

**FINANCIAL RISK MANAGEMENT PRACTICE IN
MANUFACTURING AND ALLIED COMPANIES LISTED
ON THE NAIROBI SECURITIES EXCHANGE**

BY

WANYAMA, BRIAN SITUMA

**UNITED STATES INTERNATIONAL UNIVERSITY –
AFRICA**

SUMMER 2016

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**A Project Report Submitted to the Chandaria School of
Business in Partial Fulfillment of the Requirement for the
Degree of Masters in Business Administration (MBA)**

**UNITED STATES INTERNATIONAL UNIVERSITY –
AFRICA**

SUMMER 2016

STUDENT'S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University - Africa for academic credit.

Signed.....

Date.....

Wanyama, Brian Situma (ID 641613)

This project has been presented for examination with my approval as the appointed supervisor.

Signed.....

Date.....

Dr. Bernard Omboi.

Signed.....

Date.....

Dean, Chandaria School of Business

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ABSTRACT

In recent years manufacturing companies in Kenya have faced financial risks that have threatened their operations forcing others to close down. These financial risks include exchange rate risk due to weakening of the Kenya shilling against other currencies, interest rate risk, commodity price risk and liquidity risk. It is important to study how these companies manage these financial risks.

The purpose of this study was to examine the financial risk management practice in manufacturing and allied companies listed on the Nairobi Securities Exchange. The study sought to answer the following research questions: What is the exchange rate risk management practice in manufacturing and allied companies? What is the interest rate risk management practice in manufacturing and allied companies? What is the commodity price risk management practice in manufacturing and allied companies? What is the liquidity risk management practice in manufacturing and allied companies?

A descriptive research design was utilized to get a valid conclusion on the research questions mentioned above. The target population comprised of the ten manufacturing and allied companies listed on the Nairobi Securities Exchange. Primary data was collected through the use of questionnaires distributed to purposively selected employees in finance/accounts departments of the manufacturing and allied companies. 53 questionnaires were issued as shown in the sample frame. The research was conducted during the months of May to July 2016. Data analysis was done through descriptive and regression statistics and presented in the form of tables and figures. The data was coded using Statistical Package for Social Sciences (SPSS version 20) in order to generate the descriptive statistics in the form of percentages, mean, standard deviation and regression statistics in the form of ANOVA and coefficients tables.

The study revealed that manufacturing and allied companies listed on the Nairobi Securities Exchange have documented financial risk management policy in place. Senior management of these companies support monitoring and evaluation of financial risk. Manufacturing and allied companies frequently use forwards to manage exchange rate risk and they rarely use futures, swaps, and options to manage exchange rate risk. The study also revealed that manufacturing and allied companies don't have strong mechanisms of

transferring interest rate risk to third parties. These companies rarely use forwards, futures, swaps and options to manage interest rate risk.

The study further revealed that manufacturing and allied companies listed on the Nairobi Securities Exchange don't split risk into currency and commodity components so as to assess both risks independently. These companies frequently use forwards and futures to manage commodity price risk while they rarely use swaps and options to manage commodity price risk.

The study finally revealed that manufacturing and allied companies listed on the Nairobi Securities Exchange don't maintain sufficient cash flow to meet maturing financial obligations hence they face high liquidity risk. These companies frequently use ladder liability maturities technique to manage liquidity risk while they rarely use cash flow match, diversified assets and diversified liabilities techniques to manage liquidity risk.

The study concluded that the financial risk management policies, monitoring and evaluation practices, commodity pricing and internal control systems of the listed manufacturing and allied companies have an influence on the use of hedging techniques and liquidity management techniques in managing financial risk.

The main recommendation from the study is that manufacturing and allied companies listed on the Nairobi Securities Exchange should maximize the use of hedging techniques and liquidity management techniques available to them to manage financial risk. They should review their financial risk management policies, monitoring and evaluation practice to archive maximum utilization of forwards, futures, swaps, options and the liquidity management techniques in managing financial risk.

ACKNOWLEDGEMENT

First and foremost i would like to thank God for bringing me this far in my academics. I am also grateful to my project supervisor, Dr. Bernard Omboi for his continuous assistance, understanding, cooperation and priceless insight that have helped me towards accomplishment of this research project. I also appreciate the support my family and friends gave me and the encouragement throughout the whole MBA process. Lastly my sincere appreciation and gratitude to my respondents for taking time off their busy schedules to furnish me with the information required to carry out my research and who actively participated in the study.

DEDICATION

This project is dedicated to my parents, Mr. Philip Juma Wanyama and Mrs. Mary Awino Wanyama, my wife to be and my unborn children.

TABLE OF CONTENTS

STUDENT’S DECLARATION	ii
COPYRIGHT	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	vi
DEDICATION	vii
LIST OF TABLES	x
CHAPTER ONE.....	1
1.0 INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem	5
1.3 Purpose of the Study	6
1.4 Research Questions	6
1.5 Significance of the Study	7
1.6 Scope of the Study.....	8
1.7 Definition of Terms	8
1.8 Chapter Summary.....	9
CHAPTER TWO.....	11
2.0 LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Exchange Rate Risk Management Practice in Manufacturing and Allied Companies	11
2.3 Interest Rate Risk Management Practice in Manufacturing and Allied Companies	15
2.4 Commodity Price Risk Management Practice in Manufacturing and Allied Companies	19
2.5 Liquidity Risk Management Practice in Manufacturing and Allied Companies	23
2.6 Chapter Summary.....	27
CHAPTER THREE	28
3.0 RESEARCH METHODOLOGY	28
3.1 Introduction	28
3.2 Research Design	28
3.3 Population and Sampling	29
3.4 Data Collection Methods.....	31

3.5 Research Procedure	31
3.6 Data Analysis Methods	32
3.7 Chapter Summary	33
CHAPTER FOUR	34
4.0 RESULTS AND FINDINGS	34
4.1 Introduction	34
4.2 Background Information	34
4.3 Exchange Rate Risk Management Practice in Manufacturing and Allied Companies	37
4.4 Interest Rate Risk Management Practice in Manufacturing and Allied Companies	43
4.5 Commodity Price Risk Management Practice in Manufacturing and Allied Companies	49
4.6 Liquidity Risk Management Practice in Manufacturing and Allied Companies	56
4.7 Chapter Summary	63
CHAPTER FIVE	65
5.0 DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS	65
5.1 Introduction	65
5.2 Summary	65
5.3 Discussion	67
5.4 Conclusions	73
5.5 Recommendations	75
References	77
APPENDIX I: LETTER OF INTRODUCTION	82
APPENDIX II: RESEARCH QUESTIONNAIRE	83
APPENDIX III: LIST OF MANUFACTURING AND ALLIED COMPANIES LISTED ON THE NAIROBI SECURITIES EXCHANGE	89

LIST OF TABLES

Table 3.1: Sampling Distribution.....	30
Table 4.1: Respondents Response Rate.....	34
Table 4.2: Department that Deals with Financial Risk Management.....	36
Table 4.3: Policies on Exchange Rate Risk Management.....	38
Table 4.4: Monitoring and Evaluation on Exchange Rate Risk Management.....	40
Table 4.5: Usage of Hedging Technique on Exchange Rate Risk Management.....	41
Table 4.6: Model Summary; Policies, Monitoring and Evaluation and Hedging Technique.....	41
Table 4.7: ANOVA; Policies, Monitoring and Evaluation and Hedging Technique.....	42
Table 4.8: Coefficients; Policies, Monitoring and Evaluation and Hedging Technique...	43
Table 4.9: Policies on Interest Rate Risk Management.....	44
Table 4.10: Monitoring and Evaluation on Interest Rate Risk Management.....	46
Table 4.11: Usage of Hedging Technique on Interest Rate Risk Management.....	47
Table 4.12: Model Summary; Policies, Monitoring and Evaluation and Hedging Technique.....	47
Table 4.13: ANOVA; Policies, Monitoring and Evaluation and Hedging Technique.....	48
Table 4.14: Coefficients; Policies, Monitoring and Evaluation and Hedging Technique...	49
Table 4.15: Commodity Pricing on Commodity Price Risk Management.....	50
Table 4.16: Policies on Commodity Price Risk Management.....	51
Table 4.17: Monitoring and Evaluation on Commodity Price Risk Management.....	52
Table 4.18: Usage of Hedging Technique on Commodity Price Risk Management.....	53
Table 4.19: Model Summary; Commodity Pricing, Policies, Monitoring and Evaluation and Hedging Technique.....	54
Table 4.20: ANOVA; Commodity Pricing, Policies, Monitoring and Evaluation and Hedging Technique.....	55
Table 4.21: Coefficients; Commodity Pricing, Policies, Monitoring and Evaluation and Hedging Technique.....	56
Table 4.22: Internal Control Systems on Liquidity Risk Management.....	57
Table 4.23: Policies on Liquidity Risk Management.....	59
Table 4.24: Monitoring and Evaluation on Liquidity Risk Management.....	60
Table 4.25: Usage of Liquidity Management Technique on Liquidity Risk Management.	61
Table 4.26: Model Summary; Internal Control Systems, Policies, Monitoring and Evaluation and Liquidity Management Technique.....	62

Table 4.27: ANOVA; Internal Control Systems, Policies, Monitoring and Evaluation and Liquidity Management Technique.....	62
Table 4.28: Coefficients; Internal Control Systems, Policies, Monitoring and Evaluation and Liquidity Management Technique.....	63

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Investors and lenders are naturally risk averse. They are mainly concerned with unexpected negative fluctuations in a project's cash flows or value. There is a fundamental requirement to manage risk so as to attract financing (UNEP, 2004). This has to be done in a way that minimizes the probability of an occurrence that could give rise to a negative financial impact on an investment. Risk reporting and disclosure is becoming important as stakeholders wish to know more about the risks that their organizations are taking (Woods & Dowd, 2008).

Organizations face different types of risks associated with the business environment such as; laws and regulations, operational efficiency, the organization's reputation, and financial risks. Financial risks relate to the financial operation of a business and many take different forms, for instance; currency risks, interest rate risks, credit risks, liquidity risks, cash flow risk, and financing risks. Financial risks vary from one organization to another, for example; an international firm will be more exposed to currency risk than a firm that operates only domestically. Banks are more exposed to credit risks than most other firms (Woods & Dowd, 2008).

An appropriate finance mix is necessary when companies raise new forms of finance and managers can alter their existing capital structure and funding requirements to suit the specific circumstances facing their firms at the time (Dhanani, Fifield, Helliard, & Stevenson, The management of interest rate risk: evidence from UK companies, 2008). Industrial growth is promoted through provision of loans and credit by financial institutions. Enterprises have greater potential to grow through increase in productive capacities due to adequate financial access (Kenya National Bureau of Statistics, 2015).

According to Horcher (2005) most organizations are affected either directly or indirectly due to exposure to financial markets. These organizations that are exposed to financial markets face a possibility of loss but also an opportunity for gain or profit hence provide strategic or competitive benefits. Financial transactions, for example; sales and purchases,

investments and loans expose firms to financial risk. Financial risk can also arise as a result of legal transactions, new projects, mergers and acquisitions, debt financing, the energy component of costs, or through the activities of management, stakeholders, competitors, foreign governments, or weather.

Financial risks might cause a firm not to archive its financial objective. Financial risk is all about uncertainty in foreign exchange rates, interest rates, commodity prices, equity prices, credit quality, liquidity, and an organization's access to financing. While coming up with risk management systems managers should be aware that these financial risks are not necessarily independent of each other, for example; exchange rates and interest rates are often strongly linked (Woods & Dowd, 2008).

Financial risk, for example: risk arising from movements in foreign exchange and interest rates, can have a detrimental effect of firm value hence corporate risk management is relevant under conditions of incomplete and imperfect capital markets. Managers are able to stabilize corporate cash flows through corporate risk management which in turn facilitates the efficient planning of future capital investment decisions and the strategic development of operating activities. There is a reduced cost of financial distress, smooth tax charge (where a progressive tax system is in place) and reduce investor monitoring costs due to reduction in cash flow volatility. Corporate risk management is preferable to investor risk management because of the superior access of managers to risk management instruments and for reasons of information asymmetry (Dhanani, Fifield, Helliard, & Stevenson, The management of interest rate risk: evidence from UK companies, 2008).

Worldwide today manufacturing is under intense adaptive pressure. There is a heightened competitive pressure at the firm level due to rapid technological change that has caused shortened product life cycles, the emergence of new business models, and the introduction of new materials and advanced manufacturing techniques. There is also increased uncertainty about demand and cost conditions due to global macroeconomic forces, commodity price, and exchange rate instability (African Development Bank Group, 2014).

The need for sound financial risk management was highlighted by a number of high-profile risk management disasters in the 1990s. In each of these cases, a single individual or subsidiary company built up huge positions without knowledge of senior management

or the parent company. The firms involved then suffered very large losses when the risks turned sour. Among the most noteworthy of these cases in the US were Metallgesellschaft, Orange County, Barings Bank, and in Japan Sumitomo Corporation. They all made losses in excess of \$1 billion (Li, 2003).

The Nairobi Securities Exchange was constituted as a voluntary association of stock brokers under the society act and was known as Nairobi Stock. A trading floor and secretariat was set up at the IPS building in 1990, before moving to the Nation Centre Nairobi in 1994. Over the years, the securities exchange has witnessed changes, for example; automating its trading in September 2006 making it possible for stockbrokers to trade remotely from their offices hence capital market made a significant step in providing liquidity (Maniagi, Mwalati, Ondiek, Musiega, & Ruto, 2013).

The main aims of Nairobi Securities Exchange are to support trading, clearing settlement of equities, debt derivatives and other associated instruments. Nairobi Securities Exchange is mandated to list companies and enables investors to trade in securities of companies, thus it's charged with the health of Securities Exchange. Nairobi Securities Exchange is regulated by Capital Markets Authority (Maniagi, Mwalati, Ondiek, Musiega, & Ruto, 2013).

Companies in the Nairobi Securities Exchange are grouped in the following twelve sectors; Agricultural, Automobiles and Accessories, Banking, Commercial and Services, Construction and Allied, Energy and Petroleum, Insurance, Investment, Investment services, Manufacturing and Allied, Telecommunication and Technology, Real estate investment trust (Nairobi Securities Exchange, 2016). Companies in the manufacturing and allied sector are; B.O.C Kenya Ltd, British American Tobacco Kenya Ltd, Carbacid Investments Ltd, East African Breweries Ltd, Mumias Sugar Co. Ltd, Unga Group Ltd, Eveready East Africa Ltd, Kenya Orchards Ltd, A.Baumann Co. Ltd and Flame Tree Group Holdings Ltd.

According to Kenya National Bureau of Statistics (2015) the manufacturing sector's contribution to Gross Domestic Product (GDP) has remained at an average of 10 per cent for more than ten years. Kenya's Vision 2030 stipulates that the sector should account for 20 per cent of GDP. To archive this goal requires management and government to address

some underlying constraints that hinder faster growth, for example; high input cost, decline in investment portfolio for some activities, transport infrastructure, high cost of credit and stiff competition from imports.

The manufacturing sector in Kenya constitutes 70 per cent of the industrial sector contribution to GDP, with building, construction, mining and quarrying cumulatively contributing the remaining 30 per cent (Kenya Institute for Public Policy Research and Analysis, 2013). Kenya compares favorably with neighboring Uganda and Tanzania with a share of manufacturing exports to the global market of about 0.02 per cent, although this performance is unimpressive compared with South Africa, Singapore, China and Malaysia. South Africa's global share of manufacturing exports is about 0.3 per cent, while that of Singapore and Malaysia are about 2.4 per cent and 1.3 per cent, respectively (Kenya Institute for Public Policy Research and Analysis, 2013).

The manufacturing industry in Kenya consists of food and beverage industry, paper manufacturing, plastic manufacturing, metal and allied industry. The manufacturing industry in Kenya employs more than 2.3 million people both in the formal and informal sector. The industry faces several challenges despite the critical role it plays in Kenya's GDP. The challenges include: high cost of production, production of counterfeits, reduced consumer effective demand due to increased cost of living, inadequate government support for local production and inadequate negotiation skills in regional trade agreements (Osoro & Ogeto, 2014).

Macro-economic variables such as the rate of inflation, exchange rate and the cost of acquiring capital in the form of interest rates influence the performance of the manufacturing industry. In Kenya the growth in manufacturing industry declined from 3.3 per cent in 2011 as compared to 4.4 per cent in the year 2010. This was caused by an increase in the price of the primary inputs and fuel costs, depreciation of the Kenya shilling hence increasing the costs of imported intermediate imports and the unfavorable weather conditions that led to reduced available raw material for the agro chemical industries. (Osoro & Ogeto, 2014).

