RELATIONSHIP BETWEEN HEDGING STRATEGIES AND FINANCIAL PERFORMANCE OF NON-FINANCIAL FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

This research project is my original work and has not been presented for a degree award in any other institution.

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This research project has been submitted for examination with my approval as the University supervisor.

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I thank God for giving me grace to compile this research project. I further thank my parents and my siblings for the financial support that was required throughout this course. I also want to acknowledge the support and guidance received from Dr. Lishenga Lisiolo, my supervisor on this project.

DEDICATION

I dedicate this project to my friends and all my family members who have encouraged me to work hard and inspired me to pursue my education to the highest level possible.

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ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
CBK	Central Bank of Kenya
CIRP	Covered Interest Rate Parity
FERM	Foreign Exchange Risk Management
FTSE	Financial Times Stock Exchange
FX	Forward Contract
LSE	London Stock Exchange
NSE	Nairobi Securities Exchange
PPP	Purchasing Power Parity
ROA	Return on Assets
ROE	Return on Equity
SPSS	Scientific Package for Social Sciences
UCIRP	Uncovered Interest Rate Parity
UK	United Kingdom
USD	United States Dollar

ABSTRACT

Risk management is an important component of financial management of organizations especially those involved in international trade because of their exposure to foreign currency price fluctuations. This follows high volatility in the foreign exchange market thereby creating uncertainty. Non –financial firms listed at the Nairobi Securities Exchange have faced various forex challenges following unstable exchange rates which saw the Kenyan currency depreciate against major currencies. The study sought to determine the relationship between hedging strategies and financial performance of non-financial firms listed at the Nairobi Securities Exchange. The study adopted a descriptive research design targeting 46 listed non-financial firms on the NSE. Data for the study was collected for a period of 5 years 2011-2015 using quarterly data. The findings of correlation analysis revealed that the Pearson correlation between return on Assets and lead and lag strategy of hedging indicates that strong positive correlation exists between financial performance (ROA) and the application of lead and lag hedging strategy among non-financial listed firms at the NSE. The findings of regression analysis indicated that forwards and currency invoicing were significant in explaining the variations in financial performance. The study concludes that a strong positive correlation exists between financial performance (ROA) and the application of lead and lag hedging strategy among non-financial listed firms at the NSE. The study further concludes that a strong positive correlation exists between currency invoicing and financial performance of non-financial firms listed at NSE. The study also concludes that forwards and currency invoicing were significant in explaining the variations in financial performance. The study recommends that the management of non financial firms listed at NSE should put in place currency invoicing strategies so as to minimize the risks of fluctuation in foreign exchange currencies. The study further recommends that non financial firms listed at NSE should actively pursue the led and lag strategies to enhance their financial performance. There is need for non financial firms listed at NSE to delay the payment of for imports from their customers at the same time press for early payment by the buyer. This will imply that the cash inflow from the export is used as cash outflow for imports. This will help non financial firms listed at NSE to escape devaluation risk in import payment and default risk in export receipt. Non financial firms listed at NSE should also embrace forward contract in hedging against currency and interest rate risks. Presence of forward contracts among non financial firms listed at NSE will ensure that their buyers are obligated to buy, and the non financial firms to sell a given asset at a predetermined price and date in the future. This contract will also ensure that no cash or assets are exchanged until expiry, or the delivery date of the contract.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Risk management is an important component of financial management of organizations especially those involved in international trade because of their exposure to foreign currency price fluctuations. This follows high volatility in the foreign exchange market thereby creating uncertainty. The inherent forex risks lead to adverse exchange rates fluctuations that may result into organizational losses where foreign currencies are involved. Barry and Butler (2008) opine that forex risks are risks that are attributed to unexpected exchange rates changes and overall foreign exchange exposure. Companies are exposed to this risk if their project results actually depend on future exchange rates especially where future exchange rate changes are difficult to anticipate. Forex risk management entails adopting assessment programs that are meant to readily identify as well as quantify forex risks so as to counteract and mitigate the identified forex risks hence salvaging economic value of firms (Azevedo & Guney, 2014).

The study was anchored on three key theories that explain the changes in currency prices against another to create equilibrium position. These shall include: the purchasing power parity (PPP) theory; the international fisher effect and the interest rate parity. It holds that the value of goods purchased in two economies should attract the same cost. This therefore means that the exchange value of similar basket of goods in two countries would constitute the exchange value of the two currencies involved. Any variance from this statement show that one of the country's currency is over valued. The international Fisher Effect states that variations in returns between two countries should not be more

than the inflationary changes in the two economies involved (Ross, Westerfield, & Jordan, 2008).

High fluctuations in price for foreign currency have high effects on the performance of multinationals because of their transactions across different countries (Raddatz, 2008). The sensitivity of the foreign currency prices to slight changes in the macroeconomic variables of economies makes it necessary that the firms rethink their foreign exchange risk management strategies if they are to remain competitive (Musonda, 2008). Tjhis is because of the high unpredictability that is brought about by these fluctuations in the overall performance and the growth of shareholders wealth. High fluctuations in exchange rates between nations makes it difficult for the investors to predict their returns and thus justify their investment because of the uncertainty in their return on investment. The level of fluctuations in pricing foreign currencies in Kenya during the year 2015 went high forcing the Central Bank of Kenya to intervene so as to ensure stability. For instance, the exchange rate against the United States Dollar (USD) depreciated from Ksh. 83 to a low of Ksh 106 making it difficult for organization to predict the future rate with precision.

1.1.1 Hedging Strategies

There are several strategies devised y organizations to management their foreign exchange exposure. Forward cover can be settled through delivery, cancellation, extension and early delivery, (Hillier, Grinblatt & Tittman, 2012). A swap refers to the exchange of liabilities denominated in a different currency between two parties who agree to exchange specific amounts of two different currencies at the outset in their home

currency. A currency Option is a contract giving the right, not the obligation, to buy or sell a specific quantity of one foreign currency in exchange for another at a fixed price; called the Exercise Price or Strike Price (Marshal, 1997). Leading is concerned with paying soft currency receivables or collecting earlier than planned to avoid the exposure to changes in currency prices (Jorion, 2001). Lead and lag involves delaying the original payment but within a company's divisions or subsidiaries. Netting is the reduction in the number of transactions that a firm needs to make in order to cover an exposure. It requires the firm to have a centralized organization of its cash management (CFTC, 2009). Price adjustments involve changing prices in different manners. When the local currency of a subsidiary is devaluating, the subsidiary can increase the price, so as to cancel the effect of devaluation (Jacque & Lorange, 1984).

