



Ashesi University

Currency Risk Management Techniques of Multinational Companies in Ghana

By

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of Bachelor of Science Degree in Business Administration.

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CRM TECHNIQUES OF MNCs IN GHANA

Declaration

I hereby declare that this undergraduate thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

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I hereby declare that the preparation and presentation of this undergraduate thesis were supervised in accordance with the guidelines on supervision of undergraduate thesis laid down by Ashesi University.

Supervisor's Signature:

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Date: September 2020

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Abstract

Currency fluctuations are a world-wide phenomenon which present upside and downside risk for multinational companies. Currency risk exposure can be hedged (managed) using different strategies. The study's main objective was to find out how MNCs in Ghana manage currency risk, and some of the problems they encounter in trying to manage their exposure to currency risk.

This study adopted a quantitative approach to find out the techniques MNCs in Ghana use in managing currency risk. The specific quantitative approach employed in this study was a descriptive analysis technique, tables and graphs were used to enable easier interpretation of data.

The MNCs that responded to the questionnaire confirmed that currency risk was the most significant exposure to their companies, hence most of the firms find it as important risk to be managed. The results of the study indicate that, 19% of the firms that participated in the questionnaire had no proper risk management function. It also emerged that transaction risk exposure is considered as the most critical exposure for Multinational companies in Ghana. Overall, MNCs in Ghana exhibited a low-level use of instruments for hedging against currency risk.

Recommendations aimed at increasing CRM practices among MNCs in Ghana are made. This paper is of importance to MNCs that are exposed to currency risk and to financial institutions that are interested in providing hedging tools to these companies.

Keywords: currency risk, currency risk management, Multinational Companies (MNCs), hedging

CRM TECHNIQUES OF MNCs IN GHANA

List of Abbreviations

CEO- Chief Executive Officer

CRM- Currency Risk Management

FOREX/FX- Foreign Exchange

GIPC- Ghana Investment Promotion Centre

MNCs- Multinational Companies

NBSSI- National Board for Small Scale Enterprises

SPSS- Statistical Packages for the Social Sciences

TABLE OF CONTENTS

DECLARATION	i
ACKNOWLEDGEMENTS	ii
LIST OF ABBREVIATIONS	iv
LIST OF TABLES	vii
LIST OF FIGURES	Error! Bookmark not defined.
CHAPTER 1: INTRODUCTION	1
1.1 Background	1
1.2 Research Problem	3
1.4 Research Objectives	6
1.4.1 <i>General Objective</i>	6
1.4.2 <i>Specific Objectives</i>	6
1.5 Research Relevance	6
1.6 Methodology	7
1.7 Outline of Thesis Report	8
CHAPTER 2: LITERATURE REVIEW	9
2.1 Introduction	9
2.2 Conceptual Framework	9
2.2.1 <i>Does currency risk exist?</i>	10
2.2.2 <i>Determination of exchange rates</i>	11
2.3 Currency Risk	13
2.3.1 <i>Factors that influence currency risk</i>	14
2.4 Currency Risk Exposure	15
2.4.1 <i>Transaction exposure</i>	15
2.4.2 <i>Translation exposure</i>	15
2.4.3 <i>Economic exposure</i>	16
2.5 Currency risk management strategies	16
2.5.1 <i>External currency risk management strategies</i>	17
2.5.2 <i>Internal currency risk management strategies</i>	19
2.6 Empirical studies on currency risk management	20
2.7 Summary and Research gaps	21
CHAPTER 3: METHODOLOGY	23
3.1 Introduction	23
3.2 Research Design	23
3.3 Research Scope	23
3.4 Sampling Strategy	24
3.6 Data Analysis	25

CRM TECHNIQUES OF MNCs IN GHANA

3.7 Ethical Considerations	25
3.8 Validity	26
3.9 Reliability.....	26
3.10 Generalisability	26
3.11 Limitations of the Study.....	27
CHAPTER FOUR: RESULTS	28
4.1 Introduction.....	28
4.2 Data Analysis, Presentation and Interpretation.....	28
4.2.1 <i>Characteristics of Sampled firms</i>	29
4.2.2 <i>Risk Management Function</i>	30
4.2.3 <i>Foreign Exchange Forecasting</i>	32
4.2.4 <i>Financial Risk Exposures</i>	33
4.2.5 <i>Management of Currency Risk Exposure</i>	35
4.2.5 <i>Problems Encountered with Managing Currency Risk</i>	37
4.2.6 <i>The Use of Currency Hedging Techniques by Company Size</i>	38
4.2.7 <i>The Use of Currency Hedging Techniques by Different Industries</i>	38
CHAPTER FIVE: CONCLUSION.....	40
5.1 Introduction.....	40
5.2 Summary	40
5.3 Conclusion	42
5.4 Recommendations.....	43
5.5 Further Research	43
References.....	44
Appendix: Questionnaire	50

List of Tables

Table 1	29
Table 2	31
Table 3	33
Table 4	34
Table 5	34
Table 6	36
Table 7	36
Table 8	37
Table 9	Error! Bookmark not defined.
Table 10	38
Table 11	39

List of Figures

Figure 1 Exchange rate and inflation trend in Ghana (Adu & Karimu, n.d.)	4
Figure 2 International Parity Relationships	11

CHAPTER 1: INTRODUCTION

1.1 Background

As the world of business becomes progressively global, an increasing number of organisations are establishing themselves as Multinational Companies (MNCs). With their entry into the global market, they are presented with new sets of opportunities. However, in their attempt to become market leaders and still remain profitable in foreign markets, they face risks linked to the different countries in which they operate. These risks include but are not limited to failures in some institutions, instability in the political atmosphere and violence, as well as exchange rate volatility (Teebom, 2019). The geographical and cultural differences of buyers and sellers also make international trade risky. Based on this, it can be inferred that international trade is riskier than domestic business.

Currency risk, also known as foreign exchange risk, is one of the biggest risks MNCs face. Currency risk can be described as the exposure faced by firms that operate in different countries concerning the unexpected gains or losses due to the volatility of exchange rates. Fluctuations in currency is a phenomenon that occurs globally, and therefore it affects firms across the globe that are involved in international business. Currency risk can either be short-term or long-term and can affect a firm's valuation, financial result and cash flow. Investors who want to invest in Africa consider it one of the biggest risks (Business World Ghana, 2014).

Every firm, whether domestic or multinational, has goals they would like to achieve, and the main goal of multinational companies is to maximise the wealth of shareholders (Butler, 2016). Accordingly, it is an essential factor that the organisation has structured techniques for managing these exchange rate fluctuations in order for the firm's expected cash flows, profit and bottom line not to be affected. There are three main subgroups of currency risk exposure: (i) translation risk, (ii) transaction risk and (iii) operating risk; therefore, the techniques and systems that organisations use to manage them may vary.

CRM TECHNIQUES OF MNCs IN GHANA

The management of currency risk has progressively gained significance after the Bretton Woods' fixed exchange rate system was abolished in 1971. The fixed exchange rate system was replaced by the floating exchange rate system, where the prices of currencies were determined by how much money was demanded and supplied. Many factors influence demand and supply to change frequently; this new system of floating exchange rates is what gave birth to currency fluctuations which expose companies to currency risk. As international business has increased gradually throughout the years, more companies are being exposed to currency risk. Previous studies have shown that exchange rate fluctuations have a considerable effect on firms' profits (Chiira, 2009).

Managing currency risk using currency risk management (CRM) techniques gives a beneficial outcome to shareholders. Previous studies by Dufey and Srinivasulu (1983) have suggested that CRM can decrease the cost associated with financial distress. Chow and Lee (1997) also suggest that CRM can reduce the effect that fluctuations in exchange rates have on companies. Other studies have shown that in industries where hedging (protecting investment from risky situations) with derivatives are common, companies that hedge outperform companies that do not hedge (Smithson & Simkins, 2005). CRM aims at reducing the volatility of the pre-tax cash flow of a firm; herein lies its riskiness. By stabilising a firm's cash flows, CRM reduces the cost of capital of a firm and improves its ability to implement strategic plans on more reliable cashflows (Jacque, 2013). Makar and Huffman's (1997) research supports this by concluding that currency risk management and currency risk have a positive correlation. Hence, CRM is a crucial activity for firms that frequently trade in the international market. The benefits of hedging are also confirmed by the widespread practice of MNCs across the globe that choose to manage currency risk because they believe the benefits of CRM outweigh the costs.

CRM TECHNIQUES OF MNCs IN GHANA

This study focuses on the techniques multinational firms in Ghana use to manage their currency risk and how these techniques impact the company. Another interesting perspective is the fact that management policies differ between companies with varying sizes. Therefore, when considering a global phenomenon like currency rate fluctuations, it would be interesting to know how firms of different sizes deal with this problem.

1.2 Research Problem

The abolishment of the fixed exchange rate system by the Bretton Woods caused most national currencies to float against each other on the global market, and this made way for the floating exchange rate system to be established. The floating exchange rate system led to currency fluctuations, and these fluctuations have exposed companies to currency risk due to their volatility.

Li (2003) notes that the financial environment in which firms operate is extremely unpredictable and volatile. Some studies on multinational firms engaged in international business have emphasised the fact that the more firms increase their involvement across the globe, the likelihood that they may be confronted with increased exchange rate fluctuations in their operations. As a result, there is a possibility that they might face negative outcomes on their cashflows. Viswanathan and Menon (2005) observed that exchange rate movements could cause profit margins in a firm to be unstable together with significant losses to its bottom line. However, to maintain the firm's overall welfare and cashflows, the extensive use of numerous hedging techniques by most MNCs across the globe has been widely recognised (Chiira, 2009).

