

EFFECT OF INTEREST RATE RISK MITIGATION ON THE PROFITABILITY OF FOREX BUREAUS IN NAIROBI, KENYA

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ABSTRACT

The focus of this study was to investigate the effect of interest rate risk mitigation techniques on the profitability of forex bureaus in Kenya. The objectives of the study were to assess the effect of hedging, payments netting, diversification and leading techniques on the profitability of forex bureaus in Nairobi. The study was grounded on Classical Theory of Interest Rates, Loanable Funds Theory and Transaction cost theory. This study employed a descriptive research design. The target population was the 74 forex bureaus in Nairobi County registered with the Kenya Forex & Remittance Association. Owing to the small number of the forex bureaus all of them (74) were included in the study. From each forex bureau one (1) respondent was picked from the finance department to participate in the study. This generated 74 respondents. The study collected primary data using a self-administered research questionnaire. Data collected was purely quantitative and it was analyzed by descriptive analysis. The descriptive statistical tools such as Statistical Package for Social Sciences (SPSS) and MS Excel helped the researcher to describe the data and determine the extent of the effect. The researcher further conducted a multiple regression analysis. The findings were presented using tables and figures. The study found that forex bureaus experience various interest rate risks in their operations to a great extent. The interest rate mitigation techniques affect the profitability of forex bureaus to a great extent. Forex bureaus adopted hedging techniques for mitigation of interest rate risks to a great extent. The hedging techniques applied in mitigation of

interest rate risks affect the profitability of forex bureaus in Nairobi to a great extent. The forex bureaus in Nairobi adopted payment netting techniques for mitigation of interest rate risks to a moderate extent. Payments netting adopted in mitigation of interest rate risks was found to affect the performance of the forex bureaus to a moderate extent. The forex bureaus in Nairobi have adopted leading technique for mitigation of interest rate risks to a great extent. The forex bureaus adopted diversification strategy for mitigation of interest rate risks to a great extent and they affect the performance of forex bureaus to a great extent. The study concludes that interest rate mitigation techniques have a very significant effect on the profitability of forex bureaus, hedging techniques, payment netting techniques, leading technique and diversification techniques adopted for mitigation of interest rate risks have great contributions on the performance of forex bureaus in Nairobi. The forex bureaus in Nairobi should continue hedging since it effectively manages interest rate risks. The forex bureaus should start exploring avenues of enhancing payment netting techniques for better and accurate management of interest rate risk exposure. Forex bureaus should develop and implement effective and comprehensive leading procedures and information systems to manage and control interest rate risk in accordance with its interest rate risk policies.

Key Words: *interest rate risk mitigation techniques, hedging technique, payments netting, leading technique, diversification, profitability*

INTRODUCTION

Vincent and Allain (2013) define interest rate risk as the potential impact on an institution's earnings and net asset values of changes in interest rates. Interest rate risk is an integral part of many businesses and may even be a source of profit. According to Vincent and Allain (2013) the management of interest rate risk is critical to the stability of business corporations as this relates how currency risk assessment stimulates financial objectives. Edakasi (2011) states that interest rates are important because they control the flow of money in the economy. High interest rates curb inflation but also slow down the economy. Low interest rates stimulate the economy, but could lead to inflation. Santhosh and Prakash (2016) observed that when interest rates are high, people do not want to take loans out from the bank because it is more difficult to pay the loans back, and the number of purchase of real assets goes down. The opposite is also true. The effects of a lower interest rate on the economy are very beneficial for the consumer (Vincent & Allain, 2013).

Just like any other speculative trade, enlarged risks come along with probability for a higher profit/loss (Edakasi, 2011). Low interest rates are not beneficial for lenders, who are seeing less of a return on their loan than in times when interest rates are high which means that banks may find themselves having to lower the interest rates accrued on money deposited in the bank in order to maintain a steady profit (Matthieu, Augustin & Thesmar, 2016). In their study, Amalia, Robert and Harald (2013) found out that interest rates represent the cost of borrowing capital for a given period of time. Price changes are anticipated in the real world and these expectations are part of the process that determines interest rates. The rate of interest represent the cost of borrowing capital for given period of time, given that borrowing is a significant source of finance for the firms, interest rate are of great importance to them since it greatly affects their income and by extension their operations (Ng'etich & Wanjau, 2011).

In the financial crisis of 2007/08, however, the level and volatility of interest rate spreads increased dramatically, raising the issue of how alternative monetary policy procedures impact on the economy (Kohn, 2010). Rosenberg, Gonzalex and Sushma (2009) defined interest rate as money borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets. Interest rate is the price of money, almost everyone would prefer to have one shilling in their pocket today than have it a year from now, even if their intention is to save it or not, if someone is going to defer getting paid a shilling today and instead get paid one year from now, then this person would expect some additional reward this extra is the interest rate (Kolapo & Fapetu, 2015). Interest rate as a price of money reflects market information regarding expected change in the purchasing power of money or future inflation (Vincent & Allain, 2013).