1.1.2 Firm Performance

Organization performance checks the efficiency of management in the utilization of resources entrusted to them by the shareholders in generating wealth within a given time period (Berger and Patti, 2002). It shows how well the resources owned by an organization have been used by the management in generating the shareholders' wealth. It is measured by ratios at different points in time to establish how well the resources of the firm have been applied in generating wealth (Gibson, Mundy and Sink, 2010). The ratios are classified into different categories to establish the efficiency on different frontiers. Different ratios have been applied depending on the purpose of the measurement.

According to Berger and Patti (2002), ratios indicate if the firm is utilizing the resources at its disposal in achieving the objective set by the owners of a business of making them wealthier. The ratios are used to standardize measurement so as to enable comparison across the industry, same firm over a period of years or other firms in other industries. The main objective of checking financial performance of an organization is to establish how well the resources of the organization have been utilized in generating profits and wealth for the owners.

Frequently used overall financial result measures include firm size, return on shareholders' investment in the organization concerned, return on overall assets controlled by the organization, profitability index and return on total turnover sales (Berger and Patti, 2002). Other measures include return on investment among others (Olweny & Shipho, 2011).

Most firms exist to make profit hence the general deduction is that the ultimate goal of most firms is to increase shareholders wealth. Various measures are used to measure firm profitability: the usage of overall financial results ratio indicators; Return on cash invested by shareholders (ROE) and the Return on Asset (ROA) which are the two most common ratios used to assess firm profitability. The ROA shows the efficiency of management in terms of generating earnings as a result of engaged assets. It is arrived at by dividing the annual earnings made by the total owned assets by the firm; this ratio is displayed as a percentage. The ROE on the other hand measures the earnings that are received per each penny contributed by the shareholders. This measure is what

shareholders look at in order to analyze the returns attributable to their investment (Olweny & Shipho, 2011).

1.1.3 The relationship between hedging strategies and financial performance of firms

Exchange rate fluctuations affect the value of firms differently from the share prices and return on investments by shareholders (Grambovas and McLeay, 2006). Movement in general exchange rate affects the reporting of financial statements for firms operating in multiple markets as they convert one currency transactions into another for the purpose of financial statement preparation. However, in order to minimize the effect of general changes in foreign currency prices, companies cushion themselves through adoption of several mechanisms. These actions are aimed at minimizing the exposure thus improving the overall financial returns on investment.

Taiwo and Adesola (2013) established that changes in the cost of different currencies directly affect the prevailing prices of commodities on the domestic market hence the overall firm profitability. It also affects the volume of goods transacted as it influences the purchasing power of consumers. According to a study conducted by Gachua (2011), foreign exchange rate exposure affects the overall financial returns recorded by organizations. These risks arise whenever an organization has cash obligations and assets to be collected in future (Schmidt, 2010).

1.2 Research Problem

There is no country that is self-reliant as it has to import and export some products. Taggert and McDermott (2000) assert that firms engaged in business across national

boundaries are exposed to risks arising from general changes in the cost of different currencies because of its effect on the payables and receivables denominated in foreign currencies. In order to cover their exposure, firms apply different instruments like SWAPs, forwards, options, and holding foreign currency denominated rates among others.

Non –financial firms listed at the Nairobi Securities Exchange have faced various forex challenges following unstable exchange rates which saw the Kenyan currency depreciate against major currencies. Unstable forex saw some of the firms record huge losses as they imported some of their inputs and exported some of their outputs. This meant that in order to protect their exposure, they needed to implement various forex exposure management strategies.

Various studies on hedging strategies and firm performance have reported mixed findings. On international level, Ahmed, Azevedo and Guney (2014) looked at how the value of firms was affected by different hedging strategies using non financial firms from the UK. According to another study conducted by Adetayo, Adetayo and Oladejo (2004) application of hedging strategies help financial institutions manage their position and hence improve overall financial results. The study was conducted among commercial banks with mixing results. Mbabazize (2014) established that foreign exchange risk management promoted better overall financial results of exporting firms because it enables them improve on financial results.

Locally, Were (2001) carried out an empirical assessment on how external debt among private investment firms affected overall economic growth of Kenya and established that servicing of debt among companies in foreign currency did not affect their growth adversely debt servicing does not appear to affect growth adversely but has some crowding out effects on private investment. Omagwa (2005) carried out a study on how foreign owned commercial banks managed their exposure to changes in the general currency prices and found out that all commercial banks he surveyed practice hedging. Further, Gachua (2011) examined how a firm's exposure to changes in prices of foreign currency affect an organization's overall financial results using a case of listed companies. The finding show that firms were negatively affected by changes in the foreign currency prices. Mwaniki (2012) examined the responsiveness of Kenya's financial institutions securities to the changes in the cost of lending and cost of foreign currency over a period of ten years (2001-2010). Cherop (2010) surveyed how fluctuations in currency prices affect tea exports using the case of smallholders' tea factories in Kenya and established that it led to uncertainty in the general earnings.

From the above review, the existing studies were either done in other economies which limit their application in Kenya. For those conducted in Kenya, they concentrated on foreign exchange rate risk management strategies among private organizations but did not place any focus on the non-listed financial firms. This study sought to answers one research question: What is the relationship between hedging strategies and performance of non-financial firms listed at the Nairobi Securities Exchange?

1.3 Research Objectives

The general objective of this study was to determine the relationship between hedging strategies and performance of non-financial firms listed at the Nairobi Securities Exchange**:** To achieve this, the study was guided by the following specific objectives:

i. To establish the hedging strategies used by the non-financial firms trading at the NSE.
ii. To determine the relationship between hedging strategies and performance of non-financial firms trading at the NSE.

1.4 Value of the Study

This study would be of significance to scholars and academicians, managers in organizations, government of Kenya policy technocrats and agencies such as CBK through the Treasury. To scholars and academicians, the study would add to the existing literature on foreign exchange risk hedging strategies and its application. This would broaden their comprehension of the theories on the subject of foreign exchange risk hedging besides suggesting areas for further research.