The change of the exchange rate regime from fixed to floating caused a spike in the volatility of exchange rates in Ghana from 1983 to 1989. From 2001 to 2010, the volatility was minimal. Since then, there have been intermittent spikes which indicate that Ghana's international competitiveness has declined over the years (Insah, 2013). Insah's (2013) research was aimed at proving the existence of exchange rate volatility in Ghana. His research

CRM TECHNIQUES OF MNCs IN GHANA

proved that exchange rate volatility indeed existed and was of great importance to businesses and policymakers.

Since 1990, the Ghana cedi has seen consistent depreciation in the nominal exchange rate against the US dollar with few incidents of appreciation, *illustrated in figure 1*. The yearly depreciation of the cedi to the dollar had an average of 29% between 1990-1999, 17% between 2000-2009 and 10% in 2010-2012 (Adu & Karimu, n.d.). Again in 2014, for example, the cedi was very unstable and depreciated against the US dollar by 44.65% between January and September (Alagidede & Ibrahim, 2020). The volatility of the Ghana cedi was again confirmed in early 2019 when the cedi was one of the worst-performing currencies against the dollar (Stanapedis, 2019).

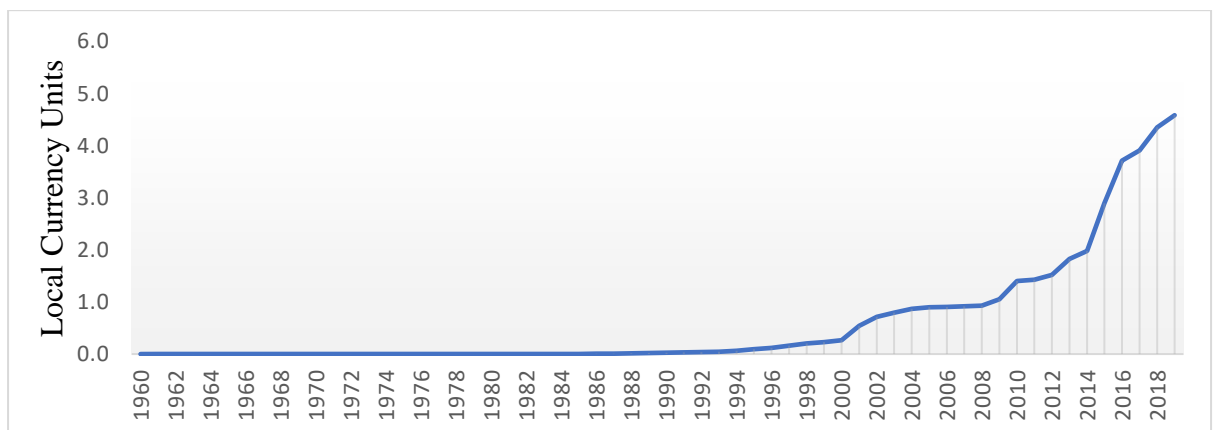


Figure 1 Exchange rate trend in Ghana (Adu & Karimu, n.d.)

In recent times, factors such as MNCs seeking investment opportunities and markets beyond their countries are the main reasons for the increased exposure of companies to currency risk (Salifu et al., 2007). A firm's exposure refers to the sensitivity of its value or stock price to changes in the exchange rate. A study by Salifu et al. (2007) found that for firms listed on the Ghana Stock Exchange, all major currencies of international transaction served as a source of currency risk. The study also found that most companies had negative exposure

CRM TECHNIQUES OF MNCs IN GHANA

coefficients, and this suggests that these companies may have unfavourable valuation effects when the cedi depreciates against foreign currencies (Salifu et al., 2007).

With the volatility of exchange rates in Ghana and the increasing exposure to currency risk, it is important businesses involved in international business that operate in Ghana, hedge from the highly volatile nature of the Ghana cedi against major currencies. These firms need to have an action plan(s) in place to hedge their currency risk exposures. CRM is a necessary factor in the safe management of all firms that have foreign exchange exposure.

Studies in the past on CRM in Ghana have focused on Ghanaian firms involved in international business and firms listed on the Ghana stock exchange. Not much research has been done in Ghana with respect to MNCs with different ownership structures, that is; MNCs owned by Ghanaians, MNCs with parent companies abroad and those with a mixed ownership structure and how they manage currency risk. For example, Abor's paper, 'Managing foreign exchange risk among Ghanaian firms', focused solely on Ghanaian owned MNCs. Abor's paper was written in 2005, and since then there has been no paper written on the subject matter in Ghana. This clearly shows there is both a time and research gap and Ghana, like most countries, has MNCs established that exist despite the high volatility of the Ghana cedi. This study is going a step further to fill this literature gap by describing how MNCs in Ghana as a whole (MNCs owned by Ghanaians, MNCs with parent companies abroad and Companies with mixed ownership) manage currency risk, and some of the problems they encounter in trying to manage their exposure to currency risk.

CRM TECHNIQUES OF MNCs IN GHANA

1.3 Research Questions

To understand better the currency risk exposure and management techniques employed by MNCs in Ghana, the following research questions are identified:

- What are the types of currency risk exposure faced by MNCs in Ghana?
- What are the techniques used by MNCs in Ghana to manage currency risk?
- What problems do MNCs in Ghana encounter in trying to manage currency risk?

1.4 Research Objectives

1.4.1 General Objective

This study seeks to determine the techniques that multinational companies in Ghana employ to manage foreign exchange risk.

1.4.2 Specific Objectives

- To identify the types of currency risk exposure faced by MNCs in Ghana.
- To identify the techniques, MNCs in Ghana use to manage currency risk.
- To identify the problems involved in managing currency risk exposure.

1.5 Research Relevance

This study is significant in a number of ways. Paramount among these is its contribution to the literature on the CRM techniques of MNCs in Ghana. This is an area currently under-researched, as evidenced by extant literature on the subject. Therefore, this research would add to the limited studies on the CRM techniques of MNCs in Ghana. This study will make people aware of the corporate strategies adopted by MNCs in Ghana.

This study will also be of great importance to MNCs in Ghana. The findings will give them insight into the techniques that are used by similar companies to manage the risks that come about as a result of exchange rate volatility. The financial managers of these MNCs can

CRM TECHNIQUES OF MNCs IN GHANA

use the findings of this research to plan strategies that will strengthen their roles in financial risk management.

Finally, the paper is of importance to financial institutions that are interested in providing hedging tools to these companies. This study would give them insight into the currency risks that MNCs in Ghana face and the strategies they have put in place to mitigate them. It would enable them to take into consideration the type hedging tools are most used and could provide for these companies.

1.6 Methodology

This study adopts a quantitative approach to find out the techniques MNCs in Ghana use in managing currency risk. Snowballing sampling technique was used to reach individuals who worked in the Finance and risk departments of Multinational Companies. Friends and family helped in reaching these individuals and some of these individuals also helped to reach colleagues who worked in other companies. The study intended to reach 20 companies, however 16 out of 20 companies responded to the questionnaire. Primary information was the main source of data used in this research, and the research instrument used in collecting this data was a survey administered online via google forms.

The survey included closed-ended questionnaires. The closed-ended questionnaire consisted of questions that were responded to by checking the box provided. This method allowed for easier analysis due to the standard nature of the questions. The limitation of using this approach is that even though it gives insight on what respondents are doing, it does not give an in-depth view into how or why they are doing it (Abor, 2005). Currency management technique responses were measured with a Likert-type rating scale to help determine the extent to which these companies use hedging techniques.

CRM TECHNIQUES OF MNCs IN GHANA

The data from respondents was put into a Statistical Packages for the Social Sciences (SPSS) database application for analysis. The empirical results were presented and analysed using a descriptive statistics approach.

1.7 Outline of Thesis Report

This dissertation is organised in five chapters. The first chapter presents the background to the study, the problem statement, the research questions, the specific objectives, the scope and limitations, the significance of the study and the organisation of the work. The second chapter is the literature review, and this is divided into two parts: the theoretical framework and a review of empirical studies. Chapter three introduces the methodology of the research used in answering the research objectives. It includes the research design, sampling technique, data source and method of collection. Chapter four presents the analysis of the data collected and discusses the results of the study. The conclusions and recommendations of the study are discussed in the fifth chapter.

CHAPTER 2: LITERATURE REVIEW.

2.1 Introduction

This chapter gives a review of existing literature on Currency Risk Management (CRM) techniques of multinational companies. It focuses on the review of empirical studies, general literature and a conceptual framework. The section presents models and theories that are essential to CRM. The conceptual framework is divided into an introduction of the conceptual framework, some theories that relate to currency risk, currency risk exposure and CRM strategies. The empirical studies, which comes after the conceptual framework, reviews literature across the globe relating to currency risk management techniques used by MNCs to give a preview of the issue tackled in this paper. The chapter concludes by highlighting the research gap this study seeks to fill within the Ghanaian context.