In the United States of America, Matthieu, Augustin, and Thesmar (2016) did a research entitled 'Banks' Exposure to Interest Rate Risk and the Transmission of Monetary Policy. The study sought to show that the cash-flow exposure of banks to interest rate risk, or income gap, affects

the transmission of monetary policy shocks to bank lending and real activity. Matthieu et al., (2016) used a large panel of U.S. banks to show that the sensitivity of bank profits to interest rates increases significantly with measured income gap, even when banks use interest rate derivatives. Matthieu et al., (2016) showed that banks retain significant exposure to interest rate risk. Our sample consists of quarterly data on US bank holding companies from 1986 to 2013. In the cross-section of banks, income gap predicts the sensitivity of bank lending to interest rates. The effect of income gap is larger or similar in magnitudes to that of previously identified factors, such as leverage, bank size or even asset liquidity. According to Matthieu et al., (2016), the allocation of interest rate exposure across agents (banks, households, firms, government) is an important variable to understand how an economy responds to monetary policy. In particular, the distribution of interest rate risk across agents is crucial to analyze the redistributive effects of monetary policy and thus to trace the roots of the transmission of monetary policy. To alleviate the concern that this result is driven by the endogenous matching of banks and firms, we use loan-level data and compare the supply of credit to the same firm by banks with different income gap (Matthieu et al., 2016).

Another study was currently conducted by Santhosh and Prakash (2016) on interest rate risk management in India which was a comparative study of Bank of Baroda and ICICI Bank. Santhosh and Prakash (2016) pointed out that the Indian banking sector is exposed to various types of risks such as liquidity risk, interest rate risk, credit risk, exchange risk etc. which affects the bank's Net Interest Income (NII) which is the basic source of a bank's profitability. The phased deregulation of interest rates and the operational flexibility given to banks in pricing most of the assets and liabilities have exposed the banking system to Interest Rate Risk (IRR). The study used analytical research design to assess the interest rate risk situation in Bank of Baroda and ICICI bank. Santhosh and Prakash (2016) used secondary information from the RBI website and the annual reports of Bank of Baroda and ICICI bank. Bank of Baroda and ICICI bank were exposed to interest rate risk during the period of study 2009-2014. According to Santhosh and Prakash (2016), a few strategies that the banks can implement to mitigate the interest rate risks to attain a desirable gap position are discussed. To reduce a negative gap, the banks can reduce the maturity of the investment portfolio, or increase long-term deposits, or increase short-term lending or increase floating rate lending. To reduce a positive gap, Santhosh and Prakash (2016) recommended that the banks can extend the maturities in the investment portfolio, increase floating rate deposits, increase short-term borrowings, increase long-term lending or increased fixed rate lending.

Kolapo and Fapetu (2015) investigated the influence of interest rate risk on the performance of deposit money banks in Nigeria. Kolapo and Fapetu (2015) made inquiry into the influence of interest rate risk on the performance of DMBs in Nigeria between 2002 and 2011, using a sample consisting of 6 tier 1 capital banks. The regression model specified return on assets to measure bank performance as a function of interest rate risk indexed with loans to asset ratio, average lending ratio, and risk of interest diversity. Kolapo and Fapetu (2015) argued that employing

fixed effect regression method, each measure of interest rate risk is found to have insignificant effect on bank performance. Kolapo and Fapetu (2015) also found that interest rate risk weakly determines changes in return on assets; hence, it does not possess significant influence on bank performance. Kolapo and Fapetu (2015) concluded that interest rate risk wields no significant influence on the performance of DMBs in Nigeria.

Jiaqi (2011) conducted a study aimed at establishing a modelling process of short-term interest rate risk management for the South African Commercial Banking Sector. According to Jiaqi (2011), the lending rates of most South African commercial banks are tied to the prime overdraft rate. The borrowing rates are linked to the money market rates such as the Johannesburg Interbank Agreed Rate (JIBAR) which is indirectly affected by the prime overdraft rate. Hence, lending and borrowing rates are related to the repo-rate. Jiaqi (2011) carried out a review of the bank risk management processes, and then discusses the enterprise risk management framework that guides the formation of the risk management processes and systems. In order to benchmark against international risk management practices, a comparative analysis is carried out to evaluate the risk management tendencies of bank risk management in South Africa and globally. Jiaqi's (2011) empirical findings reveal that most banks (i.e. eighty per cent of all local banks) manage the short-term interest rate risk by following the same process as the interest rate risk in general. The key elements (risk identification, measurement, mitigation and monitoring and reporting) of the banking book interest rate risk management are not linked together as a systematic process. This is not in line with the Basel II Accord to manage market risks through a process approach (Jiaqi, 2011).

