

**A SURVEY OF FOREIGN EXCHANGE RISK MANAGEMENT
PRACTICES BY OIL COMPANIES IN KENYA**

BY

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DECLARATION

This research project is my original work and has not been presented for a degree or any other exam at any university.

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This research project has been submitted with my approval as a university supervisor.

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ABSTRACT

Companies especially those participating in international trade are now exposed to risks caused by unexpected movements in exchange rate in today's volatile financial markets. The management of this risk has become essential for the survival of such companies. Oil companies in Kenyan market are significantly exposed to foreign exchange risk through transactions involving importation of oil products and subsequent exportation to the neighboring countries.

This paper reviews the traditional types of exchange rate risk faced by firms, namely translation, transaction and economic risk, presents measurement and management method for foreign exchange exposure and objectives of foreign exchange management. The objective of this study is to determine the foreign exchange risk management practices by oil companies operating in Kenyan market. To achieve this objective, data was collected from the target population comprising 27 major oil companies operating in Kenyan market as listed in appendix 1 through administration of questionnaire using 'drop-and-pick-later' technique. Out of 27 companies, only 20 responded representing a response rate of 74%.

The study found that foreign exchange risk is the second most significant exposure to oil companies after fluctuation in global crude oil prices and therefore most of the companies find it as an important risk to manage. US Dollar is the currency to which all the oil companies are mostly exposed because importation costs are settled in this currency. It was established that all the companies practice internal hedging techniques while only 35% of the companies used external hedging techniques (derivatives). The study noted that the internal hedging technique of changing the currency of billing was the mostly used technique by the oil companies while use of forward contracts is most frequently used derivative. As a recommendation, oil companies should enhance their foreign exchange risk management practices by increasing the use of derivatives.

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CHAPTER ONE

1.0 INTRODUCTION

In recent years, foreign exchange risk management has received increasing attention in both corporate practice and literature. The management of this type of risk has increasingly become essential for survival of companies in today's volatile financial markets. The risk arises from exposure of an organization to potential fluctuations in foreign exchange rates. These fluctuations can occasion instability in profit margin, expected future cash flows as well as significant losses to organizations (Lei and Niannian, 2007).

1.1 Background of the Study

Madura (1989) defines exchange rate risk as the possible direct loss (as a result of an unhedged exposure) or indirect loss in the firm's cash flows, assets and liabilities, net profit and, in turn, its stock market value from an exchange rate move. According to Armitage *et al* (2002), foreign exchange risk is the risk that profits will change if foreign exchange rates change.

According to Shapiro (1996), there are three types of foreign exchange rate risks that are faced by companies: translation or accounting risk, transaction risk, and economic risk. Often firms consolidate the financial statements of their foreign subsidiaries with that of the home country. In order to do this, firms must first restate the financial statements of these subsidiaries from foreign currency to that of the home or parent currency. Translation risk is the result of this restatement of a firm's foreign currency denominated accounts, where the exchange rate used causes changes in the value documented in the parent company's financial statements. In essence, translation risk is the effect exchange rates have on the figures shown on the parent company's consolidated balance sheet. Transaction risk, on the other hand, is the extent to which a

given exchange rate will change the value of foreign-currency-denominated transactions, which have already been entered into by a company. In other words, when a business contract is entered into, with the agreement that payment will be settled at a future date, the exchange rates that exist on the date the contract is entered into and the date that the contract is settled, may be different. As a result, the cash that is received on the date of settlement may be different from what was expected when the contract was entered into. Consequently, the cash flow to the firm is directly affected. Finally, economic risk is the extent to which the value of the firm will change due to a change in the exchange rate. Further, Dhanani (2000) states that economic risk is the effect of long-term exchange rate movements on a firm's future expected cash flows and is hard to identify because the cash flows linked to the risk are not certain to materialize.

Under today's system of floating foreign exchange rates, currencies often move dramatically over short periods. Empirical studies demonstrate that foreign exchange volatility can have significant impact on companies' profits (Armitage et al, 2002). In addition, David (1997) observes that under current system of floating exchange rates, investors have experienced significant real and paper volatility in earnings as a result of relative fluctuations in foreign exchange rates. Most researchers have measured the impact by studying how changes in foreign exchange rates affect market capitalization (Bodnar and Richard, 1998). Researchers consistently find that periods of significant foreign exchange movements produce substantial changes in stock market capitalization (Dahlquist, 1999).

Earlier studies by Nance and Smith (1993), Rawls and Smithson (1990), Berkman and Brandbury (1996) and Smithson (1995) suggested that foreign exchange risk management would benefit companies. In addition Chow and Lee (1997) argued that risk management could reduce the effect of foreign exchange risk volatility on companies. Hence, foreign exchange risk management gives positive effect to share holders. Dolde (1993) in a study on United States companies showed that foreign

exchange risk management adds value to them. This is supported by Makar and Huffman (1997) that foreign exchange risk management has a positive correlation with foreign exchange risk.

Organizations manage foreign exchange risk using a variety of strategies and products. Strategies for managing this type of risk often entail use of financial derivatives. These are securities whose value is derived from the value and characteristics of underlying security. The most common types of derivatives include: forward contracts, future contracts, options and swaps. The derivatives are traded widely among financial institutions and on organized exchanges (Horcher, 2005).

1.1.1 Oil Sector in Kenya

Oil forms a major source of energy in Kenya and world at large for it contributes about 40% of world energy consumption. Kenya's petroleum market has 27 major players and hundreds of independents. The oil sector has become highly competitive and is being characterized by price wars and low sales margins. Industry data shows that petroleum dealers are currently enjoying retail margins of between Sh2.30 per litre to Sh2.50 per litre for super and regular petrol and Sh2.15 per litre for every litre of diesel or illuminating kerosene (Sambu, 2009).

Kenyan Oil sector was liberalized in October 1994. It is regulated by Ministry of Energy through the Energy Act of 2006 and enforcement is done by Energy Regulatory Commission. Part IV of the Act (Petroleum and Natural Gas) deals with the issuance of business licenses for importation, storage, refining, exportation, sale and resale, transportation of petroleum and natural gas. (The Energy Act Number 12, 2006)

1.1.2 Exposure of Kenyan Oil Companies to Foreign Exchange Risk

The oil companies get exposed to foreign exchange rate risks through importation of oil products and subsequent exportation to the neighboring countries. The products are imported in bulk, and as a result, importation transactions pose the greatest exposure to exchange rate risks to the companies. Petroleum products are imported through Open Tender System (OTS) which is coordinated centrally by Ministry of Energy. Under this system, oil companies are invited to tender for supply of the products to the industry. The tender is awarded to the most competitive bidder who imports the products and invoices the rest of the participants within 10 days after shipment. The companies are required to make payment to the importer within 15 days from day of importation in proportion to their share of the imported products (Petroleum Products Tender Terms and Conditions Act, 2009).

Trading in oil products require huge amount of working capital. This is due to the high cost of importing the products coupled with requirement for upfront payment of taxes at entry point according to Petroleum Amendment Act, 2006. Oil companies use short term financing facilities (i.e. bank loans) to meet this huge working capital requirement. The product's Cost and Freight which form about 95% of the total cost are paid in US Dollars to the importer who in turn pays the seller and the freight service provider. Under the short term financing facility, the financiers (banks) enter into an agreement with oil companies to pay the importer on their behalf while holding the product as collateral until the loan is paid.

The oil companies sell the products in local currency but repay the loans in US Dollar, thus getting exposed to the risk of unpredictability in foreign exchange rate fluctuations or transaction risk. The companies can therefore experience losses in situations when on the loan repayment day, the transaction currency (US Dollar) has a higher buying power than in the moment of concluding trade financing contract. This risk is quite significant to oil companies, for instance, during the year ended December 2008,

KenolKobil reported an increase of foreign exchange loss by KES 980 million in 2008 over the loss made in 2007. Furthermore, apart from selling their products locally, some oil companies export the products to the neighboring countries which again exposes them to exchange rate risk. Other companies like KenolKobil own subsidiaries in different countries in Africa. These companies consolidate the financial statements of those foreign subsidiaries with that of the home country(Kenya).In order to do this, the companies first restate the financial statements of these subsidiaries from foreign currency to that of Kenyan currency. This process exposes the companies to translation foreign exchange risk.

According to Balu and Armeanu (2000), exchange rates between one currency and another can change dramatically in a short period of time, leaving unprepared business exposed to potentially crippling losses. The efficient management of this risk is essential for the survival of a company and any business that is exposed to such a risk should ensure that it is fully prepared to manage it. There are four major classes of derivative products that are used for managing foreign exchange risks. These are: forwards, futures, options and swaps.

1.2 Problem Statement

Managing foreign exchange risk is a fundamental component in the safe and sound management of all institutions that have exposures in foreign currencies. It involves prudently managing foreign currency positions in order to control, within set parameters, the impact of changes in exchange rates on the financial position of the organization. The frequency and direction of rate changes, the extent of the foreign currency exposure and the ability of counterparts to honour their obligations to the organization are significant factors in foreign exchange risk management (Bank of Jamaica, 2005).

Several studies on companies engaged in international trade, hedging, and exchange rate risk have stressed the fact that as the companies expand their involvement throughout the world, the higher the probability that they will face exchange rate fluctuations/volatility in their operations. In turn, they face the possibility of negative effects on their cash flows. To safeguard the company's overall interests, cash flows, and equity, the extensive use of various hedging techniques by most companies has been widely recognized. In a survey, Mathur (1982) finds that most companies institute a hedging program to reduce the negative effects of foreign exchange rate changes on their cash flows and reported earnings. He also finds that a formal foreign exchange management policy is more common among larger firms. Bartov *et al* (1996) find a relationship between exchange rate variability and stock return volatility, and attribute this to foreign currency transactions. They also find that multinational companies that do not use hedging strategies are more vulnerable to losses due to exchange rate fluctuations. Choi and Prasad (1995) also find a link between exchange rate risk and declines in cash flows and market values.