2.2 Conceptual Framework

Currency risk is the risk that a company may have to pay higher or lesser than what they expect to pay due to exchange rate volatility between its home currency and the foreign currency in which payment is made (Abor, 2005). These variabilities of earnings can be removed wholly or partially at the cost of foreign exchange management (Jacques, 1981). Companies are exposed to three types of currency risk: translation exposure, operating exposure, and transaction exposure Translation risk exposure is the possibility that the financial statement of a firm may change due to exchange rate changes. Transaction risk exposure refers to the potential that the value of real assets may change unexpectedly due to exchange rate changes. Economic risk exposure refers to the potential that the monetary cashflows of a company may change due to unexpected changes in exchange rate (Butler, 2016).

CRM TECHNIQUES OF MNCs IN GHANA

2.2.1 Does currency risk exist?

An important question to ask is whether MNCs view currency risk as an actual risk that needs to be managed. Some theoretical models imply that currency risk is not an actual risk that needs to be considered. For example, the modern capital market theory argues that under certain market efficiency assumptions CRM is unnecessary. The theory states that an organisation's risky projections are estimated by the market directly on the basis of their expected returns and their undiversifiable risk. Hence, the valuation of the market portfolio or individual firm should make no difference whether exchange rates go through the capital market or directly transfer to the market through forwards or foreign currency debt contracts. In this hypothetical world, MNCs transfer their duty of managing currency risk to shareholders who will manage the unsystematic risk portion of currency risk through diversification of their efficient portfolio. The model also assumes that investors consume one homogenous good and the law of one price holds (Jacque, 1981). In the real world, it is more complicated than these models stress.

Another argument based on some models is that the movement in currency exchange rates will be equalised in the long run. Nevertheless, this argument is not credible because it does not consider businesses in the short-term (Schuster, 2002). Currency risk exists, and if it is not managed well by companies, it will cause instability in profit margins together with significant losses as observed by Viswanathan and Menon (2005). Empirical work has suggested that a company's exposure to fluctuating exchange rates depends mainly on the nature of their business operations and its competitors (Bradley & Moles, 2001.) In dealing with currency risk, companies have to consider the nature of their business and the environment in which they operate. In addition to this, they should see it as a risk that has to be managed and not as a way to increase profit.

CRM TECHNIQUES OF MNCs IN GHANA

2.2.2 Determination of exchange rates

Companies exposed to currency risk need to understand the underlying principles of how exchange rates are determined. One of the most basic examples which explain how exchange rates are determined is that the demand and supply of currencies determine them. However, the fundamental factors of the demand and supply of a currency are not explained by this basic explanation (Buckley, 1996). The international parity relationships contain important theoretical ideas that explain how exchange rates are determined, illustrated in *figure*

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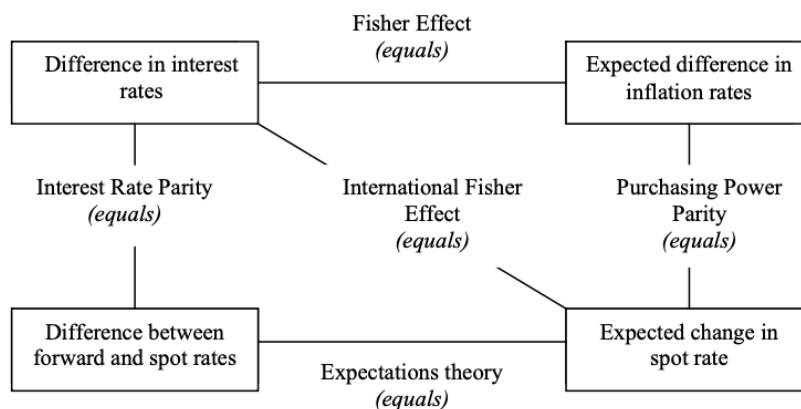


Figure 2 International Parity Relationships

Source: page 9 of Buckley, A. (1996). *The Essence of International Money*.

This model explains the relationship between spot exchange rates, forward exchange rates, inflation rates and interest rates. Even though it is an equilibrium model, markets move towards an equilibrium but hardly reach complete equilibrium in reality (Buckley, 1996). Therefore, if some of the theories under the international parity relationships do not hold in the short-term in the financial market, it would not be surprising.

2.2.2.1 Purchasing Power Parity (PPP)

Butler (2016) describes PPP, which is also known as the law of one price, as one of the most important ideas in international finance and economics. PPP is a theory of exchange rate

CRM TECHNIQUES OF MNCs IN GHANA

determination that states that assets that are equivalent should be sold at the same price. In international finance, the implication is that an asset should have the same value regardless of its currency. If PPP does not hold, there would be an opportunity to make profit from the differences in the price of different currencies (Butler, 2016).

PPP is usually categorised into two variants: absolute and relative (Balassa, 2015). Absolute PPP states that the exchange rate between two countries' currencies is equal to the ratio of their price levels. However, in reality, most traded goods are differentiated products, and due to this and other reasons, consumption baskets differ across countries. This inconsistency was addressed in the relative PPP. The theory states that the inflation and exchange rates of two countries will equalise over time (Al-zyoud, 2015). This is because the demand for the inexpensive good in one country would increase, and vice versa for the more expensive product (Eiteman, 2016).

Empirical studies have proven that PPP holds well in the long run and poorly in the short run (Eiteman, 2016). In addition to this, this theory holds better for countries with relatively high rates of inflation and capital markets that are underdeveloped (Eiteman, 2016). Under less restrictive circumstances, there is an increased likelihood that PPP might hold. If the theory holds, exchange rate determination may be easier.

2.2.2.2 *The Fisher Effect*

Fisher effect theory states that the nominal interest rates in a country are equal to the required real rate of return plus the compensation for expected inflation (Eiteman, 2016). The theory can be described using two stages. The inflation rate expected establishes the nominal interest rates, and this affects the expected future exchange rate (Hallgren et al., 2006).

CRM TECHNIQUES OF MNCs IN GHANA

2.2.2.3 Expectation Theory

This theory explains that forward exchange rates are equal to the expected values of spot exchange rates at the time of forward delivery (McMenamin, 2002). This implies that the distribution of possible real spot rates in the future is focused on the forward rate. However, in real life, forward rates are rarely equal to the future spot rates. This theory would work only if the exchange market is efficient (Buckley, 1996).

2.2.2.4 The International Fisher Effect

This theory is also known as the fisher hypothesis. It states that the nominal interest rate between two countries is directly proportional to the exchange rate changes at any given time. The main idea behind this theory is that, in order for two interest rates to give the same return, the nominal exchange rates' expected growth has to compensate for the differences in the returns (Koráb & Kapouněk, 2013).

2.2.2.5 Interest Rate Parity

This theory relates the money-market interest rate differential to the forward exchange rate (Aliber, 1973). It states that interest rates for securities that have similar risks and maturities should be equal to the forward rate premium or discount of the foreign exchange except for the cost of transaction (Eiteman, 2016).

2.3 Currency Risk

The previous paragraphs have affirmed that currency risk exists and that it should be of importance to companies that deal with it. Currency risk is an ever-present type of systematic risk. Shapiro (1985) defines currency risk as the variability in the value of a firm as measured by the present value of its expected future cash flows due to uncertain changes in the exchange

CRM TECHNIQUES OF MNCs IN GHANA

rate. Alternatively, a widely used definition of currency risk relates to the effect of unexpected exchange rate fluctuations on the value of a firm (Madura, 2018). This implies that currency risk can cause direct or indirect losses on the cash flows of a firm. To develop the idea of currency risk further, companies need to know the sources of currency risk and the types of currency risk they can be exposed to. In addition to this, they need to know how other companies choose to manage the risk.

2.3.1 Factors that influence currency risk

Fluctuations in exchange rates can affect the settlement of contracts, cashflows and value of the firm; hence, it is important to the organisation and its shareholders that currency risk is managed correctly in order for the firm to stabilise its cashflows and enhance its value (Eun & Resnick, 2007). MNCs can be exposed to both indirect and direct risk (Sarkis & Shu, 2008).

According to Sarkis and Shu (2008), the indirect form of currency risk occurs when:

1. Firms transact business in their home country's currency, but prices change over time due to exchange rate volatility.
2. Firms operate both in the home and overseas markets and have foreign competitors who have dissimilar capital cost structures.
3. Firms work both in the domestic and international markets and have domestic competitors whose cost structures are exposed to exchange rates.

The direct form of currency risk occurs when:

1. Firms import and export in foreign currencies.
2. Firms have subsidiaries in countries other than their home country that pay returns in the foreign country's currency.
3. Firms have foreign investment.

CRM TECHNIQUES OF MNCs IN GHANA

4. Firms have foreign assets and debt in foreign currencies.

2.4 Currency Risk Exposure

Exchange rate fluctuations can affect a company indirectly or directly. Direct exposure is easy for a firm to detect. Contrastingly, indirect exposure is more problematic to measure and manage because it depends on what is happening with competitors or in the world (Sarkis & Shu, 2008). In the literature, a company's currency risk exposure is divided into three: transaction, translation and operating exposure. Transaction and operating exposure have an effect on the firm's cash flows, while translation exposure has an effect on the firm's financial statements (Sarkis & Shu, 2008).