Wambua (2013) conducted a study on the effect of interest rate volatility on financial performance of class "a" road construction companies in Nairobi County. Applying a descriptive research design, the study used of secondary data. Wambua (2013) used a regression model to determine the relationship between returns of the companies and four factors, namely, interest volatility, working capital, growth and age. Wambua (2013) found that age of the companies had a significant and positive effect on return. However, the regression analyses per company showed no statistically significant relationship between return and interest volatility, working capital and growth. The relationship between interest volatility, working capital and growth and return was weak and statistically insignificant for all the 16 companies in the sample. Wambua (2013) consequently recommended putting in place policies to make these companies competitive irrespective of their age in order to make the road construction business competitively cheaper without compromising quality.

Ngalawa and Ngare (2014) carried out an investigation on interest rate risk management for commercial banks in Kenya. Ngalawa and Ngare (2014) sought to show empirically that bank's exposure to interest rate risk or income gap determines the structure of the balance sheet. Ngalawa and Ngare (2014) followed the standardized interest rate shock" approach also proposed within the new Basel Capital Accord (Basel II) and the Principles for the Management and Supervision of Interest Rate Risk" that are published by the Basel Committee on Banking

Supervision (2004). Complete data was available for six of the banks listed commercial banks in the Nairobi securities exchange. Ngalawa and Ngare (2014) established that a 2% change in the market interest rates would result to a change in income equivalent to 0.4% of total assets of the bank. Quantitatively, a 200 basis point change in CBK rates would lead to a change of net income equivalent to 0.4% of total assets of the bank (Ngalawa & Ngare, 2014).

STATEMENT OF THE PROBLEM

High interest rates have remained a macroeconomic problem that has been difficult to eliminate. According to Mang'eli (2012), fluctuations of market interest rates exert significant influence on the performance of financial institutions. Forex Bureaus have spent considerable time and effort in recent years developing systems for monitoring and managing interest rate risk. In year 2010, the interest rate spread was so high in Kenya that the members of parliament tabled a motion on financial bill to cap the interest rate (Maigua & Gekara, 2016). In August 2016, the President signed the Banking Amendment bill 2015 into law which set out a maximum interest rate to be charged for a loan at no more than 4% of the rate set (CBK, 2016). It also set out the minimum amount of interest to be paid for bank deposits at 70% of the CBK rate, given that the CBK rate currently stands at 10.5% the effective rate would be 7.35% (CBK b, 2016). Cheruiyot, Cheruiyot and Yegon (2016) indicated that the forex bureau market has experienced rapid growth in the recent past, with the number of operating bureaus having increased to 126 as at December 2010. This rapid growth is attributed to increased demand in interest rate and money transfer business. It has therefore become necessary to review the Forex Bureau Guidelines in order to streamline the sector and address emerging challenges and opportunities. Maina (2015) in a study of determinants of interest rate spread among commercial banks of Kenya established that ownership structure, market structure and business risks play significant role in explaining interest rate spread. The Central Bank requires each bureau to submit daily indicative closing Kenya shillings exchange rates, daily returns of interest rate transactions, weekly returns, quarterly balance sheet and profit and loss accounts and audited balance sheet and profit and loss account (Cheruiyot et al., 2016). Based on the foregoing studies, interest rates have a major influence on the financial performance of institutions. However, numerous studies have largely focused on interest rates and their impact on financial performance of commercial banks leaving a gap on the effect of interest rate risk mitigation techniques on profitability of forex bureaus in Kenya. This was the gap that the current that the study sought to fill.

GENERAL OBJECTIVE

The main objective of the study was to assess the effect of interest rate risk mitigation techniques on the profitability of forex bureaus in Kenya

SPECIFIC OBJECTIVES

1. To assess the effect of hedging technique on the profitability of forex bureaus in Nairobi, Kenya

2. To determine the relationship between payments netting and the profitability of forex bureaus in Nairobi, Kenya
3. To establish the influence of leading technique on the profitability of forex bureaus in Nairobi, Kenya
4. To find out the extent to which diversification affects the profitability of forex bureaus in Nairobi, Kenya

THEORETICAL REVIEW

Liquidity Preference Theory

Liquidity preference theory proposed by Ross (1976) asserts that economic units have a preference for liquidity over investing. According to Fry (1995) applying this theory explains the premium offered in forward rates in comparison to expected future spot rates. This premium is used as payment for the use of scarce liquid resources. The demand for money is a demand for liquidity (Mendoza, 1997). The demand for money (liquidity preference) arises from three motives; first is transactions motive, it relates to demand for money for current transactions of individual and business firms. In inflation times the transaction cost of banks may increase because in order to obtain the same level of goods / service more money is needed. This makes commercial banks to charge higher cost for their services (Ross, 1976).

