since: the literature suggests that these areas should participate in the assessment and hedging of FOREX; and most previous studies have focused their analysis on the use of financial hedging instruments.

Looking at operations in emerging markets, specifically in Latin America, where Europe is the largest foreign investor. This is another difference, in the sense that this study focuses on companies from developed countries with foreign investments in emerging economies (Choi and Kim, 2003). This is relevant as the conditions for the use of financial hedging instruments (the traditional approach) in emerging markets are different than those in developed countries and, therefore, the need emerges to study alternatives. These different conditions can be seen in that currencies from emerging countries could be difficult to hedge due to the high costs or the non-existence of either forward or currency options. Swap arrangements may be difficult to set up because there is no active market for swaps in a specific currency. Emerging markets' currency positions may involve investments in brand development or other intangible assets. Loans in local currencies may affect the performance and the profitability of companies trading with these currencies due to higher rates of interest in emerging economies compared to those in developed countries; the volatility of emerging countries' currencies makes it riskier to borrow long-term as companies could face a maturity mismatch; and companies borrowing in strong currencies could suffer a currency mismatch paying the capital and services of the loan with revenues in a devalued currency.

Foreign exchange risk can be managed in various ways. This section discusses techniques used for hedging against risk. Hedging can also be defined as all actions taken to change the exposed positions of a company in one currency or in multiple currencies (Prindl, (1976). According to Clark (1993), hedging refers to the technique of making offsetting

commitments in order to minimize the impact of unfavorable potential outcomes. The risk manager's choice of the different types of hedging techniques may, however, be influenced by costs, taxes, effects on accounting conventions and regulation. The different types of hedging techniques are discussed below.

Dufey (1972) suggest another line of reasoning that foreign exchange risk management does not matter because of certain equilibrium conditions in international markets for both financial and real assets. These conditions include the relationship between prices of goods in different markets, better known as purchasing power parity (PPP), and between interest rates and exchange rates, usually referred to as the International Fisher Effect. However, deviations from PPP and international Fisher Effect can persist for considerable periods of time, especially at the level of the individual firm. The resulting variability of net cash flows is of significant as it can subject a firm to financial distress or even default.

According to Logue (1977), translation exposure can be managed by adjusting fund flows, exposure netting and entering into forward contracts by creating a short position in the foreign currency used to measure a subsidiaries income. If the foreign currency depreciates against home currency, the adverse impact on the consolidated income statement can be offset by the gain on the short position in that currency.

Madura (1995) indicates that there are various hedging techniques a firm can use to eliminate transaction exposure. It can use futures hedge by buying currency future contract, which entitles them to receive specified amount in a specified currency for a stated price on a specific date, by this method affirm locks in the amount of its home currency needed for payment or expected to receive. Forwards hedge is also a method to lock in future exchange rate at which the firm can buy or sell a currency. It is similar future contract except that forward contracts are commonly used for large transactions. Money market hedge involves taking money market position to covers future payable or receivable.

The other technique is through currency option, this refers to the right but not the obligation to purchase or sell currencies at specified prices (exercise price) within a given period of time. Currency put option provide the right to sell a specified amount in a particular currency while call option provide right to buy a particular currency.

Madura (2007) indicates that, before selecting the above techniques, a firm should compare the cash flows that would be expected from each technique along with reduced risk associated with the hedging. Hedging techniques can vary over time, as the relative advantages of various instruments may change over time. Shapiro (2007) documents that firms may opt for a currency swap which is an agreement to exchange one currency for another at specified exchange rate and date.

Alder (1984) economic exposure can be managed by balancing the sensitivity of revenues and expenses to exchange rate fluctuations. To accomplish this, however, the firm must first recognizes how its revenues and expenses are affected by exchange rate fluctuations. Norton and Malindretos (1991) concurred, suggesting that hedging economic exposure requires diversification of production, raw materials sources, and operations and diversification of financing sources.

Nguyen and Faff (2002) argue that leverage, size and liquidity are important factors associated with the decision to use derivatives. Tufano (1996) finds that cash flow hedging strategies allow firms to avoid the dead weight of external financing by setting their internal cash flows equal to their investment needs.

Managing foreign exchange risk is a fundamental component in the safe and sound management of all institutions that have exposures in foreign currencies. It involves prudently managing foreign currency positions in order to control, within set parameters, the impact of changes in exchange rates on the financial position of the institution (Madura, 2003). Previous studies on the subject, however, have tended to focus on exchange risk management practices of multinational corporations (Glaum and Roth, 1993; Batten et al., 1993). Little has been done with respect to firms involved in

international trade (import and export). Micro financing Institutions (MFIs) are defined as institutions whose major business is the provision of microfinance services. Their aim is to become sustainable and expand their microfinance services. Microfinance is the supply of loans, savings, money transfers, insurance, and other financial services to low-income earners. MFIs which encompass a wide range of these financial service providers that vary in legal structure, mission, and methodology offer these financial services to clients who do not have access to mainstream banks or other formal financial service providers. In the field of international finance, it is renowned for its bottom-up approach, because of the main role of Non-Governmental Organizations (NGOs) in the launching and the development of the sector, with the financial support of donors. Microfinance is not a recent phenomenon in Kenya; This is due to the fact that some of the current informal sector practices such as money lending, Rotating Savings and Credit Associations (ROSCAS), date back to ancient societies in Kenya and elsewhere.

2.9 Conclusion

A nation's balance of payments has an important effect on the exchange rate of its currency. Bills of exchange, drafts, checks, and telegraphic orders are the principal means of payment in international transactions. Trading in foreign exchange is the means by which values are established for commodities and manufactured goods imported or exported between countries. In trying to explain the fluctuations in exchange rates, several theories have been advanced that link between domestic and foreign inflation, interest rate and exchange rates. If a firm can implement risk management policy that eliminates the risk of bankruptcy, it essentially sets the present value of these real resources cost to zero and increases the firm value accordingly.

Translation exposure can be managed by adjusting fund flows, exposure netting and entering into forward contracts by creating a short position in the foreign currency used to measure a subsidiaries income. In general, the companies' aim when managing foreign exchange exposure (FOREX) should be to avoid reductions in their operating value that is reductions in the present value of expected operating cash flows. A sensible objective for an exchange risk management strategy should be to protect the dollar home currency earning power of the company as a whole.

The purpose of this literature review has been to review the various factors influencing the foreign exchange risk management practices. This study has generally highlighted the various foreign exchange risk management practices. The knowledge of this information shall be used in data collection so as to meet the objective of the study.