2.4.1 Transaction exposure

Transaction exposure measures how the local currency value of a company's contractual cashflows, which are in a foreign currency, would be influenced by fluctuations in the exchange rate. It arises from the possibility of experiencing exchange rate gains or losses on transactions that are denominated in a foreign currency (Wang, 2005). Eiteman (2016) gives four circumstances wherein transaction exposure may occur:

1. Buying and selling goods with their prices in a foreign currency.
2. Lending or borrowing money when repayment is to be made in a foreign currency.
3. Being involved in an exchange forward contract that has not been performed; and
4. Obtaining assets or liabilities stated in a foreign currency.

2.4.2 Translation exposure

Translation exposure, also known as accounting exposure, refers to firms that have foreign subsidiaries or real assets in foreign countries. It is the risk that due to exchange rate changes, a company's income, equity, assets or liabilities will change in value. Translation exposure focuses on values and usually has an effect on items on the balance sheet. It happens

CRM TECHNIQUES OF MNCs IN GHANA

when the financial statements of foreign subsidiaries are translated into the parent company's currency for the firm to prepare its consolidated financial statements (Eiteman, 2016). The value of the liabilities and assets in the foreign currency expressed in the parent company's currency will vary because of the exchange rate changes, but the conversion does not affect cashflows unless the real assets are sold or liquidated (Hallgren *et al.*, 2006).

2.4.3 Economic exposure

Economic exposure is also known as operating exposure; it is usually a long-term exposure (Butler, 2016). Economic exposure measures changes in the present value of a firm caused by variations in future operating cash flows due to the unexpected changes in exchange rates (Eiteman, 2016). This exposure is observed as subjective because it relies on estimated future cash flows over a period of time (Sarkis & Shu, 2008). Hence, it is not caused by the accounting processes but by the analysis of operations, so it includes factors of management's responsibility (Butler, 2016). Theorists are more concerned with the management of this type of exposure because the effects are likely to be long-term, and if it is not managed properly, it may erode a company's competitive position to the point that the long-term survival of the company may become a genuine issue (Ahkam, 1995).

2.5 Currency risk management strategies

Currency risk can be managed in different ways. This section of the paper discusses the techniques which are used in hedging against currency risk. Connolly (2006) defines hedging as taking a position that will drop or rise in value to offset a rise or a fall in the value of an existing position. Choosing the type of hedging technique to use for a firm may depend on taxes, cost, the effects on accounting rules and regulations (Wagner Ricci & Morrison, 1996). Hedging techniques can be divided into external and internal.

2.5.1 External currency risk management strategies

Companies have a number of external techniques, which are also known as financial derivatives, available to them to use in the management of currency risk. When companies choose to use external techniques, they turn to financial markets (Buckley, 1996). By using financial derivatives, it is likely to decrease the risks related to the management of a firm's cash flow with a method known as hedging (Sarkis & Shu, 2008). The financial market instruments for hedging include currency forwards and futures, currency options, currency swaps, and money market hedge.

2.5.1.1 Currency forwards and futures

A forward contract is a contract to deliver an identified amount of one currency for an identified amount of another currency at a value date in the future. With this type of contract, payment and delivery are not required until maturity, but the exchange rate is determined at the time of the agreement. A futures contract is a contract to buy standardised quantities of a commodity at a standardised price and delivery date in the future. Forwards and futures are similar. They both allow parties to exchange currency pairs at a fixed exchange rate at a date in the future. There are, however, a number of things that differentiate them. For instance, forwards are tailored in terms of the amount and maturity of the currency pairs being exchanged, and they can be negotiated in financial institutions. However, futures are standardised and executed by an organised exchange or brokerages. Furthermore, forwards can be established for any currency pairs, while futures trade in seven major currencies: the British pound, the Japanese yen, the German mark, the Mexican peso, the Canadian dollar, the Australian dollar and the Swiss franc. The cost associated with forwards is significantly lower

CRM TECHNIQUES OF MNCs IN GHANA

than the cost associated with futures in terms of prepayments and transaction cost; this results in a negative cost-benefit analysis for futures contracts (Wagner Ricci & Morrison, 1996).

2.5.1.2 Currency options

A currency option is a contract that gives the buyer the right to buy or sell an underlying currency at a specified price and date. The seller is obliged to fulfil the other side of the contract. The seller pays an option premium which gives him the right to purchase or sell. Currency options have several advantages. They are usually used to hedge against currency risk that arises from importing and exporting goods (Cowdell, 2003). However, options are almost always higher in cost compared to other hedging methods; this is due to the option premium (Giddy & Dufey, 1995).

2.5.1.4 Currency swaps

A currency swap is a contractual agreement to exchange a notional amount and the interest of two currencies and, after a length of time which is agreed on, to give back the notional principal. Currency swaps give an opportunity for the parties involved to balance their currency resources in circumstances where funds are excess in one currency and short in another (Cowdell, 2003). Wagner Ricci and Morrison (1996) noted that currency swaps often require extensive documentation and may be complicated and intimidating for some companies. However, currency swaps are relatively inexpensive. The only price the companies pay is the difference in interest rates between the two currencies.

2.5.1.5 Money market hedge

Money market hedge refers to companies that have receivables or payables in a foreign currency. Companies protect their exposure to foreign currency receivables by creating a liability in the foreign currency by borrowing from the money market. In that case, losses from

CRM TECHNIQUES OF MNCs IN GHANA

the underlying exposure are offset by the gains from the liability created in the money market. Companies protect their exposure for payables by creating an asset in the foreign currency by lending in the money market. The losses from the underlying exposure are offset by gains from the asset created in the money market (Butler, 2016).

2.5.2 Internal currency risk management strategies

These are tools used by firms when they want to minimise currency risk within the corporate group. Internal hedging techniques use the features of the company's trading relationships, so they are usually simple in operation (Sarkis & Shu, 2008). There are four main types of internal CRM techniques; they are leading and lagging, matching, payments netting, and choice of invoice currency.

2.5.2.1 *Leading and lagging*

Leading and lagging involve choosing between collecting or paying cashflows that are fixed in foreign currencies earlier (leading) or later (lagging) with the mindset of benefiting from depreciation or appreciation in the value of currencies (Butler, 2016). This technique is a zero-sum game; this means that while one company gains, the other loses. Hence, the profit from taking advantage of exchange rates may be offset by the cost of loss owing to the zero-sum nature of this technique (Wagner Ricci & Morrison, 1996).

2.5.2.2 *Matching*

Matching is similar to netting; the only difference between the two is that matching involves third parties such as external suppliers and customers rather than foreign subsidiaries. With matching, a firm tries to match its currency outflows by the amount and time with the currency outflows they are expecting. Just like netting, in matching what is desirable is a two-way flow of a common currency (Pike *et al.*, 2018).

2.5.2.3 *Payments netting*

The payments netting strategy occurs when a firm and its foreign subsidiaries net off intra-organizational currency flows at the end of each financial period, allowing only the balance to be exposed to risk and hence in need of hedging (Sarkis & Shu, 2008). With this technique, currency transactions within the group are matched against each other to determine the net amount due to or from each operating unit.

2.5.2.4 *Choice of invoice currency*

This technique involves a company choosing an appropriate currency for sales. There are three main forms in which invoice sales could be invoice sales could be only in the domestic currency. They could also be in a currency basket to diversify risk exposure. Invoice sales can also be in both the domestic and foreign in the appropriate proportions to diversify risk exposure. The choice of what currency to invoice sales in is based on the current position of each party's exchange rate and the relationship between the parties (Hallgren *et al.*, 2006).

2.6 Empirical studies on currency risk management

Empirical studies on the importance of CRM suggest that this risk is important to manage. Marshall (2000) noted that CRM is a crucial activity in large Asian, British and American companies. He mentions two main objectives of CRM: to minimise fluctuations in earnings and to seek certainty in cashflows. A similar study was conducted by Schiozer & Saito (2009) for four Latin American countries: Argentina, Brazil, Chile and Mexico. They also noted that the main reason for CRM is to avoid the cost of financial distress associated with currency risk exposure. Abor (2005), in his study on foreign exchange risk management of Ghanaian firms, also established the importance of CRM. He found that most Ghanaian firms did not have a CRM department, and there was a low level of derivative usage amongst the

CRM TECHNIQUES OF MNCs IN GHANA

firms. This was due to a low level of knowledge of the importance of managing currency risk within firms' treasury departments. He encouraged Ghanaian firms to learn about hedging techniques and adopt them to manage currency risk.

On the management of translation, transaction and economic exposure, research conducted by (Batten *et al.*, 1993) found that 61.1% of Australian firms managed only transaction exposure. Marshall's (2000) study on foreign exchange risk management in UK, USA and Asia Pacific companies also revealed that companies are more concerned with hedging their transaction exposure. Loderer and Pichler's (2000) similar research on Swiss firms revealed that transaction exposure was the most frequently hedged. Transaction exposure seems to be more important to firms as compared to translation and economic exposure.

Since 1990, there has been an increase in companies that hedge with currency derivatives (Allayannis & Ofek, 2001). The choice of the strategy a company uses depends on taxes, cost, the effects on accounting rules and regulations (Marshall, 2000). There is no formal, approved CRM technique; because of this, an organisation has the choice of picking a strategy that they deem best (Chiira, 2009).