Keynes considered that there are three reasons why people demand for money rather than invest that money in bond (Crowley, 2007). Wong and Zhou (2008) argued that this is holding idle money balance due to uncertainties or emergency purposes. In reality the world is dominated by uncertainties. In consequence despite the opportunity cost of holding money, precautionary balance will be held in case there is a need for unplanned expenditure. The amount kept under this motive depends on the conditions under which one is living. In this study, the relationship between the profitability of forex and its rate of interest is inverse relationship. This implies that when interest rates are high, prices of the bonds are low. This in effect means that people may be reluctant to hold bonds for fear that the rate of interest may go up and thus bond prices fall. On the other hand if an individual strongly expects a fall in interest rate, he will be anxious to hold bond in the expectation of making a capital gain when their price goes up. According to Fry (1995) applying this theory explains the premium offered in forward rates in comparison to expected future spot rates.

Positive Theory of Corporate Hedging

The positive theory of corporate hedging developed by Levis, (2003) proposes that when capital markets are less than perfect, circumstances do arise where corporate hedging can add value and, thus, can be justified. According to the theory, there is an important trade-off between the cost and gains of risk aversion. The positive theory of corporate hedging works as a guideline rather than a model of estimations. This is because it fails to reveal companies' different risk profiles, which differ by business, products and people. The decision of whether and how to hedge then

depends on firm-level attributes that determine the benefits derived from hedging that accrue to either shareholders or managers (Karol, 2008). Hedging against foreign currency exposure is increasingly becoming important because of volatile exchange rates that in one swing turn profit into loss and vice versa as companies settle financing and purchase obligations incurred in various hard currencies (Lewis, 2003).

In this study, the theory is applied in investigating the effect of hedging techniques on profitability of forex bureaus. There is a general notion that hedging reduces the expected cost of financial distress. When capital markets are perfect, hedging at the corporate level does not add to firm value and, thus, cannot be justified. According to Levis, (2003) hedging can also increase a firm's debt capacity, therefore generating greater tax advantages from greater leverage. Hedging may also help relieve the problem of underinvestment, that is, when firms have many growth opportunities and external financing is more expensive than internally generated funds (Karol, 2008). In the foreign exchange business, risk-averse managers engage in hedging if their wealth and human capital are concentrated in the firm they manage and if they find the cost of hedging on their own account is higher than the cost of hedging at the firm level.

Transaction Cost Theory

Transaction cost theory was proposed by Oliver Williamson (Williamson, 2007) who argued that transaction or contracting costs represent the explicit or implicit costs of facilitating exchanges. Transaction costs reflect the costs of economic or organization both outside the firm and inside the firm and are one means by which one can measure the efficiency of different institutional designs in achieving economic outcomes in particular environments (Sabana, 2014). Transaction costs thus represent the difference between what a consumer pays and what a seller gets for the products. In financial markets, transaction costs relate to the cost of accessing financial services. Requirements for accessing financial services impose reflect high transaction costs and microenterprises often face higher transaction costs of borrowing than large firms which affects their performance (Beck, Hesse, Kick & Westerhagen, 2009). There are interdependencies between resources and transaction characteristics where resources are considered as antecedents of transaction costs.

Transaction cost theory explains that organizations incur costs as they acquire, configure and utilize resources. The technologies include financial statement lending, small business credit scoring, asset-based lending, factoring, and trade credit (Ayuma, Namusonge & Mike, 2014). Financial statement lending requires the borrower to have informative financial statement and strong financial condition as reflected in the financial ratios calculated from these statements. This method is relatively low cost since a modest fee is charged for the respective scores. Organizations are not mere substitutes for structuring efficient transactions when markets fail; they possess unique advantages for governing certain kinds of economic activities through a logic that is very different from that of a market. This theory becomes essential in factoring the

costs of interest rate risks and how payment netting can be essential in mitigating the risks in forex bureaus.

Interest Rate Parity Theory

The interest rate parity theory posits that the market determines exchange rates in such a way that high interest rates are compensated for by an expectation of currency depreciation, and vice versa. According to Cashin, Liang and McDermott (2000), the basis for this parity is also the law of one price, in that the purchase of one investment asset in one country should yield the same return as the exact same asset in another country otherwise exchange rates would have to adjust to make UP for the difference. With the adjustment of the exchange rates the forex bureaus would either make a profit or loss and this would affect the growth as it affects their profitability and sale volumes. In this case, there would be no opportunity to profit from interest differentials, and hence no incentive to borrow in a low-interest currency in order to invest the proceeds in a high-interest currency. In practice, high-interest currencies often experience prolonged periods of sharp appreciation spurred by capital inflows. Lured by interest differentials, short-term private capital flows can be highly destabilizing.