However most of these studies have focused on foreign exchange risk management practices in developed nations whose financial position is different from that of Kenya. The ones done in Kenya have focused on different industries other than the MFIs. Thus there is no literature focusing on various foreign exchange risk management practices by MFIs in Kenya. This study therefore seeks to add literature on the various foreign exchange risk management practices by MFIs in Kenya.

3.3 Population

Target population in statistics is the specific population about which information is desired. According to Ngecha (2004), a population is a well defined set of people, services, elements, events, group of things or households that are being investigated. This definition assumes that population of interest is homogeneous. Population studies are more representative because everyone has equal chance to be included in the final sample that is drawn according to Mugenda and Mugenda (1998).

The target population of this study was the staff working at the MFI in Kenya. There are 40 MFIs currently registered in Kenya under the Association of Micro-finance Institutions in Kenya. These organizations are considered as actively involved in Micro-finance business (AMFI 2005). The study will focus on the sections and particularly on the top, middle and lower level management staff who directly deal with the day to day foreign exchange risk management in the MFIs.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology that was used in gathering the data, analyzing the data and reporting the results. Here the researcher aims at explaining the methods and tools that were used to collect and analyze data to get proper and maximum information related to the subject under study.

3.2 Research Design

This research was an exploratory study carried out to find out the foreign exchange risks facing the microfinance industry firms in Kenya, management instruments and strategies used by the firms and to determine their effectiveness' based on empirical evidence. This design was chosen because it provides insights into and comprehension of an issue or situation. Exploratory research is a type of research conducted because a problem has not been clearly defined. The design will be useful in describing the characteristics of the firms and determining the frequency of key attributes of the study.

3.3 Population

Target population in statistics is the specific population about which information is desired. According to Ngechu (2004), a population is a well defined set of people, services, elements, events, group of things or households that are being investigated. This definition ensures that population of interest is homogeneous. Population studies are more representative because everyone has equal chance to be included in the final sample that is drawn according to Mugenda and Mugenda (1999).

The target population of this study was the staff working at the MFIs in Kenya. There are 46 MFIs currently registered in Kenya under the Association of Micro-Finance Institutions in Kenya. These organizations are considered as actively involved in Micro-Finance business (AMFI 2009). The study will focus on the section and particularly on the top, middle and lower level management staff who directly deal with the day to day foreign exchange risk management in the MFIs.

3.4 Sample Population

The population of interest in this study comprised MFIs in Kenya. There are 46 MFIs in Kenya as of September 2010 (AMFI, 2010). Thus the study conducted a census survey owing to the small number of microfinance institutions in Kenya.

3.4 Data Collection

Qualitative primary data was used for the study. It was collected through self-detailed administered questionnaires that were constructed using open ended, close ended and Likert type of questions. The structured questions were used in an effort to conserve time and facilitate easier analysis as they were in immediate usable form; while the unstructured questions used so as to encourage the respondent to give an in-depth and felt response without feeling held back in revealing of any information.

The questionnaire was administered to the treasury managers, finance managers, risk managers or equivalent managers who are involved in foreign exchange risk management in the selected firms using a drop and pick later technique. Follow-up activities included are telephone calls, e-mails and walk ins. To allow reasonable time to the respondents, three weeks were allotted for filling the questionnaire.

3.4.1 Reliability and Validity of Research Instrument

To establish the validity of the research instrument the researcher sought opinions of experts in the field of study especially the researcher's supervisor and lecturers. This was facilitated by the necessary revision and modification of the research instrument to enhance validity.

Reliability refers to the consistency of measurement and is frequently assessed using the test-retest reliability method. Reliability is increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures.

Reliability of the research instrument was enhanced through a pilot study that will be done in 5 MFIs in Nairobi. The pilot data was included in the actual study. The pilot study allows for pre-testing of the research instrument. The clarity of the instrument items to the respondents will be established so as to enhance the instrument's validity and

reliability. The pilot study enabled the researcher to be familiar with research and its administration procedure as well as identifying items that require modification. The result helped the researcher to correct inconsistencies arising from the instruments, which will ensure that they measure what is intended.

3.5 Data Analysis

The primary data collected from the questionnaire was analyzed using content analysis and descriptive statistics such as measures of variation and measures of central tendency. The descriptive statistical tools helped in describing the data and determining the extent used. Data analysis will use statistical tools such as SPSS (Version 17) and Microsoft excel to generate quantitative reports through tabulations, percentages, and measures of central tendency. The results were presented in the form of frequency tables, charts and graphs where necessary. The data analysis method employed was quantitative in nature using descriptive statistics where frequency and percentages were applied. The response from the respondents were used to answer the research questions which were the identifying instruments of hedging in the microfinance industry in Kenya against foreign currency risks and the extent these instruments are used. Using the percentage and frequency distribution, the most significant issues in each category of factors was identified and ranked.

The Likert scale was used to analyze the mean score and standard deviation, this helped in determining the extent to which firms use hedging techniques. Data analysis was done using SPSS and Microsoft excel. This was generated by quantitative reports through tabulations, percentages, and measure of central tendency. Cooper and Schindler (2003) notes that the use of percentages is important for two reasons; first they simplify data by reducing all the numbers to range between 0 and 100. Second, they translate the data into standard form with a base of 100 for relative comparisons.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

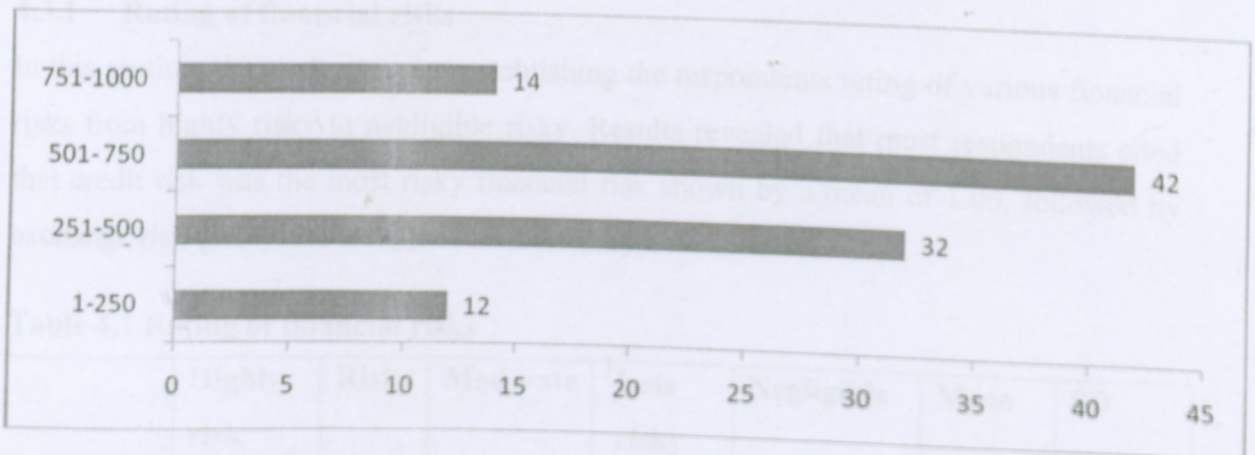
This chapter presents analysis and findings of the study as set out in the research methodology. The data was gathered exclusively from questionnaire as the research instrument. The questionnaire was designed in line with the objectives of the study.