The international trade transactions for import of oil products and export to the neighboring countries expose Kenyan oil companies to foreign exchange risks which require to be mitigated in order to guarantee their profitability and survival. Earlier studies on management of foreign exchange risk in Kenya mainly focused on the finance industry. Omagwa (2005) carried out a study on how foreign owned commercial banks in Kenya managed their foreign exchange risk exposure. Ubindi (2006) on the other hand focused on foreign exchange risk management practices by forex bureaus in Kenya. Considering the vital role played by oil companies in Kenya's economy and the volume of foreign exchange dominated transactions they carry out, a knowledge gap exists that seeks to narrow down and establish how the companies mitigate foreign exchange risk that arise from such transactions. Managing this risk is crucial for it may influence many aspects of the companies such as financing costs and profitability which in turn influence energy costs in the country. This research is

therefore geared towards ascertaining conclusively the hedging techniques and strategies that oil companies in Kenya use to mitigate part or all eminent foreign exchange risk exposures.

1.3 Objective of the study

- To determine the techniques used by oil companies in Kenya to mitigate foreign exchange risk exposures.

1.4 Significance of the study

The study will be of great importance to oil companies operating within the Kenyan market which faces a lot of turbulence as a result of exposure to financial, political and business risks. The findings will bring awareness to them regarding the practices that are used by similar firms to hedge against risks that arise from fluctuations in foreign exchange rates. In particular, the Financial Managers of the oil companies can use the research findings and recommendations to lay out strategies to strengthen their roles of financial risk management.

The study will also bring insight to Energy Regulatory Commission, a key regulatory body in licensing and operations of the oil companies. The commission has been trying to establish policies that can bring costs of fuel down including introduction of price control. The study will therefore enable the Commission appreciate and put into consideration the aspect of foreign exchange risks faced by the companies even as it strives to establish policies of lowering fuel costs in the country.

The study will also benefit financiers and creditors that deal with oil companies. This group is concerned with probability of obtaining timely payments for money owed to them. The study will provide insight to them regarding the foreign exchange risks that oil companies are exposed to and practices they have put in place to mitigate them. This

will further enable them make decisions on kind of trade agreements they should establish as they partner financially with the oil companies.

Finally, the study will make a significant contribution to academic literature in the field of foreign exchange risk management in Kenyan oil sector. A review of earlier studies revealed that they concentrated on finance sector (banks and forex bureaus). Hence this study will bring awareness of corporate practice in the subject of foreign exchange risk management in the oil sector in Kenyan market.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Measuring and managing foreign exchange rate risk exposure is important for reducing a firm's vulnerabilities from major exchange rate movements. These vulnerabilities mainly arise from a firm's involvement in international operations and investments, which could adversely affect profit margins and the value of assets. Currency risk hedging strategies entail eliminating or reducing this risk, and require understanding of both the ways that the exchange rate risk could affect the operations of economic agents and techniques to deal with the consequent risk implications (Barton et al, 2002). Selecting the appropriate hedging strategy is often a daunting task due to the complexities involved in measuring accurately current risk exposure and deciding on the appropriate degree of risk exposure that ought to be covered. The issue of currency risk management for non-financial firms is independent from their core business and is usually dealt with by their corporate treasuries. Most multinational firms also have risk committees to oversee the treasury's strategy in managing the exchange rate (and interest rate) risk (Lam, 2003). This shows the importance that firms attach to risk management issues and techniques.

2.2 Theoretical Framework

According to Brealey et al (2006), risk in investment simply means unpredictability of future returns. It is best judged in a portfolio concept. A portfolio in financial terms refers to a collection of investment securities with an aim of diversifying risk. The total risks of securities can be split into two components: systematic and unsystematic risk. Systematic is the type of risk which affect all firms in an industry although some could be more affected than others. The major factors that cause this type of risk include:

political instability, inflation, interest rate changes, government policies, energy crisis. On the other hand, unsystematic risk refers to fluctuation from a firm's expected earnings due to factors affecting that particular firm. This may be caused by such factors as: technological change, employees unrest. Unsystematic risk can be eliminated by holding a well diversified portfolio while systematic risk cannot.

Markowitz (1952) draws attention to the common practice of portfolio diversification and shows how an investor can reduce the standard deviation of portfolio returns by choosing stocks that do not move exactly together. A portfolio that gives the highest expected return for a given standard deviation, or lowest standard deviation for a given expected return, is known as an efficient portfolio. These ideas form the basis of modern risk management practices.

2.2.1 Risk Management

Radja (1997) defines risk management as a systematic process for the identification and evaluation of pure loss exposure faced by an organization or an individual, and for the selection and implementation of the most appropriate techniques of treating such exposure. Schmit and Roth (1990) describe risk management as the performance of activities designed to minimize the negative impact (cost) of uncertainty (risk) regarding possible losses.

Every entity exists to provide value for its stakeholders. All entities face uncertainty and the challenge for management is to determine how much uncertainty to accept as it strives to grow stakeholder value. Uncertainty presents both risk and opportunity, with the potential to erode or enhance value. Risk management enables management to effectively deal with uncertainty and associated risk and opportunity, while enhancing the capacity to maximize value. Value is maximized when management sets strategy and objectives to strike an optimal balance between growth and return goals and

related risks, and efficiently and effectively deploys resources in pursuit of the entity's objectives (Flaherty and Maki, 2004).

Risk management is a central part of any organization's strategic management. It is the process whereby organizations methodically address the risks attaching to their activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities. The focus of good risk management is the identification and treatment of these risks. Its objective is to add maximum sustainable value to all the activities of the organization. It marshals the understanding of the potential upside and downside of all those factors which can affect the organization. It increases the probability of success, and reduces both the probability of failure and the uncertainty of achieving the organization's overall objectives. Risk management should be a continuous and developing process which runs throughout the organization's strategy and the implementation of that strategy. It should address methodically all the risks surrounding the organization's activities past, present and in particular, future (Risk Management Standard, 2006).

The risk management process involves both internal and external analysis. The first part of the process involves identifying and prioritizing the financial risks facing an organization and understanding their relevance. It may be necessary to examine the organization and its products, management, customers, suppliers, competitors, pricing, industry trends, balance sheet structure, and position in the industry. It is also necessary to consider stakeholders and their objectives and tolerance for risk. Once a clear understanding of the risks emerges, appropriate strategies can be implemented in conjunction with risk management policy. For example, it might be possible to change where and how business is done, thereby reducing the organization's exposure and risk. Alternatively, existing exposures may be managed with derivatives. Another strategy for managing risk is to accept all risks and the possibility of losses (Horcher, 2005).

There are three broad alternatives for managing risk. The first alternative is to do nothing which by default means accepting all risks, the second one involves hedging a portion of exposures by determining which exposures can and should be hedged and the last one involves hedging all possible exposures. Measurement and reporting of risks provides decision makers with information to execute decisions and monitor outcomes, both before and after strategies are taken to mitigate them. Since the risk management process is ongoing, reporting and feedback can be used to refine the system by modifying or improving strategies. An active decision-making process is an important component of risk management. Decisions about potential loss and risk reduction provide a forum for discussion of important issues and the varying perspectives of stakeholders (Horcher, 2005).

2.2.2 Foreign Exchange Risk

According to Stern and Chew (1987), foreign exchange risk is the chance that fluctuations in the exchange rate will change the profitability of a transaction from its expected value. This definition lays emphasis on financial risk. Shapiro (2006) defines foreign exchange risk as the variability in the value of a firm as measured by the present value of its expected future cash flows - caused by uncertain exchange rate changes. This definition emphasizes on firms' the cash flows. On the other hand, Hekman (1983) defines currency risk in terms of the control of firms as the possibility that operating and financial results might exceed or fall short of budget. A common definition of exchange rate risk relates to the effect of unexpected exchange rate changes on the value of the firm by Madura (1989). It implies that the risk consists of the direct loss (as a result of an unhedged exposure) and indirect loss in the firm's cash flows, assets and liabilities, net profit and its stock market value from an exchange rate change.

2.2.3 Classification of Foreign Exchange Risks

Currently, there are three main types of foreign exchange risks as given by Shapiro (2006). The first one, the translation exposure, also known as accounting exposure, arises from the need, for purposes of reporting and consolidation, to convert the financial statements of foreign operations from the local currencies (LC) involved to the home currency (HC). If exchange rates have changed, liabilities, revenues, expenses, gains, and losses that are denominated in foreign currencies will result in foreign exchange gains or losses. It is basically balance sheet exchange rate risk and impacts balance sheet assets and liabilities and income statement items that already exist.

The second type of foreign exchange risk, transaction exposure, also known as commitment exposure, results from transactions that give rise to contractually binding future foreign-currency-denominated cash inflows or outflows. As exchange rates change between now and when these transactions settle, so does the value of their associated foreign currency cash flows, leading to currency gains and losses. It is basically cash flow risk and this exposure deals with changes in cash flows as the result from existing contractual obligations, such as the effect of exchange rate moves on transactional account exposure related to receivables (export contracts), payables (import contracts) or repatriation of dividends.