To managers in corporate organizations, the findings would be important in informing their foreign exchange risk management strategies because they would be in a position to link the strategies to the exposure of fluctuations in the general prices of foreign currency of the firms especially multinational corporations and those firms involved in international trade. By applying the findings, managers would be in a better position to anticipate and plan corrective measures when faced with foreign exchange risk exposure.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter outlines literature reviewed in order to provide a basis for the study and the concepts. In addition, the chapter highlights theories guiding the study, previous empirical studies conducted and summary of the literature review clearly showing the research gaps.

2.2 Theoretical Review

This study is founded on three key theories including Purchasing Power Parity theory, the International Fischer Theory and Interest Rate Parity. These theories are discussed in details below.

2.2.1 The Purchasing Power Parity Theory

The purchasing power parity (PPP) theory was developed by Cassel (1918) in the sixteen century to help explain the purchasing power of currencies of different economies across the world. Dornbusch, (1985) explained the theory further from the absolute PPP school of thought where the amount of a country's cash used to purchase the same collection of goods and services as in the other country. It helps explain the role played by arbitrage so as to ensure that individuals do not trade in currencies.

Due to these limitations in the absolute PPP, another form of PPP has evolved, the relative PPP which acknowledges existence of imperfections in the market such as transport costs, tariffs and quotas (ICAI, 2012). Relative PPP defines the determinants of

change in currency purchase prices over time, rather than what determines absolute level of the exchange rate. It states that the exchange rate change is determined by the difference in the inflation rates of the two countries (Ross, Westerfield, & Jordan 2008).

2.2.2 The International Fisher Effect

This school of thought explains in return on investment that accrues to investors investing in different economies in relation to the changes in general prices (Ross, Westerfield & Jordan, 2008). The theory assumes that nominal risk-free interest rates are a function of a real rate of return and anticipated changes in general prices. In accordance with this school of thought, in circumstances where an investor has invested in all countries equal amounts of investment, their returns ought to be the same safe for changes in inflation, interest rates between countries (ICAI, 2012).

If the school of thought holds, a strategy to borrow from one country and invest in a different country need not result in any positive return in general because the rates of return should yield similar returns, because the foreign currency prices will automatically adjust to offset the changes in interest rates between the two countries involved. However, this theory is limited by the extent that there are other variables apart from general changes in prices of goods and services that affect currency prices (ICAI, 2012).

2.3 Determinants of firm performance

There are several factors affecting the performance of firms. Some of the key factors include: leverage, liquidity, operational efficiency, firm size, interest rates and exchange rate fluctuations.

2.3.1 Leverage

Leverage explains the proportions of total debt to equity applied by an organization in financing its operations. It is normally subject to a number variable which in turn determine the activities that an organization can engage in for profitability. For instance, debt comes with some constraints which may limit the way the organization engages in its income generating activities. This therefore limits the profitability and general returns on investment (Adams and Buckle, 2000). Some organizations have used leverage to discipline managers so that they can work in the best interest of shareholders.

2.3.2 Liquidity

Liquidity is the available cash for the near future, or any asset that can be easily and cheaply converted to cash. According to Mwangi (2014), the most liquid asset, and what everything else is compared to, is cash. This is because it can always be used easily and immediately. According to Almajali et al. (2012), the level of liquidity maintained by an organization affects its returns on investment because of the firm's ability to take on investment opportunities as and when they fall arise. This in turn affects the overall financial results of the firm involved. It is therefore important that companies increase their current assets and decrease current to improve on liquidity. Some lenders decline extending credit facilities whenever it feels that it needs to maintain high liquidity hence this may affect the ability of an organization to take up investment opportunities even if they portray positive net present value (Diamond and Rajan, 2001). Banafa, Muturi and Ngugi (2015), established that a firms financial liquidity affects performance firms trading at the NSE.

2.3.4 Firm Size

The size of total assets controlled by an organization determines how well it undertakes several investment opportunities as they fall due. Large firms have also been found to have easy access to credit and other assets that promote overall financial results (Ezeoha, 2008). Punnose (2008) argues that small firms have many constraints which inhibit their potential to improve overall financial results.

2.3.6 Exchange Rate Fluctuations

Changes in foreign currency prices affect general prices in a local market because of the import export business which brings about place utility. Gatobu (2013) argues that the main function of commercial banks is to mediate between the supply side and the demand side of the foreign currency, any restrictions on how commercial banks go about their business would affect their overall financial results (Watkins, 2014).

According to Jamal and Khalil (2011), the more a company is involved in international trade, the more its accounting exposure and unless a company hedges this risk then it faces financial gains and/or losses from transaction and translation of foreign activities. Another unique dimension of exchange rate exposure is that of projects funded by foreign donors as Kinyuma (2013) investigated. Unrealized foreign exchange gains/losses.

2.4 Empirical Review

Ahmed et al. (2014) established that different hedging strategies affected the value of a firm among organizations outside the financial industry in the United Kingdom. The study considered several hedging strategies including: derivatives and maintaining foreign currency denominated accounts. The study applied data collected from financial

records over a period of sever years starting 2005 to the year 2012. The focus of the study was on hedging strategies, interest rates differentials together with commodity price risks with futures, among other. From the findings, it was shown that different firms applied different exchange rate fluctuation changes. There were no preferred hedging strategies instead the firms applied them in accordance with their overall strategy (Ahmed, Azevedo & Guney, 2014).

Sivakumar and Sarkar (2014) examined how different organizations cushioned themselves from fluctuations in foreign currency in India and how they affected overall financial results of firms. The research findings showed that the studied firms were actively involved in cushioning themselves against possible risks arising from transacting in different currencies; SWAPS, forwards as well as various types of options for instance; put, cross currency, call and lastly range barrier options. Ahmed et al. (2014) also examined the relationship between cushioning against interest rate fluctuations among firms. The findings indicated that cushioning against adverse effects of interest rate fluctuations helped stabilize the overall financial results of firms.