4.2 Demographic information

4.2.1 Number of employees in the firm

This section aimed at establishing the number of employees in the firms. Findings from the study revealed that a majority of the firms had 501 to 750 employees comprising 42 percent while 32 percent had 251 to 500 employees. 12 percent had 1 to 250 employees.

Figure 4.1 Number of employees in the firm



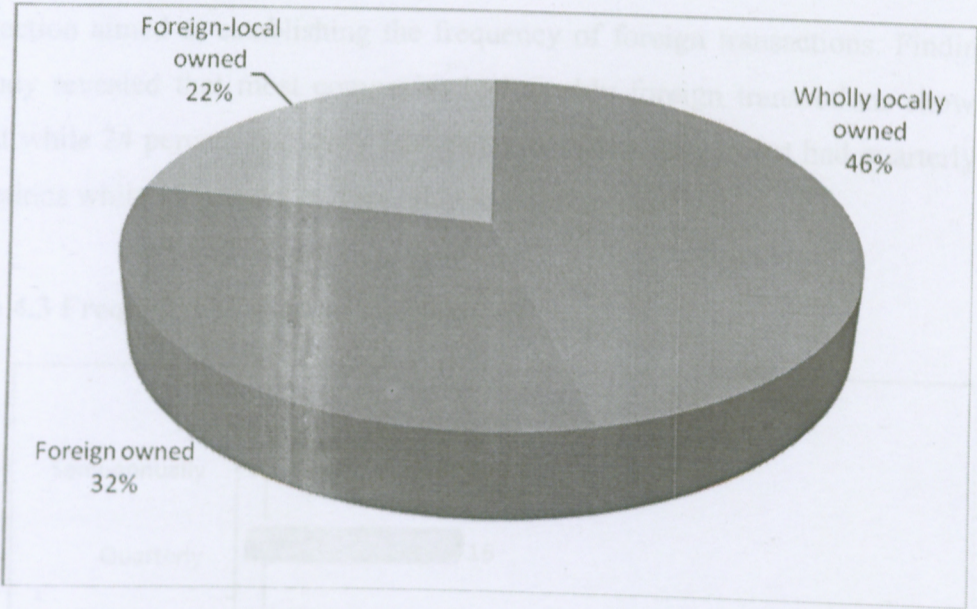
Source: Survey Data, (2010)

4.2.2 Ownership of the company

The study in this section aimed at establishing the ownership of the company. Results depicted in figure 4.2 revealed that majority of the companies were locally owned comprising 46 percent while 32 percent were foreign owned. 22 percent were foreign local owned.

Source: Survey Data (2010)

Figure 4.2 Ownership of the company



Source: Survey Data, (2010)

4.3 International Trade Status

4.3.1 Rating of financial risks

In this section, the study aimed at establishing the respondents rating of various financial risks from highly risky to negligible risky. Results revealed that most respondents cited that credit risk was the most risky financial risk shown by a mean of 1.06, followed by exchange risk (1.10) and inflation rate shown by a mean of 1.9.

Table 4.1 Rating of financial risks

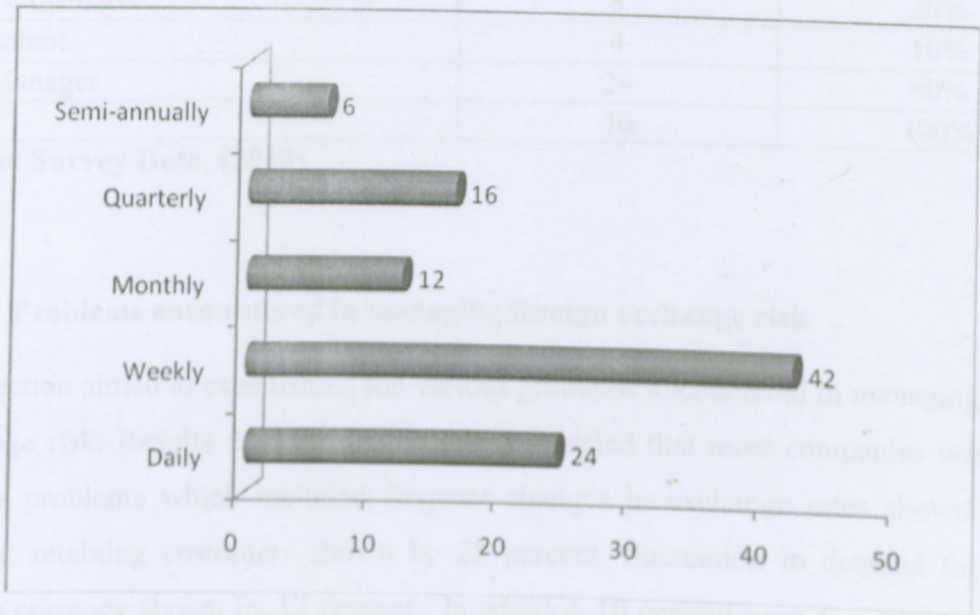
	Highly risk	Risky	Moderate	Less risky	Negligible	Mean	SD
Inflation rate	67%	10%	7%	10%	6%	1.943	1.106
Exchange rate	73%	10%	10%	4%	3%	1.109	0.6064
Credit risk	74%	8%	7%	7%	4%	1.063	0.5508
Stock prices	51%	30%	5%	4%	3%	3.212	0.7738

Source: Survey Data, (2010)

4.3.2 Frequency of foreign transactions

This section aimed at establishing the frequency of foreign transactions. Findings from the study revealed that most companies had weekly foreign transactions shown by 42 percent while 24 percent had daily foreign transactions. 16 percent had quarterly foreign transactions while 12 percent had monthly foreign transactions.

Figure 4.3 Frequency of foreign transactions



Source: Survey Data, (2010)

4.4 Management of Foreign Exchange Risk

The study revealed that all the companies had a documented foreign currency management policy. In addition, the study revealed that a majority of the companies (70%) had a risk management department/ section.