Financial problems have caused some firms in the manufacturing industry to collapse, for example: Webuye Pan Paper which had financial problems tied up to its capital structure.

Other firms have had financial difficulties but have managed to remain on the manufacturing industry, for example: Kenya Co-operative Creameries (KCC), Eveready East African limited and Mumias Sugar Company. This has led the companies into making losses (Osoro & Ogeto, 2014).

1.2 Statement of the Problem

According to Kenya National Bureau of Statistics (2015), the manufacturing sector in Kenya is the one of core sectors contributing to the economic growth of the country. There are no studies conducted on financial risk management in this sector, though there are a number of studies done on the effect of macroeconomic forces on manufacturing industry. Some of the macroeconomic factors that research has been done on are: exchange rate, interest rate and inflation rate (Osoro & Ogeto, 2014). These macroeconomic forces pose a financial risk in manufacturing companies hence the need to study how these firms manage these forces and the other financial risks.

According to Osoro and Ogeto (2014) previous studies on the effects of exchange rate, interest rate, inflation rate and GDP on the performance of a firm have concentrated on the banking industry. The nature and extent of the effects of financial risk are unique from one industry to another. Since there are no studies done on financial risk management in the listed manufacturing and allied firms in Kenya, this study searched to bridge the knowledge gap undertaking on the same.

Many manufacturing companies in Kenya have been faced with major financial risks in recent years. According to Gibendi (2013), Mumias Sugar Company's credit-rating has been downgraded from A+ to BBB between 2011 and 2013 by the Global credit rating reflecting the firm's worsening financial position. The poor rating means that the company borrows at a stiffer interest rate hence posing interest rate risk to Mumias. Interest rate risk has forced Mumias to sit with seven banks to restructure its loans since it has been struggling to service its massive debts and ease the repayment burden.

Eveready East Africa Limited had to close its manufacturing plant in Nakuru in 2015 due to increase in financing costs and insecurity. Financing costs had increased due to a weaker Kenya shilling against other currencies especially the US dollar hence posing

exchange rate risk to the company. The Kenya shilling had lost about eight per cent against the dollar in 2015 (Okoth, 2015).

Pan African Paper Mills Limited was closed down due to unpaid bills and other debts that amounted to Sh9 billion. Short-term lenders – including Kenya Commercial Bank, Barclays Bank Kenya, Ecobank Kenya and Bank of Baroda Kenya – placed the company under receivership in March 2009. They are jointly owed Sh1.4 billion with the balance of Sh9 billion owed to long-term lenders and suppliers. Pan paper faced interest rate risk and exchange rate risk due to the high interest rates from its lenders and importation of inputs from its international suppliers respectively (Kang'aru, 2010).

Mumias, Eveready and Pan Paper are just but a few of manufacturing companies in Kenya that have had financial risk management challenges. This study was carried out to bridge the knowledge gap in financial risk management practice in listed manufacturing companies in Kenya.

1.3 Purpose of the Study

The purpose of the study was to examine the financial risk management practice in manufacturing and allied companies listed on the Nairobi Securities Exchange.

1.4 Research Questions

The purpose of the study was to be achieved through the following research questions:

1.4.1 What is the exchange rate risk management practice in listed manufacturing and allied companies?

1.4.2 What is the interest rate risk management practice in listed manufacturing and allied companies?

1.4.3 What is the commodity price risk management practice in listed manufacturing and allied companies?

1.4.4 What is the liquidity risk management practice in listed manufacturing and allied companies?

1.5 Significance of the Study

The manufacturing sector is among the greatest contributor to the country's growth in GDP. Studies have been conducted on financial risk management in the banking and insurance sector but dismal research has been done on financial risk management in the manufacturing sector in Kenya. This study will be of benefit to the manufacturing sector at large and the key stakeholders in the sector.

1.5.1 Management and Shareholders

The management and stakeholders in the manufacturing sector in Kenya will be aware of financial risk and obtain guidance on the optimal skills of managing this risk hence financial health of this sector. The findings of the research will equip the top level managers, such as the managing directors, and general managers of manufacturing companies with knowledge of elements of financial risk that they face and how to manage them hence maximize shareholders wealth.

1.5.2 Government

The Government may use the findings to understand the effect of financial risk on manufacturing sector in Kenya. This will assist the Government with critical information that can be used in formulation of policies which would facilitate decision making when it comes to the adjustments of interest rates and the subsequent impact on various aspects of the economy including foreign exchange rates in the financial markets. The reduction of financial risk in the manufacturing companies in Kenya will lead to their growth hence growth in country's GDP.

1.5.3 Investors

The study will be useful to the current and prospective investors interested in the manufacturing companies listed at the Nairobi Securities Exchange. This study will enable them gain knowledge on financial risk and its impact on financial performance of the listed manufacturing companies. Investors may use the content of this study to make investment decisions.

1.5.4 Manufacturing Firms

The study will be useful to the manufacturing companies at large, both small and big companies. This will form a basis for strategy by the companies when it comes to financial risk management hence it will enhance good financial performance.

1.5.4 Researchers and Academicians

The study present valuable information on elements financial risk and financial risk management of manufacturing companies listed on the Nairobi Securities Exchange to the researchers and academicians. This will add to the extensive research that has been done on other industries.

The findings will act as reference to other researchers and academicians who would be interested in exploring further the effects of financial risk in manufacturing companies to be an area of interest in order to help the country achieving its vision 2030.

1.6 Scope of the Study

The study focused on large listed manufacturing and allied companies. The population of the study was the ten manufacturing and allied companies listed on Nairobi Security Exchange, see (Appendix III). The study used census sampling for its sample unit hence used all the ten manufacturing and allied companies listed on Nairobi Security Exchange. The study also used purposive sampling for respondents from the sample units who are in management level in either accounts or finance department. The study had a total number of 53 respondents as the sample size. The study aimed to collect views on financial risk management practice from management staff of these companies. The study used primary data by administering questionnaires in the month of June 2016 to the selected sample.

1.7 Definition of Terms

1.7.1 Risk

According to Crane, Gene, Isaacs, Jose, & Sharp (2013) risk can be defined as the chance of loss or an unfavorable outcome associated with an action. Risk refers to the probability of loss (Horcher, 2005).

1.7.2 Financial Risk

Financial risks is the risk of financial loss that relates to the financial operation of a business and takes many different forms, for example; currency risks, interest rate risks, credit risks, liquidity risks, cash flow risk, and financing risks (Woods & Dowd, 2008).

1.7.2 Financial Risk Management

According to Moles (2013) financial risk management is the activity of monitoring financial risks and managing their impact. Financial risk management is a sequence of four processes: the identification of events into one or more broad categories of market, credit, operational, and other risks and into specific subcategories; the assessment of risks using data and a risk model; the monitoring and reporting of the risk assessments on a timely basis; and the control of these risks by senior management (Alexander, 2005).

1.7.3 Practice

According to Jorion (2013), practice is a method, procedure, process, or rule used in a particular field or profession. A combination of these is regarded as standard.

1.7.4 Manufacturing

Manufacturing is the process of adding value to raw materials by turning them into finished products (Woods & Dowd, 2008).

1.8 Chapter Summary

This chapter has given the background information on financial risk in manufacturing companies in Kenya and the state of these companies in Kenyan economy. This chapter identified the knowledge gap in the study of financial risk in manufacturing companies in Kenya. The chapter has laid down the intended research purpose and research questions under which the study is to be done.

Chapter two of this study will remain on literature review of financial risk management practices in manufacturing companies. Chapter three will present the methodology adopted in this study comprising of the research design, the study population, data

collection, and data analysis methods. Subsequently, chapter four will present the results and analysis of findings. Chapter five will present discussion, conclusions and recommendations based on the findings and literature in the previous chapters.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to financial risk management practice that different companies have adopted. It highlights exchange rate risk, interest rate risk, commodity price risk and liquidity risk management practice of these companies. At the end of the chapter a summary of the literature review is made.

2.2 Exchange Rate Risk Management Practice in Manufacturing and Allied Companies

Before 1972 all countries currency had a fixed exchange rate relative to the USA dollar. Flexible exchange rate regime was introduced in 1972 and since then exchange rate fluctuations have been a big concern for investors, analyst, managers and shareholders (Osoro & Ogeto, 2014). The price of currencies is determined by supply and demand of the currency in the forex market due to the flexible exchange rate system. Supply and demand experience frequent changes that are influenced by numerous external and internal factors hence currency fluctuations. Companies are exposed to foreign exchange risk due to these fluctuations. Economies are becoming more open with international trade, hence companies become more exposed to foreign exchange rate fluctuations (Osoro & Ogeto, 2014).

Exchange rate risk can be defined as the possible direct loss or indirect loss in the firm's cash flows, assets and liabilities, net profit and, in turn, its stock market value from an exchange rate move (Papaioannou, 2010). Selecting the appropriate hedging strategy is often a tough task due to the complexities involved in measuring accurately current risk exposure and deciding on the appropriate degree of risk exposure that ought to be covered.

2.2.1 Types of Exchange Rate Risk

Companies are exposed to three types of foreign exchange risk: transaction exposure, translation exposure and economic exposure. They can also be exposed to foreign

exchange risk through commodity-based transactions where commodity prices are determined and traded in another currency and strategic exposure depending on the strategic location of the company (Horcher, 2005).

Transaction risk arises from the ordinary transactions of an organization, for example: purchases from suppliers and vendors, contractual payments in other currencies, royalties or license fees, and sales to customers in currencies other than the domestic currency. Transaction exposure generally impacts organizations that buy or sell products and services denominated in a foreign currency (Horcher, 2005)

According to Horcher (2005) transaction risk impacts an organization's profitability through the income statement and that management of this risk can be an important determinant of competitiveness in a global economy. There are few companies whose profitability is not affected, either directly or indirectly, by transaction risk.

Translation risk refers to fluctuations that result from the accounting translation of financial statements, thus: assets and liabilities on the balance sheet. This risk results wherever assets, liabilities, or profits are translated from the operating currency into a reporting currency, for example: the reporting currency of the parent company (Horcher, 2005).

Translation exposure also affects an organization by affecting the value of foreign currency balance sheet items, for example: accounts payable and receivable, foreign currency cash and deposits, and foreign currency debt. Longer-term assets and liabilities associated with foreign operations are likely to be impacted with translation exposure risk (Horcher, 2005).

According to Horcher (2005) foreign currency debt can also be considered as a source of translation exposure. The translation risk might come about if an organization borrows in a foreign currency but has no offsetting currency assets or cash flows hence increases in the value of the foreign currency against the domestic currency mean an increase in the translated market value of the foreign currency liability.

Commodities that are priced and traded internationally in U.S. dollars may indirectly result in foreign exchange exposure for non-U.S. organizations (commodity based

exposure). Even when purchases or sales are made in the domestic currency, exchange rates may be embedded in the commodity price. Suppliers of commodities are forced to pass along changes in the exchange rate to their customers or suffer losses themselves (Horcher, 2005).

2.2.2 Exchange Rate Monitoring and Evaluation

Some of the key internal and external factors that affect exchange rates include: interest rate differentials, expected inflation, trading activity in other currencies, international capital and trade flows, international institutional investor sentiment, financial and political stability, monetary policy and the central bank, domestic debt levels and economic fundamentals (Horcher, 2005).

Foreign exchange exposure might also be determined by the location and activities of major competitors to a company. An organization's competitive position is affected by strategic or economic exposure due to changes in exchange rates, for example: a firm whose domestic currency has appreciated dramatically may find its products are too expensive in international markets despite its efforts to reduce costs of production and minimize prices hence declining sales from international customers (Horcher, 2005).

2.2.3 Exchange Rate Risk Management

According to Papaioannou (2010) measuring and managing exchange rate risk exposure is important for reducing a firm's vulnerabilities from major exchange rate movements, which could adversely affect profit margins and the value of assets. Value-at-risk (VaR) model is the widely used method of measuring exchange rate risk while hedging is the widely used method of managing exchange rate risk.

Exchange rate risk management is an integral part in every firm's decisions about foreign currency exposure. Currency risk hedging strategies entail eliminating or reducing this risk, and require understanding of both the ways that the exchange rate risk could affect the operations of economic agents and techniques to deal with the consequent risk implications (Papaioannou, 2010).

According to Horcher (2005) a company can split the risk into currency and commodity components so as to assess both risks independently and determine an appropriate strategy for dealing with price and rate uncertainties, hence obtain the most efficient pricing. A company can also protect itself from this risk through fixed rate contracts that provide exchange rate protection if the exchange rate moves adversely.

According to Mutembei, Murage, and Wanjau (2014), in their study that looks at financial risk exposures facing financial firms, their hedging practices and challenges facing derivative use in Kenya, found out that Kenya is a net importer and foreign exchange fluctuation affects firms' pricing and production cost strategies. They concluded that Kenyan shilling exchange rate is volatile against major currencies exposing firms to exchange risks.

Mutembei, Murage, and Wanjau (2014), in the same study that looks at financial risk exposures facing financial firms, their hedging practices and challenges facing derivative use in Kenya, also found out that majority of the firms listed at the Nairobi Securities Exchange had not used derivative instruments: 66.7% had never used options and futures (52.8%). Swaps and forwards were the most used as only 48.6% and 34.3% respectively had never used the instruments.

According to Nzuki (2010), in his study of management of price risk using futures in oil companies in Kenya, established that firms in Kenya under-hedge their financial risks; that is, their hedging practices were below the industry optimal level. He also found that derivatives instruments used by Kenyan companies are the forward contracts and swaps. The least used derivative instrument was options which were used to foreign exchange exposure (3.7%) and interest rate exposure (7.4%).

Karp (2009) established that hedging activities in Kenya is low making shareholders lose billions of shillings owing to directors' failure to shop for appropriate hedging instruments or their poor choice of hedging strategies. Hedging strategies require understanding of both the ways that the exchange rate risk could affect the operations of the company and techniques to deal with the consequent risk implications. This study looked at exchange rate risk management practice used by managers in manufacturing and allied companies listed on the Nairobi Securities Exchange.

2.3 Interest Rate Risk Management Practice in Manufacturing and Allied Companies

Interest rate is the price the borrower pays for the use of money borrowed from the lender or financial institution, thus: fee paid for the use of borrowed assets. Interest rate risk is the exposure a firm has on its financial position due to fluctuations in interest rates. A firm's earnings, capital base changes and increase operating expenses can face significant threats due to excessive interest rate fluctuations. The underlying value of assets, liabilities and present value of future cash flows may also be affected by changes in interest rates (Osoro & Ogeto, 2014).

Cost of capital is majorly affected by the interest rate hence making it important to companies and governments. Most companies and governments carry out expansion and capital projects using debt. Interest rate has a significant impact on borrowers and prices in other financial markets (Horcher, 2005).

Interest rate risk is a form of financial risk that is concerned with the effect of movements in interest rates on the future financial performance of a firm and can manifest itself in four different ways. Variable interest rate debt may raise the funding cost for firms when interest rates rise and this may, in turn, affect their bottom line earnings. Yields on firms' interest-bearing investments will decline in a period of falling interest rates and cash-rich companies may find that declining interest rates prove costly to them. High levels of fixed-rate funding during periods of low, or declining, interest rates may result in an opportunity cost, where the companies with high fixed-rate debt pay a higher rate of interest than their counterparts with low floating-rate debt. A change in interest rates may adversely affect the demand patterns of some firms' products and, in turn, their operating cash flows, for example: luxury product manufacturers may find it more difficult to sell their products when interest rates are high (Dhanani, Fifield, Helliard, & Stevenson, 2008).

According to Horcher (2005) the following factors influence the level of market interest rates: expected levels of inflation, general economic conditions, monetary policy and the stance of the central bank, foreign exchange market activity, foreign investor demand for debt securities, levels of sovereign debt outstanding, financial and political stability.

2.3.1 Sources of Interest Rate Risk

Interest rate risk arises from the following sources: Changes in the level of interest rates (absolute interest rate risk), Changes in the shape of the yield curve (yield curve risk), Mismatches between exposure and the risk management strategies undertaken (basis risk) (Horcher, 2005).

Absolute interest rate risk results from the possibility of an up or down change in interest rates. Most organizations monitor absolute interest rate risk due to both its visibility and its potential of affecting profitability. Rising interest rates to a borrower might result in higher project costs and changes to financing or strategic plans, while a decline in interest rates to a lender results in lower interest income or inadequate return on investments held. The greater the duration the greater the impact of an interest rate change (Horcher, 2005).

Relationship changes between short and long-term interest rates result to yield curve risk. The yield curve has an upward-sloping shape in a normal interest rate environment. Longer-term interest rates are higher since they expose the lender to higher risk than shorter-term interest rates. The interest rate differential between maturities is caused by changes in the yield curve by either steepening or flattening, which can impact borrowing and investment decisions and therefore profitability (Horcher, 2005).