2.7 Summary and Research gaps

This chapter reviewed relevant literature to the study. It reviewed theories that constitute a conceptual framework to guide this study; these are currency risk, currency risk exposure and currency risk management. It further reviewed empirical studies conducted in local and international domains. Empirical studies on CRM in the international setting have shown that large companies hedge their currency risk, and it has a positive impact on them. A few studies, like Abor's (2005) paper, have been conducted on CRM techniques used by Ghanaian firms. Abor's paper was written in 2005, and since then there has been no paper written on the subject matter in Ghana. This clearly shows there is both a time and research

CRM TECHNIQUES OF MNCs IN GHANA

gap and Ghana, like most countries, has MNCs established that exist despite the high volatility of the Ghana cedi. This study is going a step further to fill this literature gap by describing how MNCs in Ghana as a whole (MNCs owned by Ghanaians, MNCs with parent companies abroad and Companies with mixed ownership) manage currency risk, and some of the problems they encounter in trying to manage their exposure to currency risk. Ghana has an underdeveloped derivatives market, this means MNCs in Ghana do not have a wide range of derivatives to choose from in managing currency risk. On the other MNCs with their parent companies in developed countries may be exposed to a wider range of derivatives since they have a wider range of options to choose from. This research gives insight into the different derivatives used by companies with different ownership structures.

CHAPTER 3: METHODOLOGY.

3.1 Introduction

An appropriate research methodology design is the backbone of good research work (Saunders et al., 2009). Hence, this chapter explains the methods that will be employed in conducting this research. This study sought to find out how Multinational Companies (MNCs) in Ghana manage currency risk. To achieve this objective adequately, primary data was collected from MNCs in Ghana through a survey administered via Google forms. This chapter explains the research design, sampling techniques, how data was collected and analysed. Limitations in the data collection and ethical considerations will be highlighted as well.

3.2 Research Design

Akhtar (2016) describes a research design as the glue that holds all the elements of the research together. It encompasses the sample size, sampling procedure, data collection method and data analysis (Sarantakos, 2013). This research was conducted using a quantitative approach. A quantitative approach was adopted because it allowed for a broader study due to the fact that it involved a greater number of subjects as compared to a qualitative study and this allowed for easier generalisation of results (Labaree, n.d.). The specific quantitative approach employed in this study was a descriptive analysis technique. Descriptive analysis was employed because it enabled data to be presented in a meaningful way, which allowed for easy interpretation of data (Labaree, n.d.).

3.3 Research Scope

The target population for this study was MNCs in Ghana. Due to cost considerations and feasibility of data collection, the research was conducted in the Greater Accra Region. Additionally, the head offices of most MNCs are located in the Greater Accra Region.

3.4 Sampling Strategy

This research was based on the premise that MNCs in Ghana are faced with currency risk. Currency risk management is, therefore, important to MNCs since they frequently trade in the international market. To find out if MNCs in Ghana manage currency risk and the techniques they use to manage this risk, the study intended to select a sample of 20 MNCs from a sampling frame of 100 MNCs that operate in Ghana and were registered with the Ghana Investment Promotion Centre (GIPC) using a simple random sampling technique. Unfortunately, the list was not received from GIPC, so the sampling method that was employed was the snowballing technique. Snowball sampling strategy is a technique where one or two contacts of the population are contacted, and these contacts identify other members (Saunders et al., 2009). This technique was used to reach out to individuals who worked in the Finance and risk department of Multinational Companies. Friends and family helped in reaching these individuals and some of these individuals also helped to reach colleagues who worked in other companies. The study intended to reach 20 companies, however 16 out of 20 companies responded to the questionnaire. The use of the snowball sampling as an alternative, made it quicker and easier to find respondents from reliable sources for the researcher to select a smaller sample size from a larger population. A major concern while using this technique was the fact that it would not have been representative of the entire population. This is due to the fact that the respondents could have been very similar. Which in this case would have been individuals who work in the finance department of MNCs in the same industry. However, the respondents all worked in the finance departments within nine different industries.

3.5 Data Collection

Primary data was the main source of data used in this research, and the research instrument used in collecting this data was a survey. The survey included close-ended questionnaires. The closed-ended questionnaire consisted of questions that could be answered

CRM TECHNIQUES OF MNCs IN GHANA

by ticking a box. This method allowed for easier analysis due to the standard nature of the questions (O'Leary & Israel, 2018). The limitation of using this approach is that even though it allows the researcher to know what the respondents are doing, it does not give an in-depth view into how or why they are doing it (O'Leary & Israel, 2018). Currency management technique responses were measured with a Likert scale to help describe the extent to which these companies use hedging techniques.

3.6 Data Analysis

The collected data was sorted, edited and coded to have the required accuracy. It was then entered into an SPSS database application for analysis. The empirical results were presented and analysed using a descriptive statistics approach. Descriptive statistics refer to analysing, summarizing and presenting data that has been derived from a sample. This approach provides simple summaries that describe what the data shows (Trochim, n.d.). Therefore, descriptive statistics enabled the data collected to be presented in a more meaningful way, which then allowed a simpler interpretation of the data.

3.7 Ethical Considerations

In attempting to maximise the information quality, this paper acknowledged that it must minimise risk to respondents of the questionnaire (Gillespie & Glisson, 1992). Therefore, the principles of ethics were observed in this study. The proposal of the research and the questionnaire were passed through Ashesi University's Institutional Review Board (IRB) before the fieldwork started. This committee confirmed that the research met all ethical requirements. After review had been done by the board, fieldwork began. Respondents were told about the nature and purpose of the research. They were also allowed to ask questions and quit the study if they chose to. Confidentiality was promised to all participants; therefore, it was protected. No participant from the organisation's name or contact details was released. The highest level of ethical standards and integrity of academia was observed in this study, and

CRM TECHNIQUES OF MNCs IN GHANA

external sources of data were referenced. The data collected was used exclusively for the purpose of this research, and no attempt was made to destroy or fabricate collected data.

3.8 Validity

Validity has to do with if the research results are really what they seem to be about (Saunders et al., 2009). To make sure respondents understood the purpose of the research, they were given a summary of the research before they were given the questionnaire to fill. One thing that could have had an adverse influence on the validity of this study is if the participants believed the results could have disadvantaged them one way or the other (Saunders et al., 2009). This was not a problem in this study because the respondents were anonymous, and the results of the study would be useful to them in the future. The problem of mortality, which refers to participants dropping out of the study, was not encountered since the study was not long-term.

3.9 Reliability

Reliability refers to the degree to which a study's data collection techniques or analysis will produce consistent results, and if other scholars could reach similar findings (Saunders et al., 2009). The main threat to reliability in using a questionnaire is subject or participant error. With this threat, a questionnaire completed at different times may produce different findings (Saunders et al., 2009). In this study, the questionnaire completion time did not affect the results. Further, the respondents from the companies were completely anonymous, which eliminated the incentive of not telling the truth.

3.10 Generalisability

Generalisability concerns with whether the results of the study may be equally applicable to other research settings, such as other companies (Saunders et al., 2009). In a quantitative study, it is the extent to which the findings can be generalised from a representative

CRM TECHNIQUES OF MNCs IN GHANA

sample to an entire population (Saunders et al., 2009). This study can be generalised because the sample was representative of the entire population.

3.11 Limitations of the Study

The major limitation of this study was the small sample size. The small sample size was mainly due to the difficulty in collecting data during the COVID 19 pandemic. Most companies were working from home during the global pandemic. Also, most companies had concerns about their company name appearing in the research, so they had to be reassured, and others refused to answer the questionnaire altogether. Due to the small sample size, the results of the study cannot be generalized.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter establishes the relationship between the data collected and the objectives of the study. The study sought to determine the techniques used by Multinational Companies in Ghana to manage their currency risk exposures. The research questions that this study sought to answer are:

- What are the types of currency risk exposure faced by MNCs in Ghana?
- What are the techniques used by MNCs in Ghana to manage currency risk?
- What problems do MNCs in Ghana encounter in trying to manage currency risk?

The corresponding research objectives of the study were:

- To identify the types of currency risk exposure faced by MNCs in Ghana.
- To identify the techniques, MNCs in Ghana use to manage currency risk.
- To identify the problems involved in managing currency risk exposure.

To aid with the analysis and presentation of data, descriptive statistics was used for ease of understanding.

4.2 Data Analysis, Presentation and Interpretation

The data for this study were collected from a target population of 20 Multinational companies (MNCs) through the administration of questionnaires. The respondents to the questionnaire were mostly Finance and Risk managers or worked in the finance department (14 respondents), and in some few cases, CEO's (2 respondents). Out of 20 Multinational companies, 16 responded, representing a response rate of 80%, while the remaining 4 did not give a reason for not participating. This may have been to prevent information from leaking to industry rivals. However, the response rate is significant enough to make a valid and reliable conclusion from the data collected to satisfy the research objectives.

CRM TECHNIQUES OF MNCs IN GHANA

4.2.1 Characteristics of Sampled firms

Table 1 presents the characteristics of the MNCs that were sampled based on industry classification, size and ownership. In all, (9) nine industries were represented including Automobile, representing 6% of valid responses, Communication (6%), Finance, property and business services (44%), Manufacturing (6%), Mining (6%), Oil and gas (6%), Public Administration and Defence (13%), Transport and Storage (6%) and Wholesale and retail trade (6%).

The size of company categories was defined based on the number of employees on classifications made by the NBSSI. MNCs with employees less than 30 were classified as small. Companies with employees between 30 and 99 were classified as medium, and large companies had 100 and more employees. 6% of the firms, fell within the small category; 4 (25%) were medium-sized, and 11 (69%) were large. Out of the 16 respondents, 7 (44%) were wholly Ghanaian-owned, 5 (31%) were wholly foreign-owned, and the remaining 4 (25%) had both Ghanaian and foreign ownership.