4.4.1 Person responsible for the risk management department

The study in this section aimed at establishing the person responsible for the risk management department. Results from the study revealed that majority of the respondents cited that the risk Manager was responsible for risk management department comprising

60 percent while 20 percent cited that the finance manager was responsible for the risk management department. 10 percent cited that the accountant and the chief executive officer was responsible for risk management department.

Table 4.2 Person responsible for the risk management department

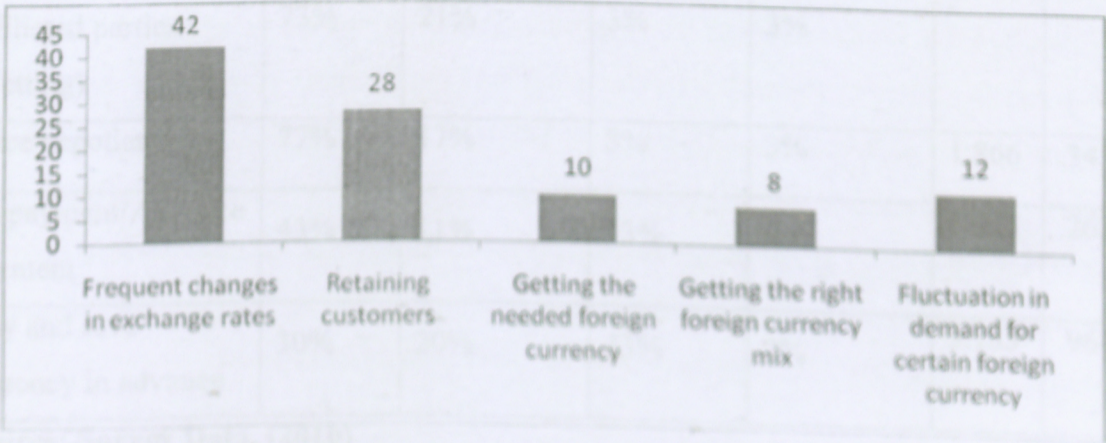
	Frequency	Percent
CEO	4	10%
Finance manager	8	20%
Accountant	4	10%
Risk Manager	24	60%
Total	40	100%

Source: Survey Data, (2010)

4.4.2 Problems encountered in managing foreign exchange risk

This section aimed at establishing the various problems encountered in managing foreign exchange risk. Results depicted in figure 4.3 revealed that most companies were faced various problems which included frequent changes in exchange rates shown by 42 percent, retaining customers shown by 28 percent, fluctuation in demand for certain foreign currency shown by 12 percent. In addition 10 percent were faced by getting the current foreign mix as a problem.

Figure 4.3 Problems encountered in managing foreign exchange risk



Source: Survey Data, (2010)

4.4.3 Management of foreign exchange risk

This section aimed at establishing the various ways in which the companies manage foreign exchange risks. Results depicted in table 4.3 revealed that most companies managed foreign risk through price adjustment, delay of payment when foreign currency are strong and delay accelerate when weak, Forward covers, Use swaps, Netting and price negotiation shown by means of 1.03, 1.05, 1.66, 1.80, 1.83 and 1.96 respectively. The least used methods of foreign risk management were prepayment/Advance payment and buying and saving currency in advance shown by means of 3.0 and 3.1 respectively.

Table 4.3 Management of foreign exchange risk

	Most used	Moderately used	Least used	Not at all	Mean	SD
Price adjustment	40%	40%	13%	7%	1.033	.9643
Delay payment when foreign currency are strong and delay accelerate when weak	65%	17%	7%	12%	1.500	1.106
Forward covers	63%	25%	7%	5%	1.666	.6064
Use swaps	85%	9%	3%	3%	1.800	.5508
Set off against affiliated parties (Netting)	73%	21%	3%	3%	1.833	.3790
Price negotiation	77%	17%	3%	3%	1.866	.3457
Prepayment/Advance payment	43%	11%	43%	3%	3.028	.2622
Buy and save currency in advance	30%	20%	43%	7%	3.133	.9643

Source: Survey Data, (2010)

4.4.4 Financial instruments used by the firms to hedge against foreign exchange risks.

The study further revealed that the firms practiced currency hedging. This section aimed at establishing the various financial instruments used by the firms to hedge against foreign exchange risks. Findings from the study revealed that most companies used currency swaps and currency options as financial instruments to hedge against foreign exchange risks shown by 84 percent and 70 percent respectively. 48 percent used forward contract while 44 percent used futures contract as financial instruments to hedge against foreign exchange risks.

Table 4.4 Financial instruments used by the firms to hedge against foreign exchange risks.

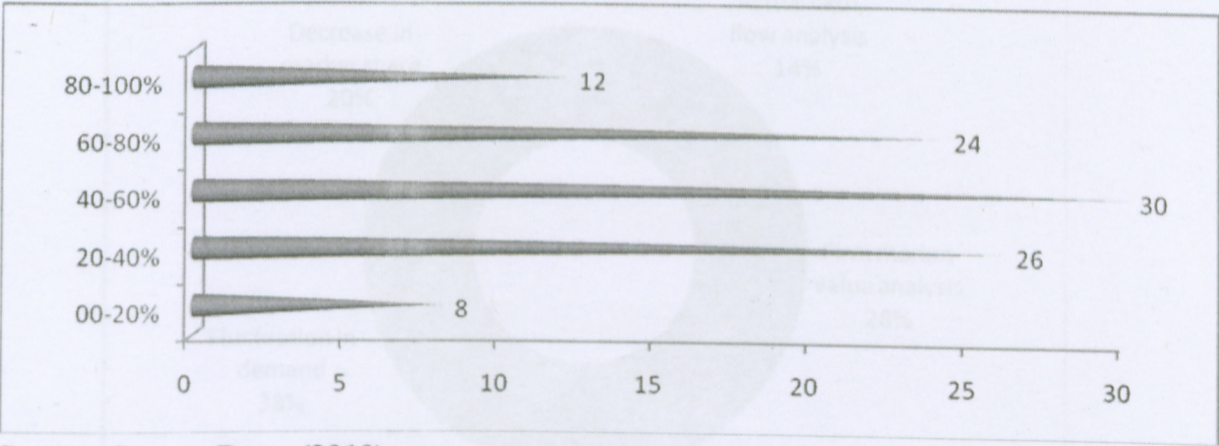
Financial instrument used	Yes	No
Forward contract. (Is used to protect known contractual cash flows, such as exposed transactions)	48%	52%
Futures contract. (Are contracts that specify delivery of fixed quantities of foreign currencies on a set delivery date in the future that are traded on an organized market)	44%	66%
Currency options. (This is a contract that gives the holder the right but not the obligation to sell or buy currencies at a set price either on a specific date or before some expiration date)	70%	30%
Currency swaps. (An agreement in which two parties repay each other's fixed interest rate loans denominated in different currencies)	84%	16%

Source: Survey Data, (2010)

4.4.5 Percentage of foreign currency denominated purchases that are hedged

This section aimed at establishing the percentage of foreign currency denominated purchases that are hedged. Results depicted in figure 4.4 revealed that most companies hedged 40 to 60 percent of their foreign currency denominated purchases comprising 30 percent while 26 percent hedged 20 to 40 percent of their foreign currency denominated purchases. 24 percent hedged 60 to 80 percent of their foreign currency denominated purchases while 12 percent hedged 80 to 100 percent of their foreign currency denominated purchases.