Basis risk is the risk when a hedge, for example: a derivatives contract does not move with the magnitude to offset the underlying exposure, hence it is a concern whenever there is a mismatch. Basis risk may occur when one hedging product is used as a proxy hedge for the underlying exposure. The basis may narrow or widen, thus: potential for gains or losses as a result. Where basis is the difference between the cash and futures price (narrow), the relationship between the two prices may change over time, impacting the hedge. Basis risk can also arise if prices are prevented from fully reflecting underlying market changes (Horcher, 2005).

2.3.2 Interest Rate Risk Management

Companies can change the funding structure by using financial derivatives and, in particular, interest rate swaps. Interest rate swaps enable companies to switch fixed-rate funding for floating-rate funding and vice versa, as well as changing the pricing interval

and payment dates. More sophisticated instruments, such as interest rate swaptions, are now also available whereby companies can purchase the right (but not the obligation) to convert fixed-rate cashflows into floating-rate cashflows (and vice versa) (Dhanani, Fifield, Helliari, & Stevenson, The management of interest rate risk: evidence from UK companies, 2008).

According to Dhanani, Fifield, Helliari, and Stevenson (2008) the management of interest rate risk has gained prominence in the corporate sector of UK firms for four reasons: interest rate volatility in the UK has increased considerably in recent years, there has been a dramatic increase in the use of corporate debt (increasingly, firms are using shorter-term borrowing facilities in place of equity), financial institutions now often use interest rate-based covenants in their funding arrangements with corporates, finally the emphasis on financial risk in recent corporate governance codes such as the Cadbury report and the Turnbull report has increased the transparency of corporate risk and risk management practices to the external market which has, in turn, necessitated a more professional approach within companies.

Companies manage their interest rate risk by making policy decisions about an acceptable level of gearing and an appropriate level of fixed-to-floating rate debt. Both corporate gearing levels and fixed-to-floating rate debt ratios contribute significantly to the overall level of risk encountered by companies and these decisions will affect the ability of companies to manage interest rate (Dhanani, Fifield, Helliari, & Stevenson, 2008).

Companies can use various analytical models such as duration analysis, gap analysis and value-at-risk (VaR) to assess their net interest rate exposures and take account of the impact of movements in interest rates on their liabilities, assets and cashflow streams. These techniques seek to aggregate the exposures associated with assets and liabilities over time to determine net exposures. Companies can then choose from a variety of interest rate derivative products to manage their interest rate risk, including interest rate swaps, interest rate futures and forwards, interest rate options, caps and floors (Dhanani, Fifield, Helliari, & Stevenson, 2008).

According to Dhanani, Fifield, Helliari, and Stevenson (2008), in their study that examined the interest rate risk management practices of UK-listed companies, found that interest rate

risk was of significant concern to all companies, with changes in interest rates potentially affecting the overall interest charge and, in turn, the level and volatility of corporate cashflows as well as accounting-based reported profits. Companies also recognized the opportunity cost associated with high levels of fixed-rate debt. This cost was recognized in terms of a competitive disadvantage during periods of favourable movements in interest rates and also in terms of a higher overall charge.

Dhanani, Fifield, Helliard, and Stevenson (2008), in the same study that examined the interest rate risk management practices of UK-listed companies, also found that companies engaged in interest rate risk management in order to protect shareholder funds, bank covenants and corporate credit ratings. Some companies sought to manage their interest rate risk in order to reduce the risk of financial distress arising from high-corporate leverage while others are concerned with their credit ratings and lowering their cost of capital for shareholders' advantage.

Finally, Dhanani, Fifield, Helliard, and Stevenson (2008), in their study that examined the interest rate risk management practices of UK-listed companies, they concluded that interest rate risk is important to UK companies and that their hedging strategies are geared towards managing profits and cash flows and protecting their banking covenants and corporate credit ratings. Companies change their fixed-to-floating rate debt ratio to manage some of their risk and consider a variety of factors when setting their interest rate risk policy. Companies rely extensively on financial derivatives to manage their interest rate risk although the formal reporting and control systems that companies adopt to monitor derivatives activity often need to be strengthened. Finally they found out that some companies are in favour of the more stringent reporting requirements, while others fear that this new standard may curb managerial practices.

According to Ngalawa and Ngare (2014) in their study which sought to establish the exposure to interest rate risk among commercial banks in Kenya, found from the sample of banks investigated that a 2% change in the market interest rates would result to a change in income equivalent to 0.4% of total assets of the bank. This study was to fill that gap in manufacturing and allied companies and show the exposure of interest rate risk in manufacturing and allied companies listed on the Nairobi Securities Exchange.

2.4 Commodity Price Risk Management Practice in Manufacturing and Allied Companies

Physical commodity prices are influenced by supply and demand, the value of commodities is also affected by attributes, for example: physical quality and location. Commodity supply is a function of production and may be reduced if problems with production or delivery occur. If consumers are able to obtain substitutes at a lower cost demand for commodities may be affected. Supply or cost issues may also cause a major shift in consumer taste over the long term (Horcher, 2005).

The number of commodity prices in the world is overwhelming, especially if variation in commodity quality and location are taken into account. Some method of classification and simplification is indicated before commodity price characteristics can be identified, for example; standard complex classifications employed by the derivative security industry can be used. These classifications focus on sectors of commodity production: the agriculture complex; the energy complex; and the metals complex (Poitras, 2013).

2.4.1 Commodity Price Risk Monitoring and Evaluation

Commodity prices may be affected by the following factors: expected levels of inflation, interest rates, exchange rates, general economic conditions, costs of production and ability to deliver to buyers, availability of substitutes and shifts in taste and consumption patterns, political stability (Horcher, 2005).

Commodity price risk has been influenced by the failure of international efforts such as lack of stabilization of funds and lack of international commodity agreements in stemming commodity price fluctuations. Loss of safety nets due to global free trade and changes in domestic production policy have only added to this vulnerability (Kang & Mahajan, 2006).

Price volatility on export producers in Kenya is much greater than it is for those in developed economies, as they rely heavily on a few commodities for their export earnings, leaving them very vulnerable to commodity price shocks (Khosla, 2012).

Fast Moving Consumer Goods companies are always under pressure as they keep facing a lot of competition from their fellow competitors although they generate a large volume of sales and money. Due to this, these companies try to do their level best in maintaining a fine balance in their profits and the product price. Thus they keep facing new challenges on their margins month after month (Nyaga, 2014).

Producers in much of the developing world are exposed to highly volatile commodity revenues. A range of methods have been tried to either reduce this exposure, for example; through compensatory schemes and production/export controls, or to better manage it, for example; through stabilization funds or market-based risk management mechanisms (Rutten & Youssef, 2007).

This risk occurs when there is potential for changes in the price of a commodity that must be purchased or sold. Commodity exposure can also arise from non-commodity business, for example: inputs or products and services have a commodity component. Manufacturers, governments, processors, and wholesalers are affected by commodity price risk. If commodity prices rise, the cost of commodity purchases increases, reducing profit from transactions (Horcher, 2005).

Fluctuations in world commodity prices and terms of trade are the most important external shocks that would affect macroeconomic performance and external balances of developing countries. For commodity-dependent countries, debt servicing is also closely linked to commodity prices. Commodity risk management has the potential of simplifying governments' budgetary planning, improving budgetary control, and avoiding the need for crisis management due to unforeseen revenue shortfalls (Kang & Mahajan, 2006).

According to Kang and Mahajan (2006), price volatility can be devastating in a macro-perspective since more than 50 developing countries depend on three or fewer leading commodities, such as coffee, sugar cane, cotton, wheat and maize, for at least half their export earnings. The prices earned on international commodity markets impact the government's fiscal revenue, public expenditure, foreign reserves and its creditworthiness, and are thus of prime importance to the domestic economy.

According to Horcher (2005) if commodity prices decline, the revenues from production also fall, reducing business income hence a price risk to commodity producers. Commodity prices may be set by local buyers and sellers in the domestic currency in order to facilitate local customer business, but when transactions are conducted in the domestic currency for a commodity traded in another currency, for example: U.S. dollars, the exchange rate will be a component of the total price for the commodity, and the currency exposure continues to be a consideration.

Mutembei, Murage, and Wanjau (2014), in their study that looks at financial risk exposures facing financial firms, their hedging practices and challenges facing derivative use in Kenya, established that Kenyan firms incur most of their input in foreign currencies which occasionally led to exported inflation which affects the commodity prices; hence commodity price risks.

Businesses that produce, transport and consume commodities require real assets to conduct these activities hence they require capital investments in hard assets. There is a fundamental connection between the speculative element in commodity risk management and the associated capital investment decision problem because the expected return on such investments will depend on commodity prices. This permits commodity market participants to be segmented according to the degree of participation in the underlying commodity cash market while with financial markets, a functional distinction is made between intermediaries—depository institutions, investment banks, asset management companies—and end users, the lenders and borrowers using financial products that are relatively costless to produce, transport and consume (Poitras, 2013).

2.4.2 Commodity Price Risk Management

Commodity exchange is a financial market where different groups of participants trade commodity-linked contracts, with the underlying objective of either trading the commodity or transferring exposure of commodity price risks. Organized commodity futures exchanges have existed for more than a century (Kang & Mahajan, 2006).

Commodity derivatives are contracts where the underlying asset is a commodity. Most of these contracts trade on organized exchanges. These include; commodity options,

commodity futures, and commodity swaps that are contracts used to hedge against the price of a commodity. Hedging is a strategy to reduce large substantial losses that may occur (Khosla, 2012).

According to Khosla (2012), the major benefits of commodity derivative trading are; risk reduction and redistribution, where risk is transferred amongst market participants and price discovery due to the introduction of commodity derivatives into any market is expected to increase information flows in that market. Market-based mechanisms entail shifting risks to entities in a better position and more willing to bear them.

The hedging and price discovery functions of futures markets promote more efficient production, storage, marketing, financing, and overall commodity marketing performance (Adanacioglu, 2011). The futures market can be a means of risk management for the agricultural sector. It provides protection from price risk, it presents possibility of flexibility to participants in that transactions can be opened or closed at any time, and it creates an objective environment for the spot market because it is completely open.

According to Khosla (2012) commodity futures markets has beneficial role in risk management and price discovery. This feature makes it very beneficial for the Kenyan producers and exporters. A commodity futures market enables risk transfer amongst producers and other market participants. By entering into futures contracts, producers can effectively set the price that they will receive for their produce at a future date. This enables the producers make prudent decisions on the whole production process ranging from the cost of production to the final quantity produced. This should ultimately lead to less dissatisfaction and increased productivity.

Many institutional portfolio managers have added commodity derivatives as an asset class to their portfolios. This is to increase diversification in their portfolios away from only equity and include more varied asset types such as derivative securities. This includes commodity futures which are used to hedge against equity risk, as a result of negative correlation between returns on equity and return in commodity futures. Commodity derivatives' trading has increased alongside rapid expansion in trading in all major derivative markets. This is a result of the low interest rate environments and the search by both institutional and individual investors for higher yields (Khosla, 2012).

2.5 Liquidity Risk Management Practice in Manufacturing and Allied Companies

Liquidity risk refers to uncertainty regarding the ability of a firm to unwind a position at little or no cost. Liquidity risk also relates to the availability of sufficient funds to meet financial commitments when they fall due (Woods & Dowd, 2008). Liquidity risk impacts all markets, for example: it affects the ability to purchase or sell a security or obligation, either for hedging purposes or trading purposes, or alternatively to close out an existing position (Horcher, 2005).

2.5.1 Liquidity Risk Monitoring and Evaluation

Ogilo and Leonard (2015) in their paper that sought to establish the determinants of liquidity risk for commercial banks in Kenya found that capital adequacy had a positive effect on liquidity risk while liquid assets ratio, ownership type, size and leverage had a negative influence on liquidity risk. They also found out that individually capital adequacy and leverage were significant determinants of liquidity risk. Liquid assets ratio, ownership type and size of the commercial bank were not significant determinants of liquidity risk for commercial banks in Kenya, but capital adequacy, liquid asset ratio, ownership type size and leverage taken together were significant determinants of liquidity risk.

The market liquidity risk and the funding liquidity risk are the two main areas in liquidity risk. Financial instruments in the financial market greatly influence market liquidity risk. Market liquidity risk may be due to inadequate market depth, market disruption or the inability of the company to access the market. The funding liquidity risk is related to solvency (possibility that a company may be unable to meet its funding requirements to finance its assets). It also includes the obligation of a company to make payments to third parties. An entity is liquid as long as inflows are bigger or at least equal to outflows (Iqbal, 2012).

Indicators of liquidity include the number of financial institutions active in the market, average bid/ask spreads, trading volumes, and price volatility. Liquidity risk can also be the risk that an organization has insufficient liquidity to maintain its day-to-day operations. Liquidity issues may require decisions that are detrimental to long-term growth if short-

term cash is insufficient while revenues and sales may be sufficient for long-term growth (Horcher, 2005).

According to Claire, Murray, and Rosenthal (2000), unexpected demand for liquidity may be triggered by: a credit rating downgrade, negative publicity (whether justified or not), deterioration of the economy, or reports of problems of other companies in the same or similar lines of business. Other random fluctuations in demand for liquidity and certain company-specific characteristics can amplify liquidity risk, for example; a single or a few contract holders control large sums of money (policies or contracts), the size of the company may limit access to capital markets, immediate demands on cash, unpredictable deferred or deferrable demands on cash, insufficient ability to borrow short-term through bank lines of credit and commercial paper, lack of diversity in either the liability or the asset portfolio when analyzed by product, region, industry or creditor.

2.5.2 Liquidity Risk Management

The process of liquidity management begins with the stipulation of liquidity management policies by the board of directors as guidance for all entities in the organization. The policies contain specific goals and objectives of managing liquidity, including the short-term and long-term strategies of managing liquidity. The policies determine the roles and responsibilities of the bodies involved in the liquidity management process, including asset and liability management policies, and the relationship with other financial institutions and regulators (Kimathi, Mugo, Njeje, & Otieno, 2015).

Liquidity risk management can be broken into three levels; Day-to-day cash management which involves controlling day-to-day cash flow variability by balancing cash positions and lines of credit. Ongoing/intermediate term cash flow management which involves ongoing cash needs over the next six to twenty-four months. It involves analysis of cash inflows and outflows. Ongoing liquidity management tools can include restructuring or fine-tuning the portfolio, for example; renegotiating the terms of large liabilities or assets, selling more or fewer of selected products, diversifying where possible, and changing the investment strategy if needed. Stress liquidity risk management involves the ability of the company to meet the demands of many policy/contract holders for cash over a short period (Claire, Murray, & Rosenthal, 2000).

Once liquidity risk has been adequately assessed at all levels, management may decide to take appropriate steps toward minimizing its exposure to liquidity risk. Some possible actions that a company can take while it is operating normally in order to reduce the liquidity risk are; cash flow match, diversify assets, diversify liabilities, ladder liability maturities, back surplus/capital with liquid assets, establish a durable line of credit, issue commercial paper, and use repurchase agreements (Claire, Murray, & Rosenthal, 2000).

Kimathi, Mugo, Njeje, and Otieno (2015), in their study that sought to find factors affecting liquidity risk management practices in microfinance institutions in Kenya made a number of findings. Their first objective of the study was to assess the internal control systems in place for the management of liquidity risks in microfinance institutions. Majority of the microfinance institutions staff were of the opinion that the internal control systems in place were adequate to address liquidity risks. The second objective of the study sought to know whether there were internal mechanisms to ensure strict adherence to the liquidity risk management policies. The findings revealed the presence of conducive internal environment which ensures strict adherence to the liquidity risk management policies in place. The third objective of the study sought to determine whether the microfinance institutions had provisions for the review to determine whether their organizations complied with the liquidity risk management policies and procedures in place. The findings showed that majority of the microfinance institution staffs were in agreement that their organizations ensured that there were periodic reviews on organizations compliance with its liquidity risk policies and procedures.

Management information system is designed to provide the board of directors, senior management and other appropriate personnel with timely information on the liquidity position of the bank being an important element of the liquidity management framework, Kimathi, Mugo, Njeje, and Otieno (2015) study sought to establish the information systems for real time processing and transmission of data on the various determinants of liquidity position of microfinance institutions. The information systems in place were rated moderate, with 61.4% of the respondents agreeing that their systems provided real time information on the liquidity position of their organizations, however, 25.3% disagreed.

Kimathi, Mugo, Njeje, and Otieno (2015), study also sought to know whether the internal audit department included in their audits the liquidity risk management process. Majority of the respondents, 59.0% agreed that the periodic review by the internal audit department also included the evaluation of the liquidity risk management process to identify any weaknesses or problems in the system. Internal control charter is key in internal control systems, therefore the study sought to establish whether microfinance institutions in Kenya have internal control charters. The staff identified that indeed there were internal control charters in 71.1% of the organization surveyed however 28.9% of the staff indicated that their microfinance institutions did not have internal control charters.