The interest rate parity theory is significant in this study since it helps to explain the reason why business organizations may not achieve high financial performance because of servicing loans that were acquired at high interest rates. Organizations may also not have much incentive to borrow at high interest rates and this is likely to affect the magnitude of projects undertaken and the financial performance attained. By manipulating interest rates, central banks exert influence over both inflation and exchange rates, and changing interest rates impact inflation and currency values. Higher interest rates offer lenders in an economy a higher return relative to other countries. The impact of higher interest rates is mitigated, however, if inflation in the country is much higher than in others, or if additional factors serve to drive the currency down. The opposite relationship exists for decreasing interest rates, that is, lower interest rates tend to decrease exchange rates (Bergen, 2010). This explains why firms use leading to mitigate the interest rate risks.

Market Segmentation Theory

Market segmentation theory (MST) was proposed by Zarruk in 1989 does away with approximation and discusses each separate maturity term as being independent of the others. In other words, we should not speak of a bond market, but rather of two-year, five-year, ten-year bond markets, since the roles played by these instruments are not equivalent in any way (Zarruk, 1989). Each maturity term is fulfilling a different function, with a different investor profile, and thus is a unique product, far from being a tool of convenience for those who would prefer to hold a single contract instead of renewing each short term one in succession, as suggested by the expectations theory (Fry, 1995). MST posits that each borrower and lender (market structure) have a particular timeframe in mind when purchasing or selling a debt instrument (Barajas, Steiner & Salazar, 1999). An investment bank may be buying or selling a government bond in

the short term in order to profit from interest rate changes that could be announced by a central bank.

Barajas et al., (1999) asserted that market segmentation theory allows us to incorporate the depth of the market into our understanding of the term structure of debt instruments, and in a way, takes the two-dimensional liquidity preference theory or the expectations theories, and gives them the third dimension of investor preferences. Thus, the risk premium discussed in the context of the liquidity preference theory is about diversification of interest rate risks in the finance sector. The advantage of this theory is that it can easily explain while the yield curve slopes upwards most of the time in the diversified market (Randall, 1998). Since each maturity term constitutes a separate market, we would expect their interest rates to move independently up or down, with no obvious relationship, but that, of course, contradicts the well-known and easily observed relationships in the market. In this study this theory is applicable in explaining the relationship between diversification and profitability of forex bureaus.

CONCEPTUAL FRAMEWORK

The independent variables in this study are hedging technique, payments netting, leading and diversification, while the dependent variable is profitability of forex bureaus.