Figure 4.4 Percentage of foreign currency denominated purchases that are hedged

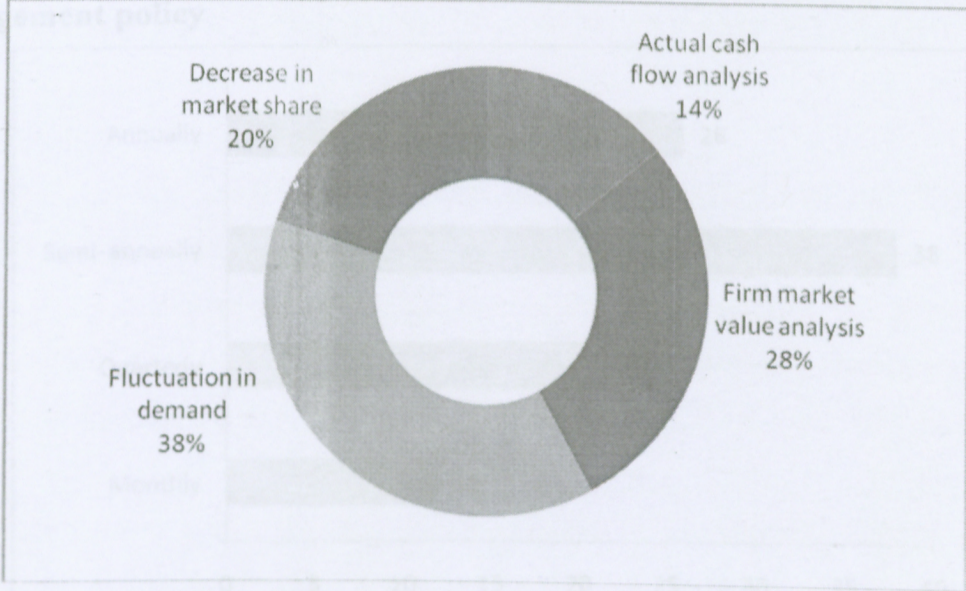


Source: Survey Data, (2010)

4.4.6 Ways in which the firms measure foreign exchange risk exposure.

The study further revealed that all companies hedged all open positions immediately. The study went ahead to inquire on the various ways in which the firms measure foreign exchange risk exposure. Findings from the study revealed that most firms measured foreign exchange risk exposure through fluctuation in demand as was shown by 38 percent while 28 percent measured foreign exchange risk exposure the rough firm market value analysis. 20 percent of the firms measured foreign exchange risk exposure through decrease in market share.

Figure 4.5 Ways in which the firms measure foreign exchange risk exposure.

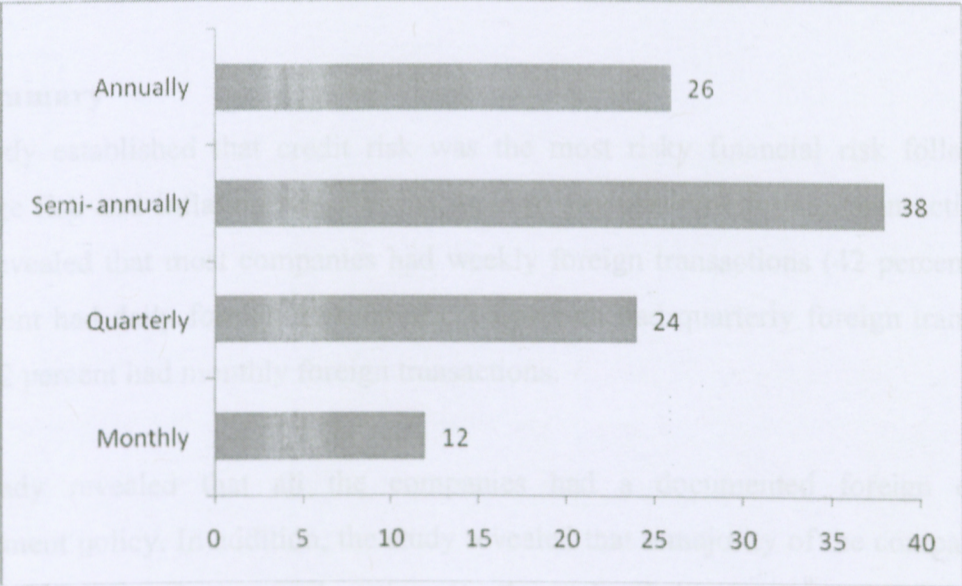


Source: Survey Data, (2010)

4.4.6 How often the firms measure the success of exchange risk management policy

The study further inquired on how often the firms measured the success of exchange risk management policy. Findings from the study revealed that most firms measured the success of exchange risk management policy semi annually as was shown by 38 percent while 26 percent measured them annually. 24 percent of the firms measured the success of exchange risk management policy on a quarterly basis.

Figure 4.6 How often the firms measure the success of exchange risk management policy



Source: Survey Data, (2010)

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study established that credit risk was the most risky financial risk followed by exchange risk and inflation rate. On the topic of frequency of foreign transactions, the study revealed that most companies had weekly foreign transactions (42 percent) while 24 percent had daily foreign transactions. 16 percent had quarterly foreign transactions while 12 percent had monthly foreign transactions.

The study revealed that all the companies had a documented foreign currency management policy. In addition, the study revealed that a majority of the companies had a risk management department/ section. On the topic of the person responsible for the risk management department, the study revealed that in majority of the firms, the risk manager was responsible for risk management department comprising .However, in other firms, the finance manager and the accountant was responsible for the risk management department.

The study further revealed that most companies were faced with various problems in managing foreign exchange risk which included frequent changes in exchange rates, retaining customers, fluctuation in demand for certain foreign currency and getting the current foreign mix. On the issue of management of foreign exchange risk, the study revealed that most companies managed foreign risk through price adjustment, delay of payment when foreign currency are strong and delay accelerate when weak, Forward covers, Use swaps, Netting and price negotiation. The least used methods of foreign risk management were prepayment/Advance payment and bbuying and saving currency in advance.