The third type of risk, economic exposure, measures the change in present value of the firm resulting from any change in the future cash flows of the firm caused by unexpected change in the exchange rates. Future cash flows can be divided into cash flows resulting from contractual commitments and cash flows from anticipated future transactions. In a way, economic exposure comprising future cash flows resulting from contractual commitments and denominated in foreign currency. However, there is a clear distinction between transaction exposure and economic exposure. Transaction exposure arises from firm contractual commitments and the amounts to be paid or

received are known. With economic exposure these amounts are uncertain and based on estimates. Economic exposure is basically the future effect of foreign exchange rates on liquidity, operations, financial structure and profit.

2.2.4 Sources of Foreign Exchange Risk and Factors that Affect Exchange Rates

There are many potential sources of foreign exchange exposure. Having assets and liabilities with net payment streams denominated in a foreign currency may be the most obvious source of risk. This risk is easy to identify and hedge: payment streams in the major currencies can be converted into domestic currency using swaps, for example or payments can be matched by natural hedging. But having assets and liabilities abroad can also decrease firm's foreign exchange exposure. Each company engaged in international trading is exposed to foreign exchange risk since foreign revenues, for example, are generally denominated in foreign currency. Revenues and costs incurred in a foreign currency are exposed to exchange rate risk. Often firms have to pay in a foreign currency for imported raw materials and receive foreign currency for exported finished goods. This problem gets more complicated if firm's revenue exposure and cost exposure are in different currencies. Generally speaking, each investment in a foreign country that generates cash inflows or outflows denominated in a foreign currency is exposed to a foreign exchange risk. Such cash flows can be revenues from operations, dividends or royalties coming from foreign subsidiaries, expenses paid in a foreign country, etc (Popov and Stutzmann, 2003)

Financial activities such as foreign -currency borrowing or lending, guarantees, etc. represent another kind of source of foreign exchange risk. Allayannis and Ofek (2000) find that exchange rate exposure is positively related to the level of foreign debt that the firm has. At the same time, foreign debt can be another way to hedge foreign currency exposure since it represents a cash outflow in a foreign currency. It can only be used as

a hedge when a firm has foreign revenues. By contrast, imports which also represent outflow in a foreign currency cannot be hedged through foreign debt.

Chamberlain et al(1996) in their study on foreign exchange exposure on 30 US bank holding companies found that the more foreign debt a bank has, the more it is exposed to foreign exchange risk. The estimated exposure is strongly correlated with the size of the firm. However, size itself cannot be a source of exchange rate exposure. The bigger the firm, the more it is foreign trades it has, and the smaller the firm, the more it is focused on its local market. Hence bigger firms (most often the multinationals) have a bigger exposure to foreign exchange risk.

Foreign exchange rates are determined by supply and demand for currencies. Supply and demand, in turn, are influenced by factors in the economy, foreign trade, and the activities of international investors. A higher currency makes a country's exports more expensive and imports cheaper in foreign markets; a lower currency makes a country's exports cheaper and its imports more expensive in foreign markets. A higher exchange rate can be expected to lower the country's balance of trade, while a lower exchange rate would increase it (Horcher, 2005). Bergen (2006) shows that there are six principal factors that determine exchange rate between two given countries. These are: differentials in inflation between the countries, differentials in interest rates, current-account position (Balance of payment), public debt, terms of trade, political stability and economic performance.

2.3 Empirical Studies on Foreign Exchange Risk Management

Empirical studies on importance of foreign exchange risk management show that this risk is important to manage. Marshall (1999) finds that foreign exchange risk management is one of the most important financial activities in large American, British and Asian firms. He states four main objectives of foreign exchange risk management: minimize foreign exchange losses, reduce the volatility of cash flows, and protect

earnings fluctuations and hedge the risk of the views on foreign exchange risk. Loderer and Pichler (2000) made a similar survey for Swiss companies. They obtain as main reasons for managing currency risk as guaranteeing cash flow, reducing financing costs, simplifying planning, preventing losses and reducing taxes. Omagwa, (2005), in his study on foreign exchange risk management practices by foreign owned commercial banks In Kenya finds that this risk is important to manage. He states that the main reason for managing this risk is to protect earnings fluctuations.

On whether firms hedge or not, Batten et al (1993) find that all firms hedge foreign exchange exposure. In their sample of Australian firms, 21 out of 69 fully hedged, 48 are partially hedged. On their side, Bodnar and Richard (1998) results reveal that the majority of firms hedge less than 25% of their perceived exposure. These suggest that foreign currency hedging, rather than eliminating completely exposures, generally only reduces them. Furthermore, they find out that firms show a clear preference for short-term hedging: 82% of firms hedge with maturity of 90 days or less. Ubindi, (2006), in his study on foreign exchange risk management practices by forex bureaus in Kenya finds that all bureaus he surveyed practice hedging. His finding is consistent with that of Omagwa, (2005) on commercial banks.

Empirical studies on management of transaction, translation and economic exposures by Batten et al (1993) reveal that 61.1% of the Australian firms manage transaction exposure only, 8.3% both translation and transaction and 16.6% transaction, translation and economic exposures. For Swiss firms, Loderer and Pichler (2000) find that transaction exposure is the most frequently hedged. Translation and economic exposures appear to be less important. Omagwa, (2005) finds that all Kenyan commercial banks he surveyed banks hedged against transaction exposure while 60% and 30% hedged against accounting and economic exposures respectively.

Empirical studies on instruments used by firms for hedging by Allayannis and Ofek (2000) reveal that exporters prefer the use of foreign currency derivatives to the use of

foreign currency debt when hedging their operations. They explain this by the nature of exporting, which can require customized, short-term contracts that are better served by derivatives rather than by long term foreign debt. The advantage of derivatives is that they have a predetermined cost and are accessible by all companies where as foreign debt is limited to large firms. Bodnar and Gebhardt (1998) state that German and US firms prefer to use over the counter instruments (forwards, swaps, and options) rather than exchange traded instruments such as futures. Forwards are recommended for firm commitments where as options should be preferred for uncertain foreign currency denominated future cash flows. When hedging more uncertain exposures from anticipated transactions, forwards are the preferred instruments because the uncertainty can be taken into account by adjusting the hedge ratio with forwards. The most frequently used derivative contract to hedge transaction is the currency forward contract.

Bodnar et al (1998) confirm that options are less frequently used than forwards. Furthermore, they found that options were mainly used in longer-term exposures. Firms avoid using options either because of the cost they incur in order to get the options or because they find another instrument that is better suited for the given exposure. For Australian firms, Batten et al (1993) find similar results: the most used instruments to hedge are forwards, options and currency swaps.

Marschall (1999) finds that US, UK and Asian firms use both internal hedging and external hedging for covering transaction exposure. For translation exposure, US and UK companies use internal and external hedging as well where as Asian firms use mainly internal methods. Bodnar et al (1998) find that a majority of firms use natural hedging. In Switzerland, Loderer and Pichler (2000) demonstrate that firms use money market hedges, choice of currency of billing and currency risk sharing as internal hedging techniques. Pricing policy, credit policy and choice of countries in which to buy inputs and sell goods are other frequently used techniques.

Bodnar et al (1998) show that the most frequently cited motivation for using foreign exchange derivatives is for hedging short term observable exposures. However, many firms use foreign currency derivatives at least sometimes to hedge long term exposures. Few firms use foreign currency derivatives to hedge translation exposure. According to Bodnar and Gebhardt (1998), German and US firms use derivatives primarily to manage foreign exchange (and interest rate) risk. They show that the main purpose of using derivatives in exchange risk management is to minimize the variability in cashflows. They also show that companies prefer to use simple foreign exchange instruments. Similar results are found by Bodnar et al (1998): 83% of derivative using firms use foreign currency derivatives and 95% of US manufacturing firms hedge foreign exchange risk with derivatives.

Allayannis and Wetson (2001) find that from 1990 to 1995 there is an increase in the number of firms with foreign exchange sales that use currency derivatives. In contrast, the percentage of firms with no foreign sales that use foreign currency derivatives is small.

Omagwa (2005) and Ubindi (2006) find that each organization had its peculiar hedging instruments and strategies. This variation is due to the fact that there are no formal corporate approved risk management practices that must be adopted in Kenya and hence each organization has a leeway to make its choice on practices it deems as best. Omagwa (2005) finds that most banks practiced conventional foreign exchange risk management practices. He further observes 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. On the other hand, Ubindi (2006), finds that use of conventional foreign exchange risk management practices is quite low among forex bureaus in Kenya. He also finds that forward contracts, money market hedge, currency options and currency swaps are the mostly used instruments.

2.4 Financial Risk Management by Oil Companies

Oil exploration, production and marketing industry faces more business risk than any other industry and therefore the risk management comes to be especially important for it (Masaaki, 2001). The risk propensity of oil companies is a function of three sets of traits or strategies that can be distinguished by their nature or source. The first relates to conscious decisions (including inactions) about company structure such as size and gearing. The second source of risk propensity is more tactical and is sourced in strategic decisions such as manager selection, exploration strategy and investments. The third source of risk propensity is actions by the firm that impact its cash flows (Curtis, 2006).

The first source of risk propensity fits within the concept of behavioral corporate finance (Shefrin, 2001), which explains decisions in terms of the firm's endogenous traits and exogenous drivers. The most important of these traits and drivers are a firm's structural features, which -when taking a resource based view of the firm (Hart, 1995) - will influence risk propensity by placing a limit on maximum sustainable loss; and will influence risk management through determining its capacity to identify and execute well-judged risks. Size is a particularly important risk-related feature. Larger firms tend to have a diversified portfolio of assets that - through the co-insurance effect (Hyland and Diltz, 2002) - makes them more resilient to any given loss. This is enhanced by their generally higher level of slack or surplus resources such as greater capacity to raise capital to replace any loss; and by economies of scale that enable larger firms to execute activities with high transaction costs such as raising debt. Thus larger firms can better tolerate and manage risks.