Liquidity Preference theory states that short term bonds are more favorable than long term bonds. Investors prefer short term bonds to long-term securities because such securities are more liquid. They can be converted to cash with little danger of loss of principal. On the other hand borrowers prefer long term debt because short-term debt exposes them to the risk of having to repay the debt under adverse conditions. Borrowers are willing to pay higher rate, other things held constant for long-term process than short term ones (Kimathi, Mugo, Njeje, & Otieno, 2015). Liquidity preference determines which mix of assets and liabilities is acceptable to each individual agent or an institution. Liquidity preferences will show the collection of assets an organization chooses, their market values and its collection of liabilities.

Assets have different degrees of liquidity. Custom designed assets and assets such as limited partnerships may not be readily marketable. Even assets that are technically liquid, such as corporate bonds, may not be immediately liquid when one is trying to sell billions of dollars of assets within a few days. Further, due to interest rate increases or credit deterioration of the bond issuer, assets may have to be sold at less than book value or what in normal circumstances would be fair value. Some assets that appear on the balance sheet are not even available for sale (Claire, Murray, & Rosenthal, 2000).

The inventory theory of capital and liquidity buffer argue that it is costly for companies to keep a stock of liquid assets but may also be beneficial as it reduces the probability of running out of cash. Profitability is improved for companies that hold some liquid assets; however, beyond a certain point holding further liquid assets diminishes a company's profitability. This argument is in line with the idea that the opportunity cost of holding

low-return assets eventually outweighs the benefit of any increase in the company's liquidity. However there are benefits to holding more liquid assets when economic conditions deteriorate (Ogilo & Leonard, 2015).

2.6 Chapter Summary

This chapter of literature review has discussed on the research done by other scholars in line with financial risk management practices. This chapter highlighted exchange rate risk, interest rate risk, commodity price risk and liquidity risk management practices by companies. Previous works have not particularly touched on financial risk management practices in manufacturing firms but have concentrated on financial industry. It is important that this study highlights it in this research. Chapter three will present the research design, population of study, data collection, and data analysis methods.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter will focus on how the study will be carried out. It will present the research design methodology and procedures in order to find the solutions to the research questions in chapter one. It will indicate the research design that will be used, the population of the study, the size of sample, the sources of data, the procedure of data collection and the analysis of data, and method of data presentation.

3.2 Research Design

A descriptive research design was used in this study to collect and analyze data. Descriptive research design portrays an accurate profile of persons, events or situations (Sanders, Lewis, & Thornhill, 2009). Descriptive research helps to determine and report the way things are and attempts to describe such things as possible behavior, attitudes, values and characteristics (Mugenda and Mugenda, 2003). Descriptive research design was appropriate for this study, since the study intended to collect detailed information through descriptions and identify variables.

Descriptive research design was most appropriate since this study intended to obtain self-reported information from the manufacturing and allied companies' employees on financial risk management practices in their companies. This research design was also chosen since it would give patterns and trends in manufacturing companies concerning financial risk management practices that they adopt. The study used primary data, where questionnaires were distributed to respondents from the selected sample units. This data helped to show the trends and patterns of financial risk management practices in manufacturing companies hence the relevance of descriptive research design in this study.

3.3 Population and Sampling

3.3.1 Population

Population is the total collection of elements which the researcher wishes to make some inference (Cooper & Schindler, 2008). The population of this study consisted of the ten manufacturing and allied companies listed on the Nairobi Securities Exchange, see (Appendix III). Cooper and Schindler (2008), describe target population as the focus the researcher wants to generalize the result of the study. This study examined the practice of financial risk management in the ten listed manufacturing and allied companies as its target population since this are big companies, easily accessible and can give a clear picture of financial risk management in the manufacturing sector.

3.3.2 Sampling Design

3.3.2.1 Sampling Frame

Sampling is the process of selecting some of the elements in a population so that we may draw a conclusion about the entire population (Cooper & Schindler, 2008). Sample frame is the list of the entire population from which a sample of elements will be drawn (Cooper & Schindler, 2008). For this study, the sampling frame took into account all the ten manufacturing and allied companies listed on the Nairobi Security Exchange, see (Appendix III).

3.3.2.2 Sampling Technique

Sampling technique is the elementary selection method of elements from the population that will stand on behalf that population (Cooper & Schindler, 2008). The objective, nature, and scope of the study are factors that determine a particular technique to be used. This study used a two-step sampling technique involving census and purposive sampling. Census sampling technique was used to sample the study unit since the population is small and manageable for this study. From the study unit, purposive sampling was used to get the respondents. Purposive sampling is a sampling technique in which the researcher relies on his or her own judgment when choosing members of population to participate in the study (Cooper & Schindler, 2008). The respondents were purposively selected from

finance or accounts department who are in management level since they are the main people involved in financial decisions in organizations.

3.3.2.3 Sample Size

This is the selection of a subset of individuals from within a population to yield some knowledge about the whole population, especially for the purposes of making predictions based on statistical inference (Barratt, 2009). The study purposively selected respondents who are in management level either in finance or accounts department from the study units. These respondents were served with questionnaires to give their individual response. The managers in either finance or accounts department were selected since they have sound knowledge of financial activities of their companies. The sample size was determined using the Yamane's formula;

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample size

N = Population size

E = Level of precision (10%)

Therefore N = 115, e = 10%

$$\text{Thus: } \frac{115}{1 + 115(0.1)^2} = 53$$

Table 3.1: Sampling Distribution

Company Name	Population in Finance and Accounts department	Sample Size
B.O.C Kenya Limited	10	5
British American Tobacco Kenya Limited	13	6
Carbacid Investments Limited	9	4
East African Breweries Limited	14	7
Mumias Sugar Co. Limited	15	7
Unga Group Limited	12	5
Eveready East Africa Limited	10	5
Kenya Orchards Limited	11	5
A.Baumann Co. Limited	13	6
Flame Tree Group Holdings Limited	6	3
Total	115	53

3.4 Data Collection Methods

Cooper and Schindler (2008) define data as the facts presented to the researcher from the study's environment. Data collection refers to the technique through which a researcher collects information to be used for a study. This information can either be primary or secondary collected using various methods. In this research project, primary data collection method was considered. Primary information was collected from the listed manufacturing and allied companies by use of questionnaires to permanent employees who work in either accountants or finance department in the company.

Selection of the respondents was based on purposive sampling targeting specific employees. The study selected employees of either accounts or finance department due to their sound knowledge of financial activities of their firms. The data by the respondents was captured by the use of questionnaires. The views by all respondents was taken into consideration and recorded for analysis. All the respondents were issued questionnaires to fill and a five point likert scale was used to provide their ratings based on their conclusions. The respondents also answered semi-structured questions within the same documents that were analyzed to provide the respondents views on specific area of the study.

The questionnaire was structured into five sections. The respondents were supposed to provide background information in the first section. The second section was to collect information on exchange rate risk management practice in manufacturing and allied companies. The third, fourth and fifth sections were to collect information on interest rate risk, commodity price risk and liquidity risk management practice in manufacturing and allied companies respectively.

3.5 Research Procedure

A pilot study was done to allow pre-testing of the research instrument and make the researcher familiar with the research and its administration procedure as well as identify items that require modification. The result helped the researcher to correct inconsistencies arising from the instruments i.e. ensured that it measure what was intended. The pilot

study was conducted on five respondents selected randomly who work in the accounts or finance department.

The researcher sought the opinions of experts in the field of study so as to establish the efficiency of the research instrument hence facilitate the necessary revision and modification of the research instrument. The pilot study helped to project output for the main study besides highlighting any necessary adjustments to the questionnaire.

After the pilot study the main survey followed. The questionnaires were administered through drop and pick method and to get a favorable response rate, the respondents were given one week to fill-in the questionnaires owing to their busy work schedule and the need to obtain objective response. The researcher made phone calls and personal visits where necessary to remind the respondents to fill-in and return the questionnaires.

3.6 Data Analysis Methods

Analyzing information involves examining it in ways that will reveal the patterns, trends and relationships that can be identified within it. This may mean subjecting it to statistical operations that can tell you the level of trust the answers one is getting, in addition to the relationships that seem to exist among the variables (Milstein & Wetterhall, 2000).

Descriptive statistics was used for data analysis in this study hence considering percentages, mean and standard deviation for the analysis of the quantitative data. Regression statistics was also considered to show the relationship between financial risk management policies, monitoring and evaluation practice and financial risk management techniques in exchange rate risk, interest rate risk, commodity price risk and liquidity risk management. The basic multiple regression equation used on every research question was;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon$$

Where: Y = Financial risk management technique

X1 = Financial risk management policies

X2 = Monitoring and evaluation practice

SPSS version 20 was used to provide the findings on exchange rate risk, interest rate risk, commodity price risk and liquidity risk management practices in manufacturing and allied companies. The findings were presented using tables and figures so as to make it easy to read the research findings.

3.7 Chapter Summary

The chapter has dealt with research methodologies that will help the researcher in gathering and analyzing data in respect to the research questions. The chapter has discussed the research design that was appropriate for this study. The population has been identified hence the sample and sampling techniques has been arrived to. The data collection and analysis methods that suite the study have been identified. Chapter four will present the findings and analysis and show the results for this study.

CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter will present the results and findings of the study with specific focus on the research questions while making use of the data collected from the respondents. The first section will present some of the background information of the respondents while the second section will present findings on exchange rate risk management practice. The third and fourth sections will provide findings on interest rate risk and commodity price risk management practice respectively. The last section will present findings on liquidity risk management practice. A total of forty four responses were received which represents 83% of the total sample size.

Table 4.1: Respondents Response Rate

Response Rate	Distribution	
	Frequency	Percentage
Questionnaires Issued	53	100
Questionnaires Returned	44	83

4.2 Background Information

The study sought to establish background information because it enables understanding of the logic of the responses issued by the respondents of each respective manufacturing firm. The variables included respondents department, length of employment in the organization, the department that deals with financial risk management in the organization and documentation of financial risk management policy in the organization.

4.2.1 Respondent's Department

Figure 4.1 presents the study finding regarding the departments in which the different respondents work in the manufacturing firms. The study sought to establish the department in which the respondent's work. The findings of the study revealed that 72.7% of the

respondents were from the finance department while 27.3% of the respondents were from the accounts department. Employees from such departments deal with financial risk management or similar roles in their course of work, they could be said to have some knowledge on financial risk management practice in their companies.

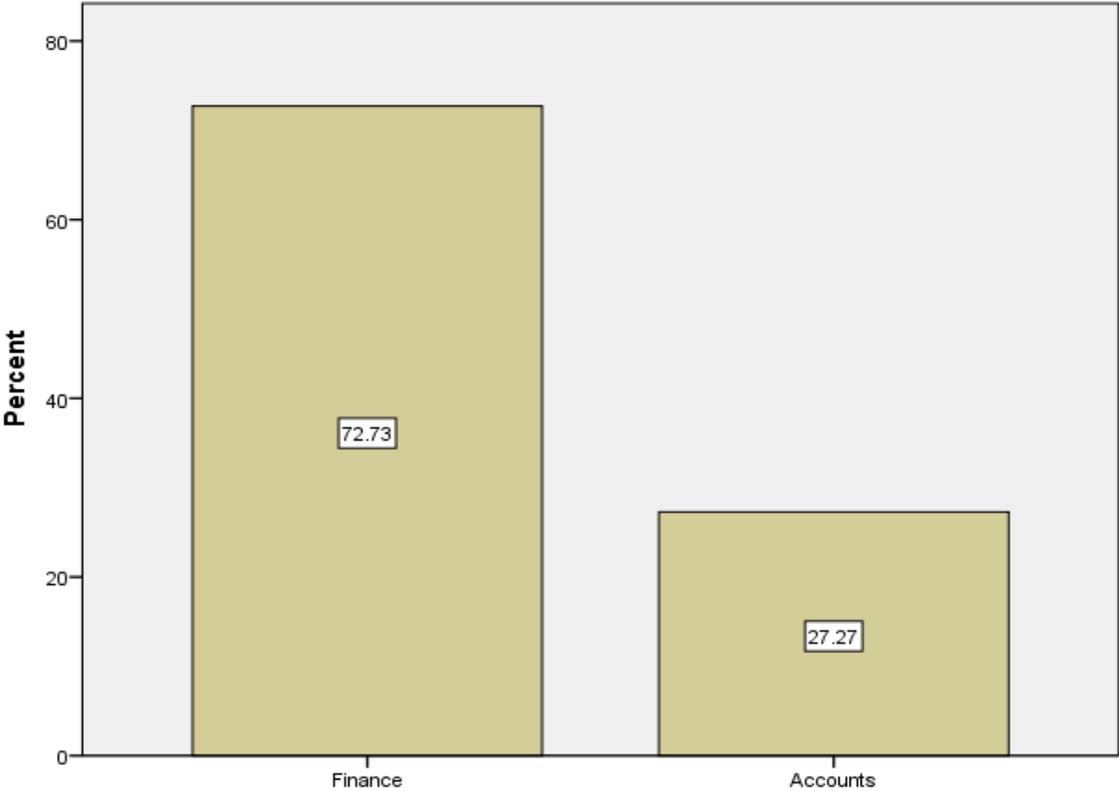


Figure 4.1: Respondent’s Department

4.2.2 Length of Employment of the Respondents in the Organization

Figure 4.2 presents the study finding regarding the number of years worked by different respondents in the manufacturing firms. The study revealed that 40.9% of the respondents have 4 to 6 years of employment in their organization. 25% of the respondents have 7 to 9 years of employment in their organization. 20.5% of the respondents have 1 to 3 years of employment in their organization. Only 13.6% of the respondents had over 10 years of employment in their organization. Thus majority of the respondents have stayed in their organization for more than three years hence they might have some knowledge on financial risk management practice in their companies.

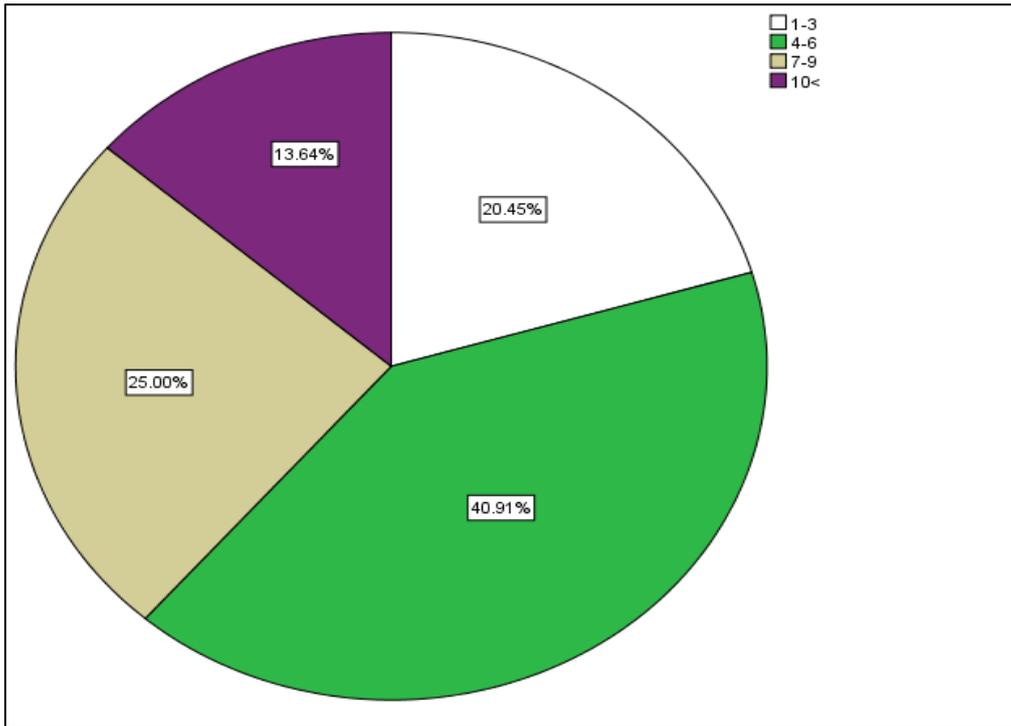


Figure 4.2: Respondent's duration of working in the organization (Years)

4.2.3 Department that Deals With Financial Risk Management

Table 4.2 presents the study finding regarding the department that deals with financial risk management in the manufacturing firms. The study revealed that 100% of the respondents said that the finance department deals with financial risk management in their organizations.