On the topic of the various financial instruments used by the firms to hedge against foreign exchange risks, the study revealed that most companies used currency swaps and currency options as financial instruments to hedge against foreign exchange risks.

In addition, forward contract and futures contract were also used as financial instruments to hedge against foreign exchange risks.

On the topic of the various ways in which the firms measured foreign exchange risk exposure, the study established that most firms measured foreign exchange risk exposure through fluctuation in demand, firm market value analysis and through exposure through decrease in market share.

On the issue of how often the firms measured the success of exchange risk management policy, the study revealed that most firms measured the success of exchange risk management policy semi annually and annually. In addition, a number of firms measured the success of exchange risk management policy on a quarterly basis.

5.2 Conclusion

The study concludes that there were various foreign exchange risk management practices adopted by micro finance institutions in Kenya. These included price adjustment, delay of payment when foreign currency was strong and delay accelerate when weak, forward covers, use of swaps, Netting and price negotiation. The least used methods of foreign risk management were prepayment/Advance payment and buying and saving currency in advance.

The study further concludes that the microfinance institutions had employed various methods of measuring foreign exchange risk. These included fluctuation in demand, firm market value analysis and exposure through decrease in market share.

5.3 Recommendation

The study recommends that microfinance institutions in Kenya need to employ risk management policies aimed at reduction of bankruptcy and distress costs, reduction in expected tax payments, reduction in expected payments to stakeholders and reduction in cost of raising funds. If a firm can implement risk management policy that eliminates the risk of bankruptcy, it essentially sets the present value of these real resources cost to

zero and increases the firm value accordingly.

5.4 Limitations of the Study

The researcher encountered various limitations that tended to hinder access to information sought by the study. These included:

The researcher encountered problems of time as the research was being undertaken in a short period which limited time for doing a wider research. However the researcher countered the limitation by carrying out the research across all Micro finance institutions in Kenya which enabled generalization of the study findings.

The respondents approached were reluctant in giving information fearing that the information sought would be used to intimidate them or print a negative image about the MFIs. The researcher handled the problem by carrying with him an introduction letter from the University and assured them that the information they gave would be treated confidentially and it was to be used purely for academic purposes.

The researcher also encounter problems in eliciting information from the respondents as the information required was subject to areas of feelings, emotions, attitudes and perceptions, which could not be accurately quantified and/or verified objectively. The researcher encouraged the respondents to participate without holding back the information they had as the research instruments did not bear their names.

Lack of sufficient funds limited the researcher from accessing all the institutions in Kenya to collect data for study. The researcher however limited himself to the Micro finance institutions due to inadequacy of funds.

5.5 Suggestions for further study

This study focused on the various foreign exchange risk management practices adopted by microfinance institutions in Kenya. More research needs to be carried out in other firms such as banks and Sacco's.

REFERENCES

- Arnott, R.D., Henricksson, R.D. (1989), "A disciplined approach to global asset allocation", *Financial Analysts Journal*, Vol. 44 No.2, pp.17-28.
- Batten, J., Mellor, R., Wan, V. (1993), "Foreign exchange risk management practices and products used by Australian firms", *Journal of International Business Studies*, Vol. 24 No.3, pp.557-73.
- Baum, A. (1995), "Can foreign investment be successful?", *Real Estate Finance Journal*, Vol. 12 pp.81-9
- Baum, A., Schofield, A. (1991), "Property as a global asset", Centre for European Property Research, Reading.
- Benari, Y. (1990), "Optimal asset mix and its link to changing fundamental factors", *The Journal of Portfolio Management*, Vol. 16 No.2, pp.11-18.
- Black, F. (1989), "Universal hedging: optimizing currency risk and reward in international portfolios", *Financial Analysts Journal*, July-August, pp.16-22.
- Black, F., Litterman, R. (1992), "Global portfolio optimization", *Financial Analysts Journal*, September-October, pp.28-43.
- Bogusz, R.J. (1993), "The renaissance of netting", *Journal of Cash Management*, 16-17, Vol. 13 No.3, pp.10-13.
- Bradley, K., Moles, P. (2002), "Managing strategic exchange rate exposures: evidence from U.K. firms", *Managerial Finance*, Vol. 28 No.11, pp.28-42.
- Brucatite, V and Yan, V. (2000) "Financial Risk Management – Case Studies with SKF and Elof Hansson" Unpublished Masters Thesis.
- Burik, P., Ennis, R.M. (1990), "Foreign bonds in diversified portfolios: a limited advantage", *Financial Analysts Journal*, Vol. 46 No.2, pp.31-40.

- Clark, E., Levasseur, M., Rousseau, P. (1993), *International Finance*, International Thomson Business Press, London, .
- Cowdell, P. (1993), "Foreign exchange risk management", *Banking World*, Vol. 11 No.6, pp.49-51.
- Dennis, M.C. (1993), "Exporters can choose different terms of sale", *Business Credit*, Vol. 95 No.6, pp.40-1.
- Einzig, *History of Foreign Exchange* (2d ed. 1970); I.
- Eun, C.S., Resnick, B.G. (1988), "Exchange rate uncertainty, forward contracts, and international portfolio selection", *Journal of Finance*, Vol. 43 No.1, pp.197-215.
- Evans, J.S., Malhotra, D.K. (1994), "Understanding cross-currency swaps", *Baniers Magazine*, Vol. 177 No.2, pp.55-9.
- Fatemi, A and Glaum, M (2000), *Risk Management Practices of German Firms – International Management*. Vol 26 No.3.
- Fatemi, A. (2000), "Risk management practices of German firms", Vol. 26 No.3, pp.1-17.
- Fowler, F. (1993), *Survey Research Methods*, Sage, Newbury Park, CA, .
- Giliberto, S.M. (1990), "Global real estate securities: index performance and diversified portfolios", *Salomon Brothers, Inc.*, .
- Glaum, M. (1990), "Strategic management of exchange rate risks", *Long Range Planning*, Vol. 23 No.4, pp.65-72.
- Glaum, M., Roth, A. (1993), "Wechselkursrisiko-management in deutschen internationalen unternehmungen", *Zeitschrift für Betriebswirtschaft*, Vol. 63 No.11, pp.1181-206.
- Grant, R., Soenen, L. (1991), "Conventional hedging: an inadequate response to long-term foreign exchange exposure", *Managerial Finance*, Vol. 17 No.4, pp.1-4.