The second source of corporate risk propensity is the company's strategic decisions such as manager selection, exploration strategy and investments. It is tactical in nature, reflects transient results and opportunities, and is largely within the company's control. Under this, the first aspect is the behavior of the firm's managers, which starts at the Board. Board composition influences risk propensity, because reaching consensus is a

function of common thinking within the Board (promoted by less diversity of directors, including range of ages and proportion of women directors) and relevant expertise (Gummer, 1998). Below the Board level, senior executives make most of the important day-to-day decisions, and they can have a substantial portion of their human capital tied up in the firm, as well as their wealth given the tendency to include significant stock and options in compensation packages. A study by Rajgopal and Shevlin (2002) on US oil and gas firms shows that firms whose CEOs have more stock options will pursue more risky investment strategies and avoid risk management strategies such as hedging.

The third source of oil company risk propensity comprises actions by the firm that change the level or uncertainty of cash flows, which is the principal risk to shareholders. An oil company's expected cash flows are a function of its production, cost structure and oil prices; whilst the discount rate is a function of firm-specific risk and overall market risk. Just as a rising tide lifts all boats, oil companies have little influence over oil prices and overall market risk. They do, however, have considerable influence over expected cash flows, firm specific risk and the frequency of information releases relating to changes in these parameters. This makes governance processes important to firm risk, for their ability (or not) to continuously improve expected cash flows and operational reliability, and control disclosure of price-sensitive information.

Curtis (2006) compares US oil companies with their Australian counterparts and he finds that Australian firms have less risk management (lower hedging levels) and greater propensity for operational and financial risk; not surprisingly, Australian firms had higher risk on each of the market and accounting measures. In short, shareholders in Australian oil companies face higher risk because the companies take greater operational risk and do not manage their oil price exposures. Moral hazard also comes from the state of the world. For instance, hedging is lower following a year of higher oil

prices, which matches previous studies (e.g. Tufano, 1996), and suggests that oil company managers expect oil price trends to continue.

Work by the International Monetary Fund (IMF) indicates that a 100 percent increase in the real price of oil typically leads to a 50 percent real appreciation of the currencies of oil-exporting economies and an opposite effect on oil-importing economies (Lee et al, 2007). This adjustment could come from a change in the exchange rate. Countries that allow their currencies to float—even with extensive management—would likely experience a nominal appreciation when oil is strong and a nominal depreciation when oil is weak (Frankel,2006). These fluctuations in exchange rates between one currency and another can change dramatically in a short period of time, leaving unprepared business exposed to potentially crippling losses. The efficient management of this risk is essential for the survival of a company and any business that is exposed to such a risk should ensure that it is fully prepared to manage it. There are four major classes of derivative products that are used for managing foreign exchange risks. These are: forwards, futures, options and swaps.

2.5 Measurement and Management of Foreign Exchange Risk

Measuring and forecasting exchange rates can be useful for different reasons. First, for hedging decisions, if the forecast of foreign exchange rate is that it will stay stable, the company can decide not to hedge. Second, for financing decisions, when the firm decides to borrow, it can choose the currency. The ideal currency will have a low interest rate and will depreciate over time. The forecast will help to choose the potential currency exhibiting these features. Third, for investing decisions, the ideal currency should have a high interest and appreciate over time. Fourth, for budgeting decisions, when choosing to open a new subsidiary, the firm will estimate the future cash flows and will therefore need an accurate forecast of foreign exchange rate. Finally, for translation exposure, earnings from subsidiaries need to be converted into home

currency. A forecast will help to evaluate the future earnings that will be reported (Popov and Stutzmann, 2003)

Measuring currency risk may prove difficult, at least with regards to translation and economic risk (Van Deventer et al, 2004; Holton, 2003). At present, a widely-used method is the value-at-risk (VaR) model. Broadly, value at risk is defined as the maximum loss for a given exposure over a given time horizon with $z\%$ confidence. The VaR methodology can be used to measure a variety of types of risk, helping firms in their risk management. However, the VaR does not define what happens to the exposure for the $(100 - z) \%$ point of confidence, i.e., the worst case scenario. Since the VaR model does not define the maximum loss with 100% confidence, firms often set operational limits, such as nominal amounts or stop loss orders, in addition to VaR limits, to reach the highest possible coverage (Papaioannou and Gatzonas, 2002).

After identifying the types of exchange rate risk and measuring the associated risk exposure, a firm needs to decide whether or not to hedge these risks. Prindl (1976) defines hedging as all action taken to change the exposed positions of a company in one currency or in multiple currencies. In international finance, the issue of the appropriate strategy to manage (hedge) the different types of exchange rate risk is yet to be settled (Jacque, 1996). In practice, however, corporate treasurers have used various currency risk management strategies depending, *ceteris paribus*, on the prevalence of a certain type of risk and the size of the firm (Allen, 2003).

2.5.1 Best Practices for Exchange Rate Risk Management

For their currency risk management decisions, firms with significant exchange rate exposure often need to establish an operational framework of five best practices (Allen, 2003; Jacque, 1996). The first principle involves identification of the types of exchange rate risk that a firm is exposed to and measurement of the associated risk exposure. As mentioned before, this involves determination of the transaction, translation and economic risks, along with specific reference to the currencies that are related to each

type of currency risk. In addition, measuring these currency risks - using various models (e.g. VaR) - is another critical element in identifying hedging positions.

The second one involves development of an exchange rate risk management strategy. After identifying the types of currency risk and measuring the firm's risk exposure, a currency strategy needs to be established for dealing with these risks. In particular, this strategy should specify the firm's currency hedging objectives - whether and why the firm should fully or partially hedge its currency exposures. Furthermore, a detailed currency hedging approach should be established. It is imperative that a firm details the overall currency risk management strategy on the operational level, including the execution process of currency hedging, the hedging instruments to be used, and the monitoring procedures of currency hedges.

The third principle entails the creation of a centralized entity in the firm's treasury to deal with the practical aspects of the execution of exchange rate hedging. This entity will be responsible for exchange rate forecasting, the hedging approach mechanisms, the accounting procedures regarding currency risk, costs of currency hedging, and the establishment of benchmarks for measuring the performance of currency hedging. (These operations may be undertaken by a specialized team headed by the treasurer or, for large multinational firms, by a chief dealer.)

The fourth one involves the development of a set of controls to monitor a firm's exchange rate risk and ensure appropriate position taking. This includes setting position limits for each hedging instrument, position monitoring through market-to-market valuations of all currency positions on a daily basis (or intraday), and the establishment of currency hedging benchmarks for periodic monitoring of hedging performance (usually monthly). Finally, the firm would need to establish a risk oversight committee. This committee would in particular approve limits on position taking, examine the appropriateness of hedging instruments and associated VaR positions, and review the risk management policy on a regular basis.

Managing exchange rate risk exposure has gained prominence in the last decade, as a result of the unusual occurrence of a large number of currency crises. From the corporate managers' perspective, currency risk management is increasingly viewed as a prudent approach to reducing a firm's vulnerabilities from major exchange rate movements. This attitude has also been reinforced by recent international attention to both accounting and balance sheet risks (Van Deventer et al, 2004).

2.5.2 Tools and Techniques for Foreign Exchange Risk Management

Today foreign exchange risk could not only influence a firm's quarterly earnings, but also determine its survival. A variety of financial instruments emerge as the financial markets require managing the different growing exposure that firms face. For managing foreign exchange risk, there exist internal hedging techniques such as matching inflows and outflows, inter-company netting of receipts and payments, transfer pricing agreement, etc, and external hedging tools involve the usage of different kinds of derivatives including forwards, futures, debt, options and swaps. Each of these techniques differs to hedge different exchange risk in each company situation. When choosing between different types of hedging, the risk manager must compare costs, taxes, effects on accounting conventions (important for translation) and regulation (which may limit some transactions). Most corporations do not use only one technique but rather determine which technique is the most suitable for a particular case (Lei and Niannian, 2007).

2.5.3 Internal Hedging (Natural Hedging)

According to Papaioannou (2006), internal hedging includes all techniques that do not require external parties. Before purchasing external hedges, the company should first look for internal hedges since they have a relatively low cost. He outlines six internal hedging techniques. The first one, known as netting involves reduction of 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. The centralization

means that the company collects foreign currency cash flows between subsidiaries and groups them together so as an inflow offsets an outflow in the same currency.

Another internal hedging is prepayment. Import commitments can include an option to prepay. This is used if currency is thought to appreciate; then prepaying enables the company to pay at a lower rate. If the future rate finally depreciates, the firm is worse off than if it had done nothing.

The third one, leading and lagging, involves accelerating or delaying the original payment but within a company's divisions or subsidiaries. If the currency of a subsidiary is sought to appreciate it may accelerate its payment (leading) and realize the payment before the currency appreciates. The reverse is true if a currency is expected to depreciate, then the company will delay its payment (lagging). However, the firm should not only take into account the gain or loss from the currency but also the cost from increasing or decreasing the liquidity.

The fourth technique, long term structural changes, which entails restructuring, is a more complex task than hedging a currency transaction. However, once the restructuring is finished, the reduction has a long -term effect. The firm can act on four parameters: change the sales, change the foreign suppliers, change the foreign production factories or change the foreign debt. The idea is to change the relationship between cash inflows and outflows. Restructuring is a very attractive technique to manage economic exposure, but it is quite difficult to apply and cannot be reversed immediately.