Independent Variables

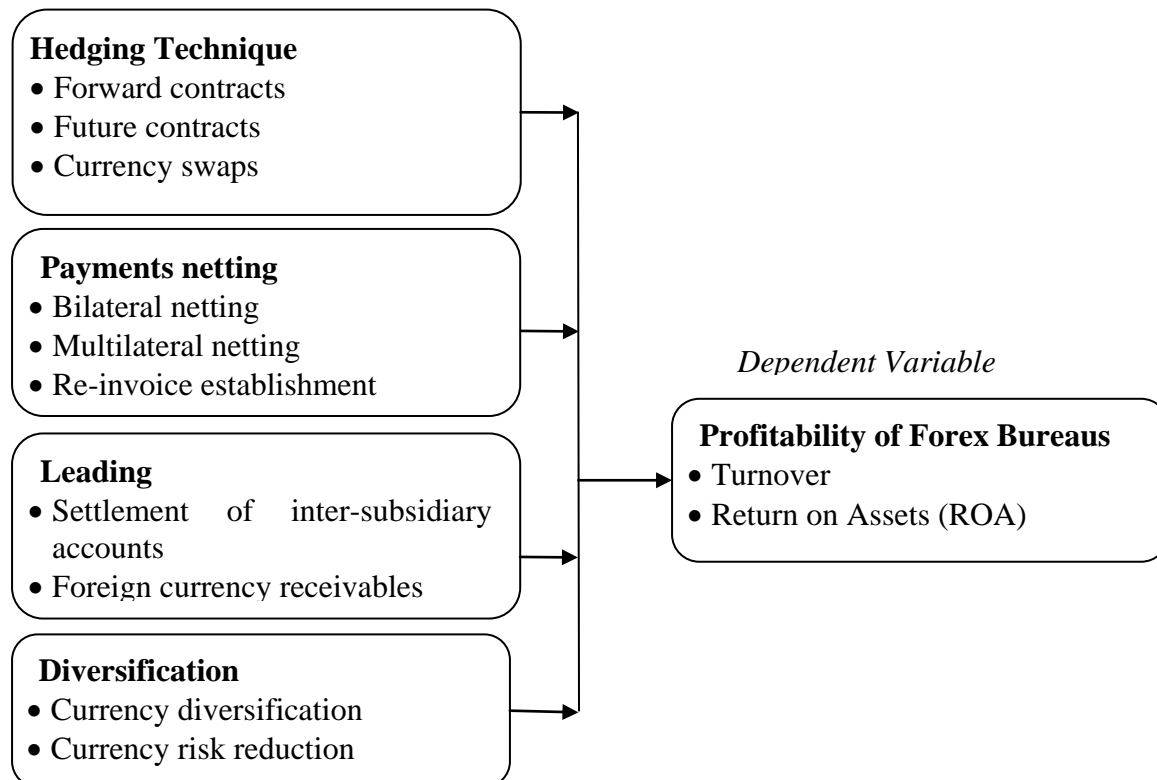


Figure 1: Conceptual Framework

RESEARCH METHODOLOGY

This study employed a descriptive research design. The target population in the study was the 74 forex bureaus in Nairobi County registered with the Kenya Forex & Remittance Association. According to Kenya Forex & Remittance Association (2015), the total number of forex bureaus operating in Nairobi Kenya was 74. The sampling frame for this study consisted of all the 74 forex bureaus operating in Nairobi. A census survey of all the 74 forex bureaus operating in Nairobi was carried out. This is because the number of the forex bureaus operating in Nairobi is relatively manageable and therefore was possible to get responses within a reasonable time. From these 74 forex bureaus operating in Nairobi, the corresponding aspects of interest rate risks and profitability were studied. This study utilized a research questionnaire as the main primary data collection research instrument.

The researcher dropped the questionnaires physically at the respondents' place of work and picked them up once filled up. Secondary data was obtained from the information published by the firms, industry regulators and government agencies on the impact of interest rate risk mitigation techniques on the profitability of forex bureaus in Nairobi, Kenya. The pilot study was carried among 15 respondents purposively chosen from selected financial institutions in Nairobi and reliability tested using a Cronbach's alpha. A reliability of above 0.7 was achieved. The respondents were also informed that the research is meant for academic purposes only and that the study had no intention of using the information for personal gains.

The data collected from the field was assessed and comparison made so as to select the most accurate and quality information from the feedback given by various respondents. The raw primary data collected was coded prior to being input into SPSS statistical analysis software. It was analyzed by descriptive analysis. The descriptive statistical tools such as Statistical Package for Social Sciences (SPSS) and MS Excel helped the researcher to describe the data and determine the extent used. The findings were presented using tables and charts. To quantify the strength of the relationship between the variables, the researcher conducted a multiple regression analysis to establish the impact of interest rate risk mitigation techniques on the performance of the forex bureaus in Nairobi Kenya. The data was broken down into the different aspects of impact of interest rate risk mitigation techniques and their effect on the performance of the forex bureaus in Nairobi Kenya. This offered a quantitative and qualitative description of the objectives of the study. The regression equation was:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Whereby; Y = profitability, X₁ = hedging techniques, X₂ = payments netting, X₃ = leading and X₄ = diversification techniques. Further, β_0 = the regression intercept, β_1 , β_2 , β_3 & β_4 = Regression Coefficients and ε = Error term normally distributed about a mean of 0 and for purposes of computation ε is assumed to be 0. To test the significance of the overall model, the model was tested using Analysis of Variance (ANOVA).

RESEARCH RESULTS

Out of the 74 questionnaires sent, 64 were received back completely filled contributing to a response rate of 86.5%.

The study found that forex bureaus experience various interest rate risks in their operations to a great extent. The various interest rate risks that are experienced by forex bureaus in Kenya include re-pricing risks, risk of interest diversity, repricing risk, yield curve risk and basis risk. These risks reflect a number of possible mismatches in the characteristics of assets and liabilities. The study established that interest rate mitigation techniques affect the profitability of forex bureaus to a great extent. From the study organizational policies affect mitigation of interest rate risks among forex bureaus. Accordingly, institutional values affect interest rate risks mitigation in the forex bureaus to a great extent as well as operational procedures, while mission and vision affect interest rate risks mitigation in the forex bureaus to a moderate extent.

The study found that the forex bureaus adopted hedging techniques for mitigation of interest rate risks to a great extent. The hedging techniques applied in mitigation of interest rate risks affect the profitability of forex bureaus in Nairobi to a great extent. The study ascertained that there are various aspects of hedging techniques applied in mitigation of interest rate risks affect the profitability of forex bureaus in Nairobi. In this regard, currency swaps and forward contracts affect the profitability of forex bureaus in Nairobi to great extents. However, future contracts and currency derivatives affect the profitability of forex bureaus in Nairobi to moderate extents.