Chiira (2009) put on the suggestion that the identification of the specific currencies that possess greater risks is a strategy that can be used to effectively manage forex exchange risk exposure. This is because it enables quick analysis of all inherent risks hence enabling firms to appropriately devise strategies aimed at mitigating against such identified risks. This risk is inevitable especially where firms deal with foreign currencies. It would be absolutely beneficial if affected firms can undertake to adopt adequate forex risk management strategies in order to mitigate against negative foreign

exchange rates movements on the firm (Jamal & Khalil, 2011). The usage of hedging techniques is widely adopted by many firms to manage forex risk. Hedging techniques can be classified into two groups including: internal techniques that comprises of various techniques aimed towards the attainment of a reduction or prevention of the arising position of exposure and external techniques that towards the minimization of exchange losses that are as a result of existing exposure.

According to Giddy and Dufey (2012), various financial instruments can be used by firms to carry out hedging. The various techniques include: option, issue of foreign debt, futures, forwards and swaps. Hedging is in turn broadly classified into both operational and financial hedging. Financial hedging is more cost-effective in comparison to operational hedging as it does not involve major resources redeployment in other countries. In essence, options, currency futures, swaps and forward contracts are examples of financial hedges used by firms to effectively stabilize current operating cash flows. Contractual hedging on the other hand uses financial contracts so as to hedge against forex exposure through futures, options, forward contracts and swaps (Nebart, 2010).

Netting that entails realizing overall reduction in total number of transactions is also a hedging strategy that firms adopt so as to cover exposures due foreign currencies. Firms adopt this strategy so as to reduce the; buying and selling rates, commission and foreign exchange purchase costs. A Price adjustment that entails the changing of prices at different manners is also a strategy that firms can utilize to curb against negative foreign currency fluctuations. When subsidiary local currency is devalued, an increment in prices can cancel out the effects of devaluation. Firms can use this technique in countries where

derivative markets are efficient and also where devaluation of local currency is high (Yip & Nguyen, 2009).

Adetayo, Adetayo and Oladejo (2004) looked at how firms managed their fluctuations in foreign currency prices among selected commercial banks in Nigeria. The study used questionnaires to collect primary data which was complemented with secondary data from financial statements and other records in the banks involved. The study made use of hypothesis which were tested using the Chi-Square. The findings indicated that spot transaction technique was more appropriate in managing a firms exposure to general changes in exchange rate.

Locally; Omagwa (2005), a studied how foreign owned commercial banks in Kenya manage their foreign exchange risk exposure, found out that all commercial banks he surveyed practice hedging. Taking into account the significant role played by the banking industry in Kenya, this study sought to determine the strategies and extent of application of those strategies by all commercial banks in Kenya in hedging themselves against foreign exchange risks. This study sought to establish the relationship between foreign exchange risk management and profitability of commercial banks? As well as, to what extent do commercial banks employ various tool of hedging in managing foreign exchange risks?

Gachua (2011) looked at how foreign exchange rate exposure affected overall financial results of firms in Kenya. The study applied secondary data for the ten years (2001-2010) which was analyzed using correlation and regression analysis. The findings

indicate that different exchange rate risk management strategies were applied to help improve the performance of the organization.

Omagwa (2005) and Ubindi (2006) studies found out that each organization had its peculiar hedging instruments and strategies. Their choices varied due to lack of any formal corporate approved risk management practices that must be adopted by such companies operating in Kenya. For instance Omagwa (2005) found out that foreign owned commercial banks practiced conventional foreign exchange risk management practices and noted that forward contracts and foreign currency options as the most frequently used instruments. He also finds that 80% of the banks practiced natural hedging practices. Ubindi (2006) found that the usage of conventional foreign exchange risk management practices is quite low among Forex Bureaus in Kenya.

Runo (2013) carried out a study on how risk arising from foreign currency denominated transactions affected the profits of oil companies trading at the Nairobi Securities exchange namely; Kenol Kobil and Total Kenya ltd. The study used descriptive analysis, correlation and regression analysis for data analysis. The study results indicated that the foreign exchange risk greatly influences the profits reported by these oil companies. Other variables namely the gross profit and operational expenses were used as predictors of profitability along with the foreign exchange risk and were also found to have a strong correlation to the profits. Foreign exchange risk as measures by the foreign exchange gain/loss reported by these companies was found to carry more weight in predicting the profitability of these two companies with a correlation coefficient of 95% Since it was evident that foreign exchange risk greatly affects the profits. The study by Runo (2013)

however differs from with this study since it focused on foreign exchange risks on oil companies listed at the NSE only while the researcher wants to establish the relationship between risk arising from foreign exchange hedge strategies and profitability of the commercial banks with headquarters in Kenya.

Mumoki (2009) carried out a study to establish the management strategies applied by firms in the management of foreign exchange rate fluctuations. The research design adopted in the study was a census survey. The population used consisted of 42 commercial banks licensed to operate in Kenya as listed by the Central Bank of Kenya. Primary data collection, through the use of a questionnaire, was used to gather information from the target population outlining issues relevant to the study. Analysis was then done using SPSS (v20). The results of the study showed that the forward contract was the most frequently used instrument. The money market hedge and the currency swap were also frequently used. Parallel loans (Back-to-back loan), foreign currency denominated debt and cross hedging techniques were moderately used. Futures contract, foreign currency option and leading and lagging techniques were occasionally used. Prepayment was the least used technique. The study study however did not cover on the relationship between foreign exchange risk strategies and profitability of the commercial banks with headquarters in Kenya.

Wanja (2013) examined how hedging of risks related to foreign currency trading methods affected the recorded overall organization among organizations trading at the NSE. Study results confirmed that the listed companies that endeavor to employ hedging methods essentially perform better in comparison to those that do not carry out hedging its foreign

transactions. The study concluded that the listed companies ought to plan for anticipated future transactions so as to enable them carry out future obligations with ease. Mburugu (2014) examined how different hedging strategies affected he overall performance of firms. An explanatory research design was adopted during the study. This study used quarterly data from the year 2006 to 2014.

The Economic Paper (2008) found the presence of hedging strategies with exchange rate derivatives for instance options and forwards to be most widespread. This was found to effective to reduce exchange rate risk exposure in the short run. Bubere and Shihab (2013) examined hedging strategies of Swedish mining companies. The studied companies were found to have a natural hedge to mitigate against risk exposure as a result of currency fluctuations. It was further found that some of the studied firm undertook to hedge their process inventory. This was done to ensure that the firms do not lose their created value from their undertaken refinements. The studied firms further adopted natural hedges so as to manage currency risks.