The fifth one, price adjustments involves changing prices in different manners. First, when the local currency of a subsidiary is devaluating, the subsidiary can increase the price, so as to cancel the effect of devaluation. This technique is particularly used in countries where devaluation is high and where derivative markets are inefficient. However, as a disadvantage of this method, prices cannot be raised without any

consideration about competitors because if the price increases too much the customer will choose an equivalent cheaper product from a competitor. In the same logic, a firm can increase the export price. But price adjustment is even more complex since the company has to face not only local but also international competitors. Second, the company can change the currency of billing. Third, the firm can use export currency of billing to transfer profits from one affiliate to another. The purpose is to raise or lower intergroup selling prices by billing rate adjustment so that profits appear in hard currency or low-tax companies.

The last technique, Asset Liability Management (ALM), is related to leading/lagging and has the same rationale: for currencies likely to appreciate, increase assets and reduce liabilities. For currencies likely to depreciate do the reverse. For illustration, suppose a currency appreciates. A firm will then increase its assets by increasing investment and reduce its liabilities by reducing the short-term debt. The long-term assets/liabilities are more difficult to change. Long-term debt cannot be reduced easily and buildings cannot be sold promptly. This technique can be used for hedging translation exposure.

2.5.4 External Hedging

When internal hedging is not enough to manage successfully exchange rate risk, companies can get into contact with banks or go to the market and do external hedging. External hedging is more expensive and more complicated than internal hedging and not all companies can afford it, but is quite successful and many firms use it. External hedging consists in using foreign exchange derivative contracts such as forwards, futures, options or swaps. These instruments can be regrouped into two main categories: the first category contains instruments such as currency forwards and futures, and money market contracts. With these instruments the exchange rate is fixed at the moment when the risk appears. The main disadvantage with these instruments is that they cannot benefit from a favourable movement of exchange rate. The second

category contains instruments such as currency options that protect the company from an unfavourable movement of the exchange rate and at the same time keep the possibility of benefiting from a favourable movement of exchange rates. The following is a brief description of these instruments (Lei and Niannian, 2007).

2.5.4.1 Foreign Exchange Forwards

A forward foreign exchange contract is an agreement to exchange one currency for another with a specific quantity, where the exchange rate is fixed on the day of the contract but the actual exchange takes place on a pre-determined date in the future. The predetermined exchange rate is the forward exchange rate. The amount of the transaction, the value date, the payments procedure, and the exchange rate are all determined in advance. Forward contracts in major currencies can be available daily with maturities of up to 30-, 90-, and 180-day. Two types of forwards contracts are often used: deliverable forwards (face amount of currency is exchanged on settlement date) and non-deliverable forwards (which are settled on a net cash basis). A currency forward contract is normally used to hedge exposures that are short to medium term and whose timing is known for certainty. It is so important for corporations' treasurers to trade in the forward market that they can fix the costs of imports and exports in advance for the payable or receivable amount. Empirical researches such as Belk et al. (1992) and Bodnar et al. (1995) indicate that the most frequently used method is forward exchange contract. With forwards, the firm can be fully hedged. However, some risks including settlement risk that exchange rate moves in the opposite direction as their forecast, and counter party risk which the other party is unable perform on the contract, the high cost of forward contracts will sometimes prevent firms to exercise this tool to fully hedge their exchange exposure.

2.5.4.2 Money Market Contracts

A company can hedge in the same way by using the money market. This is a market where company and individuals can lend and borrow as short as overnight and as long

as twelve months period at an interest. For illustration, assume an exporting company is expecting to receive dollars in three months. The exchange rate for dollars in three months is unknown. The company can borrow dollars now from a bank and convert these to shillings at the spot rate on that date. Thus the company has a dollar debt, but that doesn't matter because it can repay the debt upon receiving dollars in three months. The company is not concerned with future exchange rate movements. It has an amount in shillings needed and can deposit it in a bank and thus earn the three months interest. This operation permits the firm to dispose immediately with money and not to wait three months for the dollars. In addition the exchange rate risk is covered. The only problem with this is that it is not easy to borrow money especially for small companies and big amounts. The technique however works well for an importer but not for an importing company (Popov and Stutzmann, 2003).

2.5.4.3 Currency Futures

Currency future is another instrument to reduce the risk of foreign exchange volatility is an exchange-traded contract specifying a standard volume of a particular currency to be exchanged on a specific settlement date (Lei, 2007). It is similar to forward contract in that they allow a firm to buy or sell certain currency at a fixed price and at a future point in time. Yet, there are some differences between these two kinds of techniques. One way in which futures differ from forwards is that futures are standardized both for amounts and delivery date (normally March, June, September and December), while Forward is for any amount and any delivery date which the two parties make agreed. Another difference is that forwards are traded by phone and telex and are completely independent of location or time while all clearing operations for futures markets are handled by an exchange clearing house. The biggest difference is in terms of liquidation that futures contracts are settled by offset of gains and losses for each day, while forward contracts are settled by actual delivery whether full delivery of the two currencies or net value only at the contract maturity. Both futures market and forward

market are most important ways to hedge risk. A study by Belk and Glaum (1992) found that none of the companies which were interviewed used currency futures, because the standardized features of exchange traded futures most often do not enable the companies to hedge their positions perfectly.

2.5.4.4 Currency Options

A foreign exchange option gives the holder of the contract the right to buy or sell a certain amount of a certain currency at a predetermined price (also called strike or exercise price) until or on a specified date, but he is not obliged to do so. The seller of a currency option has obligation to perform the contract. The right to buy is a call; the right to sell, a put. There is option premium needed to pay by those who obtain such a right. The holder of a call option can benefit from a price increases (profit is the difference between the market price and the strike price plus the premium), while can choose not to exercise when the price decreases (locked in loss of the option premium). Vice versa is for the holder of a put option. For the advantages of simplicity, flexibility, lower cost than the forward, and the predicted maximum loss – which is the premium, the currency option has become increasingly popular as a hedging device to protect firms against the exchange movements. Whenever there is uncertainty in the size of cash flows and the timing of cash flows, currency option contracts would be superior to traditional hedging instruments such as forward contracts and futures contracts. Grant and Marshall (1997) examined the extent of derivative use and the reasons for their use by carrying out surveys in 250 large UK companies. They found that a widespread use of both forwards and options (respectively 96% and 59%). They pointed out that comparing to the primary reasons for the use of forwards were company policy, commercial reasons and risk aversion, a good understanding of instrument, and price were prominent while the primary reasons to use option for company management.

2.5.4.5 Currency Swaps

Lei (2007), outlines that as a relative new financial derivative used to hedge foreign exchange exposure, currency swaps have a rapid development. Since its introduction on a global scale in the early 1980's, currency swaps market has become one of the largest financial derivative markets in the world. A currency swap is a foreign exchange agreement between two parties to exchange a given amount of one currency for another and, after a specified period of time, to give back the original amounts swapped. It can be negotiated for a wide range of maturities up to at least 10 years, and can be regarded as a series of forward contracts. It is commonly used under such situation that a firm operate in one currency but need to borrow in another currency. Currency swaps are often associated with interest rate swaps, as the common cross currency swaps the cross-currency coupon swap which is to pay fixed and receive floating interest payment meantime buying the currency swap. Another commonly used one is cross currency basis swap which is to pay floating interest in a currency and receive floating interest in another currency. The advantage of currency swaps is to enable each contracting part to borrow in their comparative favorable market, and both parties can benefit from the swaps by reduction in borrowing costs. The use of swaps now has grown rapidly in western countries such as Grant and Marshall (1997) found that the use of swaps and forwards/futures is dominant in UK, Bodnar et al. (1995) found that swaps dominate the interest rate risk management in US.

2.6 Summary

Companies especially those engaging in international trade companies are now exposed to risks caused by unexpected movements in exchange rate. The management of foreign exchange risk has become essential for the survival of companies in today's volatile financial markets. The focus of good risk management is the identification and treatment of these risks. Its objective is to add maximum sustainable value to all the activities of the organization. It marshals the understanding of the potential upside and

downside of all those factors which can affect the organization. It increases the probability of success, and reduces both the probability of failure and the uncertainty of achieving the organization's overall objectives.

Kenyan oil companies engage in international trade transactions during importation of oil products. Importation costs are settled in US dollars, and due to the huge working capital requirement, the companies obtain short term financing facilities from banks. The companies can therefore experience losses in situations when on the loan repayment day, the transaction currency (USD) has a higher buying power than in the moment of concluding trade financing contract. Furthermore, apart from selling their products locally, some oil companies export the products to the neighboring countries which again exposes them to exchange rate risk. Other companies like KenolKobil own subsidiaries in different countries in Africa. These companies consolidate the financial statements of those foreign subsidiaries with that of the home country(Kenya).In order to do this, the companies first restate the financial statements of these subsidiaries from foreign currency to that of Kenyan currency. This process exposes the companies to translation foreign exchange risk.It is therefore evident that the oil industry faces significant risk as a result of foreign exchange rate fluctuations and management of this risk is imperative not only for profitability of the companies, but also for their survival.

Earlier studies on management of foreign exchange risk in Kenya mainly focused on the finance industry. Omagwa (2005) carried out a study on how foreign owned commercial banks in Kenya managed their foreign exchange risk exposure. Ubindi (2006) on the other hand focused on foreign exchange risk management practices by forex bureaus in Kenya. Considering the vital role played by oil companies in Kenya's economy and the volume of foreign exchange dominated transactions they carry out, a knowledge gap exists that seeks to narrow down and establish how the companies mitigate foreign exchange risk that arise from such transactions. This research is therefore geared towards ascertaining conclusively the hedging techniques and

strategies that oil companies in Kenya use to mitigate part or all eminent foreign exchange risk exposures.