Table 1

Characteristics of Sampled firms

	Frequency	Percentage
<i>Industry</i>		
Agriculture	0	0%
Auto Mobile Industry	1	6%
Communication	1	6%
Community Services	0	0%
Construction	0	0%
Electricity, gas and water	0	0%
Finance, property and business services	7	44%
Manufacturing	1	6%
Mining	1	6%
Oil and Gas	1	6%
Public Administration and defence	2	13%

CRM TECHNIQUES OF MNCs IN GHANA

Recreation, personal and other services	0	0%
Transport and storage	1	6%
Wholesale and Retail trade	1	6%
Total	16	100%

Size

Small	1	6%
Medium	4	25%
Large	11	69%
Total	16	100%

Ownership

Wholly Ghana owned	7	44%
Wholly Foreign owned	5	31%
Both	4	25%
Total	16	100%

Source: Survey Data

4.2.2 Risk Management Function

The presence of a risk management department in a company is a good step toward the management of financial risk. This department is responsible for making sure that risks are identified and are mitigated effectively so that the companies' value can be maximised (Chiira, 2009). The research noted that 19% of the firms that participated in the questionnaire had no proper risk management function, while the remaining 81% had a functioning risk management department. The firms that have a functioning risk department, which constituted 13 of the firms, were asked how long the risk department had been in operation. It was noted that 1 firm (8%) had been in existence for less than 5 years; another 1 firm (8%) for 5 to 10 years, and 11 firms (85%) for over ten years. This shows that the management of risk is becoming more important to MNCs. Among the 13 firms that have a functioning risk management department, risk is usually managed by the CEO, the Chief Risk Officer or the Accountant. Data from the questionnaire revealed that 38% of the firms have their CEO managing currency risk. Research done by (Batten *et al.*, Marshall, and Loderer and Pichler) to mention a few, on currency risk

CRM TECHNIQUES OF MNCs IN GHANA

management techniques in countries across the globe show that currency risk is usually managed by a firm's treasurer, risk manager or finance officer. CEO's managing currency risk is unusual, but this study finds that some MNCs have their CEO's managing currency risk. This may be because the CEO's have a background in finance, or the firms do not have a well-established risk management department.

Does your company have a risk management function?

16 responses

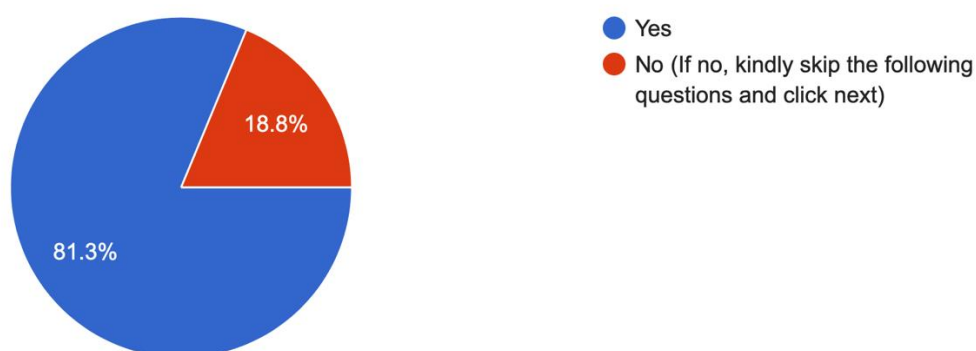


Figure 4.1 Risk Management Function

Table 2

Risk Management Function

	Frequency	Percentage
<i>If yes, how long has the function been operational?</i>		
Below 5 years	1	8%
Between 5 and 10 years	1	8%
Over 10 years	11	85%
Total	13	100%
<i>Who is responsible for the risk management function?</i>		
CEO	5	38%
Financial Officer	1	8%
Accountant	1	8%
Treasurer	1	8%
No One in particular	1	8%
Chief Risk Officer	2	15%
Other	2	15%
Total	13	100%

Source: Survey data

4.2.3 Foreign Exchange Forecasting

Exchange rate forecasting is the estimation of future exchange rates (Butler, 2016). It allows individuals and firms to make decisions through their predictions to derive value in monetary terms. The firms that had a risk management function present in their company were also asked questions concerning exchange rate forecasting in the questionnaire. From the previous section, 13 respondents answered yes to the question of whether or not their companies had a risk management function present. Out of these 13 companies, 7 (54%) forecast exchange rate movements on their own, while the remaining 6 (46%) do not forecast on their own. 5 (71%) of the firms that forecast exchange rate movements on their own forecast them in all currencies to which their companies are greatly exposed, while the remaining 2 (29%) only forecast in volatile currencies. For the sources of the information for exchange rate forecasting (Figure 4.2), banks were the highest source of information (72.7%), followed by external consultants, companies' foreign headquarters, financial models and financial publications which were 27.3%. The result on sources of information revealed that MNCs receive this service from external sources. This supports the reasoning of no-cost justification in the literature, as it will be cheaper for these MNCs to receive the service from external sources than incur cost by buying equipment or hiring more staff. This is similar to results for large MNCs in Latin America by Schiozer & Saito (2009). Additionally, since banks and some external consultants are major players in the forex market, it would be cheaper for them to obtain information at a lower cost.

Table 3

Foreign exchange forecasting

	Frequency	Percentage
<i>Do you forecast exchange rate movement on your own?</i>		
No	6	46%
Yes	7	54%
Total	13	100%
<i>If yes, in which currencies?</i>		
All currencies in which your company is greatly exposed	5	71%
Volatile currencies only	2	29%
Major world currencies	0	0%
Total	7	100%

Source: Survey data

What is the source of information for your exchange rate forecasts?

11 responses

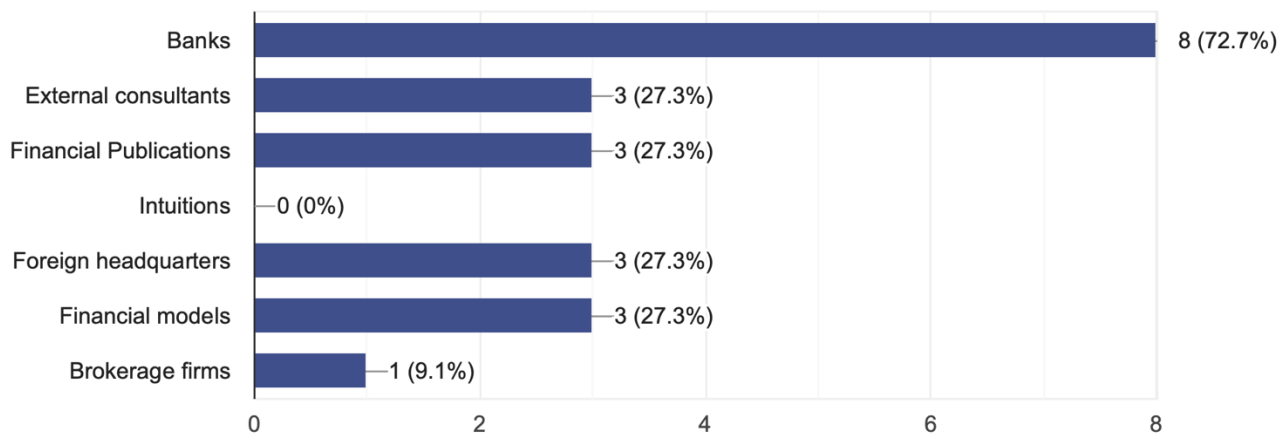


Figure 4.2 Source of Exchange Rate Forecasting Information

4.2.4 Financial Risk Exposures

The exposure of MNCs to financial risk was ranked on a scale of 1 to 5 in order of its significance to each company. From table 4, foreign exchange risk had a mean of 4.5 and ranked as the most significant. This was followed by credit risk with a mean of 4, interest rate fluctuations with a mean of 3.25, while fraud was the last and had a mean of 3.06. It can be

CRM TECHNIQUES OF MNCs IN GHANA

inferred that foreign exchange risk is vital to the operation of MNCs; therefore, mitigating it is important. These results are consistent with Marshall's (2000) study, where he found that currency risk management is one of the most crucial financial activities in big firms in the USA, UK and Asia.

Table 4

Significance of financial risk exposure

Nature of Exposure	1	2	3	4	5	Total No. Companies	Mean	Rank
Interest rate fluctuations	0	12	0	0	4	16	3.25	3
Foreign exchange risk/ Currency risk	14	0	0	0	2	16	4.5	1
Credit risk	12	0	0	0	4	16	4	2
Fraud	0	10	1	1	4	16	3.06	4

Source: Survey data

Key

1= Very Important (5 points) **2=** Important (4 points) **3=** Fairly Important (3 points)

4= Slightly Important (2 points) **5=** Not Important at all (1 point)

Upon the analysis of data on how critical the types of exposures are to MNCs, as presented in table 4.5 below, the study found that transaction risk exposure is considered as the most critical exposure; it had a mean of 2.42. It was followed by translation risk exposure, which had a mean of 2.15, and then economic risk with a mean of 1.82. Batten *et al.*, (1993) found a similar result with Australian firms. Their study found that companies in Australia view transaction risk exposure to be the most critical. The results are also consistent with Marshall's (2000) study on foreign exchange risk management that companies in the UK, USA and Asian are more concerned with hedging their transaction exposure.