Table 4.2: Department that deals with financial risk management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Finance	44	100.0	100.0	100.0

4.2.4 Documentation of Financial Risk Management policy

Figure 4.3 presents the study finding regarding the documentation of financial risk management policy in the manufacturing firms. The study revealed that 93.2% of the respondents agreed that their companies have a documented financial risk management

policy while 6.8% of the respondents did not know if their companies had a documented financial risk management policy.

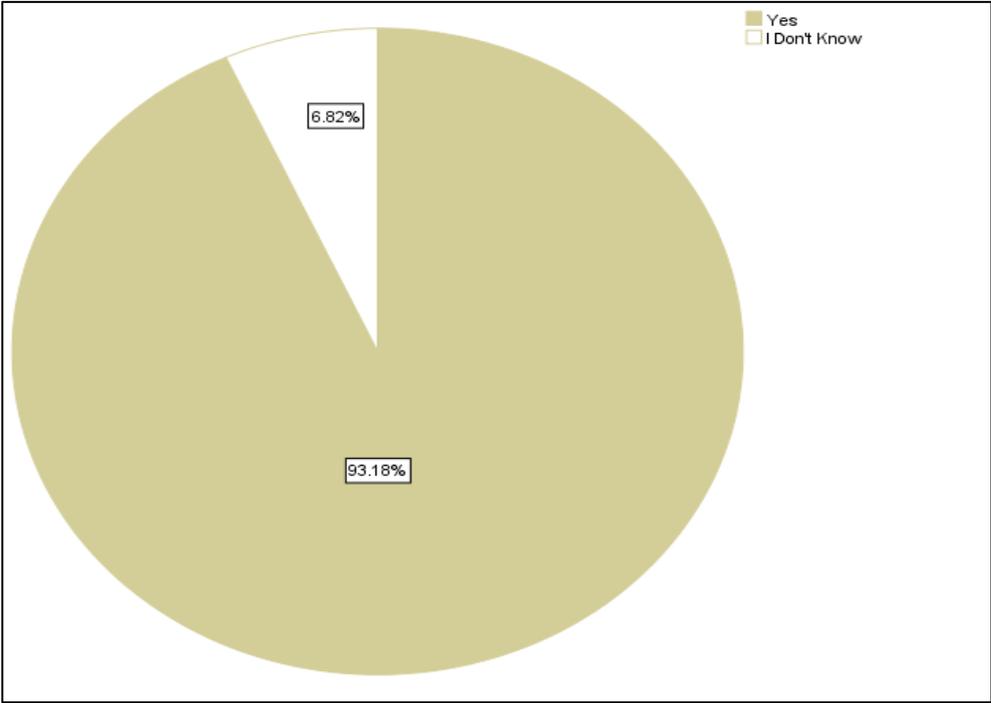


Figure 4.3: Documentation of financial risk management policy

4.3 Exchange Rate Risk Management Practice in Manufacturing and Allied Companies

The first objective of the study was to establish exchange rate risk management practice in manufacturing companies listed on the NSE. The following sub-sections present summaries of the findings while making considerations on the various features of exchange rate risk management practice.

4.3.1 Policies

Table 4.3 presents the study finding regarding policies on exchange rate risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation. According to the results in table 4.3, 61.4% of the respondents agreed that their companies have specific policies on exchange rate risk management while 36.4% strongly agreed and 2.3% were uncertain.

54.5% of the respondents agreed that roles and responsibilities for exchange rate risk management are clearly defined in their organization while 38.6% strongly agreed and 6.8% were uncertain. 61.4% of the respondents agreed that their companies adhered to the exchange rate risk management policies in place while 31.8% strongly agreed and 6.8% were uncertain. 54.5% of the respondents strongly agreed that employees are properly trained on exchange rate risk management policies of their firm while 43.2% agreed and 2.3% were uncertain. 52.3% of the respondents strongly agreed that their companies periodically reviewed the exchange rate policies while 40.9% agreed and 6.8% were uncertain.

Generally from the means, the results show that employees in the listed manufacturing companies agree that they are properly trained on the specific exchange rate risk management policies of their companies and that the manufacturing companies periodically review these policies. The exchange rate risk management policies clearly define roles and responsibilities and the listed manufacturing companies adhere to these policies.

Table 4.3: Policies on exchange rate risk management

Exchange Rate Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. The company has specific policies on exchange rate risk management.	0	0	2.3	61.4	36.4	4.34	0.53
2. Roles and responsibilities for exchange rate risk management are clearly defined.	0	0	6.8	54.5	38.6	4.32	0.6
3. The company adheres to the exchange rate risk management policies in place.	0	0	6.8	61.4	31.8	4.25	0.58
4. Employees are properly trained on exchange rate risk management policies of the firm.	0	0	2.3	43.2	54.5	4.52	0.55
5. The company periodically reviews the exchange rate policies	0	0	6.8	40.9	52.3	4.45	0.63

4.3.2 Monitoring and Evaluation

Table 4.4 presents the study finding regarding monitoring and evaluation on exchange rate risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.4, 72.7% of the respondents strongly agreed that monitoring and evaluation of exchange rate risk is supported by senior management while 25% agreed and 2.3% were uncertain. 56.8% of the respondents agreed that their companies had hedging strategies to reduce or eliminate exchange rate risk while 15.9% strongly agreed and 27.3% were uncertain. 65.9% of the respondents agreed that foreign exchange fluctuation affected their company's pricing and production cost strategies while 31.8% strongly agreed and 2.3% were uncertain. 45.5% of the respondents agreed that their companies have controls in place to evaluate the efficiency of the exchange rate risk program while 38.6% strongly agreed and 15.9% were uncertain. 52.3% of the respondents strongly agreed that their companies did regular reviews on exchange rate risk management and a report made to senior management while 40.9% agreed and 6.8% were uncertain.

Generally from the means, the results show that senior management of the listed manufacturing companies support monitoring and evaluation of exchange rate risk and regular reviews of exchange rate risk management are made and reported to them. Though the manufacturing companies have controls in place to evaluate the efficiency of exchange rate risk management program, the companies fail to have hedging strategies in their program that entail reducing or eliminating exchange rate risk.

Table 4.4: Monitoring and evaluation on exchange rate risk management

Exchange Rate Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. Exchange rate risk monitoring and evaluation is supported by senior management.	0	0	2.3	25	72.7	4.7	0.51
2. The company has hedging strategies that entail reducing and eliminating exchange rate risk.	0	0	27.3	56.8	15.9	3.89	0.66
3. Foreign exchange fluctuation affects firms' pricing and production cost strategies.	0	0	2.3	65.9	31.8	4.3	0.51
4. Controls are in place to evaluate the efficiency of exchange rate risk management program.	0	0	15.9	45.5	38.6	4.23	0.71
5. Regular reviews of exchange rate risk management are made and reported to senior management.	0	0	6.8	40.9	52.3	4.45	0.63

4.3.3 Hedging Technique

Table 4.5 presents the study finding on the usage of hedging techniques in managing exchange rate risk in manufacturing firms. The information was collected on a 5 point ranking scale, where; 1-Don't use, 2-Very rare, 3-Rare, 4-Frequent, 5-Very frequent. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.5, 61.4% of the respondents said their companies frequently use forwards to manage exchange rate risk while 27.3% said they rarely use forwards and 11.4% said they don't use forwards. 59.1% of the respondents said they rarely used futures to manage exchange rate risk in their company while 18.2% said they frequently used futures. 11.4% of the respondents said they don't use futures to manage exchange rate risk while 11.4% said they very rarely use futures. 52.3% of the respondents said they frequently use swaps to manage exchange rate risk in their companies while 36.4% said they rarely use swaps and 11.4% said they don't use swaps. 56.8% of the

respondents said they rarely use options to manage exchange rate risk in their companies while 29.5% said they frequently used options and 9.1% said they don't use options.

Generally from the means, the results show that most of the listed manufacturing companies frequently use forwards to manage exchange rate risk. Futures is very rarely used to manage exchange rate risk.

Table 4.5: Usage of hedging techniques on exchange rate risk management

Hedging Technique	Don't Use (%)	Very Rare (%)	Rare (%)	Frequent (%)	Very Frequent (%)	Mean	Std. Deviation
Forwards	11.4	0	27.3	61.4	0	3.39	0.97
Futures	11.4	11.4	59.1	18.2	0	2.84	0.86
Swaps	11.4	0	36.4	52.3	0	3.3	0.95
Options	9.1	0	56.8	29.5	4.5	3.2	0.9

4.3.4 Regression Test of Policies, Monitoring and Evaluation and Hedging Technique in Exchange Rate Risk Management.

The regression test was done to establish the effect of policies, monitoring and evaluation on the use of hedging technique in managing exchange rate risk in manufacturing firms. The results are discussed in the following sections.

The model summary table shows R square as 0.196. This shows that exchange rate risk management policies and exchange rate risk monitoring and evaluation practice affects the use of hedging technique by 19.6% in listed manufacturing companies.

Table 4.6: Model Summary; Policies, Monitoring and Evaluation and Hedging Technique

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.443 ^a	.196	.157	.73811
a. Predictors: (Constant), Exchange rate risk monitoring and evaluation, Exchange rate risk management policies				

The Analysis of Variance (ANOVA) table shows the F value as 5.01 at a significance level of 0.011, meaning the test statistic is significant at that level. This shows that exchange rate risk management policies and exchange rate risk monitoring and evaluation practice have a statistical significance effect on the use of hedging technique in listed manufacturing companies at 95% confidence level.

Table 4.7: ANOVA; Policies, Monitoring and Evaluation and Hedging Technique

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.458	2	2.729	5.010	.011 ^b
	Residual	22.337	41	.545		
	Total	27.795	43			

a. Dependent Variable: Hedging Technique
b. Predictors: (Constant), Exchange rate risk monitoring and evaluation, Exchange rate risk management policies

The coefficient table shows a t statistics value of 2.7, $p=0.010$ for exchange rate risk management policies. This shows that at 95% confidence level, the influence of exchange rate risk management policies on the use of hedging technique in manufacturing companies is significant. The results mean that a unit change in exchange rate risk management policies influence the use of hedging technique by 0.914 units. The coefficient table also shows a t statistics value of -2.887, $p=0.006$ for exchange rate risk monitoring and evaluation practice. This shows that the influence of exchange rate risk monitoring and evaluation practice on the use of hedging technique in manufacturing companies is significant, hence a unit change in exchange rate risk monitoring and evaluation influences the use of hedging technique by -1.12 units.

Table 4.8: Coefficients; Policies, Monitoring and Evaluation and Hedging Technique

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	4.011	1.487		2.698	.010	1.009	7.013
Exchange rate risk management policies	.914	.338	.458	2.700	.010	.230	1.597
Exchange rate risk monitoring and evaluation	-1.120	.388	-.489	-2.887	.006	-1.903	-.336

a. Dependent Variable: Hedging Technique

4.4 Interest Rate Risk Management Practice in Manufacturing and Allied Companies

The second objective of the study was to establish interest rate risk management practice in manufacturing companies listed on the NSE. The following sub-sections present summary of the findings while making considerations on the various features of interest rate risk management practice.

4.4.1 Policies

Table 4.9 presents the study finding regarding policies on interest rate risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.9, 72.7% of the respondents agreed that their companies have specific policies on interest rate risk management while 25% strongly agreed and 2.3% were uncertain. 50% of the respondents agreed that roles and responsibilities for interest rate risk management are clearly defined in their organization while 43.2%

strongly agreed and 6.8% were uncertain. 47.7% of the respondents strongly agreed that their companies adhered to the interest rate risk management policies in place while 45.5% agreed and 6.8% were uncertain. 61.4% of the respondents agreed that employees are properly trained on interest rate risk management policies of their firm while 25% strongly agreed and 13.6% were uncertain. 50% of the respondents strongly agreed that their companies periodically reviewed the interest rate policies while 43.2% agreed and 6.8% were uncertain.

Generally from the means, the results show that employees in the listed manufacturing companies are properly trained on the specific interest rate risk management policies of their companies and that the manufacturing companies periodically review these policies. The interest rate risk management policies clearly define roles and responsibilities and the listed manufacturing companies adhere to these policies.

Table 4.9: Policies on interest rate risk management

Interest Rate Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. The company has specific policies on interest rate risk management.	0	0	2.3	72.7	25	4.23	0.48
2. Roles and responsibilities for interest rate risk management are clearly defined.	0	0	6.8	50	43.2	4.36	0.61
3. The company adheres to the interest rate risk management policies in place.	0	0	6.8	45.5	47.7	4.41	0.62
4. Employees are properly trained on interest rate risk management policies of the firm.	0	0	13.6	61.4	25	4.11	0.62
5. The company periodically reviews the interest rate policies	0	0	6.8	43.2	50	4.43	0.63

4.4.2 Monitoring and Evaluation

Table 4.10 presents the study finding regarding monitoring and evaluation on interest rate risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.10, 56.8% of the respondents strongly agreed that monitoring and evaluation of interest rate risk is supported by senior management while 40.9% agreed and 2.3% were uncertain. 59.1% of the respondents agreed that their companies have a mechanism for transferring interest rate risks to third parties while 38.6% were uncertain and 2.3% strongly disagreed. 45.5% of the respondents agreed that interest rate fluctuation affected their company's production operations while 40.9% were uncertain, 11.4% strongly agreed and 2.3% strongly disagreed. 50% of the respondents agreed that their companies have controls in place to evaluate the efficiency of the interest rate risk management program while 31.8% were uncertain and 18.2% disagreed. 47.7% of the respondents strongly agreed that their companies did regular reviews on interest rate risk management and a report made to senior management while 34.1% agreed and 18.2% were uncertain.

Generally from the means, the results show that senior management of the listed manufacturing companies support monitoring and evaluation of interest rate risk and regular reviews of interest rate risk management are made and reported to them. The manufacturing companies have weak mechanisms of transferring interest rate risk to third parties hence low controls are in place to evaluate this weak interest rate risk management program.

Table 4.10: Monitoring and evaluation on interest rate risk management

Interest Rate Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. Interest rate risk monitoring and evaluation is supported by senior management.	0	0	2.3	40.9	56.8	4.55	0.55
2. The company has a mechanism for transferring interest rate risks to third parties.	2.3	0	38.6	59.1	0	3.55	0.63
3. Interest rate fluctuation affects the company's production operations.	2.3	0	40.9	45.5	11.4	3.64	0.78
4. Controls are in place to evaluate the efficiency of interest rate risk management program.	0	18.2	31.8	50	0	3.32	0.77
5. Regular reviews of interest rate risk management are made and reported to senior management.	0	0	18.2	34.1	47.7	4.3	0.77

4.4.3 Hedging Technique

Table 4.11 presents the study finding on the usage of hedging techniques in managing interest rate risk in manufacturing firms. The information was collected on a 5 point ranking scale, where; 1-Don't use, 2-Very rare, 3-Rare, 4-Frequent, 5-Very frequent. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.11, 75% of the respondents said their companies rarely use forwards to manage interest rate risk while 13.6% said they frequently use forwards and 11.4% said they don't use forwards. 34.1% of the respondents said they rarely use futures to manage interest rate risk in their company while 34.1% said they very rarely used futures. 20.5% of the respondents said they frequently use futures to manage interest rate risk while 11.4% said they don't use futures. 84.1% of the respondents said they rarely use swaps to manage interest rate risk in their companies while 4.5% said they very rarely use swaps and 11.4% said they don't use swaps. 38.6% of the respondents said they

rarely use options to manage interest rate risk in their companies while 22.7% said they frequently and very rarely used options, 11.4% said they don't use options.

Generally from the means, the results show that most of the listed manufacturing companies rarely use forwards and options to manage interest rate risk. The least used hedging techniques by these companies are futures and swaps.

Table 4.11: Usage of hedging techniques on interest rate risk management

Hedging Technique	Don't Use (%)	Very Rare (%)	Rare (%)	Frequent (%)	Very Frequent (%)	Mean	Std. Deviation
Forwards	11.4	0	75	13.6	0	2.91	0.77
Futures	11.4	34.1	34.1	20.5	0	2.64	0.94
Swaps	11.4	4.5	84.1	0	0	2.73	0.66
Options	11.4	22.7	38.6	22.7	4.5	2.86	1.05

4.4.4 Regression Test of Policies, Monitoring and Evaluation and Hedging Technique in Interest Rate Risk Management.

The regression test was done to establish the effect of policies, monitoring and evaluation on the use of hedging technique in managing interest rate risk in manufacturing firms. The results are discussed in the following sections.

The model summary table shows R square as 0.078. This shows that interest rate risk management policies and interest rate risk monitoring and evaluation practice affects the use of hedging technique by 7.8% in listed manufacturing companies.