2.5 Summary of Literature Review

This chapter reviewed existing literature relevant to the study. It specifically reviewed the theories guiding the study that is; The Purchasing Power Parity, The International Fischer Effect and The Interest Rate Parity Theory. The literature further reviewed empirical studies that have been done from the international and local perspectives. The empirical studies (Adetayo, Adetayo & Oladejo, 2004; Ahmed, Azevedo & Guney, 2014; Mbabazize, Twesige & Ekise, 2014; Hansen, 2009 & Debasish, 2008) were done on international setting in countries whose findings may not apply to Kenyan firms. The

studies (Omagwa, 2005; Gachua, 2011; Mumoki, 2009; Runo, 2013; Were, 2001; Gachua, 2011 & Ubindi, 2006) were conducted in Kenya. None of the studies sought to examine the relationship between hedging strategies and performance of non-financial firms listed at the NSE. This study therefore seeks to fill this gap by establishing the relationship between hedging strategies used by non-financial firms listed at the Nairobi Securities Exchange. The study is founded on the following conceptual framework in figure 2.1:

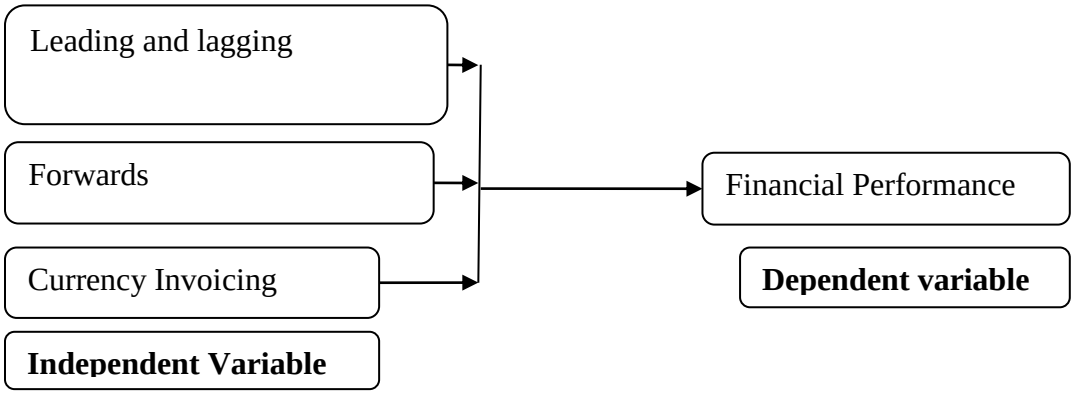


Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methods that will be used by the study to achieve the study objectives. It presents the research design, population and sample, data and data collection, data reliability and validity and data analysis where the model is discussed.

3.2 Research Design

Mathoko et al (2007) defines a research design as a master plan developed by a researcher to guide their data collection and analysis process with the aim of achieving study objectives. Descriptive research design was adopted to ensure the objective of the study is exhaustively met. This enabled the researcher to employ secondary quantitative data which was obtained from NSE handbooks and from published books of accounts of the non financial listed firms at the NSE for a period of 5 years (2011-2015).

3.3 Population of the Study

Population refers to the entire group of people or things of interest that the researcher wishes to investigate (Mugenda and Mugenda, 2003). Data available at the NSE shows that there are 66 Companies listed at the NSE as at 31st December 2015 and out of which 46 are the non-financial firms which were the target population in this study. The researcher included all the 46 non-financial firms in the study.

3.4 Data Collection

The study will use primary data collected using a questionnaire divided into five sections including demographic information in section 1; and the rest will address the study independent variables. This study will strive to collect the research data with reference to a period of 5 years 2011-2015. The population of the study comprised

3.5 Data Analysis

Data collected was analysed using means, minimum, maximum, standard deviation, skewness, the multiple regression analysis. The analysis was done at 0.05 level of significance.

3.5.1 Analytical Model

The researcher conducted a multiple regression so as to determine the relationship between hedging strategies and performance of non-financial firms listed at the NSE. The regression model adopted was as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + €$$

Where; Y = Financial Performance (Return on Assets)

X_1 = Leading and Lagging

X_2 = Forwards

X_3 = Currency Invoicing

B_0 = Constant

B_1, β_2, and β_3 = Coefficients

3.5.2 Test of Significance

The hypothesis testing was performed, and regression analysis using coefficient of determination (r^2) tested the hypothesis and give the levels of association among the variables.

CHAPTER FOUR

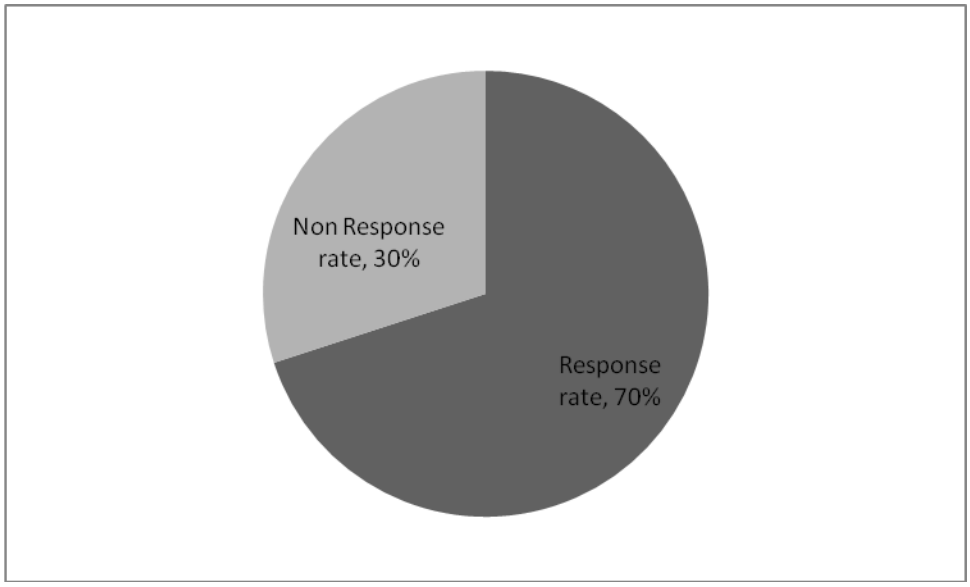
DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter is set out as follows 4.2 presents descriptive statistics, 4.3 regression results and 4.4 is the summary and interpretation of findings.