Empirical studies on importance of foreign exchange risk management show that this risk is important to manage. A variety of financial instruments emerge as the financial markets require managing the different growing exposure that firms face. For managing foreign exchange risk, there exist internal hedging techniques such as matching inflows and outflows, inter-company netting of receipts and payments, transfer pricing agreement, etc, and external hedging tools involve the usage of different kinds of derivatives including forwards, futures, debt, options and swaps. Each of these techniques differs to hedge different exchange risk in each company situation. When choosing between different types of hedging, the risk manager must compare costs, taxes, effects on accounting conventions (important for translation) and regulation (which may limit some transactions). The studies also show that most oil companies hedge against foreign exchange risk though on a lower scale following a year of higher oil prices.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

Qualitative research was applied in this study. This type of research aim to gather an in-depth understanding of human or organizational behavior and the reasons that govern such behavior by investigating the why and how of decision making, not just what, where, when. Hence qualitative research was found suitable to enable the objective of the study to be achieved as outlined in Chapter one; that is, to determine the techniques used by oil companies in Kenya to mitigate foreign exchange risk exposures.

3.2 Research Design

Research design is an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with an economic procedure. In fact, the research design is the conceptual structure with which research is conducted, it consists the blue print for collection, measurement and analysis of data (Hancock, 1998). A survey design was be used to collect data for this study. This was found to be suitable in meeting the objectives of the study which was: to to determine the techniques used by oil companies in Kenya to mitigate foreign exchange risk exposures.

3.3 Population and Sample Size

In this study, the target population was all the 27 major oil companies operating in Kenyan market as listed in Appendix 1. Since this number was not too large, the study focused on all of them without sampling.

3.4 Data Collection

In this research, the primary data was be collected through administration of a questionnaire (Appendix 2) which was directed to Financial Management Personnel of the oil companies using 'drop-and-pick-later' technique. This is because the personnel are the best equipped to provide responses regarding objective of this study.

The questionnaire was divided into various sections to adequately cover the objective of the study as highlighted in Chapter One. It consisted of open ended, structured and unstructured questions. The structured questions provided a set of answers from which the respondents chose the answer which best described the situation in their firms. Unstructured ones provided the freedom while responding to the subject matter. In order fully meet the objectives of the study; the primary data gathered was supplemented by secondary data from in house financial publications, reports, journals, companies' websites and brochures.

3.5 Data Analysis

To meet the objective of the study, the data collected was analyzed by use of statistical measures like tables, determination of frequencies and calculation of percentages. Excel spread sheets were used in performing these calculations and presenting the results in a way that is easy to understand. The results were then be interpreted in order to draw conclusions and recommendations.

CHAPTER FOUR

4.0 DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter, the study seeks to examine the data collected in detail categorizing it according to its relationship with the study objectives. The study endeavored to determine the techniques used by oil companies in Kenya to mitigate foreign exchange risk exposures. Quantitative techniques were used in the analysis and presentation was done using tables and percentages for ease of understanding.

4.2.0 Data Analysis, Presentation and Interpretation

Data was collected from the target population comprising 27 major oil companies as listed in appendix 1 through administration of questionnaire using 'drop-and-pick-later' technique. The respondents were Finance Managers and in some cases personnel from treasury section of finance department. Out of 27 companies, only 20 responded representing a response rate of 74% while 7 declined stating that their policies do not allow them to participate in any form of business research. This could probably be a safety precaution to guard against leakage of vital information to the competition. The response rate is significant enough to provide valid and reliable conclusions from the data collected towards satisfaction of the study objectives as depicted in the table below.

Table 4.1: Overview of data collected

Population	No. (p)	Questionnaire filled (c)	Questionnaire not filled (p-c)	Non response error %
Major oil firms in Kenya	27	20	7	26%

Key: p=population; c=completed questionnaire; p-c=non response error =26%

Source: Survey data

4.2.1 Background information

Regarding the period the companies have been operating in Kenya, it was noted that 10% have been in existence for 5 years or less, 50% for 6 to 10 years while 40% for over 10 years. This indicates that on average, most of the major oil companies have been operating in the Kenyan market for over 5 years.

Table 4.2: Period of business in Kenya

Period	No of companies	Percentage
1-5 years	2	10%
6-10 yrs	10	50%
Over 10 years	8	40%
Total	20	100%

Source: Survey data

4.2.2 Risk Management Function

Existence of risk management function is a positive step towards effective financial risk management. The function ensures that risks are identified and effectively mitigated in order to maximize value of all the activities of the organization. The study noted that 40% of the major oil companies had risk management function while 60% did not have the function. This indicates that most of the oil companies are yet to establish risk management function.

Table 4.3: Existence of risk management function

Existence of risk management function	No. of Companies	Percentage
Companies with risk management function	8	40%
Companies without risk management function	12	60%
Total	20	100%

Source: Survey data

Of the companies with the risk management function, it was found that the function was less than 5 years old in 50% of the companies and over 10 years old in the other 50% of the companies. The results are as shown in table 4.4 below. This shows that risk management is increasingly becoming essential to the oil companies.

Table 4.4: Age of risk management function

Period	No. of Companies	Percentage
Below 5 years	4	50%
6 to 10 Years	0	0%
Over 10 Years	4	50%
Total	8	100%

Source: Survey data

4.2.3 Financial Risk Exposures

On financial risk exposures, the oil companies ranked the various exposures on a scale of 1 to 5 in order of significance to them. As indicated in table 4.5 below, fluctuation in global oil prices with a mean of 4.85 ranked as the most significant risk. This was followed by foreign exchange risk with a mean of 3.94. Interest rate fluctuations ranked third with a mean of 2.94; credit risk was fourth with a mean of 2.42 while fraud was the last with a mean of 1.44. It can therefore be deduced that although foreign exchange risk was ranked as the second most significant risk to the oil companies, it is essential to their operations and its mitigation is important. The results are consistent with empirical studies on importance of foreign exchange risk management. Marshall (1999) finds that foreign exchange risk management is one of the most important financial activities in large American, British and Asian firms.

Table 4.5: Significance of financial risk exposures

Nature of Exposure	X5	X4	X3	X2	X1	Total No. of Companies	Mean	Rank
Interest rate fluctuations	0	4	9	5	0	18	2.94	3
Foreign exchange risk	2	13	3	0	0	18	3.94	2
Fluctuation in global oil prices	18	1	1	0	0	20	4.85	1
Credit risk	0	2	5	11	1	19	2.42	4
Fraud	0	0	2	4	12	18	1.44	5

Source: Survey data

Key

X5=Most significant (5 points); X4= More significant (4 points); X3= Significant (3 points); X2= Less significant (2 points); X1= Not significant (1 point)

Regarding the nature of transactions compelling the oil companies to trade in foreign currency, the study found that all the companies are required to settle importation costs in foreign currency (US Dollar). It was also found that 18 or 90% of the companies also trade in foreign currency through exporting oil products to the neighboring countries. This showed that oil importation transactions expose all the oil companies to transaction type of foreign exchange risk while export transactions expose a significant proportion of the companies to the same type of risk.

Existence of subsidiaries exposes firms to translation type of foreign exchange risk as the companies restate the financial statements of these subsidiaries from foreign currency to that of the home/parent currency. On existence of subsidiaries operating in other countries, the study noted that 12 companies (60%) have subsidiaries in the neighboring countries while the rest, 8 (40%) do not have subsidiaries. This shows a significant proportion of the oil companies are exposed to translation risk besides transaction exposure

Upon analysis of data on criticality of the three types of exposures to the oil companies, as shown in table 4.6 below, it was noted that transaction exposure with a mean of 2.85 was considered as the most critical exposure. It was followed by economic exposure with a mean of 2.11 and then translation exposure which had a mean of 1.12. The results are consistent with empirical studies by Batten et al (1993) that Australian firms consider transaction exposure as the most critical. Similar results were obtained by Omagwa (2005) in his study on foreign exchange risk management practices by commercial banks in Kenya.

Table 4.6: Importance of foreign exchange risk exposures to oil companies

Type of Exposure	Most critical (3)	Critical (2)	Least critical (1)	No. of Companies	Mean	Rank
Translation exposure	0	2	15	17	1.12	3
Transaction exposure	17	3	0	20	2.85	1
Economic exposure	3	14	1	18	2.11	2

Source: Survey data

4.2.4 Measurement of Foreign Exchange Risk Exposure

On measurement of foreign exchange risk, the study found that 9 companies (45%) measure the risk while the rest, 55% do not measure it. Therefore majority of the companies do not quantify the risk. The results are consistent with those of Loderer and Pichler (2000), that only less than 40% of the sampled Swiss firms that quantified their foreign exchange risk exposures. They explain that this is because it is difficult to quantify the risk and most firms believe that their currency exposure is small.

On frequency of measurement of the various types of foreign exchange risk exposures, it was found that transaction exposure with a mean of 2.63 was the most frequently measured exposure, followed by translation exposure with a mean of 1.44. Economic exposure ranked last with a mean of 1.11. The results are shown in table 4.7 below. The results can be explained from the fact that most companies consider transaction exposure as the most critical. Further, Popov and Stutzmann (2003) observe that only transaction exposure can be easily measured while translation as well as economic exposure are much more difficult to quantify.