Table 4.12: Model Summary; Policies, Monitoring and Evaluation and Hedging Technique

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.278 ^a	.078	.033	.73021
a. Predictors: (Constant), Interest rate risk monitoring and evaluation, Interest rate risk management policies				

The Analysis of Variance (ANOVA) table shows the F value as 1.723 at a significance level of 0.041, meaning the test statistic is significant at that level. This shows that interest rate risk management policies and interest rate risk monitoring and evaluation practice have a statistical significance effect on the use of hedging technique in listed manufacturing companies at 95% confidence level.

Table 4.13: ANOVA; Policies, Monitoring and Evaluation and Hedging Technique

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.838	2	.919	1.723	.041 ^b
Residual	21.861	41	.533		
Total	23.699	43			

a. Dependent Variable: Hedging Technique
b. Predictors: (Constant), Interest rate risk monitoring and evaluation, Interest rate risk management policies

At 95% confidence level the coefficient table shows a t statistics value of 1.148, p=0.038 for interest rate risk management policies and a t statistic value of 1.053, p=0.029 for interest rate risk monitoring and evaluation practice. This shows that the influence of interest rate risk management policies, monitoring and evaluation on the use of hedging technique in manufacturing companies are both significant. The results mean that a unit change in interest rate risk management policies influence the use of hedging technique by 0.323 units and a unit change in interest rate risk monitoring and evaluation influences the use of hedging technique by 0.429 units.

Table 4.14: Coefficients; Policies, Monitoring and Evaluation and Hedging Technique

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-.267	1.684		-.159	.045	-3.668	3.133
Interest rate risk management policies	.323	.281	.180	1.148	.038	-.245	.890
Interest rate risk monitoring and evaluation	.429	.408	.165	1.053	.029	-.394	1.253

a. Dependent Variable: Hedging Technique

4.5 Commodity Price Risk Management Practice in Manufacturing and Allied Companies

The third objective of the study was to establish commodity price risk management practice in manufacturing companies listed on the NSE. The following sub-sections present a summary of the findings while making considerations on the various features of commodity price risk management practice.

4.5.1 Commodity Pricing

Table 4.15 presents the study finding regarding commodity pricing on commodity price risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.15, 59.1% of the respondents strongly agreed that competition greatly influenced pricing in their companies while 15.9% agreed and were uncertain, 4.5% disagreed and strongly disagreed. 45.5% of the respondents strongly

agreed that their companies have effective pricing and production cost strategies while 43.2% agreed and 11.4% were uncertain. 52.3% of the respondents agreed that liberalization of diversification influenced commodity pricing in their companies while 29.5% strongly agreed, 13.6% were uncertain and 4.5% disagreed.

Generally from the means, the results show that most of the listed manufacturing companies have effective pricing and production strategies, competition highly influences pricing in some manufacturing companies than in others. Majority of the listed manufacturing companies agree that liberalization of diversification has influence on their commodity pricing.

Table 4.15: Commodity pricing on commodity price risk management

Commodity Price Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. Competition greatly influences the company's pricing.	4.5	4.5	15.9	15.9	59.1	4.2	1.15
2. The company has effective pricing and production cost strategies.	0	0	11.4	43.2	45.5	4.34	0.68
3. Liberalization of diversification influences commodity pricing.	0	4.5	13.6	52.3	29.5	4.07	0.79

4.5.2 Policies

Table 4.16 presents the study finding regarding policies on commodity price risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.16, 72.7% of the respondents strongly agreed that their companies have specific policies on commodity price risk management while 25% agreed and 2.3% were uncertain. 75% of the respondents agreed that roles and responsibilities for commodity price risk management are clearly defined in their organization while 20.5% strongly agreed and 4.5% were uncertain. 50% of the respondents agreed that their

companies adhered to the commodity price risk management policies in place while 47.7% strongly agreed and 2.3% were uncertain. 81.8% of the respondents agreed that employees are properly trained on commodity price risk management policies of their firm while 11.4% strongly agreed and 6.8% were uncertain.

Generally from the means, the results show that employees in the listed manufacturing companies agreed that they are properly trained on the specific commodity price risk management policies of their companies. They also strongly agreed that commodity price risk management policies clearly define roles and responsibilities and the listed manufacturing companies adhere to these policies.

Table 4.16: Policies on commodity price risk management

Commodity Price Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. The company has specific policies on commodity price risk management.	0	0	2.3	25	72.7	4.7	0.51
2. Roles and responsibilities for commodity price risk management are clearly defined.	0	0	4.5	75	20.5	4.16	0.48
3. The company adheres to the commodity price risk management policy in place.	0	0	2.3	50	47.7	4.45	0.55
4. Employees are properly trained on commodity price risk management policies of the firm.	0	0	6.8	81.8	11.4	4.05	0.43

4.5.3 Monitoring and Evaluation

Table 4.17 presents the study finding regarding monitoring and evaluation on commodity price risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.17, 52.3% of the respondents strongly agreed that monitoring and evaluation of commodity price risk is supported by senior management while 45.5% agreed and 2.3% were uncertain. 56.8% of the respondents agreed that their

companies split risk into currency and commodity components so as to assess both risks independently while 40.9% were uncertain and 2.3% strongly disagreed. 70.5% of the respondents agreed that their companies have controls in place to evaluate the efficiency of the commodity price risk management program while 27.3% strongly agreed and 2.3% were uncertain. 52.3% of the respondents strongly agreed that their companies did regular reviews on commodity price risk management and a report made to senior management while 45.5% agreed and 2.3% were uncertain.

Generally from the means, the results show that most of the employees in the listed manufacturing companies agree that commodity price risk monitoring and evaluation is supported by senior management and that regular review of commodity price risk management are made and reported to them. The employees are however uncertain if their companies split risk into currency and commodity components so as to assess both risks independently.

Table 4.17: Monitoring and evaluation on commodity price risk management

Commodity Price Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. Commodity price risk monitoring and evaluation is supported by senior management.	0	0	2.3	45.5	52.3	4.5	0.55
2. The company splits risk into currency and commodity components so as to assess both risks independently.	2.3	0	40.9	56.8	0	3.52	0.63
3. Controls are in place to evaluate the efficiency of commodity price risk management program.	0	0	2.3	70.5	27.3	4.25	0.49
4. Regular reviews of commodity price risk management are made and reported to senior management.	0	0	2.3	45.5	52.3	4.5	0.55

4.5.4 Hedging Technique

Table 4.18 presents the study finding on the usage of hedging techniques in managing commodity price risk in manufacturing firms. The information was collected on a 5 point ranking scale, where; 1-Don't use, 2-Very rare, 3-Rare, 4-Frequent, 5-Very frequent. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.18, 56.8% of the respondents said their companies frequently use forwards to manage commodity price risk while 31.8% said they rarely use forwards and 11.4% said they don't use forwards. 40.9% of the respondents said they frequently use futures to manage commodity price risk in their company while 36.4% said they rarely used futures. 11.4% of the respondents said they very rarely and don't use futures to manage commodity price risk. 61.4% of the respondents said they rarely use swaps to manage commodity price risk in their companies while 22.7% said they very rarely use swaps and 11.4% said they don't use swaps. 31.8% of the respondents said they rarely use options to manage commodity price risk in their companies while 25% and 22.7% said they frequently and very rarely used options respectively, 11.4% said they don't use options.

Generally from the means, the results show that most of the listed manufacturing companies rarely use forwards and futures to manage commodity price risk. The companies very rarely use options and swaps to manage commodity price risk.

Table 4.18: Usage of hedging techniques on commodity price risk management

Hedging Technique	Don't Use (%)	Very Rare (%)	Rare (%)	Frequent (%)	Very Frequent (%)	Mean	Std. Deviation
Forwards	11.4	0	31.8	56.8	0	3.34	0.96
Futures	11.4	11.4	36.4	40.9	0	3.07	0.99
Swaps	11.4	22.7	61.4	4.5	0	2.59	0.76
Options	11.4	22.7	31.8	25	9.1	2.98	1.15

4.5.5 Regression Test of Commodity Pricing, Policies, Monitoring and Evaluation and Hedging Technique in Commodity Price Risk Management.

The regression test was done to establish the effect of commodity pricing, policies, monitoring and evaluation on the use of hedging technique in managing commodity price risk in manufacturing firms. The results are discussed in the following sections.

The model summary table shows R square as 0.274. This shows that commodity pricing, commodity price risk management policies and commodity price risk monitoring and evaluation practice affects the use of hedging technique by 27.4% in listed manufacturing companies.

Table 4.19: Model Summary; Policies, Monitoring and Evaluation and Hedging Technique

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.523 ^a	.274	.219	.72162
a. Predictors: (Constant), Commodity price risk monitoring and evaluation, Commodity pricing on commodity price risk management, Commodity price risk management policies				

The Analysis of Variance (ANOVA) table shows the F value as 5.029 at a significance level of 0.005, meaning the test statistic is significant at that level. This shows that commodity pricing, commodity price risk management policies and commodity price risk monitoring and evaluation practice have a statistical significance effect on the use of hedging technique in listed manufacturing companies at 95% confidence level.

Table 4.20: ANOVA; Commodity Pricing, Policies, Monitoring and Evaluation and Hedging Technique

Model	Sum of Squares	df	Mean Square	F	Sig.
1					
Regression	7.857	3	2.619	5.029	.005 ^b
Residual	20.829	40	.521		
Total	28.686	43			
a. Dependent Variable: Hedging Technique					
b. Predictors: (Constant), Commodity price risk monitoring and evaluation, Commodity pricing on commodity price risk management, Commodity price risk management policies					

At 95% confidence level the coefficient table shows a t statistics value of -3.458, $p=0.001$ for commodity pricing, a t statistics of -2.248, $p=0.030$ for commodity price risk management policies and a t statistic value of 2.451, $p=0.019$ for commodity price risk monitoring and evaluation practice. This shows that the influence of commodity pricing, commodity price risk management policies, monitoring and evaluation on the use of hedging technique in manufacturing companies are significant. The results mean that a unit change in commodity pricing influences the use of hedging technique by -0.7 units. A unit change in commodity price risk management policies influence the use of hedging technique by -0.935 units and a unit change in commodity price risk monitoring and evaluation influences the use of hedging technique by 1.313 units.

Table 4.21: Coefficients; Commodity Pricing, Policies, Monitoring and Evaluation and Hedging Technique

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	4.491	1.519		2.958	.005	1.422	7.560
Commodity pricing on commodity price risk management	-.700	.202	-.544	-3.458	.001	-1.109	-.291
Commodity price risk management policies	-.935	.416	-.419	-2.248	.030	-1.775	-.094
Commodity price risk monitoring and evaluation	1.313	.535	.512	2.451	.019	.230	2.395

a. Dependent Variable: Hedging Technique

4.6 Liquidity Risk Management Practice in Manufacturing and Allied Companies

The fourth objective of the study was to establish liquidity risk management practice in manufacturing companies listed on the NSE. The following sub-sections present a summary of the findings while making considerations on the various features of liquidity risk management practice.

4.6.1 Internal Control Systems

Table 4.22 presents the study finding regarding internal control systems on liquidity risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.22, 65.9% of the respondents agreed that their companies have effective information system that support the liquidity management

process while 31.8% strongly agreed and 2.3% were uncertain. 43.2% of the respondents strongly agreed that their companies have internal mechanisms to ensure strict adherence to the liquidity risk management policies while 40.9% agreed and 15.9% were uncertain. 68.2% of the respondents agreed that the information system in their companies are effective in transmission of real time data on the liquidity position while 29.5% strongly agreed and 2.3% were uncertain. 63.6% of the respondents agree that employees are properly trained to handle the information systems in their companies while 34.1% strongly agreed and 2.3% were uncertain.

Generally from the means, the results show that most of the employees of listed manufacturing companies agree that their companies have effective information systems that support the liquidity management process. They also agree that the information system is effective in transmission of real time data on liquidity position and that they are properly trained to handle the information system.

Table 4.22: Internal control system on liquidity risk management

Liquidity Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. The company has effective information system that supports the liquidity management process.	0	0	2.3	65.9	31.8	4.3	0.51
2. The company has internal mechanisms to ensure strict adherence to the liquidity risk management policies.	0	0	15.9	40.9	43.2	4.27	0.73
3. The information system is effective in transmission of real time data on the liquidity position.	0	0	2.3	68.2	29.5	4.27	0.5
4. Employees are properly trained to handle the information system.	0	0	2.3	63.6	34.1	4.32	0.52

4.6.2 Policies

Table 4.23 presents the study finding regarding policies on liquidity risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1- Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.23, 56.8% of the respondents agreed that their companies have specific policies on liquidity risk management while 40.9% strongly agreed and 2.3% were uncertain. 59.1% of the respondents agreed that roles and responsibilities for liquidity risk management are clearly defined in their organization while 38.6% strongly agreed and 2.3% were uncertain. 59.1% of the respondents agreed that their companies adhered to the liquidity risk management policies in place while 11.4% strongly agreed and 29.5% were uncertain. 86.4% of the respondents agreed that employees are properly trained on liquidity risk management policies of their firm while 11.4% strongly agreed and 2.3% were uncertain.

Generally from the means, the results show that employees in the listed manufacturing companies agreed that they are properly trained on the specific liquidity risk management policies of their companies. They also agreed that liquidity risk management policies clearly define roles and responsibilities but they were uncertain if their companies adhered to the liquidity risk management policy in place.

Table 4.23: Policies on liquidity risk management

Liquidity Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. The company has specific policies on liquidity risk management.	0	0	2.3	56.8	40.9	4.39	0.54
2. Roles and responsibilities for liquidity risk management are clearly defined.	0	0	2.3	59.1	38.6	4.36	0.53
3. The company adheres to the liquidity risk management policy in place.	0	0	29.5	59.1	11.4	3.82	0.62
4. Employees are properly trained on liquidity risk management policies of the firm.	0	0	2.3	86.4	11.4	4.09	0.36

4.6.3 Monitoring and Evaluation

Table 4.24 presents the study finding regarding monitoring and evaluation on liquidity risk management in manufacturing firms. The information was collected on a 5 point likert scale, where; 1-Strongly disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly agree. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.24, 77.3% of the respondents strongly agreed that monitoring and evaluation of liquidity risk is supported by senior management while 20.5% agreed and 2.3% were uncertain. 36.4% of the respondents were uncertain that their companies' maintained sufficient cash flow to meet maturing financial obligations while 31.8% agreed, 18.2% strongly agreed and 13.6% disagreed. 45.5% of the respondents agreed that their companies have controls in place to evaluate the efficiency of the liquidity risk management program while 18.2% strongly agreed and 36.4% were uncertain. 52.3% of the respondents agreed that regular reviews of liquidity risk management are made and reported to senior management while 45.5% strongly agreed and 2.3% were uncertain. 45.5% of the respondents were uncertain that the internal audit included the liquidity risk management process in their audits while 36.4% agreed, 13.6% strongly agreed and 4.5% disagreed.

Generally from the means, the results show that most of the employees in the listed manufacturing companies agree that liquidity risk monitoring and evaluation is supported by senior management and that regular review of liquidity risk management are made and reported to them. The employees are however uncertain if their companies maintain sufficient cash flow to meet maturing financial obligations, controls are in place to evaluate the efficiency of liquidity risk management program and the internal audit includes in their audits the liquidity risk management process.

Table 4.24: Monitoring and evaluation on liquidity risk management

Liquidity Risk Management	Strongly Disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
1. Liquidity risk monitoring and evaluation is supported by senior management.	0	0	2.3	20.5	77.3	4.75	0.49
2. The company maintains sufficient cash flow to meet maturing financial obligations.	0	13.6	36.4	31.8	18.2	3.55	0.95
3. Controls are in place to evaluate the efficiency of liquidity risk management program.	0	0	36.4	45.5	18.2	3.82	0.72
4. Regular reviews of liquidity risk management are made and reported to senior management.	0	0	2.3	52.3	45.5	4.43	0.55
5. The internal audit department includes in their audits the liquidity risk management process.	0	4.5	45.5	36.4	13.6	3.59	0.79

4.6.4 Liquidity Management Technique

Table 4.25 presents the study finding on the usage of certain liquidity management techniques in managing liquidity risk in manufacturing firms. The information was collected on a 5 point ranking scale, where; 1-Don't use, 2-Very rare, 3-Rare, 4-Frequent, 5-Very frequent. The data was analyzed through percentages, mean and standard deviation.

According to the results in table 4.25, 43.2% of the respondents said their companies rarely use cash flow match to manage liquidity risk while 36.4% said frequently, 13.6% said very frequently and 4.5% said very rarely. 54.5% of the respondents said they rarely use diversified assets to manage liquidity risk in their company while 31.8% said they frequently, 11.4% said very frequently and 2.3% said they don't use. 65.9% of the respondents said they rarely use diversified liabilities to manage liquidity risk in their companies while 20.5% said frequently, 11.4% said very frequently and 2.3% said they don't use. 56.8% of the respondents said they frequently use ladder liability maturities to manage liquidity risk in their companies while 25% said rarely, 15.9% said very rarely and 2.3% said they don't use. 52.3% of the respondents said they very rarely use derivatives to manage liquidity risk while 11.4% said they don't use and 18.2% said they rarely and frequently used derivatives.