4.1.1 Response rate

The study targeted 46 non-financial firms operating at the NSE as at December 2015. Out of the 46 firms, 32 availed data which was used in the analysis. This gives a response rate of 69.70% which is within Mugenda and Mugenda prescribed as good response rate for generalization of the findings to the entire population. The findings of the study are well illustrated in Figure 4.1 below.



4.2 Descriptive Statistics

In order to establish the reliability of the data provided, established the distribution of descriptive statistics on the study variables. The findings are well illustrated in the Table 4.1 below:

Table 4.1: Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
Lead and Lag	32	1.00	5.00	3.482	.0680
Forwards	32	1.00	5.00	3.384	.453
Invoicing Currency	32	1.00	5.00	3.561	.356
Return on Assets	32	-2.83	1.74	.1278	.38710

From the findings in Table 4.1, lead and lag had a minimum value of 1.00 with a maximum value of 5.0, the mean was 3.482, standard deviation being 0.0680. The findings on forwards indicated a minimum value of 1.00, a maximum value being 5.0, the mean was 3.384, standard deviation being 0.453. The findings of invoicing currency indicated a minimum value of 1.00 and maximum value of 5.0. The means was 3.561 with a standard deviation of 0.356. For Return on Assets ROA, the minimum value was -2.83%, with a maximum of 1.74 %, the mean was 0.1278% while the standard deviation was 0.3870.

4.3 Pearson's Moment of Correlation

In order to establish the strength of the relationship between Hedging strategies and overall financial results of non-financial trading at the NSE, the study conducted a correlation analysis whose results are well illustrated below:

Table 4.2: Correlations

		Financial Performance (ROA)	Led and Lag	Forwards	Currency Invoicing
Financial Performance (ROA)	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	32			
Led and Lag	Pearson Correlation	.601**	1		
	Sig. (2-tailed)	.003			
	N	32	32		
Forwards	Pearson Correlation	.711**	.699**	1	
	Sig. (2-tailed)	.000	.000		
	N	32	32	32	
Currency Invoicing	Pearson Correlation	.595**	.601**	.507**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	32	32	32	32

**. Correlation is significant at the 0.05 level (2-tailed).

From the findings of correlation analysis, the Pearson correlation between return on Assets and lead and lag strategy of hedging was 0.601, with p value of 0.003. This indicates that there exist a strong positive correlation between overall financial results of an organization (ROA) and the application of lead and lag hedging strategy among non-financial listed firms at the NSE. Since the p value; 0.003 is less than 0.05, it implies the existence of statistically significant association between lead and lag strategy and overall financial results among the firms studied.

The findings further indicate that Pearson correlation between forwards and overall financial results of non-financial firms listed at NSE was 0.711, the p value being 0.003. This means that a strong positive correlation exists between forwards and overall financial results among the firms studied.

The findings indicate that Pearson correlation between currency invoicing and overall financial results of organizations trading at the NSE was 0.595, the p value being 0.000. This means that a strong positive correlation exists between currency invoicing and overall financial results among the firms studied.

4.4 Regression Analysis

The coefficient of determination (R-Square) resulting from the multiple regressions was used to determine the variations in overall financial results that could be explained by the hedging strategies. The findings were well illustrated in the Table 4.3.

Table 4.3: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.762[a]	.581	.559	1.30458

a. Predictors: (Constant), Led and Lag, Forwards, Currency Invoicing

The findings of the model summary indicate that the value of R is 0.862, R square is 0.581 and adjusted R square is 0.559. The findings indicate that 58.10% of among the firms studied can be explained by the independent variables in the study (Led and Lag, Forwards, Currency Invoicing). This however indicates that there are other variables that explain the variations in overall financial results of firms studied not considered in this study hence can form a basis for future studies.

Table 4.4: ANOVA[a]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	139.014	3	46.338	12.92	.000[b]
Residual	100.414	28	3.58621429		
Total	**239.429**	**31**			

a. Dependent Variable: Financial Performance
b. Predictors: (Constant), Led and Lag, Forwards, Currency Invoicing

In order to check model fitness in estimating the relationship between the dependent and independent variables, the study conducted Analysis of Variance (ANOVA) statistics at 5% level of significance. From the Table above, calculated F value is 12.92 and the of F critical value at 5% level was 2.911. Since F calculated is greater than the F critical (12.92>2.911), this shows that the overall model was relevant in explaining the interactions.

Table 4.5: Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.427	1.128		2.151	.036
Led and Lag	.019	.040	.062	.485	.629
Forwards	.143	.033	.517	4.338	.000
Currency Invoicing	.095	.034	.295	2.762	.008

a. Dependent Variable: Financial Performance (ROA)

$Y = 2.427 + 0.019X_1 + 0.143X_2 + 0.095X_3$

Whereby: Y = Financial Performance (ROA), X_1 = Led and Lag, X_2 = Forwards,

X_3 = Currency Invoicing

From the results above, if all the hedging strategy variables were held constant at zero, overall financial results would be at 2.427. An increase in lead and lag would lead to an increase in the overall financial results by 0.019. An increase in forwards would lead to an increase in overall financial results by 0.143 and finally an increase of one unit in currency invoicing would lead to a 0.095 increase in overall financial results of studied firms. These findings show that forwards had the highest coefficient followed by currency invoicing. From the P-values, forwards and currency invoicing were significant

in explaining the variations in overall financial results as their p-values were below 0.05 whereas lead and lag was insignificant as its p-values was more than 0.05.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of the research findings based on the variables of the study. There is also the conclusion section in respect to the findings of the study. The chapter also presents recommendation for the study for policy makers. There is also the recommendation for further studies that opens a room for future studies for scholars, researchers and academicians.