The study further found that the forex bureaus in Nairobi adopted payment netting techniques for mitigation of interest rate risks to a moderate extent. Payments netting adopted in mitigation of interest rate risks was found to affect the performance of the forex bureaus to a moderate extent. From the results, that multilateral netting, bilateral netting and re-invoice establishment in mitigation of interest rate risks affect the performance of forex bureaus in Nairobi to moderate extents. The study found that it is easy to control the overall firm's activity when all the currency exposure is netted in one place, netting ensured that the firm as a whole follows a consistent policy and that each subsidiary can concentrate on what they are specialized in.

The study also established that the forex bureaus in Nairobi have adopted leading technique for mitigation of interest rate risks to a great extent. Leading technique adopted for mitigation of interest rate risks was found to affect the performance of forex bureaus in Nairobi to a moderate extent. From the results reinvesting funds, foreign currency receivables and settlement of inter-subsidary accounts affect performance of forex bureaus in Nairobi to great extents, while extending credit, adjusting transfer prices, credit tightening and dividend payments affect performance of forex bureaus in Nairobi to moderate extents.

The study found that the forex bureaus adopted diversification technique for mitigation of interest rate risks to a great extent and that diversification techniques adopted for mitigation of interest rate risks affect the performance of forex bureaus in Nairobi to a great extent. From the

results, distribution of funds and debt service costs were found to affect the performance of forex bureaus in Nairobi to great extents, while temporal non-alignment affects the performance of forex bureaus in Nairobi to a moderate extent. As such, currency diversification helps to limit the potential effect of any single currency’s movements on the value of a firm.

Table 1: ANOVA Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.140	4	0.535	3.282	.032
	Residual	9.617	59	0.163		
	Total	11.757	63			

The ANOVA results revealed that the significance of F statistics is 0.032 which is less than 0.05. The critical values for F-test (4, 59, at 0.05 alpha is 2.53) which is less than the computed F-value (3.282). This implies that there is a significant relationship between hedging technique, payments netting, leading and diversification technique with profitability of forex bureaus in Nairobi, Kenya.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.908a	.825	.789	0.752

The four variables that were studied (hedging technique, payments netting, leading and diversification technique) explain 82.5% of the profitability of forex bureaus in Nairobi as represented by the R². This therefore means that the four variables (hedging technique, payments netting, leading and diversification technique) contribute 82.5% to the profitability of forex bureaus in Nairobi while other aspects not studied in this research contribute 17.5% of the profitability of forex bureaus in Nairobi Kenya.

Table 3: Regression Results

Model	Unstandardized Coefficients	Standardized Coefficients	t		Sig.
			B	Std. Error	
(Constant)			1.376	.415	3.316 0.002
Hedging technique			.289	.070	.301 4.146 0.032
Payments netting			.274	.074	.270 3.684 0.041
Leading technique			.311	.077	.295 4.036 0.023
Diversification technique			.313	.060	.369 5.226 0.012

The regression model established becomes:

$$Y = 1.376 + 0.289X_1 + 0.274X_2 + 0.311X_3 + 0.313X_4 + 0.415$$

The regression equation above has established that holding all factors (hedging technique, payments netting, leading and diversification technique) constant at zero profitability of forex bureaus in Nairobi will be 1.376. The model indicates that, if the predictor variables are held constant, there would be a positive financial performance of the forex bureaus. A unit increase in diversification technique would lead to a 0.313 increase in the scores of profitability of forex bureaus in Nairobi. This technique had a significant value of 0.012 which is less than 0.05 depicting the significance of the relationship between diversification technique and profitability of forex bureaus in Nairobi. The results also show that the profitability of forex bureaus is positive and significantly related to leading technique. This is indicated by a regression coefficient of 0.311 which is a positive coefficient and a p-value of 0.023 less than 0.05 showing the significance of the relationship. Based on the coefficient, it is evident that a unit increase in leading technique would result to 0.311 times increase in profitability of forex bureaus in Nairobi. Payments netting was also seen to have a positive effect on the profitability of forex bureaus in Nairobi. This is shown by the regression coefficient of 0.274 with a significance value of 0.041 which is less than 0.05 the critical value at the 5% level of significance. This therefore shows that given a unit increase in payments netting would result to 0.274 growth in profitability of forex bureaus in Nairobi.