Generally from the means, the results show that most of the listed manufacturing companies rarely use cash flow match, diversified assets, diversified liabilities and ladder liability maturities to manage liquidity risk. The companies very rarely use derivatives to manage liquidity risk.

Table 4.25: Usage of liquidity management techniques on liquidity risk management

Liquidity Management Technique	Don't Use (%)	Very Rare (%)	Rare (%)	Frequent (%)	Very Frequent (%)	Mean	Std. Deviation
Cash Flow Match	0	4.5	43.2	36.4	13.6	3.6	0.79
Diversified Assets	2.3	0	54.5	31.8	11.4	3.5	0.79
Diversified Liabilities	2.3	0	65.9	20.5	11.4	3.39	0.78
Ladder Liability Maturities	2.3	15.9	25	56.8	0	3.36	0.84
Derivatives	11.4	52.3	18.2	18.2	0	2.43	0.93

4.6.5 Regression Test of Internal Control Systems, Policies, Monitoring and Evaluation and Liquidity Management Techniques in Liquidity Risk Management.

The regression test was done to establish the effect of internal control systems, policies, monitoring and evaluation on the use of liquidity management technique in managing liquidity risk in manufacturing firms. The results are discussed in the following sections.

The model summary table shows R square as 0.465. This shows that internal control systems, liquidity risk management policies and liquidity risk monitoring and evaluation practice affects the use of liquidity management technique by 46.5% in listed manufacturing companies.

Table 4.26: Model Summary; Internal Control Systems, Policies, Monitoring and Evaluation and Liquidity Management Technique

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.682 ^a	.465	.425	.40676
a. Predictors: (Constant), Liquidity risk management monitoring and evaluation, Liquidity risk management policies, Internal control systems on liquidity risk management				

The Analysis of Variance (ANOVA) table shows the F value as 11.581 at a significance level of 0.000, meaning the test statistic is significant at that level. This shows that internal control systems, liquidity risk management policies and liquidity risk monitoring and evaluation practice have a statistical significance effect on the use of liquidity management technique in listed manufacturing companies at 95% confidence level.

Table 4.27: ANOVA; Internal Control Systems, Policies, Monitoring and Evaluation and Liquidity Management Technique

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.748	3	1.916	11.581	.000 ^b
	Residual	6.618	40	.165		
	Total	12.366	43			
a. Dependent Variable: Liquidity Management Technique						
b. Predictors: (Constant), Liquidity risk management monitoring and evaluation, Liquidity risk management policies, Internal control systems on liquidity risk management						

At 95% confidence level the coefficient table shows a t statistics value of 1.121, p=0.049 for internal control system, a t statistics of -4.827, p=0.000 for liquidity risk management policies and a t statistic value of 1.106, p=0.045 for liquidity risk monitoring and

evaluation practice. This shows that internal control systems, liquidity risk management policies, monitoring and evaluation practices have a significant influence on the use of liquidity management technique in manufacturing companies. The results mean that a unit change in internal control systems influences the use of liquidity management technique by 0.266 units. A unit change in liquidity risk management policies influence the use of liquidity management technique by -0.953 units and a unit change in liquidity risk monitoring and evaluation influence the use of liquidity management technique by 0.226 units.

Table 4.28: Coefficients; Internal Control Systems, Policies, Monitoring and Evaluation and Liquidity Management Technique

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	5.178	.887		5.840	.000	3.386	6.969
Internal control systems on liquidity risk management	.266	.237	.227	1.121	.049	-.214	.746
Liquidity risk management policies	-.953	.197	-.613	-4.827	.000	-1.353	-.554
Liquidity risk management monitoring and evaluation	.226	.205	.215	1.106	.045	-.187	.640

a. Dependent Variable: Liquidity Management Technique

4.7 Chapter Summary

In this chapter the researcher has provided the results of the study with regards to the information issued by the respondents. The data gathered was analyzed using descriptive statistics and regression analysis. The first section provides the results about the respondent's

background, which is followed by exchange rate risk management practice. This was followed by interest rate risk management practice, commodity price risk and finally liquidity risk management practice in listed manufacturing companies. The study findings revealed that indeed financial risk management practice in listed manufacturing companies influence the use of hedging technique and liquidity management technique. The next chapter will outline the summary, discussions, recommendations and conclusions made from the study.

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a discussion of the findings in chapter four, and also relates the findings to the concepts and frameworks discussed in chapter two then draws conclusion based on the discussions and makes recommendations. This chapter begins with a summary of the study. The discussions then follow based on the study objectives and conclusions drawn in view of the discussions. In the end the chapter makes recommendations for improvements and suggestions for further research.

5.2 Summary

The purpose of the study was to examine financial risk management practice in manufacturing and allied companies listed on the Nairobi Securities Exchange. The study was guided by the following research questions: What is the exchange rate risk management practice in manufacturing and allied companies? What is the interest rate risk management practice in manufacturing and allied companies? What is the commodity price risk management practice in manufacturing and allied companies? What is the liquidity risk management practice in manufacturing and allied companies?

A descriptive research design was utilized to examine and explore descriptive characteristics of several variables of interest. The target population comprised of the ten manufacturing and allied companies listed on the Nairobi Securities Exchange. The study sample frame comprised of a list of key employees in finance/ accounts department of the selected manufacturing and allied companies. Primary data was collected through the use of questionnaires. The data was analyzed using descriptive and regression statistics and the results organized according to the research questions. The findings were presented using tables and figures.

According to the study, majority of the respondents agreed that listed manufacturing companies have exchange rate risk management policies that define roles and responsibilities. They also agreed that employees are properly trained on this policies and

that senior management support in exchange rate risk monitoring and evaluation. The respondents were however uncertain if listed manufacturing companies have hedging strategies to reduce or eliminate exchange rate risk hence the low rankings in the use of hedging techniques in managing exchange rate risk. Forwards is frequently used at 61.4% to manage exchange rate risk while futures, swaps and options are rarely used. Generally exchange rate risk management policies, monitoring and evaluation practice have an influence on the use of hedging technique at 19.6%.

Based on the study, majority of the respondents also agreed that listed manufacturing companies have interest rate risk management policies that define roles and responsibilities. They also agreed that employees are properly trained on this policies and that senior management support in interest rate risk monitoring and evaluation. Majority of the respondents were uncertain if their companies have mechanisms of transferring interest rate to third parties and if there are controls to evaluate the efficiency of this program. Generally all hedging techniques are very rarely used in managing interest rate risk. Interest rate risk management policies, monitoring and evaluation practice have an influence on the use of hedging technique at 7.8%.

On commodity price risk management, most of the respondents agreed that listed manufacturing companies have effective pricing and production cost strategies that consider competition and diversification. They also agreed that their companies have commodity price risk management policies that define roles and responsibilities. They agreed that employees are properly trained on this policies and that senior management support in commodity price risk monitoring and evaluation. Majority of the respondents were uncertain if their companies split risk into currency and commodity so as to assess both of them independently. Generally forwards and futures are rarely used in managing commodity price risk while swaps and options are very rarely used. Commodity pricing, commodity price risk management policies, monitoring and evaluation practice have an influence on the use of hedging technique by 27.4%.

Based on the research, majority of the respondents agreed that listed manufacturing companies have effective information systems that support liquidity risk management through transmission of real time data on the liquidity position. They also agreed that their companies have liquidity risk management policies that define roles and responsibilities.

They agreed that employees are properly trained on this policies and that senior management support in liquidity risk monitoring and evaluation. Majority of the respondents were uncertain if their companies maintain sufficient cash flow to meet maturing financial obligations hence they are uncertain if their companies adhere to the liquidity risk management policies in place. Generally cash flow match, diversified assets, diversified liabilities, and ladder liability maturities are rarely used in managing liquidity risk while derivatives are very rarely used. Internal control systems, liquidity risk management policies, monitoring and evaluation practice have an influence on the use of liquidity management technique by 46.5%.

5.3 Discussion

This section weighs the research findings against the findings of previous studies in literature review, were the research findings have been considered and discussed against the research questions of the study.

5.3.1 Exchange Rate Risk Management Practice in Manufacturing Companies

The study sought to establish exchange rate risk management practice in listed manufacturing companies by considering certain aspects of exchange rate risk management policies, monitoring and evaluation and the use of hedging technique in managing this risk. 65.9% of the respondents agreed and 31.8% strongly agreed that foreign exchange fluctuations affected their companies pricing and production cost strategies. This is in line with Osoro and Ogeto (2014), who say that exchange rate fluctuations are a big concern for investors, analysts, managers and shareholders. They add that companies are exposed to foreign exchange risk due to fluctuations in price of currencies in the forex market and due to international trade.

Senior management support in exchange rate risk monitoring and evaluation and having an efficient exchange rate risk management program are important in managing exchange rate risk. 72.7% of the respondents strongly agreed and 25% agreed that exchange rate risk monitoring and evaluation is supported by senior management. 45.5% of the respondents agreed and 38.6% that controls are in place to evaluate the efficiency of exchange rate risk management program. These findings are in line with the argument by Papaioannou

(2010), who says measuring and managing exchange rate risk exposure is important for reducing a company's vulnerabilities from major exchange rate movements that could adversely affect profit margins and value of assets.

Papaioannou (2010) argues that selecting the appropriate hedging strategy is often a tough task due to the complexities involved in measuring accurately current risk exposure and deciding on the appropriate degree of risk exposure that ought to be covered. This is the same situation in listed manufacturing companies since 56.8% of the respondents are uncertain if their companies have hedging strategies to eliminate or reduce exchange rate risk.

Mutembei, Murage, and Wanjau (2014) when looking at financial risk exposures facing financial firms, their hedging practices and challenges facing derivative use in Kenya, found that majority of the firms listed at the Nairobi Securities Exchange had not used derivative instruments to manage exchange rate risk. They found out that 66.7% had never used options and futures and that swaps and forwards were rarely used. This study concurs to their study since 61.4% of the respondents said they frequently used forwards and 52.3% said they frequently used swaps to manage exchange rate risk. Futures and options were the least used hedging technique in managing exchange rate risk with 59.1% of the respondents saying they rarely used futures and 56.8% saying they rarely used options.

Exchange rate risk management policies, monitoring and evaluation practice influence the use of hedging technique by 19.6% in listed manufacturing companies. Hedging techniques are rarely used to manage exchange rate risk. Nzuki (2010) established that firms in Kenya under-hedge their financial risks. Karp (2009) established that hedging activities in Kenya is low making shareholders lose billions of shillings due to directors' failure to shop for appropriate hedging instruments and their poor choice of hedging strategies.

5.3.1 Interest Rate Risk Management Practice in Manufacturing Companies

The study sought to establish interest rate risk management practice in listed manufacturing companies by considering certain aspects of interest rate risk management policies, monitoring and evaluation and the use of hedging technique in managing this risk. 45.5% of the respondents agree and 11.4% strongly agree that interest rate

fluctuations affect their companies' production operations. This is in line with Osoro and Ogeto (2014) argument that a firm's earnings, capital base and operating expenses can face significant threats due to excessive interest rate fluctuations. Dhanani, Fifield, Helliari, and Stevenson (2008) also argue that variable interest rate debt may raise the funding cost for firms when interest rates rise hence affecting their earnings. They add that a change in interest rates may adversely affect the demand patterns of some firms' products hence affect their operating cash flows.

Effective policies are important in managing interest rate risk. 72.7% of the respondents agree and 25% strongly agree that listed manufacturing companies have specific policies on interest rate risk management. This is in line with Dhanani, Fifield, Helliari, and Stevenson (2008) argument that companies manage interest rate risk by making policy decisions about an acceptable level of gearing and an appropriate level of fixed-to-floating rate debt.

Listed manufacturing companies monitor and evaluate interest rate risk. This activity is supported by senior management as 56.8% of the respondents strongly agreed and 40.9% agreed. According to Horcher (2005) most organizations monitor absolute interest rate risk due to both its visibility and its potential of affecting profitability. This might be the case influencing monitoring and evaluation of interest rate risk in listed manufacturing companies.

Dhanani, Fifield, Helliari, and Stevenson (2008) argue that management of interest rate risk has gained prominence in the corporate sector of UK firms due to emphasis on financial risk in recent corporate governance codes, for example; the Cadbury report and the turnbull report. These reports have necessitated increase in transparency of corporate risk and risk management practice hence a professional approach within companies. Listed manufacturing at the NSE can also be said to have a professionalism approach to interest rate risk management since most of them have policies on interest rate risk management. 50% of the respondents agree and 43.2% strongly agree that roles and responsibilities for interest rate risk management are clearly defined. 45.5% of the respondents agree and 47.7% strongly agree that the listed manufacturing companies adhere to the interest rate risk management policies in place. 61.4% of the respondents agree and 25% strongly agree

that employees in listed manufacturing companies are properly trained on the interest rate risk management policies of their companies.

Dhanani, Fifield, Helliard, and Stevenson (2008), in their study that examined interest rate risk management practice of UK listed companies, found that those companies frequently use swaps to manage interest rate risk. The same cannot be said for listed manufacturing companies in Kenya. 84.1% of the respondents said they rarely used swaps to manage interest rate risk. Generally listed manufacturing companies in Kenya rarely use hedging technique to manage interest rate risk.

5.3.1 Commodity Price Risk Management Practice in Manufacturing Companies

The study sought to establish commodity price risk management practice in listed manufacturing companies by considering certain aspects of commodity pricing, commodity price risk management policies, monitoring and evaluation and the use of hedging technique in managing this risk. 59.1% of the respondents strongly agree and 15.9% agree that competition greatly influences commodity pricing in listed manufacturing companies in Kenya. This concurs with Horcher's argument that commodity prices are affected by availability of substitutes at lower cost and shifts in taste and consumption patterns. Nyaga (2014) adds that fast moving consumer goods companies face a lot of competition from their fellow competitors although they generate a large volume of sales and money.

Hoher (2005) suggests that a company can split risk into currency and commodity components so as to assess both risks independently and determine an appropriate strategy for dealing with price and exchange rate uncertainties. 56.8% of the respondents agree and 40.9% were uncertain that listed manufacturing companies in Kenya split risk into currency and commodity components. This could explain the findings by Khosla (2012), that price volatility on export producers in Kenya is much greater than it is for those in developed economies. Rutten and Youssef (2007) also found out that producers in much of the developing world are exposed to highly volatile commodity revenues. Hoher (2005) adds that, even when purchases or sales are made in the domestic currency, exchange rates may be embedded in the commodity price.

Exchange rate has a major impact on commodity pricing. Horcher (2005) states that an organizations competitive position is affected by strategic or economic exposure due to changes in exchange rates, hence effective pricing and production cost is highly important. 45.5% of the respondents strongly agreed and 43.2% agreed that listed manufacturing companies in Kenya have effective pricing and production cost strategies. This is quite low having 11.4% of the respondents being uncertain. Horcher (2005) found out that a firm whose domestic currency has appreciated dramatically may find its products being too expensive in international markets despite its efforts to reduce costs of production and minimize prices. Mutembei, Murage, and Wanjau (2014), also found out that Kenya is a net importer and foreign exchange fluctuations affects firms' pricing and production cost strategies.

Commodity derivatives are contracts where the underlying asset is a commodity. Forwards and futures are rarely used in managing commodity price risk in listed manufacturing companies in Kenya. 56.8% of the respondents said they rarely use forwards while 40.9% said they rarely used futures. Swaps and options are very rarely used to manage commodity price risk. This is in line Khosla (2012) who found out that futures enabled Kenyan producers and exporters to manage commodity price risk and price discovery.

5.3.1 Liquidity Risk Management Practice in Manufacturing Companies

The study finally sought to establish liquidity risk management practice in listed manufacturing companies by considering certain aspects of internal control systems to manage liquidity, liquidity risk management policies, monitoring and evaluation and the use of liquidity management technique in managing this risk. 36.4% of the respondents were uncertain, 31.8% agree and 18.2% strongly agree that listed manufacturing companies in Kenya maintain sufficient cash flow to meet maturing financial obligations. Horcher (2005) argues that liquidity risk affects the ability to purchase or sell a security or obligation or to close out an existing position. Listed manufacturing companies might face challenges in closing out existing positions due to the minimal cash flow maintained within the companies.

Internal control systems are important in managing liquidity risk in any company. Kimathi, Mugo, Njeje, and Otieno (2015), in their study that sought to find factors

affecting liquidity risk management practices in microfinance institutions in Kenya found that majority of the microfinance institutions have effective information system that support liquidity management process. The same can be said for listed manufacturing companies in Kenya. 65.9% of the respondents agreed and 31.8% of the respondents strongly agreed that their companies have effective information systems to support liquidity management process.