5.2 Summary of the Findings

The findings of descriptive statistics indicated that lead and lag had a minimum value of 1.00 with a maximum value of 5.0, the mean was 3.482, standard deviation being 0.0680. The findings on forwards indicated a minimum value of 1.00, a maximum value being 5.0, the mean was 3.384, standard deviation being 0.453. The findings of invoicing currency indicated a minimum value of 1.00 and maximum value of 5.0. The means was 3.561 with a standard deviation of 0.356. For Return on Assets ROA, the minimum value was -2.83%, with a maximum of 1.74 %, the mean was 0.1278% while the standard deviation was 0.3870.

The findings of correlation analysis revealed that the Pearson correlation between return on Assets and lead and lag strategy of hedging was 0.601, with p value of 0.003. This indicates that strong positive correlation exists between overall financial results (ROA) and the application of lead and lag hedging strategy among non-financial listed firms at

the NSE. Since the p value; 0.003 is less than 0.05, it implies that there is a statistically significant association between lead and lag strategy and overall financial results of studied firms. The findings further indicate that Pearson correlation between forwards and overall financial results of firms studied was 0.711, the p value being 0.003. This means that a strong positive correlation exists between forwards and overall financial results of studied firms. The findings also indicate that Pearson correlation between currency invoicing and overall financial results of firms studied was 0.595, the p value being 0.000. This means that a strong positive correlation exists between currency invoicing and overall financial results of firms studied.

The findings of regression analysis indicated that forwards and currency invoicing were significant in explaining the variations in overall financial results as their p-values were below 0.05 whereas lead and lag was insignificant as its p-values was more than 0.05. Furthermore, positive relationship was established between currency invoicing, forwards and overall financial results. These imply that an increase in forward and currency invoicing increases overall financial results of firms studied.

5.3 Conclusion

The study concludes that a strong positive correlation exists between overall financial results of firms studied and the application of lead and lag hedging strategy among firms studied. There is significant statistical association between lead and lag and overall financial results of firms studied.

There exists a strong positive correlation exists between forwards and overall financial results of firms studied. Statistically significant association exists between forwards and overall financial results of firms studied.

The study further concludes that a strong positive correlation exists between currency invoicing and overall financial results of firms studied. Furthermore, significant statistical association exists between currency invoicing and overall financial results of firms studied.

Forwards and currency invoicing were significant in explaining the variations in overall financial results. There is also positive relationship between currency invoicing, forwards and overall financial results of firms studied.

5.4 Recommendations of the Study

The management of non financial firms listed at NSE should put in place currency invoicing strategies so as to minimize the risks of fluctuation in foreign exchange currencies. Non financial firms ought to invoice in domestic currencies as this shifts transaction risk to their customers abroad.

The study further recommends that non financial firms listed at NSE should actively pursue the led and lag strategies to enhance their overall financial results. There is need for these firms to delay the payment of for imports from their customers at the same time negotiate on how they can have credit facilities paid to them in advance. This will help non financial firms listed at NSE to escape devaluation risk in import payment and default risk in export receipt. This enhances the overall financial results of firms studied.

Non financial firms listed at NSE should also embrace forward contract in hedging against currency and interest rate risks. Presence of forward contracts among non financial firms listed at NSE will ensure that their buyers are obligated to buy, and the non financial firms to sell a given asset at a predetermined price and date in the future. This will enhance the overall financial results of the non financial firms as future fluctuations in interest rates or exchange rates will have been taken care of.

5.5 Recommendation for Further Studies

The current study evaluated relationship between hedging strategies and overall financial results of non-financial firms listed at the Nairobi securities exchange. Future scholars and researchers should undertake their studies in specific segments at NSE for example Manufacturing, Telecommunication, Service and allied or among the firms that have cross listed their shares on East Africa Stock Exchange.

The current study assessed three variables: leading and lagging, forwards and currency invoicing. Future studies should cover other risk management strategies for example diversification of products. This study also used secondary data that was gathered using data collection sheet from the financial statements of the involved firms. Future scholars and researchers should collect their data using other methods for example the questionnaire.

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APPENDIX I: NON FINANCIAL FIRMS LISTED AT NSE

1. A. Baumann & Co Ltd
2. ARM Cement Ltd
3. Atlas Development & Support Services Ltd
4. B.O.C Kenya Ltd
5. Bamburi Cement Ltd
6. British American Tobacco Kenya Ltd
7. Car & General (K) Ltd
8. Carbacid Investments Ltd
9. Centum Investment Co Ltd
10. Crown Paints Kenya Ltd
11. E. A. Cables Ltd
12. E.A.Portland Cement Co. Ltd
13. Eaagads Ltd
14. East African Breweries Ltd
15. Eveready East Africa Ltd
16. Express Kenya Ltd
17. Flame Tree Group Holdings Ltd
18. Home Afrika Ltd
19. Hutchings Biemer Ltd
20. Kakuzi Ltd
21. Kapchorua Tea Co. Ltd
22. KenGen Co. Ltd
23. KenolKobil Ltd
24. Kenya Airways Ltd
25. Kenya Orchards Ltd
26. Kenya Power & Lighting Co Ltd
27. Kurwitu Ventures Ltd
28. Longhorn Publishers Ltd
29. Marshalls (E.A.) Ltd
30. Mumias Sugar Co. Ltd
31. Nairobi Securities Exchange Ltd
32. Nation Media Group Ltd
33. Olympia Capital Holdings ltd
34. Safaricom Ltd
35. Sameer Africa Ltd
36. Sasini Ltd
37. Standard Group Ltd
38. The Limuru Tea Co. Ltd
39. Total Kenya Ltd
40. TPS Eastern Africa Ltd
41. Trans-Century Ltd
42. Uchumi Supermarket Ltd
43. Umeme Ltd
44. Unga Group Ltd
45. Williamson Tea Kenya Ltd
46. WPP Scangroup Ltd

Source: (NSE, 2016)

APPENDIX II: QUESTIONNAIRE

RELATIONSHIP BETWEEN HEDGING STRATEGIES AND PERFORMANCE OF NON-FINANCIAL FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

1. Below are several hedging strategies adopted by firms in managing their foreign exchange exposure. Kindly indicate on a scale of 1-5 the extent to which your organization has applied them in managing its foreign exchange exposure. (Where where 5= strongly agree, 4= agree, 3= neutral, 2= disagree and 1= strongly disagree)