- Hauser, S., Levy A. (1991), "Optimal forward coverage of international fixed-income portfolios", *Journal of Portfolio Management*, Vol. 17 No.4, pp.54-9.
- Hill, C.W.L. (2001), *International Business: Competing in the Global Marketplace*, 3rd ed., Irwin/McGraw-Hill, Boston, MA, .
- Hudson-Wilson, S., Stimpson, J. (1996), "Adding US real estate to a Canadian portfolio: does it help?", *Real Estate Finance*, Winter, pp.66-78.
- Jacques, L. (1981), "Management of foreign exchange risk: a review article", *Journal of International Business Studies*, Vol. 12 No.1, pp.81-101.
- Jalilvand, A., Switzer, J.A., Tang, C. (2000), "A global perspective on the use of derivatives for corporate risk management decisions", *Managerial Finance*, Vol. 26 No.3, pp.29-38.
- Jorion, P. (1989), "Asset allocation with hedged and unhedged foreign stocks and bonds", *Journal of Portfolio Management*, Vol. 15 No.4, pp.49-54.
- Kettel, B. (1985), *A Businessman's Guide to the Foreign Exchange Market*, Lexington Books, Boston, MA., .
- Lizieri, C., Finlay, L. (1995), "International property portfolio strategies: problems and opportunities", *Journal of Property Valuation & Investment*, Vol. 13 No.1, pp.6-21.
- Madura, J. (1992), *International Financial Management*, .
- Madura, J. (2003), *International Financial Management*, 7th ed., South-Western College Publishing, Boston, MA, .
- Madura, J., McCarty, D.E. (1989), "Research trends and gaps in international financial management: a note", *Management International Review*, Vol. 29 No.1, pp.75-7.
- Madura, J., Reiff, W. (1985), "A hedge strategy for international portfolios", *Journal of Portfolio Management*, Vol. 12 No.1, pp.70-4.

- N. Abuaf and S. Schoess, Foreign-Exchange Exposure Management (1988).
- Newell, G., Worzala, E. (1995), "The role of international property in investment portfolios", *Journal of Property Finance*, Vol. 6 No.1, pp.55-63.
- Pasmantier, A. (1993), "Hedging foreign exchange exposure", *Journal of Cash Management*, Vol. 13 No.6, pp.36-43.
- Pickford, J (2000) *Mastering Risk*. Vol2 N.y:Prentice Hall
- Popov, V., Stutzmann, Y. (2003), *How Is Foreign Exchange Risk Managed? An Empirical Study Applied to Two Swiss Companies*, University of Lausanne, Lausanne, .
- Popov, V., Stutzmann, Y. (2003), *How Is Foreign Exchange Risk Managed? An Empirical Study Applied to Two Swiss Companies*, University of Lausanne, Lausanne, .
- Prindl, A.R. (1976), *Foreign Exchange Risk*, Wiley, London, .
- Redja, G. (1998), *Principles of Risk Management and Insurance*, Addison-Wesley, New York, NY, .
- Ricci, C., Morrison, G. (1996), "International working capital practices of the Fortune 200", *Financial Practice and Education*, Vol. 6 No.2, pp.7-20.
- Schmit, J.T., Roth, K. (1990), "Cost effectiveness of risk management practices", *Journal of Risk and Insurance*, Vol. 57 No.3, pp.455-70.
- Shapiro, A (1996) *Multinational Financial Management*. NY: Prentice Hall.
- Shapiro, A.C. (1978), "Payments netting in international cash management", *Journal of International Business Studies*, Vol. 9 No.2, pp.51-8.
- Shapiro, A.C. (2002), *Multinational Financial Management*, 7th ed., Wiley, New York, NY, .

- Shapiro, A.C. (2007), *Multinational Financial Management*, 9th ed, Wiley, New York.
- Showers, J. (1988), "Hedging the currency exposure of foreign subsidiaries: strategic issues", Working paper by the Bond Portfolio Analysis Group, Salomon Brothers, Inc., .
- Sweeney, F. (1988), "20% in property - a viable strategy", *Estates Gazette*, London,
- Taylor, A.M. (2002), "A century of purchasing power parity", *Review of Economics and Statistics*, Vol. 84 No.1, pp.139-50.
- Taylor, A.M., Taylor, M.P. (2004), "The purchasing power parity debate", *Journal of Economic Perspectives*, Vol. 18 No.4, pp.135-58.
- The African Growth and Opportunity Act (AGOA) website, (online)
<http://www.agoa.info>.
- Tygeson, K.J. (1993), *Financial Markets and Institutions: A Managerial Approach*, 1st ed., New York: Harper Collins College Publishers, , NY,
- Ubindi, S Billy (2006) *A Survey Of Foreign Exchange Risk Management Practices By Forex Bureaus In Kenya*, Unpublished MBA project, University of Nairobi.
- Wexler, *Fundamentals of International Economics* (2d ed. 1972);
- Wong, F (2000). The Association between SFAS 119 derivatives Disclosures and the Foreign Exchange Risk Exposure of Manufacturing Firms, *Journal of Accounting Research* 38, pp 387- 417.
- Worzala, E., Vandell, K. (1995), "International real estate investments as alternative portfolio assets for institutional investors: an evaluation", Working paper presented at the IRES/ERES Meetings, Stockholm, Sweden, .
- Worzala, E.M. (1992), "International direct investments as alternative portfolio assets for institutional investors", PhD Dissertation, University of Wisconsin-Madison, USA.,

- Worzala, E.M. (1994), Overseas property investments: how are they perceived by the institutional investor? *Journal of Property Valuation & Investment*, Vol. 12 No.3, pp.31-47.
- Worzala, E.M. (1995), "Currency risk and international property investments", *Journal of Property Valuation & Investment*, Vol. 13 No.5, pp.23-8.
- Wu, Y. (1996), "Are real exchange rates no stationary? Evidence from a panel-data test", *Journal of Money and Banking*, Vol. 28 pp.54-63.
- Ziobrowski, A.J., Boyd, J.B. (1991), "Leverage and foreign investment in US real estate", *Journal of Real Estate Research*, Vol. 7 No.1, pp.33-58.
- Ziobrowski, A.J., Curcio, R.J. (1991), "Diversification benefits of US real estate to foreign investors", *Journal of Real Estate Research*, Vol. 6 No.2, pp.119-42.
- Ziobrowski, A.J., Ziobrowski, B.J. (1993), "Hedging foreign investments in US real estate with currency swaps", *Journal of Real Estate Research*, Vol. 8 No.1, pp.27-54.
- Ziobrowski, A.J., Ziobrowski, B.J. (1995), "Hedging foreign investments in US real estate with forward contracts", *Journal of Property Valuation & Investment*, Vol. 13 No.1, pp.22-43.