Table 4.7: Frequency of foreign exchange risk measurement

Frequency	Often (3)	Sometimes (2)	Never (1)	No. of Companies	Mean	Rank
Translation exposure	1	2	6	9	1.44	2
Transaction exposure	6	1	1	8	2.63	1
Economic exposure	0	1	8	9	1.11	3

Source: Survey data

4.2.5 Management of Foreign Exchange Risk Exposure

The study established that all the oil companies hedged against foreign exchange risk. All the companies practice internal hedging techniques while only 7 companies or 35% that use derivatives. This is in consistent with empirical findings by Batten e al (1993) and Omagwa (2005) who both found that all the firms they examined hedged against the risk.

Concerning the main reason for hedging, it was noted that most of the oil companies (55%) practice hedging in order to minimize losses. 20% mainly hedge to reduce volatility of cash flow, 15% to protect earning fluctuations while 10% to reduce financing costs. Loderer and Pichler (2000) find that most of the Swiss firms hedge in order to minimize foreign exchange losses and to reduce volatility of cash flow.

Table 4.8: Reasons for hedging

Main reason for hedging	No. of companies	Percentage
Minimize foreign exchange losses	11	55%
Reduce volatility of cash flow	4	20%
Protect earning fluctuations	3	15%
Reducing financing costs	2	10%
Total	20	100%

Source: Survey data

On internal hedging techniques (table 4.9 below), the study found that the technique of changing the currency of billing, with a mean of 2.90 as the most frequently used technique. Upon seeking further explanation on the technique, it was noted that most of the companies billed for export and bulk sale of oil products using US Dollar as a measure against foreign exchange risks. The second most used internal hedging technique was increasing prices of oil products which had a mean of 2.75. Prepayment technique ranked third with a mean of 1.84. No company was found to have used restructuring as a way of hedging against foreign exchange losses probably because it is quite difficult to apply and cannot be reversed immediately according to Popov and Stutzmann (2003).

Table 4.9: Internal hedging techniques

Technique	Often (3)	Sometimes (2)	Never (1)	No. of Companies	Mean	Rank
Cash flow matching (Netting)	0	2	16	18	1.11	5
Prepayment	2	12	5	19	1.84	3
Leading and Lagging	0	3	15	18	1.17	4
Restructuring	0	0	20	20	1.00	7
Increasing prices	15	5	0	20	2.75	2
Changing currency of billing	18	2	0	20	2.90	1
Asset liability management	0	1	16	17	1.06	6

Source: Survey data

As depicted in table 4.10 below, external hedging techniques are not very popular with the oil companies in Kenyan market. However, use of forward contracts with a mean of 1.60 was the most frequently used technique. The result is consistent with empirical study by Bodnar and Gebhardt (1998) in their study on US and Germany firms where they find that the most frequently used derivative contract to hedge transaction is the currency forward contract. The use of currency options ranked second with a mean of

1.17 while the use of money market contracts with a mean of 1.16 ranked third. Use of currency swaps ranked last with a mean of 1.06.

Table 4.10: External hedging techniques

Technique	Often (3)	Sometimes (2)	Never (1)	No. of Companies	Mean	Rank
Forwards	5	2	13	20	1.60	1
Futures	0	2	15	17	1.12	4
Money market contracts	0	3	16	19	1.16	3
Options	0	3	15	18	1.17	2
Swaps	0	1	16	17	1.06	5

Source: Survey data

Regarding maturity period, the study found that majority of the instances of use of derivatives (10 out of 16) or 63% was done on short maturity period of 90 days or less. Batten et al (1993) obtained the same results from a study on Australian firms where they found that 82% of the firms hedge with a maturity of 90 days or less.

Table 4.11: Maturity period for external hedging techniques

Technique	0-90 days	91-180 days	180- 360days	Not used	No. of companies
Forwards	6	1	0	13	20
Futures	1	1	0	15	17
Money market contracts	2	1	0	16	19
Options	1	2	0	15	18
Swaps	0	1	0	16	17
Total	10	6			

Source: Survey data

From table 4.12 below, it was evident that there was an increase in use of derivatives with increase in company size. 5 out of 6 companies with revenue greater than KES 10 billion used derivatives, while 2 out of 9 companies with revenue of KES 10 billion or less used derivatives. None of the companies with revenue of KES 5 billion or less that

use derivative. These results concur with those of Chamberlain et al (1996) in their study on foreign exchange exposure on 30 US bank holding companies that the estimated exposure is strongly correlated with the size of the firm. The bigger the firm, the more it is foreign trades it has, and the smaller the firm, the more it is focused on its local market.

Table 4.12: Derivative usage by company size

Revenue in KES	No. of companies	Percentage	Use Derivatives
Less than 1	1	5%	0
1.1 -5	4	20%	0
5.1-10	9	45%	2
Over 10	6	30%	5
Total	20	100%	7

Source: Survey data

As shown on table 4.13 below, 13 out of 16 instances of use of derivatives (81%) involved partial hedge while 3 instances or 19% involved full hedge. This shows that most of the companies preferred partial hedging as compared to full hedging. Batten et al (1993) in their sample of Australian firms find that 30% of the firms fully hedged while 70% partially hedged.

Table 4.13: Comparison between partial and full hedging

Instruments/Techniques	Partial Hedge	Full Hedge
Futures	2	0
Forwards	4	3
Money market contracts	3	0
Options	3	0
Swaps	1	0
Total	13	3

Source: Survey data

The study according to table 4.14 below revealed that 75% of the oil companies hedge less than 20% of their perceived exposure. On their side, Bodnar and Richard (1998)

results reveal that the majority of firms hedge less than 25% of their perceived exposure. These then suggest that foreign currency hedging, rather than eliminating completely exposures, generally only reduces them (Popov and Stutzmann, 2003).

Table 4.14: Percentage of foreign exchange risk hedged

Percentage of hedging	No. of companies	Percentage
0-20%	15	75%
20-40%	2	10%
40-60%	1	5%
60-80%	2	10%
80-100%	0	0%
Total	20	100%

Source: Survey data

Reviewing of risk management policy on a regular basis is one of the best practices for ensuring that there is continuous improvement in risk management techniques in order to effectively deal with uncertainties facing the organization while maximizing shareholders' value. The study revealed that most of the companies (30%) review their policy on yearly basis while 10% review on semiannual basis. 60% of the companies are yet to establish a risk management function and a policy.

Table 4.15: Evaluation of risk management policy

Period	No. of companies	Percentage
Yearly	6	30%
Semiannually	2	10%
Quarterly	0	0%
Monthly	0	0%
No risk management policy	12	60%
Total	20	100%

Source: Survey data

Companies were further requested to indicate the extent to which the statements collected from empirical studies applied to them as per question 9 of the questionnaire (appendix 2). The results are as shown in table 4.16 below. On average, the first

statement which stated that during the periods of rising crude oil prices, the oil companies protect themselves less against expected exchange rate fluctuations than they usually do, was top on the rank with a mean of 3.60. This shows that the oil companies hedge less against exchange rate fluctuations during the periods of rising oil prices than they usually do. This result is consistent with a study by Tufano (1996) who finds that hedging by oil companies is lower following a year of higher oil prices. Further, from the results shown in table 4.15, it can also be depicted that oil companies find currency markets being information efficient markets and organizations cannot make consistent speculative gains through predicting future exchange rates. The statement is ranked second with a mean of 3.53.

The oil companies to a greater extent first look for internal hedges before purchasing external hedges. The statement ranked third with a mean of 3.50. This result concurs with recommendation by Papaioannou (2006), who explains that before purchasing external hedges, the company should first look for internal hedges since they have a relatively low cost.

Table 4.16: Statements on empirical evidence versus current practice

Statement	Very large extent (5)	Large extent (4)	Some extent (3)	Small extent (2)	Not at all (1)	No. of Companies	Mean	Rank
a	2	8	10	0	0	20	3.60	1
b	2	2	4	8	3	19	2.58	4
c	0	1	6	7	4	18	2.22	5
d	4	4	10	2	0	20	3.50	3
e	3	8	5	2	1	19	3.53	2

Source: Survey data

CHAPTER 5

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The objective of this study was to determine the techniques used by oil companies in Kenya to mitigate foreign exchange risk exposures. Data was collected from the target population comprising 27 major oil companies operating in Kenyan market as listed in appendix 1 through administration of questionnaire using 'drop-and-pick-later' technique. The respondents were Finance Managers and in some cases personnel from treasury section of finance department. Out of 27 companies, only 20 responded representing a response rate of 74% while 7 declined stating that their policies do not allow them to participate in any form of business research.

The study found that risk management is increasingly becoming essential to the oil companies. Of the companies with the risk management function, it was found that the function was less than 5 years old in 50% of the companies and over 10 years old in the other 50% of the companies. Foreign exchange risk was ranked as the second most significant risk to oil companies after fluctuation in global crude oil prices and therefore most of the companies found it as an important risk to manage.

It also emerged that all oil companies are exposed to foreign exchange risk through oil importation transactions while 90% of the companies are further exposed through oil export transactions. Further, 60 % of the companies own subsidiaries in the neighboring countries and are further exposed to translation risk as they restate the financial statements of these subsidiaries from foreign currency to that of the home or parent

currency. The study also revealed that US Dollar is the currency to which all the oil companies are mostly exposed as importation costs are settled in US Dollar.

It was found that 55% of the oil companies do not quantify foreign exchange risk probably because it is difficult to quantify the exposure. Transaction exposure was ranked as the most critical risk to the oil companies and it is the most quantified and hedged risk. It was established that all the companies practice internal hedging techniques while only 35% of the companies used external hedging techniques (derivatives).