On adherence to liquidity risk management policies, 40.9% respondents agreed and 43.2% strongly agreed that listed manufacturing companies in Kenya have internal mechanisms to ensure adherence to the policies. This concurs with the findings of Kimathi, Mugo, Njeje, and Otieno (2015) on microfinance institutions in Kenya, where they found out that the majority of the institutions had conducive internal environment which ensured adherence to the liquidity risk management policies in place.

Reviews should be made to policies and procedures do adapt to changing times and environments. 52.3% of the respondents agree and 45.5% strongly agree that regular reviews of liquidity risk management are made and reported to senior management in listed manufacturing companies in Kenya. The same can also be said about microfinance institutions in Kenya from the study of Kimathi, Mugo, Njeje, and Otieno (2015) where they found out that majority of the microfinance institutions ensured periodic reviews on organization compliance with liquidity risk policies and procedures.

Information system designed to provide senior management with timely information on the liquidity position of the company is an important element of liquidity management framework. 68.2% of the respondents agreed and 29.5% strongly agreed that listed manufacturing companies in Kenya have information systems that are effective in transmission of real time data on the liquidity position. This was close to the findings in the study by Kimathi, Mugo, Njeje, and Otieno (2015) on microfinance institutions in Kenya where they found 61.4% of the respondents agreeing that the information systems in their institutions provided real time information on their liquidity position.

Evaluation of the liquidity risk management process to identify weaknesses or problems in the system is done by the internal audit department. 45.5% of the respondents were uncertain, 36.4% agree and 13.6% strongly agreed that the internal audit department in

listed manufacturing companies included in their audits the liquidity risk management process. This is quite the opposite in microfinance institutions in Kenya according to the study by Kimathi, Mugo, Njeje, and Otieno (2015), were 59% of the respondents agreed that reviews by internal audit department included the evaluation of the liquidity risk management process.

Claire, Murray, and Rosenthal (2010) state that some of the possible actions that a company can take to reduce liquidity risk are; cash flow match, diversified assets, diversified liabilities and ladder liability maturities. This methods are rarely used by listed manufacturing companies in Kenya as 43.2% of the respondents said they rarely used cash flow match, 54.5% said they rarely used diversified assets, 65.9% said they rarely used diversified liabilities. 56.8% of the respondents said they frequently used ladder liability maturities while 52.3% of the respondents said they very rarely used derivatives to manage liquidity risk.

5.4 Conclusions

This section presents the conclusions drawn from the discussion of findings and also from the discussions in the previous chapters on the basis of exchange rate risk, interest rate risk commodity price risk, liquidity risk and their management practice.

5.4.1 Exchange Rate Risk Management Practice in Manufacturing Companies

Manufacturing and allied companies listed on the NSE have specific policies on exchange rate risk management that clearly define roles and responsibilities and employees are properly trained on them. The companies adhere to these policies and they periodically review them. Foreign exchange fluctuations affect pricing and production cost strategies of these companies and they don't have strong hedging strategies to reduce exchange rate risk. Hedging techniques are rarely used by these companies to manage exchange rate risk. Exchange rate risk management policies, monitoring and evaluation practices of these companies have an influence on the use of hedging technique in managing exchange rate risk.

5.4.2 Interest Rate Risk Management Practice in Manufacturing Companies

Manufacturing and allied companies listed on the NSE have specific policies on interest rate risk management that clearly define roles and responsibilities and employees are properly trained on them. The companies adhere to these policies and they periodically review them. Interest rate fluctuations don't greatly affect the production operations of these companies and they don't have strong mechanisms for transferring interest rate risk to third parties. Hedging techniques are very rarely used by these companies to manage interest rate risk. Interest rate risk management policies, monitoring and evaluation practices of these companies have an influence on the use of hedging technique in managing interest rate risk.

5.4.3 Commodity Price Risk Management Practice in Manufacturing Companies

Manufacturing and allied companies listed on the NSE commodity pricing is influenced by competition and diversification. They have specific policies on commodity price risk management that clearly define roles and responsibilities and employees are properly trained on them. The companies adhere to these policies and they periodically review them. Some of these companies don't split risk into currency and commodity components. Forwards and futures are rarely used to manage commodity price risk while swaps and options are very rarely used. Commodity pricing, commodity price risk management policies, monitoring and evaluation practices of these companies have an influence on the use of hedging technique in managing commodity price risk.

5.4.4 Liquidity Risk Management Practice in Manufacturing Companies

Manufacturing and allied companies listed on the NSE have effective information systems that support liquidity management process through transmission of real time data on their liquidity position. They also have specific policies on liquidity risk management that clearly define roles and responsibilities and employees are properly trained on them. These companies don't maintain sufficient cash flow to meet maturing financial obligations and their internal audits don't include liquidity management process. Cash flow match, diversified assets, diversified liabilities and ladder liability maturities are rarely used to manage liquidity risk while derivatives are very rarely used. Internal control systems, liquidity risk management policies, monitoring and evaluation practices of these

companies have an influence on the use of liquidity management technique in managing Liquidity risk.

5.5 Recommendations

5.5.1 Recommendations for Improvement

This section provides more insight of what needs to be done by the listed manufacturing and allied companies. This section also presents recommendation for future studies which is derived from the discussions in the previous chapters.

5.5.1.1 Exchange Rate Risk Management Practice in Manufacturing Companies

Manufacturing and allied companies listed on the NSE should come up with stronger hedging strategies so as to utilize the hedging techniques as companies in developed economies. They should also review their exchange rate management policies, monitoring and evaluation practice to archive maximum utilization of the hedging technique in managing exchange rate risk.

5.5.1.2 Interest Rate Risk Management Practice in Manufacturing Companies

Manufacturing and allied companies listed on the NSE should increase the use of mechanisms of transferring interest rate risk to third parties. They can archive this if they increase their use of hedging techniques as companies in developed economies. They should also review their interest rate management policies, monitoring and evaluation practice to archive maximum utilization of the hedging technique in managing interest rate risk.

5.5.1.3 Commodity Price Risk Management Practice in Manufacturing Companies

Manufacturing and allied companies listed on the NSE should split risk into currency and commodity components so as to assess both risks independently. Previous studies have shown that companies can easily transfer exchange rate risk in their commodity price hence commodity price risk. They should also utilize the hedging techniques as companies in developed economies to manage commodity price risk. They should review their commodity pricing, commodity price risk management policies, monitoring and

evaluation practice to archive maximum utilization of the hedging technique in managing this risk.

5.5.1.4 Liquidity Risk Management Practice in Manufacturing Companies

Manufacturing and allied companies listed on the NSE should increase the maintenance of sufficient cash flow to meet maturing financial obligations to avoid liquidity risk. Their internal audits should also include review of their liquidity management process. They should maximize the use of liquidity management techniques available to them to manage liquidity risk. They should review their internal control systems, liquidity risk management policies, monitoring and evaluation practice to archive maximum utilization of the liquidity management technique in managing this risk.

5.5.2 Recommendations for further studies

The survey carried out was based on policies, monitoring and evaluation practice, commodity pricing and internal control systems on their influence in the use of hedging techniques and liquidity management techniques in managing exchange rate risk, interest rate risk, commodity price risk and liquidity risk. The researcher therefore recommends further study to identify other factors that influence the use of hedging techniques and liquidity management techniques in manufacturing and allied companies listed on the Nairobi Securities Exchange.

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APPENDIX I: LETTER OF INTRODUCTION



8th June, 2016

TO WHOM IT MAY CONCERN

Dear Sir/ Madam,

RE: RESEARCH STUDIES BY BRIAN SITUMA WANYAMA-ID No. 641613

This is to confirm that the above named student is undertaking a research project entitled "**Financial Risk Management practice in manufacturing and allied companies listed on the Nairobi Securities Exchange**".

As the office in charge of research projects, I would appreciate it if you could accord him the assistance he requires to complete the project. The feedback collected shall be confidential and will only be used for the project (no identifying information will be used in the report).

For additional information, please contact the researcher, Brian Situma Wanyama at (+254) 712 307 420 or via briansituma@gmail.com or his supervisor Dr. Bernard Omboi at bomboi@usiu.ac.ke

If you have any questions or need further clarifications, please contact the undersigned.

Sincerely,

Francis W. Wambalaba, Ph.D., AICP

Associate Deputy Vice Chancellor Academics: Research

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APPENDIX II: RESEARCH QUESTIONNAIRE

The purpose of this study is to collect data that will assist in determining financial risk management practice in manufacturing and allied companies listed on the NSE. The information provided will be confidential and used for the purpose of the study only.

Part 1 – Background Information

1) Company Name (Optional).....

2) Respondent’s Department.....

3) How long have you worked for your organization?

1 -3 years 4 -6 years 7 -9 years 10 years and above

4) Which department in your organization deals with financial risk management?

Accounts Finance Other (Specify)

5) Does your company have a well-documented financial risk management policy?

Yes No I Don’t Know

Part 2 – Exchange Rate Risk Management Practice in Manufacturing Companies.

Indicate your level of agreement with the following statements regarding exchange rate risk management practice in your company. Use a scale of 1-5, where: 1-Strongly Disagree; 2-Disagree; 3-Uncertain; 4-Agree; 5-Strongly Agree.

Exchange Rate Risk Management	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
Policies					
1. The company has specific policies on exchange rate risk management.	1	2	3	4	5
2. Roles and responsibilities for exchange rate risk management are clearly defined.	1	2	3	4	5
3. The company adheres to the exchange rate risk management policies in place.	1	2	3	4	5

4. Employees are properly trained on exchange rate risk management policies of the firm.	1	2	3	4	5
5. The company periodically reviews the exchange rate policies	1	2	3	4	5
Monitoring and Evaluation					
1. Exchange rate risk monitoring and evaluation is supported by senior management.	1	2	3	4	5
2. The company has hedging strategies that entail reducing and eliminating exchange rate risk.	1	2	3	4	5
3. Foreign exchange fluctuation affects firms' pricing and production cost strategies.	1	2	3	4	5
4. Controls are in place to evaluate the efficiency of exchange rate risk management program.	1	2	3	4	5
5. Regular reviews of exchange rate risk management are made and reported to senior management.	1	2	3	4	5

On a scale of 1 - 5, rank the use of the below hedging techniques on exchange rate risk management in your company, where: 1-Don't Use; 2-Very Rare; 3-Rare; 4-Frequent; 5-Very Frequent.

Hedging Technique	Don't Use	Very Rare	Rare	Frequent	Very Frequent
Forwards	1	2	3	4	5
Futures	1	2	3	4	5
Swaps	1	2	3	4	5
Options	1	2	3	4	5

Part 3 – Interest Rate Risk Management Practice in Manufacturing Companies.

Indicate your level of agreement with the following statements regarding interest rate risk management practice in your company. Use a scale of 1-5, where: 1-Strongly Disagree 2-Disagree 3-Uncertain 4-Agree 5-Strongly Agree

Interest Rate Risk Management	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree

Policies					
1. The company has specific policies on interest rate risk management.	1	2	3	4	5
2. Roles and responsibilities for interest rate risk management are clearly defined.	1	2	3	4	5
3. The company adheres to the liquidity risk management policies in place.	1	2	3	4	5
4. Employees are properly trained on interest rate risk management policies of the firm.	1	2	3	4	5
5. The company periodically reviews the interest rate policies	1	2	3	4	5
Monitoring and Evaluation					
1. Interest rate risk monitoring and evaluation is supported by senior management.	1	2	3	4	5
2. The company has a mechanism for transferring interest rate risks to third parties.	1	2	3	4	5
3. Interest rate fluctuation affects the company's production operations.	1	2	3	4	5
4. Controls are in place to evaluate the efficiency of interest rate risk management program.	1	2	3	4	5
5. Regular reviews of interest rate risk management are made and reported to senior management.	1	2	3	4	5

On a scale of 1 - 5, rank the use of the below hedging techniques on interest rate risk management in your company, where: 1-Don't Use; 2-Very Rare; 3-Rare; 4-Frequent; 5-Very Frequent.

Hedging Technique	Don't Use	Very Rare	Rare	Frequent	Very Frequent
Forwards	1	2	3	4	5
Futures	1	2	3	4	5
Swaps	1	2	3	4	5
Options	1	2	3	4	5

Part 4 - Commodity Price Risk Management Practice in Manufacturing Companies.

Indicate your level of agreement with the following statements regarding commodity price risk management practice in your company. Use a scale of 1-5, where: 1-Strongly Disagree 2-Disagree 3-Uncertain 4-Agree 5-Strongly Agree.

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
Commodity Price Risk Management					
Commodity Pricing					
1. Competition greatly influences the company's pricing.	1	2	3	4	5
2. The company has effective pricing and production cost strategies.	1	2	3	4	5
3. Liberalization of diversification influences commodity pricing.	1	2	3	4	5
Policies					
5. The company has specific policies on commodity price risk management.	1	2	3	4	5
6. Roles and responsibilities for commodity price risk management are clearly defined.	1	2	3	4	5
7. The company adheres to the commodity price risk management policy in place.	1	2	3	4	5
8. Employees are properly trained on commodity price risk management policies of the firm.	1	2	3	4	5
Monitoring and Evaluation					
5. Commodity price risk monitoring and evaluation is supported by senior management.	1	2	3	4	5
6. The company splits risk into currency and commodity components so as to assess both risks independently.	1	2	3	4	5
7. Controls are in place to evaluate the efficiency of commodity price risk management program.	1	2	3	4	5
8. Regular reviews of commodity price risk management are made and reported to senior management.	1	2	3	4	5

On a scale of 1 - 5, rank the use of the below hedging techniques on commodity price risk management in your company, where: 1-Don't Use; 2-Very Rare; 3-Rare; 4-Frequent; 5-Very Frequent.

Hedging Technique	Don't Use	Very Rare	Rare	Frequent	Very Frequent
Forwards	1	2	3	4	5
Futures	1	2	3	4	5
Swaps	1	2	3	4	5

Options	1	2	3	4	5
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Part 5 - Liquidity Risk Management Practice in Manufacturing Companies.

Indicate your level of agreement with the following statements regarding liquidity risk management practice in your company. Use a scale of 1-5, where: 1-Strongly Disagree 2-Disagree 3-Uncertain 4-Agree 5-Strongly Agree.

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
Liquidity Risk					
Internal Control Systems					
1. The company has effective information system that supports the liquidity management process.	1	2	3	4	5
2. The company has internal mechanisms to ensure strict adherence to the liquidity risk management policies.	1	2	3	4	5
3. The information system is effective in transmission of real time data on the liquidity position.	1	2	3	4	5
4. Employees are properly trained to handle the information system.	1	2	3	4	5
Policies					
1. The company has specific policies on liquidity risk management.	1	2	3	4	5
2. Roles and responsibilities for liquidity risk management are clearly defined.	1	2	3	4	5
3. The company adheres to the liquidity risk management policy in place.	1	2	3	4	5
4. Employees are properly trained on liquidity risk management policies of the firm.	1	2	3	4	5
Monitoring and Evaluation					
6. Liquidity risk monitoring and evaluation is supported by senior management.	1	2	3	4	5
7. The company maintains sufficient cash flow to meet maturing financial obligations.	1	2	3	4	5
8. Controls are in place to evaluate the efficiency of liquidity risk management program.	1	2	3	4	5
9. Regular reviews of liquidity risk management are made and reported to senior management.	1	2	3	4	5

10. The internal audit department includes in their audits the liquidity risk management process.	1	2	3	4	5
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On a scale of 1 - 5, rank the use of the below liquidity management techniques on liquidity risk management in your company, where: 1-Don't Use; 2-Very Rare; 3-Rare; 4-Frequent; 5-Very Frequent.

Liquidity Management Technique	Don't Use	Very Rare	Rare	Frequent	Very Frequent
Cash Flow Match	1	2	3	4	5
Diversified Assets	1	2	3	4	5
Diversified Liabilities	1	2	3	4	5
Ladder Liability Maturities	1	2	3	4	5
Derivatives	1	2	3	4	5

Thank you for your participation

**APPENDIX III: LIST OF MANUFACTURING AND ALLIED COMPANIES
LISTED ON THE NAIROBI SECURITIES EXCHANGE**

No	Company Name
1	B.O.C Kenya Limited
2	British American Tobacco Kenya Limited
3	Carbacid Investments Limited
4	East African Breweries Limited
5	Mumias Sugar Co. Limited
6	Unga Group Limited
7	Eveready East Africa Limited
8	Kenya Orchards Limited
9	A.Baumann Co. Limited
10	Flame Tree Group Holdings Limited

(Nairobi Securities Exchange, 2016).