	1	2	3	4	5
LEADING AND LAGGING					
1. Our Company settles foreign currency denominated obligations early in time					
2. Our Company collect foreign currency denominated debts / receivables early in time					
3. Our Company delays payment of its obligations denominated in foreign currency					
4. Our Company delays collection of its obligations denominated in foreign currency					
FORWARDS					
1. Our company enters into agreement with its stakeholders to agree on considerations in advance					
2. Our Company hedges its financing costs through pre-arranged interest rate agreement with providers					
3. Our company hedges through foreign currency denominated loans					
CURRENCY INVOICING					
1. Our Company uses local currency on foreign sales					
2. Our Company uses United States Dollar on Foreign Currency					
3. Our Company negotiates special rates on our invoices					

APPENDIX III: RAW DATA

Company Name		EABIT (KSHS)	TOTAL ASSETS (KSHS)	ROA
KENGEN-	2011	2080121	160993290	0.012921
	2012	2822600	163144873	0.017301
	2013	522704	188673282	0.00277
	2014	2826323	250205524	0.011296
	2015	11517327	342519995	0.033625
KOBIL-	2011	3273831	13180127	0.248391
	2012	-6284575	7343350	-0.85582
	2013	558419	7382919	0.075637
	2014	1423011	7616244	0.186839
	2015	2479532	8766436	0.282844
NMG-	2011	1949.3	3324.2	0.586397
	2012	2612.7	4031.5	0.648071
	2013	2615.7	4449.9	0.587811
	2014	2418.1	4256.7	0.568069
	2015	2076.6	3933.8	0.527887
CAR AND GENERAL-	2011	288706	2456992	0.117504
	2012	266556	2776937	0.095989
	2013	315790	31434826	0.010046
	2014	278363	3962355	0.070252
	2015	127147	3992257	0.031848
MARSHALL-	2011	181501	403568	0.449741
	2012	-165527	392629	-0.42159
	2013	-110029	294564	-0.37353
	2014	-2481	298291	-0.00832
	2015	-20393	286917	-0.07108
SAMEER-	2011	96948	2370933	0.04089
	2012	186454	2458887	0.075829
	2013	401189	2831926	0.141666
	2014	-89097	2719397	-0.03276
	2015	-141714	2497020	-0.05675
TPS EAST AFRICA-	2011	615891	11516544	0.053479
	2012	493588	11183940	0.044134
	2013	451011	13517985	0.033364

	2014	165783	13168419	0.012589
	2015	-141339	13581474	-0.01041
EA CABLES-	2011	314730	2918720	0.107832
	2012	527060	3530652	0.149281
	2013	398202	4063157	0.098003
	2014	673817	4595807	0.146616
	2015	-1432804	5229033	-0.27401
TOTAL KENYA-	2011	1312.3	39984.2	0.03282
	2012	-202.1	32980.6	-0.00613
	2013	-71.4	35198.2	-0.00203
	2014	1424088	32541800	0.043762
	2015	1615003	34225035	0.047188
CENTUM- 2011		2292383	9559377	0.239805
	2012	1189405	10041242	0.118452
	2013	1034098	13642741	0.075798
	2014	3055370	20272837	0.150713
	2015	7942432	38555000	0.206003
KQ-	2011	3538	56529	0.062587
	2012	1660	53676	0.030926
	2013	-7864	71855	-0.10944
	2014	-3382	84901	-0.03983
	2015	-25743	101432	-0.2538
LONHORN-	2011	127746	411405	0.310512
	2012	-22465	264585	-0.08491
	2013	93918	385866	0.243395
	2014	94933	434320	0.218578
	2015	71717	380378	0.188541
BAT- 2011		3097755	8409916	0.368346
	2012	3270852	9123815	0.358496
	2013	3723691	10204821	0.364895
	2014	4255314	11070605	0.38438
	2015	4976256	12080481	0.411925
E.A BREWERIES- 2011		9023660	34202944	0.263827
	2012	11186113	31687489	0.353014
	2013	6522200	31113616	0.209625
	2014	6858608	35405293	0.193717
	2015	9535000	42009009	0.226975
EVEREADY-	2011	-123994	358481	-0.34589

	2012	70084	454965	0.154043
	2013	45092	497778	0.090587
	2014	177589	357764	0.496386
	2015	77710	860359	0.090323
CARBACID-	2011	302195	1694287	0.178361
	2012	389287	1862650	0.208996
	2013	475541	2115977	0.224738
	2014	490641	2377406	0.206377
	2015	393865	2721601	0.144718
UMEME-2011		23009339	559249157	0.041143
	2012	57110	451576	0.126468
	2013	83667	509273	0.164287
	2014	101674	742472	0.13694
	2015	105857	1364343	0.077588
SAFCOM-2011		13158973	79737036	0.16503
	2012	12627607	84283777	0.149823
	2013	17539810	92265128	0.190102
	2014	23017540	96338359	0.238924
	2015	31871303	104767293	0.30421
KAKUZI-2011		549936	3466163	0.158658
	2012	379357	3425677	0.110739
	2013	165028	3570362	0.046222
	2014	160205	3680033	0.043534
	2015	527687	4185969	0.126061

RAW DATA ON DEPENDENT VARIABLE

	Mean	Standard Deviation
LEADING AND LAGGING		
Our Company settles foreign currency denominated obligations early in time	3.7302	1.2076
Our Company collect foreign currency denominated debts / receivables early in time	3.8730	1.0394
Our Company delays payment of its obligations denominated in foreign currency	4.0476	0.9576
Our Company delays collection of its obligations denominated in foreign currency	3.8751	1.014
FORWARDS		
Our company enters into agreement with its stakeholders to agree on considerations in advance	3.9167	1.0864
Our Company hedges its financing costs through pre-arranged interest rate agreement with providers	3.7561	0.8694
Our company hedges through foreign currency denominated loans	3.4681	1.0568
CURRENCY INVOICING		
Our Company uses local currency on foreign sales	3.6491	0.7681
Our Company uses United States Dollar on Foreign Currency	3.8164	1.0534
Our Company negotiates special rates on our invoices	3.6081	1.0437