Table 5

Importance of currency risk exposure to MNCs

Type of exposure	Least Critical (1)	Critical (2)	Most Critical (3)	Total No. of companies	Mean	Rank
Transaction	2	3	7	12	2.42	1

CRM TECHNIQUES OF MNCs IN GHANA

Translation	4	3	6	13	2.15	2
Economic	4	5	2	11	1.82	3

4.2.5 Management of Currency Risk Exposure

From figure 4.3 below, out of the 16 MNCs that responded to the questionnaire, 4 (25%) manage currency risk while the remaining 12 (75%) do not manage or hedge against currency risk. The low numbers indicate that most Multinational companies in Ghana do not practice hedging. The 25% who manage currency risk indicated that they hedge mainly to reduce the volatility of their cashflows and minimise foreign exchange losses.

These results are similar to Abor's (2005); even though his study focused only on Ghanaian firms, his study found that 23.5% of Ghanaian firms (16 respondents) hedged foreign exchange risk, while the remaining 76.5% of Ghanaian firms (52 respondents) were not hedging. This indicates that since Abor's study, not a lot of firms operating in Ghana have adopted hedging foreign exchange risk.

Is the company hedging (managing) the exchange rate risk?

16 responses

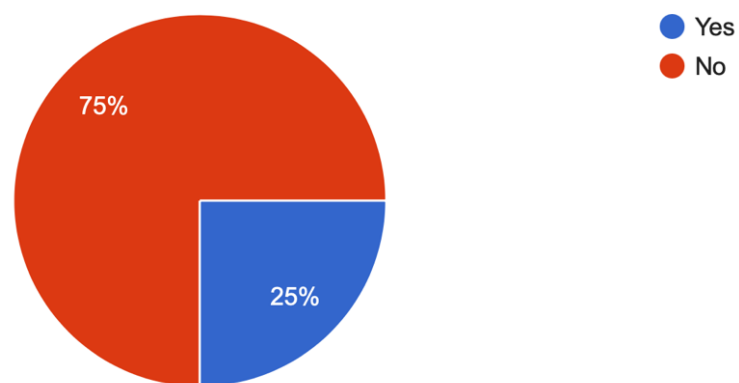


Figure 4.3 Employing CRM Techniques

Table 6

Reason for employing CRM techniques

	Frequency	Percentage
<i>What is the main reason for adopting CRM practices in your firm?</i>		
Minimize foreign exchange losses	2	50%
Reduce the volatility of cashflows	2	50%
Protect earnings fluctuations	0	0%
Reducing financing costs	0	0%
Other	0	0%
Total	4	100%

With regard to the internal hedging techniques (table 7 below), the changing currency of billing technique was the most popular with a mean of 3.5. The companies further explained that they are usually billed in US dollar to measure against currency risk. Netting, Prepayment and Asset liability management ranked as the second most used internal hedging techniques with a mean of 3.25. Ranking in the last place was Leading and Lagging, Restructuring and Increasing prices, which were all techniques rarely used by Multinational companies to hedge against currency risk internally. Restructuring as a way of hedging may not be popular among MNCs because applying it is difficult, and it is irreversible in the short-term (Chiira, 2009).

Table 7

Internal hedging techniques

Instrument/technique	Often 4	Sometimes 3	Rarely 2	Never 1	Mean	Rank
Cash flow matching						
(Netting)	1	3	0	0	3.25	2
Prepayment	1	3	0	0	3.25	2
Leading and Lagging	1	1	2	0	2.75	3
Restructuring	1	1	2	0	2.75	3
Increasing prices	0	3	1	0	2.75	3

CRM TECHNIQUES OF MNCs IN GHANA

Changing currency of billing	2	2	0	0	3.5	1
Asset liability management	1	3	0	0	3.25	2

Table 8 indicates that external hedging techniques (derivatives) are not usually used by MNCs in Ghana. This may be due to the fact that Ghana does not have an active derivative market. However, the most used external hedging technique among MNCs is forwards with a mean of 3. Empirical studies by researchers around the world have shown that forward contracts are the most frequently used derivative (Aliber, 1973). This is due to the fact that the cost associated with forwards is significantly lower than the cost associated with other derivatives (Wagner Ricci & Morrison, 1996). Currency options ranked second with a mean of 2.25. Currency swaps had a mean of 2 and ranked third, while the money market technique ranked fourth with a mean of 1.75. The use of futures ranked last with a mean of 1.25; this is not surprising, given the fact that Ghana does not have an organised futures exchange.

Table 8

External hedging techniques

Instrument/technique	Often 4	Sometimes 3	Rarely 2	Never 1	Mean	Rank
Forwards	1	2	1	0	3	1
Futures	0	0	1	3	1.25	5
Money Market	0	0	3	1	1.75	4
Options	0	2	1	1	2.25	2
Swaps	0	1	2	1	2	3

4.2.5 Problems Encountered with Managing Currency Risk

The MNCs that hedge against currency risk were further asked of some of the problems they encountered in managing currency risk. The main problem they encounter is the fact that it is time consuming. This is mainly because Companies need to track the global exchange market to get ahead of unfavourable currency valuations.

CRM TECHNIQUES OF MNCs IN GHANA

4.2.6 The Use of Currency Hedging Techniques by Company Size

Table 10 indicates the use of derivatives increases with the size of the company. 3 out of 11 companies that have 100 or more employees use currency hedging techniques to manage currency risk, while 1 out of 4 companies that have employees between 31 to 99 manage their currency risk using currency risk management techniques. None of the companies with 30 employees or less use currency risk management techniques to hedge against exchange rate fluctuations. This could be because, as small companies they find FX hedging to be complicated or they do not have structures such as a functioning risk management department in place. Hedging currency risk does not need to be complicated simple hedging tools such as forward contracts are simple tools that can be used in CRM. Additionally, small companies may not be very exposed to currency risk and therefore do not see the need to hedge. These results are consistent with the results of the research by Chamberlain *et al.*, (1997) on the exchange rate exposure of U.S. and Japanese banking institutions. Their study found that the exposure of a company had a strong correlation with the size of the company. Smaller firms were less exposed to currency risk and bigger firms were more exposed.

Table 9

The use of currency hedging techniques by company size

Company size	Number of companies	Percentage	Use of Currency Hedging Techniques
Small	1	6%	0
Medium	4	25%	1
Large	11	69%	3
Total	16	100%	4

4.2.7 The Use of Currency Hedging Techniques by Different Industries

The results of the questionnaire revealed that MNCs in the automobile industry, finance, property and business services industry and the oil and gas industry manage currency

CRM TECHNIQUES OF MNCs IN GHANA

risk using derivatives. Upon further research from the survey results, the two companies in the finance, property and business services industry and the one company in the oil and gas industry are wholly foreign owned. This could be due to the fact that their parent companies are exposed to more derivatives than companies which are wholly Ghanaian owned.

Table 10

The use of currency hedging techniques by different Industries

	Number of companies	Percentage	Use of Currency Hedging Techniques
<i>Industry</i>			
Agriculture	0	0%	0
Auto Mobile Industry	1	6%	1
Communication	1	6%	0
Community Services	0	0%	0
Construction	0	0%	0
Electricity, gas and water	0	0%	0
Finance, property and business services	7	44%	2
Manufacturing	1	6%	0
Mining	1	6%	0
Oil and Gas	1	6%	1
Public Administration and defense	2	13%	0
Recreation, personal and other services	0	0%	0
Transport and storage	1	6%	0
Wholesale and Retail trade	1	6%	0
Total	16	100%	4

CHAPTER FIVE: CONCLUSION

5.1 Introduction

This section of the study gives a summary of the findings and a conclusion on the study by answering the research questions. It also gives recommendations for future research. This chapter is divided into four subsections: a summary of the findings, conclusion, research recommendations, and recommendations for future research.

5.2 Summary

The objective of this study was to determine the techniques used by Multinational Companies in Ghana to hedge against the risk of being exposed to exchange rate fluctuations. Data were collected from the target population which comprised of 20 MNCs in Ghana through the administration of questionnaires via google forms. The respondents of the questionnaire were mostly Finance and Risk managers or individuals who worked in the finance department (14 respondents), and in some few cases, CEO's (2 respondents) who worked in MNCs. Out of 20 companies, 16 responded, which represents a response rate of 80%, while the remaining 4 did not give a reason for not participating.

The results of the study show that 19% of the firms that participated in the study had no proper risk management function. The firms that have a functioning risk department, which constituted 13 of the firms (81%) of participants, were asked how long the risk department had been in operation. It was noted that 1 firm (8%) had been existence for less than 5 years, 1 firm (8%) for 5 to 10 years and 11 firms (85%) for over ten years. This shows that the management of risk is becoming more important to MNCs. Currency risk (foreign exchange risk) was ranked as the most significant risk exposure faced by Multinational Companies (MNCs) in Ghana.

It emerged that transaction risk exposure is considered as the most critical exposure for

CRM TECHNIQUES OF MNCs IN GHANA

Multinational companies in Ghana. It was followed by translation risk exposure, which is usually a concern for companies that have subsidiaries in other countries since they have to translate their financial statements from the foreign currency to that of the parent currency.