The study noted that the internal hedging technique of changing the currency of billing was the mostly used technique by the oil companies. The companies bill the export and bulk sale of oil products using US Dollar as a measure against foreign exchange risks. Increasing the prices of oil products and prepayment were found to be other major internal hedging techniques.

Use of derivatives was not found to be popular with the oil companies. Only 35% of the companies use derivatives, with forward contracts being the most frequently used derivative. Currency options ranked second while use of money market contracts ranked third. Regarding maturity period for the derivatives, it was found that majority of the companies preferred short periods of 90 days or less. The use of derivatives was observed to increase with increase in size of the companies. It was noted that 5 out of 6 companies with revenue greater than KES 10 billion used derivatives, while 2 out of 9 companies with revenue of KES 10 billion or less used derivatives. None of the companies with revenue of KES 5 billion or less that used derivative. Most of the companies that used derivatives practiced partial hedge as opposed to full hedge. It was also noted that 75% of the oil companies hedge less than 20% of their perceived exposure.

The study further noted that oil companies hedge less against exchange rate fluctuations during the periods of rising oil prices than they usually do. It was also observed that oil companies find currency markets being information efficient markets and organizations can therefore not make consistent speculative gains through predicting future exchange rates. Further, it was noted that to a greater extent, the oil companies first look for internal hedges before purchasing external hedges since they have a relatively low cost.

5.2 Conclusion

To a greater extent, the objective of the research which was to determine the techniques used by oil companies in Kenya to mitigate foreign exchange risk exposures was achieved. The study found that all the oil companies find foreign exchange risk to be significant to them and most of them rank it as second to fluctuation in global crude oil prices. It was found that transaction foreign exchange risk is the most critical to the oil companies which results from oil importation and subsequent export to neighboring countries.

All the companies use a variety of internal hedging techniques with change of currency of billing, increasing prices of oil products and prepayment being the most preferred techniques. To the contrary, only 35% of the companies use derivatives to manage foreign exchange exposures. This could probably be due to cost involved and absence of some of derivative products in Kenyan market. Forward contract was found to be the most popular derivative followed by currency options and money market contract. The use of derivatives was found to vary directly with increase in size of the firms. Most of the firms preferred derivatives with a short maturity period of 90 days or less. The study also revealed that 75% of the oil companies hedged less than 20% of their perceived exposure. The companies also to a greater extent stated that they hedge less during periods of increasing oil prices than they usually do.

5.3 Recommendations

The study will be of great importance to oil companies operating within the Kenyan market which faces a lot of turbulence as a result of exposure to financial, political and business risks. The findings shed light regarding the practices that are used by similar firms to hedge against risks that arise from fluctuations in foreign exchange rates. This is crucial since it was found that management of foreign exchange risk is critical to the operations of the oil companies and 75% of the companies only mitigate only upto 20% of their perceived exposures. The companies can therefore use the findings of this research to boost their foreign exchange risk management measures.

Financiers and creditors that deal with oil companies can also use the results of this study to gain more insight regarding financial risks that the companies are exposed to and mitigation measures that have been put in place. Since this group is concerned with probability of obtaining timely payments for money owed to them, it will enable them make informed decisions on kind of trade agreements they should establish as they partner financially with the oil companies.

The study will make a significant contribution to academic literature in the field of foreign exchange risk management in Kenyan oil sector. A review of earlier studies revealed that they concentrated on finance sector (banks and forex bureaus). Hence this study will bring awareness of corporate practice in the subject of foreign exchange risk management in the oil sector in Kenyan market. A researcher interested in this area of study will find the results contained in this research useful to his work.

5.4 Limitations of the study

Though the study was successful to a greater extent, a number of limitations were experienced which could impact negatively on the quality of the results obtained. Seven companies declined to respond to research questions due to their policies which do not

permit them to participate in any form of business research. This constituted 26% of the target population. In addition, some of the respondents did not answer some questions probably because they considered them confidential.

Due to time limitation, the respondents were given only one week to provide responses. In most cases, the questionnaires were filled in a hurry and in presence of the researcher which could possibly affect the quality of the responses. In addition, there was not enough time to schedule for interviews in order to seek further clarifications on responses that were not clear enough.

Some of the oil companies lacked qualified financial personnel with thorough understanding of risk management and foreign currency market. Such personnel were found not to be fully conversant with the area of foreign exchange risk management and their responses may negatively influence the findings of this research.

5.5 Suggestions for further research

The study opens a way for in depth studies on the area of foreign exchange risk management practices for other industries in the Kenyan market. This is because a particular study in relation to one industry may not be directly applicable to another industry. In addition, besides focusing on determination of foreign exchange risk management practices, researchers can also attempt to determine the effectiveness of the practices already adopted by the oil companies in Kenyan market. Finally, since fluctuation of global crude oil prices was found to be a major risk to oil companies, another research can be conducted to determine the practices being adopted by oil companies to mitigate this kind of exposure.

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APPENDICES

Appendix 1: List of Oil Companies in Kenya

1. Addax Petroleum Ltd
2. Al-Leyl Limited
3. Bakri International Energy Ltd
4. Dalbit Petroleum Ltd
5. Engen Petroleum Ltd
6. Fossil Fuels Ltd
7. Galana Petroleum Ltd
8. Gapco Kenya Ltd
9. Global Petroleum Ltd
10. Gulf Energy Ltd
11. Hashi Energy Ltd
12. Hass Petroleum Ltd
13. KenolKobil Ltd
14. Intoil Company Ltd
15. Libya Oil Kenya Ltd
16. Mongas International Ltd
17. Muloil Company Ltd
18. National Oil Corporation of Kenya
19. Oilcom Ltd
20. Pentoil Petroleum Ltd
21. Petro Oil Kenya Ltd
22. Rivapet Ltd
23. Riva Oil Ltd
24. Royal Fuels Ltd
25. Kenya Shell Ltd
26. Total Kenya Ltd
27. Trojan Petroleum Ltd

Source: Petroleum Institute of East Africa, <http://www.petroleum.co.ke/>.

Appendix 2: QUESTIONNAIRE

This questionnaire seeks to collect information on foreign exchange risk management practices adopted by oil companies in Kenya.

Please provide the following information frankly and honestly. All information received will be treated confidentially and used for academic purposes only.

1. Institutional Information

Please indicate:

- ❖ Name of your organization.....
- ❖ Location of your main office.....
- ❖ When did your organization commence business operations in Kenya?.....
- ❖ Respondent's position within the organization.....

2. Value of annual revenue

Kindly indicate the company's operating revenue in KES.

- ❖ Less than 1 billion []
- ❖ 1.1 billion-5 billion []
- ❖ 5.1 billion-10 billion []
- ❖ Over 10 billion []

3. 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 []

4. Financial Risk Exposure

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 []
- ❖ Fluctuations in global crude oil prices []
- ❖ Credit risk []
- ❖ Fraud []

5. Foreign Exchange Risk Exposure

a) Kindly indicate the transactions which compel your company to trade in foreign currency.

- ❖ Transactions for importation of oil products []
- ❖ Transactions for exportation of oil products to neighboring countries []
- ❖ Others (kindly specify).....

b) Please state the foreign currency to which your company is mostly exposed.

- ❖ US Dollar []
- ❖ Euro []
- ❖ Other (specify)

c.) Does your company have subsidiaries in other countries? Yes [] No []

c) If yes, please state the countries in which the subsidiaries are located.

.....

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

- ❖ Translation exposure []
- ❖ Transaction exposure []
- ❖ Economic exposure []

6. Measurement of Foreign Exchange Risk Exposure

a) Is the firm measuring the exchange rate exposure? Yes [] No []

b) If yes, how often is the company measuring them?

Exposure	Often	Sometimes	Never
Translation exposure(accounting translation into base currency)			
Transaction exposure(foreign receivable and payable currency)			
Economic exposure(future expected cash flow and competitive position)			

7. Management of Foreign Exchange Risk Exposure

- a) Is the company hedging the exchange rate risk? Yes [] No []
- b) Please state 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) What kind of **internal hedging** instruments or techniques is the company using for hedging?

Instruments/Techniques	Often	Sometimes	Never
Cash flow matching (Netting)			
Prepayment			
Leading and Lagging			
Restructuring			
Increasing prices			
Changing currency of billing			
Asset liability management			
Others (specify)			

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

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

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

Instruments/Techniques	0-90 days	91-180 days	180-360 days	Not used
Forwards				
Futures				
Options				
Money market contracts				
Swaps				
Others(please specify).....				

f) How do you use these instruments?

Instruments/Techniques	Partial Hedge (hedging only those positions for which currency loss is expected)	Full Hedge (hedging all open positions)
Futures		
Forwards		
Options		
Money market contracts		
Swaps		
Others(please specify).....		

g) What percentage of exchange rate exposure is the company hedging?

- 0-20% [] 40-60% [] 80-100% []
 20-40% [] 60-80% []

8. Evaluation of risk management policy

How often do you measure the success of foreign exchange rate risk management policy?

- ❖ Yearly []
- ❖ Semiannually []
- ❖ Quarterly []
- ❖ Monthly []
- ❖ 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)	During the periods of rising crude oil prices, the oil companies protect themselves less against expected exchange rate fluctuations than they usually do.					
b)	The company has general rules for setting hedging periods.					
c)	The company forecasts on fluctuations of US dollar during its planning horizons.					
d)	The company first looks for internal hedges before purchasing external hedges.					
e)	Currency markets are information efficient markets, organizations cannot make consistent speculative gains through predicting future exchange rates.					