APPENDICES

Appendix I: Introduction Letter

June 2010

1. Name of the company (optional)

.....

Position of respondent

P.O Box.....

Nairobi. Years served in the company

Dear Sir/Madam

Number of employees in the firm

RE: REQUEST TO COLLECT DATA FOR MBA RESEARCH PROJECT

I am a student at the University of Nairobi pursuing a Masters of Business Administration program.

Pursuant to the pre-requisite course work, I would like to conduct a research project on **FOREIGN EXCHANGE RISK MANAGEMENT PRACTICES ADOPTED BY MICROFINANCE INSTITUTIONS IN KENYA**. The focus of my research is the Microfinance institutions in Kenya and this will involve use of questionnaires administered to members of the management team.

I kindly seek your authority to conduct the research in this institution through questionnaires and use of any other relevant documents available to complete this study. I have enclosed an introductory letter from the University. Your assistance is highly valued. Thank you in advance.

Designation of the respondent

Yours faithfully,

Geoffrey Thige Njunge

Appendix II: Research Questionnaire

Part A: General information

1. Name of the company (optional) _____
2. Position of respondent _____
3. Years served in the company _____
4. Number of employees in the firm

1-250	☐
251-500	☐
501-750	☐
751-1000	☐
Over 1000	☐
5. How long has the firm been in existence? _____
6. What is the ownership of the company?

Wholly locally owned	☐
Foreign owned	☐
Foreign-local owned	☐
7. Designation of the respondent _____

Part B: International Trade Status

- Please rank the following financial risks from highly risky to negligible risky as shown in table below:

	Highly risk	Risky	Moderate	Less risky	Negligible
Inflation rate					
Exchange rate					
Credit risk					
Stock prices					

- What percentage of foreign denominated transactions to total transactions?

- 00-20% ☐
- 20-40% ☐
- 40-60% ☐
- 60-80% ☐
- 80-100% ☐

- What is the frequency of your foreign transactions?

- Daily ☐
- Weekly ☐
- Monthly ☐
- Quarterly ☐
- Semi-annually ☐
- Annually ☐
- Rarely ☐

- What is the percentage of foreign currency denominated transactions to total transactions?

- 00-20% ☐
- 20-40% ☐
- 40-60% ☐

60-80%

☐

80-100%

☐

Part C: Management of Foreign Exchange Risk

1. Do you have a documented foreign currency management policy?

Yes ☐

No ☐

2. Does the company have a risk management department/ section?

Yes ☐

No ☐

3. If answer in 1 above is yes, who is responsible for the risk management department?

CEO ☐

Finance manager ☐

Accountant ☐

Risk Manager ☐

Other (specify).....

4. What are the problems encountered in managing foreign exchange risk?

Frequent changes in exchange rates ☐

Retaining customers ☐

Getting the needed foreign currency ☐

Getting the right foreign currency mix ☐

Fluctuation in demand for certain foreign currency ☐

Other (specify).....

5. How do you manage foreign exchange risk? Rank in order of extent of use.

	Not at all	Least used	Moderately used	Most used
Price adjustment				
Delay payment when foreign currency are strong and delay accelerate when weak				
Forward covers				
Use swaps				
Set off against affiliated parties (Netting)				
Price negotiation				
Prepayment/Advance payment				
Buy and save currency in advance				

6. Does the firm practice currency hedging?

Yes [] No []

7. If the answer above is yes, kindly tick the financial instruments used by your firm to hedge against foreign exchange risk?

- i) Forward contract. (Is used to protect known contractual cash flows, such as exposed transactions) []
- ii) Futures contract. (Are contracts that specify delivery of fixed quantities of foreign currencies on a set delivery date in the future that are traded on an organized market) []
- iii) Currency options. (This is a contract that gives the holder the right but not the obligation to sell or buy currencies at a set price either on a specific date or before some expiration date) []
- iv) Currency swaps. (An agreement in which two parties repay each other's fixed interest rate loans denominated in different currencies) []
- v) Others (specify).....

8. Please rate the percentage of use of the following instruments?

	0 - 20%	20 -40%	40% -60%	60% - 80%	80% - 100%
Forward market					
Future contracts					
Currency options					
Currency swaps					
Others					

9. What percentage of your foreign currency denominated purchases are hedged?

00-20% ☐

20-40% ☐

40-60% ☐

60-80% ☐

80-100% ☐

10. Do you hedge all open positions immediately or do you hedge only those positions for which you expect a currency loss while leaving open positions for which you expect a currency gain?

i) Hedge all open positions immediately ☐

ii) Hedge only those positions where currency loss is expected ☐

11. How does your firm measure foreign exchange risk exposure?

Actual cash flow analysis ☐

Firm market value analysis ☐

Fluctuation in demand ☐

Decrease in market share ☐

Other (specify).....

12. How often does your firm measure the success of its exchange risk management policy?

- i. Monthly []
- ii. Quarterly []
- iii. Semi- annually []
- iv. Annually []
- v. None at all []

THANK YOU FOR YOUR PARTICIPATION

Appendix III: List of registered MFIs in Kenya

1. AAR Credit Services
2. ADOK TIMO
3. Agakhan Foundation
4. Barclays Bank of Kenya Ltd Microfinance Department
5. Biashara Factors Limited
6. BIMAS
7. Blue Limited
8. Canyon Rural Credit Limited
9. Chartis Insurance
10. CIC Insurance
11. Co-operative Bank
12. Chase Bank-Rafiki Deposit taking Microfinance Ltd.
13. Equity Bank
14. Faulu Kenya DTM Limited
15. Fusion Capital Ltd
16. Greenland Fedha Limited
17. Jamii Bora
18. Jitegemea Credit Scheme
19. Jitegemee Trust
20. JuhudiKilimo Company Limited
21. K-rep Bank Ltd
22. K-rep Development Agency
23. KADET

24. Kenya Eclof
25. Kenya Entrepreneur Empowerment Foundation (KEEF)
26. Kenya Post Office Savings Bank
27. Kenya Women Finance Trust
28. Microensure Advisory Service Limited
29. Micro Africa
30. Molyn Credit Limited
31. OIKO CREDIT
32. Opportunity Kenya
33. Pamoja Women Development Programme
34. Renewable Energy Technology Assistance Programme (RETAP)
35. Rupia Limited
36. Select Management Services Limited
37. SISDO
38. SMEP
39. Swiss Contact
40. Taifa Option Microfinance
41. U & I Microfinance Limited
42. Youth Initiatives Kenya.
43. Yehu Enterprises Support Services
44. Remu Ltd.
45. Orion East Africa Ltd.
46. One Africa Capital Ltd