The study noted that only 25% of respondents (4 firms) hedged currency risk and their main reasons for hedging were to minimise foreign exchange losses and to reduce the volatility of cashflows. With regard to the internal hedging techniques, the changing currency of billing technique was the most popular. The companies further explained that they are usually billed in US dollar to measure against currency risk. Cashflow netting, prepayment and asset liability management were also some major internal hedging techniques.

The use of derivatives to hedge was not found to be very popular with Multinational Companies in Ghana. This may be due to the fact that Ghana does not have an active derivative market. Only 19% of the firms use derivatives to hedge against currency risk, with forward contracts being the most used derivative. It was observed that the use of the currency hedging techniques increases with an increase in size of the firm. From the study, 3 out of 11 companies that have 100 or more employees use currency hedging techniques to manage currency risk, while 1 out of 4 companies that have employees between 31 and 99 manage their currency risk using currency risk management techniques. None of the companies with 30 employees or less use currency risk management techniques to hedge against exchange rate fluctuations.

The MNCs that hedge against currency risk were further asked about some of the problems they encountered in managing currency risk. The main problem they encounter is retaining local customers due to the high prices of imported goods that affect the final price.

5.3 Conclusion

To a large extent, the main objective which was to determine the techniques used by Multinational Companies in Ghana to hedge against the risk of being exposed to exchange rate fluctuations was achieved. It was established that MNCs find currency risk to be the most significant exposure to them. It was also found that transaction risk is the most critical risk exposure to MNCs in Ghana.

Only 25% of the companies hedge against currency risk. With the few firms that hedge, it was observed that the use of the currency hedging techniques increases with an increase in the size of the firm. Overall, MNCs in Ghana have exhibited a low-level use of instruments for hedging against currency risk, which is the same thing Abor found in his study of Ghanaian firms involved in international trade. This indicates that since Abor's (2005) study, not many firms have adopted the use of currency risk management techniques to hedge against currency risk. This may be since the financial markets in Ghana are underdeveloped. Also, it may be due to the complicated nature of the documentation, costs and risks that come with using some of these hedging instruments (Abor, 2005).

It was noted that for the internal hedging techniques, the changing currency of billing technique was the most popular. Cashflow netting, prepayment and asset liability management were also some major internal hedging techniques. The use of derivatives to hedge was not found to be very popular with Multinational Companies in Ghana. This may be due to the fact that Ghana does not have an active derivative market. Only 19% of the firms use derivatives to hedge against currency risk, with forward contracts being the most used derivative.

This study has given a lot of insight into the currency risk management techniques of MNCs in Ghana. One interesting finding was that few companies actually use these hedging techniques, which raises a question of whether some of these theories are effective in practice. This is an area which needs to be further researched.

5.4 Recommendations

Based on the results of the study, it is recommended that MNCs in Ghana must learn about Currency Risk Management techniques and adopt them in managing their currency risk exposure. To aid with this, multinational firms need to implement a risk management system that functions well to manage risk exposure and ensure the survival of the company.

Banks also need to educate their customers/clients on the essence of using hedging techniques in managing currency risk exposure. These banks also need to develop more hedging tools to help MNCs in Ghana manage their currency risk.

5.5 Further Research

The results of this study on these MNCs indicate that there is a need to improve CRM techniques in MNCs in Ghana. Information needs to be provided to these companies concerning hedging techniques. This information can be provided from external sources like banks, who play a very key role. A research done from the banks' perspective would be very insightful. The research can delve into their view of the problem and this would give a better understanding of the full problem. In addition to this, a two-way perspective would make it easier to implement possible solutions.

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Appendix: Questionnaire

Participant code:

Date:

1. What is your function or position within the company?

.....

2. Please indicate the industry in which your company is classified

- ◆ Manufacturing []
- ◆ Wholesale and Retail trade []
- ◆ Finance, property and business services []
- ◆ Construction []
- ◆ Agriculture []
- ◆ Transport and storage []
- ◆ Electricity, gas and water []
- ◆ Mining []
- ◆ Communication []
- ◆ Public Administration and defence []
- ◆ Community services []
- ◆ Recreation, personal and other services []
- ◆ Other (specify) []

3. What is the approximate total number of employees in your company?

- ◆ Less than 30 employees []

CRM TECHNIQUES OF MNCs IN GHANA

- ◆ 31-99 employees []
- ◆ 100 and above employees []

4. Please Indicate the type of ownership

- ◆ Wholly Ghanaian Owned []
- ◆ Wholly foreign owned []
- ◆ Both []

5. Risk Management Function

a) Does your company have a risk management function?

Yes [] No []

b) If yes, how long has the function been operational?

- ◆ Below 5 years []
- ◆ Between 5 and 10 years []
- ◆ Over 10 years []

c) Who is responsible for the risk management function?

- ◆ CEO []
- ◆ Finance Officer []
- ◆ Accountant []
- ◆ Treasurer []
- ◆ No one []

6. Foreign exchange forecasting

CRM TECHNIQUES OF MNCs IN GHANA

a) Do you forecast exchange rate movement on your own?

Yes ☐ No ☐

If yes, in which currencies?

- ◆ All currencies in which your company is greatly exposed ☐
- ◆ Volatile currencies only ☐
- ◆ Major world currencies ☐

b) What is the source of information for your exchange rate forecasts? (Kindly tick all that apply).

- ◆ Banks ☐
- ◆ External consultants ☐
- ◆ Financial Publications ☐
- ◆ Intuitions ☐
- ◆ Foreign headquarters ☐
- ◆ Financial models ☐
- ◆ Others (specify) ☐

c) In your opinion, what is the most useful indicator of expected exchange rate changes

- ◆ Balance of payment surplus or deficit ☐
- ◆ Inflation ☐
- ◆ Government budget deficit ☐
- ◆ Money supply growth ☐
- ◆ Interest rate differentials ☐

CRM TECHNIQUES OF MNCs IN GHANA

- ◆ Political stability []
- ◆ Other (specify) [].....

7. Financial Risk Exposure

- a) Kindly rank the following financial exposures in the order of importance to your company, where 1 =most significant and 5= least significant

- ◆ Interest rate fluctuations []
- ◆ Foreign exchange risk []
- ◆ Credit risk []
- ◆ Fraud []

- b) What type of exposures does your company face? (Kindly tick all that apply).

- ◆ Translation []
- ◆ Transaction []
- ◆ Economic []

- c) Kindly rank the three exposures in order of importance to your company, where 1= most critical and 3= least critical

- ◆ Translation []
- ◆ Transaction. []
- ◆ Economic []

8. Management of Foreign Exchange Risk Exposure

- a) Is the company hedging the exchange rate risk? Yes [] No []

CRM TECHNIQUES OF MNCs IN GHANA

b) What is the main reason for adopting foreign exchange risk management practices in your firm.

- ◆ Minimize foreign exchange losses []
- ◆ Reduce the volatility of cash flows []
- ◆ Protect earnings fluctuations []
- ◆ Reducing financing costs []
- ◆ Others (specify) [].....

c) Kindly rank the following goals in the order of importance for risk management to your company, where 5=most important and 1= not important at all.

No	Statement	Very Important = 5	Important = 4	Fairly important =3	Slightly important =2	Not important at all =1
a.	Ensuring the survival of the firm					
b.	Enhancing reported results					
c.	Increasing profitability					
d.	Reducing cash flow volatility					
e.	Increasing the market value of the firm					

CRM TECHNIQUES OF MNCs IN GHANA

f.	Reducing earnings volatility					
g.	Influencing the behaviour of managerial employees					

d) Where are the main foreign exchange risk decisions taken?

- ◆ Corporate (Overseas) []
- ◆ Local (in Ghana) []
- ◆ Both []

e) What kind of **internal hedging** instruments or techniques is the company using for hedging?

Instruments/ Techniques	Often	Sometimes	Rarely	Never
Cash flow matching (Netting)				
Prepayment				
Leading and Lagging				
Restructuring				
Increasing prices				

CRM TECHNIQUES OF MNCs IN GHANA

Changing currency of billing				
Asset liability management				
Others (specify)				

- f) What kind of **external hedging instruments** or techniques is the company using for hedging?

Instruments/ Techniques	Often	Sometimes	Rarely	Never
Forwards				
Futures				
Money market contracts				
Options				
Swaps				
Others (please specify)				

- g) For each of the external hedging instrument, what is the average maturity?

Instruments/ Techniques	0-90 days	91-180 days	181-360 days	Not used
Forwards				

CRM TECHNIQUES OF MNCs IN GHANA

Futures				
Money market contracts				
Options				
Swaps				
Others (please specify)				

9. Empirical Evidence versus Current Practice

Below are statements relating to empirical evidence on foreign exchange risk. Kindly indicate on a scale of 5 to 1 the extent to which they apply to your company.

No	Statement	Very Large Extent = 5	Large Extent = 4	Some Extent =3	Small extent =2	Not at all =1
a.	The company has general rules for setting hedging periods.					
b.	The company forecasts on fluctuations of US dollar during its planning horizons					
c.	The company first looks for internal hedges before purchasing external hedges.					

CRM TECHNIQUES OF MNCs IN GHANA

d.	Currency markets are information efficient markets, organizations cannot make consistent speculative gains through predicting future exchange rates.					
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10. What are some of the problems encountered in managing exchange risk?

- ◆ Frequent increase in exchange rates []
- ◆ Retaining customers []
- ◆ Getting the needed foreign currency []
- ◆ Other (specify) [].....