The regression model as well shows that hedging technique is positively related to forex bureaus in Nairobi. The regression coefficient for this was obtained to be 0.274 with a significant value of 0.041 less than 0.05 indicating a significant effect of hedging technique on profitability of forex bureaus in Nairobi. Thus, a unit growth in hedging technique would result to 0.274 times increase in profitability of forex bureaus in Nairobi. Overall, diversification technique and leading technique had the greatest effect on the profitability of forex bureaus in Nairobi. Testing the significance of the coefficients at 95% confidence level, the table indicates that all the variables had a significance value less than 0.05 ($p < 0.05$) thus confirming the significance of the results. Also, from the table, all the variables indicated a positive coefficient indicating a positive relationship between the dependent and independent variables.

CONCLUSIONS

The study concludes that the high and volatile interest rates associated with contemporary inflation have prompted a pronounced change in performance of forex bureaus. The study established that interest rate mitigation techniques have a very significant effect on the profitability of forex bureaus. The study deduces that Organizational policies affect frequency, volatility and direction of interest rate changes. Accordingly, the organizational policy factors affecting interest rate risk management include institutional values, tenets, pillars, operational

procedures, flow of information, chain of command, missions, goals, targets, commitments and visions.

The study deduces that the forex bureaus in Kenya have greatly adopted hedging techniques for mitigation of interest rate risks. It is clear that firms that aim to reduce or eliminate interest rate risk can hedge individual foreign exchange positions by a counterbalancing transaction in the forward markets, with a currency option or with another hedging instrument. The study made it clear that forward contracts, future contracts, currency derivatives and currency swaps are the hedging approaches utilized in the mitigation of interest rate risks among the forex bureaus. Further, it was discovered that hedging techniques help investors manage the risk inherent in currency markets by predetermining the rate and date on which they will purchase or sell a given amount of foreign exchange.

The study also concludes that most of the forex firms have sparingly adopted payment netting techniques for mitigation of interest rate risks. It was also clear that payments netting adopted in mitigation of interest rate risks has a moderate effect on the performance of the forex bureaus in Nairobi. Payments netting controls the overall firm's activity when all the currency exposure is netted in one place, thus ensure that the firm as a whole follows a consistent policy, lower transaction cost because of the centralized netting system and each subsidiary can concentrate on what they are specialized in. Netting systems are set up to reduce the costs associated with inter-firms cash transfers that result from business transactions as well as reducing the physical flow of funds from one firm to another. This technique requires skillful leadership, adequate compensation and integration of new technology.

The study further concludes that forex bureaus in Nairobi have adopted leading technique for mitigation of interest rate risks. Leading technique adopted for mitigation of interest rate risks has a significant influence on the performance of forex bureaus in Nairobi. The various aspects of leading technique that affect the performance of forex bureaus in Nairobi include foreign currency receivables, credit tightening, extending credit, settlement of inter-subsidiary accounts, reinvesting funds, adjusting transfer prices and dividend payments.

The study also deduces that the forex bureaus in Nairobi have adopted diversification for mitigation of interest rate risks to great levels. The diversification techniques adopted for mitigation of interest rate risks have a great contribution on the performance of forex bureaus in Nairobi. The various aspects of diversification techniques in mitigation of interest rate risks on the performance of forex bureaus include distribution of funds, debt service costs and temporal non-alignment.

RECOMMENDATIONS

The forex bureaus in Nairobi should continue hedging since it effectively manages interest rate risks, it also gives the forex bureaus' management and employees' peace of mind, stabilizes currency prices, increased cash flows and profits. In addition, hedging has increased

organizations' value. Hedge contracts should be entered when the economy is bear. Also, the forex bureaus should watch their liquidity and leverage position as this is what institutions will look at when the forex bureaus wants to secure hedge contracts. Forex bureaus should enter into contracts that do not have restrictive covenants. Continuous training is required for employees involved in negotiating forex contracts so as to stay abreast with new techniques available in the market.

The study recommends that forex bureaus operating in Kenya and other organizations operating internationally should start exploring avenues of enhancing payment netting techniques for better and accurate management of interest rate risk exposure. This capacity enhancement would cover interest diversity, repricing, yield curve and basis risks and improve understanding of the relationship between payment netting practices and how they impact on financial performance of the firms. It is also recommended that forex companies use a wider variety of payment netting techniques, recognizing that this has a significant impact on their financial performance.

Since leading techniques was found to affect the profitability of forex bureaus, the study thus recommends each institution to develop and implement effective and comprehensive leading procedures and information systems to manage and control interest rate risk in accordance with its interest rate risk policies. These approaches should be appropriate to the size and complexity of the institution's interest rate risk-taking activities. The use of leading techniques is one means of managing and controlling interest rate risk

Finally, the study recommends that forex bureaus should pursue diversification techniques which businesswise are health as interest rate risks are spread over different industries. Capital resources are effectively allocated bringing back stable profits and even enhanced shareholder value. Emerging attractive unrelated business opportunities can only be utilized through the application of unrelated diversification strategies which increases shareholders' financial gains.

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